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Women in Science, Research and Technology
"Overcoming barriers, innovation & retention"

Emancipatory power of Science Communication.

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Introduction

- Science Communication
- Public Understanding of Science research.
- Transdisciplinarity and science communication
- The emancipatory power of science communication

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Knowledge

"… knowledge must be viewed as a produced means of production and science as an on-going social activity in a continuing process of transformation". We may generally agree that science's position in the world is anthropocentric and argue that mankind is central to the world we live in. It is difficult for us to imagine a world without mankind. It is also difficult for us to think of the world without science. (Roy Baskar (1975:17).

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Science

1. Is knowledge regarded as socially produced. i.e. as having a material cause of its own kind? Or is it read straight onto the natural world or out of the human mind?
2. Are the objects of knowledge regarded as existing and acting independently of mankind? Or do they depend implicitly or explicitly upon mankind for their existence and/or activity?
3. If we argue that science is the product of imaginative and disciplined work of mankind – based on what is given to them and is driven by acquired knowledge, then we can safely argue that science is a social process.

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Science and knowledge

- If we ask the question: how do we produce scientific knowledge, what will be the answer?

- We might refer to the technocratic nature of knowledge production or be interested on the different modes of knowledge production. Here academic specialisation often frames (constrains?) our ‘ways of knowledge’ within disciplinary boundaries. Though the process of reflection is inherent to all scientific activities, this process is less so within the constraints of disciplines – a discipline does not often reflect upon itself or the wider world and mostly depends on technical formations and specific methodological processes. In the academic world the manner in which we internalise and express specific discipline bound knowledge is used as benchmark for our ability and capability to manage knowledge.

Science communication

- Definition of science communication
- Sites of communication
- Models of communication

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Public Understanding of Science

- How do people relate to scientific knowledge?
- How is knowledge brought to people's attention?
- What are the intersections between those who are reputedly knowledgeable and those who are not?

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Public Understanding of Science: scientific temper

- Jawahrlal Nehru's five-point plan to be implemented within the first few years after the 1947 independence of India:

- "People should develop along lines of their own genius and we should avoid imposing anything on them.
- Tribal rights in land and forest should be protected.
- We should try to train and build up a team of their own people to do the work of administration and development.
- We should not over-administer these areas or overwhelm them with a multiplicity of schemes.
- We should judge results not by statistics or the amount of money spent but by the quality of human life that is involved"

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Definition of scientific temper

- "…the essence of scientific attitude is an active, sensitive, questioning, understanding and creative relationship between man and his environment. Not only his physical and biological environment but also his behavioural, social and cultural environment. It is a rational approach to the discovery of truth, through free and creative thinking, experimentation and objective analysis: a steadfast commitment (with humility, not arrogance) to scientifically established truth. At the same time it recognizes the tentative and continuously unfolding character of our scientific understanding of phenomena.

- A scientific approach involves deliberate effort to distinguish between apparent and real causes of phenomena, disentangling the different forces and motivations at work; a consistence between theory and practice; quantitative as distinguished from vague qualitative thinking; a spirit of adventure; a willingness to pursue a promising path or paradigm consistently and tenaciously to its logical conclusion, with built-in consistence checks, and a willingness to also give up the paradigm if contradictions show. Last, but not least, an important characteristic of a scientific approach to the solution of problems is a systems approach: analyzing the totality of a complex system into its essential components, and taking operational steps with due allowance for the mutual interactions of these components so that desired results may follow" (Udgaonkar 1980:27)

The challenge

Michèle Gellereau (2012:111 - 112) provides four factors to take into account:

- The development of linguistic sciences and their increased interest in social customs and in specific kinds of discourses issuing from different social worlds, including the world of science.
- The rise of sociology and anthropology of scientific activity (social and political dimensions of research).
- The theorising of popularization (as a means to generate reflexivity and challenging the irreducible heterogeneity of the production of knowledge).
- The critique of the political role played by science in social life (looking at the links between so-called legitimate forms of knowledge production and ideological frameworks supported by literature and the media).


Building the bridge between
research, policy and action