

Scientific culture and popularization of science: popscience program of Fapesb in the political agenda of science, technology and innovation of Bahia

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Abstract

This study aims to perform an analysis of public policies on science and technology under the bias of science popularization in Bahia, as well as investigating the inclusion of this issue in Brazilian political agenda. The purpose is to analyze the contribution of the Foundation for Research Support of the State of Bahia (Fapesb) that through its Program for the Popularization of Science (Popsciences), has from 2006 launched calls for holding public events during the National Week of Science and Technology, besides creating announcements directed to research and extension. To this end, the managers of Popsciences were interviewed and teachers also included in the public calls. Another research regards mapping of calls performed from 2006 to 2011, which was analyzed in the following categories: 1) The percentage of contemplation by the nature of institutions; 2) The percentage of contemplations by institution; 3) The degree of titration of the proponents contemplated; 4) The distribution of the projects contemplated by areas and sub-areas of knowledge; 5) The number of times that a town in Bahia was cited for taking place the science popularization activities envisaged in the projects benefited and 6) The distribution of these activities by territory identity. Through exploring the material is intended to answer the following question: how does Fapesb, through Popsciences public calls promote scientific culture in the state of Bahia? Within this context, the expectation is to contribute by responding to the

challenges of socioeconomic development, by means of democratization of scientific knowledge, providing a reflection on the establishment or not of a scientific culture that introduces the public in scientific debate in the State. For this, the use of references was employed on Policy Analysis, Studies on Science, Technology and Society (ETCS) and studies on Scientific Disclosure and Public Communication of Science.

Introduction

This study is part of a chapter extracted from one of this work's authors' dissertation, Mariana Menezes Alcântara, advised by Simone Terezinha Bortoliero, Professor at the Federal University of Bahia. The dissertation was submitted in March 2013, as part of the Post-Graduate Multidisciplinary Program in Culture and Society, Federal University of Bahia, and bears the same title of this article.

The starting point for the presented research was based on the emergence of a movement within Brazil, aiming at establishing a public policy destined to popularize Science and Technology. The analysis of a local frame exposes the need to recognize and evaluate the impact of actions for development in popularization of Science implemented by the Research Support Foundation of Bahia (Fapesb) through its Popularization of Science Program (Popciências). These are recent actions in the State of Bahia and the result of the former presidential government initiative, Luiz Inácio Lula da Silva, with the foundation of the Popularization and Diffusion of Science and Technology Department (DEPDI) within the Secretary Department of Technology and Science for Social Inclusion (SECIS) of the then Science and Technology Ministry (MCT). This department primarily aims to contribute to the improvement of Science and Educational Science dissemination within the country. Attention to the National Week of Science and Technology, established by presidential decree in 2004.

Certainly, the mobilization of many actors and institutions around this event elevated the discussion about the necessity of bringing scientific knowledge to society, since the majority of researches in Brazil are financed by public power. In this scenario the Science popularization theme was inserted in the politics agenda by social inclusion discourse.

Methodology

For the implementation of the survey, it was conducted the description, mapping and analysis of public notices, issued by Popciências from 2006 to 2011, along with analysis of the Fapesb Annual Technical Reports. Based on the collected data it was possible to identify the quantity of resources allocated to this program, as well as analyzing the following categories: 1) the percentage of absorption by nature of institutions; 2) the percentage of absorption by institution; 3) the grade of titles of contemplated proponents; 4) the distribution of contemplated projects by areas and subareas of knowledge; 5) the amount of times a city or town from Bahia was mentioned as host of activities for popularization of science foreseen by the benefited projects; and 6) the distribution of these activities per territory of identity.

Results and discussion

Based on the collected data, 235 approved and benefited proposals were established which, summed up, totalize R\$ 4,853,927.68. This resource was distributed, during six years, to 170 proponents, 87 women and 83 men. Overall 9 public notices were surveyed with 235 benefited projects, from which 233 were located in Fapesb archives. Regarding the nature category of the contemplated institutions, federal and state universities together stand out compared to other ones. Over and above many reasons, this can be explained by the tradition of research and extension within these institutions. The Federal Institutions are located in third place, since they can be compared to universities, offering all sorts of education, from basic to high school, graduation and post-graduation, including research groups registered in the National Council of Technology and Science Development (CNPq) and extension projects.

For the most contemplated institutions, it was identified that Federal University of Bahia stands in first place, with 21.1%. In second place is the Federal University of Recôncavo of Bahia, with 12.5% of the total of the benefit contemplated projects. The State Universities of Feira de Santana and Santa Cruz are almost tied in third place with 9.9% and 9.5% of contemplations. The Federal institute of Education, Science and Technology, originated from the old Federal Center of Technological Education of Bahia (CEFET-BA) and Federal Agrotechnical Schools cover 9.1% of the total benefit projects.

The opening of the public notice Popciências for the participation of public schools as proponents of research projects and events in National Week of Science and Technology has had some effect in the category on the nature of the contemplated institutions, where the participation of schools ranked fourth, with 6.9% of the contemplations for the state schools and 4.74% for municipal schools.

Private colleges also deserve to be mentioned, with 6.17% of the benefit projects by the public notice Popciências. This small participation of private higher education institutions may be understood by the fact that do not have a strong extension background in their activities, as well as not be cohesive local of elements of research groups. In addition, it can be found in the list of participating institutions of these public notices as NGO's, research institutes, state museum, Civil Society Organization of Public Interest (OSCIP's), city halls, libraries, cooperatives and state secretary of tourism. It is believed that a large part of these participations is due to the fact that the opening of the public notices, especially those that were directed to hold events in National Week of Science and Technology and for search/extension in schools, for institutions that are not universities and research centers.

Even not requiring academic titles, the projects contemplated in public notices Popciências still had higher contemplation of proponent PhDs (64.9%), followed by masters (19.5%), specialists (10.2%), graduated (3.9%) and not identified (1.5%). In the female group, 54 doctors, 16 masters, 10 specialists, 5 graduates and 2 women were found without registration in Lattes Platform. In the male group, 53 doctors, 17 masters, 9 specialists, 3 graduates and 1 man were located without registration in Lattes Platform.

For the distribution of the projects contemplated by knowledge area, it was observed that the Exact Sciences and Earth are the champions in contemplations, covering 26.7% of the projects surveyed. Then, there are the Biological Sciences (18.1%), the Interdisciplinary field (16.8%), the Agrarian Sciences (13.8%), the Human Sciences (11.6%) and the Health Sciences (5.2%). Few projects were found and classified as Applied Social Sciences and Linguistics, Arts and Letters, with 0.4% each, which represents the contemplation of just one project in these areas over six years. Some projects have not received clear ratings on the part of its proponents, being marked in their projects as "Other" (3.4%).

This information support the argument that the public notices Popciências are more sought for the sciences considered "hard", such as physics, chemistry and biology. Still, it can be said that teachers and other members of the human, social and arts areas do not visualize or do not understand the popularization of science so that they can trace this transverses actions from this one with the intrinsic knowledge to the disciplines that pertain to them. However, the expressive number of projects classified as "Interdisciplinary" demonstrates a changing process of this dominant paradigm, in which interdisciplinary proposals emerged each year, from 2006 to 2011, in which projects directed to the popularization of content related to physics, biology, chemistry, astronomy, environment, geosciences, among others, were increasingly classified in the subarea of Education (9.5%).

It was possible to identify a representative quantity of projects in the subarea of Agronomy (7.8%), the majority originated mainly from the Federal University of Recôncavo of Bahia, followed by the Federal University of Bahia, which offers Agronomy courses. On the other hand, the amount of projects in the subarea of Astronomy (6 %) is due to the celebrations of the International Year of Astronomy in 2009, which allowed this subarea to present a thematic and specific public notice through an agreement with the CNPq, the Astronomy for All (025/2009). Other projects of astronomy popularization also mark presence in the public notice 009/2009 (search/extension and events in SNCT). In other public notices Popciências, are also found projects benefited with the theme of astronomy, the majority originated from teachers of Departments of the Exact Sciences and Earth of the UFRB, of UEFS, of the UFBA and UESC.

In category 5, on the cities mentioned in the projects, it was noticed that Salvador had 92 of the 233 projects surveyed. Then, it comes the city of Cruz das Almas, which hosts UFRB, with 28 activities. Tied in third place, with 23 projects each, are the municipalities of Feira de Santana and Ilhéus, which hosts the UEFS and the UESC, respectively.

Finally, it was understood that organize the distribution of cities by territories of identity would be interesting to visualize the distribution of the resources of Popciências throughout the state of Bahia. The intention of this distribution is justified by the fact

that the State government has recently begun to use these units to assist the planning of public policies¹.



Figure 1: Map with the distribution of the projects contemplated by territory of identity

In the case of Program of Popularization of Science from Fapesb, it is noticed that the distribution of resources is still unequal and even absent in some territories such as The Basin of the Corrente River, Basin of Paramirim, Low South, Middle Southwest of Bahia, Old Chico and Basin of Jacuípe, as can be visualized on the map about the distribution of projects contemplated by territory of identity.

In this map is possible to still visualize the concentration of activities in the Metropolitan Region of Salvador, with 98 citations found in the 233 projects surveyed. In second place, is the territory of Recôncavo, with 33 citations. In third place, the

¹ It is not for this research to make a critical analysis of the distribution of cities by territories of identity, as well as its political repercussions, economic, social and spatial.

South Coast, with 26 citations. For the Portal of the Sertão, were located 23 citations in the documents of the projects studied.

It is worth pointing out that these citations were located in the proposals forwarded to Fapesb for approval in the public notices Popciências and not in the final technical reports of approved projects, now the access to these documents was denied by Legal Counsel from Fapesb. Thus, some cities may have been contemplated and others may have not in the course of the implementation of these projects. This way, we cannot say with absolute certainty that this distribution of projects and citations of cities that sheltered activities of popularization of science corresponds to an exact reality, but that reflect an ideal of actions predicted by proponents of projects with a view to the approval of them for obtaining the requested resources.

Conclusion

The insertion of the thematic "popularization of science" in the Brazilian political agenda happened so explicitly linked to the issue of social inclusion. As explained throughout this article, the vision of popularization of science of public notices Popciências is in full affinity with the vision of the federal government. This alignment also happened due to the actuation of the social actor more militant in the process, the director of DEPDI, Ildeu Castro Moreira. It is worth pointing out that he undertook various visits to all Brazilian states to promote National Week of Science and Technology together to sectors such as centers and museums of science, universities, fomentation agencies, printed media and television, companies, etc. Besides the Secti and Fapesb, other institutions from Bahia also mobilized around the week.

In Bahia, the evolution of public notices Popciências over the years can be represented by different lines of fomentation that have emerged. It was allowed the participation of both institutions of post-secondary education and research, as public schools of education or administered in public/private consortium, Non-Governmental Organizations (NGOs), associations, cooperatives, among others. This opening to the participation of different social actors in the process of popularization of science are indications that the Fapesb was leading a transitional process toward a public communication of science based on democratic model, that provides the participation

of different sectors of society such as producers of knowledge, despite the majority of the activities accomplished up to the moment possess characteristics of a conception that refers to a communication via handheld single, that means, products developed by scientists to society, without the active participation of the public in this process.

There were not required academic titles to the proponents of the projects. This facility occurs because there are not many people who are trained as researchers in the area of scientific dissemination and also because the qualification of teachers from the public schools is based on degree course, and the public notices gave space for the participation of schools in a specific line of fomentation. In spite of these facilities, it can be noticed that there is still a very low level of participation of these institutions, which make us aware to the need for a greater dissemination of public notices directed to the popularization of science inside the schools, task that should be assigned to the Secretary of Education (SEC).

About what it was researched, even if there is a wish of the researchers and teachers contemplated in public notices Popciências in promoting activities of popularization of science, there are the constraints imposed by political instability, as the successive exchanges of managers and interruptions in fomenting programs for such activities. As explains Dagnino (2007), the research community plays the role of dominant actor in conformation process of the public policy agenda for science and technology. This fact explains the relative continuity of actions implemented in the framework of the policy of C&T during the different governments. However, in the popularization of science, it does not happen! There are strong indications that the own actors of popularization, in this case, the teachers contemplated in public notices, don't see each other as political actors in the process of conformation of agenda. They do not seem to be aware of what can and must defend their interests, their speeches in the arenas of decision, such as the conferences of science and technology, where are evaluated the ancient and formulated new public policies in this area.

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