

Parallel Session 9: Theoretical Framework evolution around PCST

SCIENCE POPULARIZATION AS A STUDY SUBJECT

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Abstract

A brief discussion of the definition, goals and models about science popularization is presented, followed by a view of the types of studies about this discipline done in Mexico. Three main purposes for science popularization are proposed that can guide research and allow to maintain the diverse modalities of science popularization, while managing to go beyond the deficit model.

Key Words: Science Popularization, Research, Mexico, Models

Text

Definitions

The term “science popularization” alludes to a set of activities, disciplines and approaches that seek to communicate science to a wide voluntary audience. No definition is commonly accepted by all science popularizers, because their practices are usually carried out in a practical way, without a proper theory to sustain it. (A definition that has gained good acceptance in Mexico has been presented by A. Sánchez Mora [1].) This situation has resulted in each different group or individual trying to develop its own theoretical framework to plan, evaluate and analyze their activities.

Goals

Such reflection has been the seed of what could be called “research on science popularization” [2]. In Mexico, although there has been a long and strong tradition of science popularization, such studies have been rather scarce and seldom published [3]. In this context, it is important to define more precisely the diverse approaches that can be adopted according to the particular goals pursued, since each one implies its own criteria for assessing quality and determining what is evaluated. Briefly, it could be said that the range of important and valid goals for science popularization is very broad: entertaining, informing, teaching, arising new scientific vocations, challenging pseudoscience, democratizing scientific knowledge, spreading scientific culture... [4].

Models

Lewenstein [5] has proposed four models of public communication of science and technology. It is clear that in Mexico, as in many other countries, the

“deficit” model is prevailing, with the “context” model slowly gaining recognition. More social-oriented models such as the “lay-expertise” and the “public participation” models need to be encouraged. Some of the diverse goals for public science communication mentioned above are more aptly satisfied by some models than others. Thus, all four of Lowenstein’s models can be useful in certain circumstances, and none has necessarily to be discarded in favor of the others.

Science communication studies in Mexico

Examples of research on science popularization that have been to a modest degree conducted in Mexico are historical studies [6], analyses of scientific and science communication discourses [7-10], approaches to the relationship between science and literature [11] or science and art in general [12], museum studies [13,14] as well as philosophical or methodological reflections [15].

A strategy for science communication

In setting goals for science communication studies, it is important to distinguish between “applied” studies, which seek to improve the practice, planning, evaluation and development of popularization activities and products, and “basic” studies, which view science popularization itself as their subject and analyze it in ways not directly applicable to the practice. Both types of studies will be necessary if science communication is to go beyond the deficit model without limiting public science communication to what is “useful” or “necessary” for pragmatic purposes.

I propose three main purposes for science communication, that broadly encompass the diverse goals mentioned above: 1) public appreciation of science (including aesthetic appreciation of science and a view of science as a valid form of entertainment), 2) public understanding of science (including scientific knowledge and knowledge about what science is and how it is done), and 3) social responsibility about science (in the STS sense, coherent with the lay-expertise and public participation models).

Conclusion

I suggest that, in view of the diversity of modalities and goals for public science communication in countries like Mexico, it would be useful to adopt a broad strategy (possibly a national one) that encourages all diverse modalities around the three goals proposed: social appreciation, understanding and responsibility about science and technology. Thus it would be possible to meet important social demands that have received little attention from science communicators, without at the same time giving away the ideal, long sustained in Mexican science popularization, of a broad scientific culture in the aesthetic sense.

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