

Science Communication through the Mainstream Media in India

Communication & Journalism
Research
3 (1&2) p 75-85
©The Author(s) 2014
Reprints and Permissions:
masscomhod@uoc.ac.in
ISSN 2348 – 5663

Sangeetha Unnithan

Assistant Professor, Indian Institute of Mass Communication, Kottayam, Kerala, India

Abstract

Issues related to science and diffusion of knowledge is central to many social, political and economic debates in our country. The study undertaken for this paper is part of a wider research to study the dissemination of science news and development communication through the leading print and electronic news media in India. The study analyses stories and articles related to science and development communication in these media.

Keywords

science communication, knowledge diffusion, Indian media

Introduction

Development or pursuit of societal development is supposed to be an inherent quality of journalism. However today, across the world, journalism is going through a paradigm shift from a 'public service' to a white collar job ruled by 'exclusives' and sensationalism. Paid news, private treaties, corporatisation and the change in identity of news media as business enterprises rather than journalistic enterprises have thrown new challenges to professionals working in this field. In the new media environment, science and development reporting have slumped down to least priority spots with many leading media-houses relinquishing their science correspondents or replacing their beats with more 'hot' beats like business or politics.

Issues related to science and diffusion of knowledge is also central to many social, political and economic debates in our country. It is indeed intriguing as well as disconcerting that despite the quantum leap made by this country in the fields of S&T, and despite the immense scope in science and development

Correspondence: Email: san217@gmail.com

communication they remain underdeveloped areas of communication in India. Science communication and propagation of science and development initiatives is imperative to build up an informed citizenry, especially at a time when India is striving to become a knowledge economy.

Objective

The study undertaken for this paper is part of a wider research to study the dissemination of science news and development communication through the leading print and electronic news media in India. The study proposes to analyse stories and articles related to science and development communication in these media. Some of the questions that the research proposes to answer are:

- What do the news media in India highlight?
- How much space do mainstream news media allocate for science news and development communication?
- How do news media treat stories relating to science and development?
- How do they prioritize stories related to S&T and development?
- Is there any pattern or repetitiveness in science and development related stories appearing in the media?
- Do news media focus on the social aspects of science and development stories or is it merely surface reporting?
- Is miscommunication a concern in science communication?

News media are one of the largest platforms in India through which information is consumed. They also have a major role to play in the dissemination of development and science communication. This study will help in analysing the role played by mainstream news media in India in propagating the developments in the field of S&T and also help identify and fill lacunas, if any, in this sector.

Methodology

The study titled *Science Communication through the Mainstream Media in India* is being carried out using the method of comparative content analysis. It will be a comprehensive study of science news and development communication materials published in leading news media across the country in 2014-15. Study includes analysis of news content in five leading English newspapers published in five different centres of the country as well as two television news channels, including a regional and national channel. The five newspapers that the study proposes to analyse are Hindustan Times (New Delhi), Times of India (Mumbai), Central Chronicle (Bhopal), The Statesman (Kolkata) and The Hindu (Chennai). These five newspapers have been selected from five different regions of the country (North, West, Central, East and South) to make it a holistic pan-national study. The news channels that will be analysed are NDTV 24x7 and Doordarshan, Thiruvananthapuram.

A constructed year with 14 sample issues of these newspapers between August 2014 and August 2015 will form the material for assessment. In the case of channels, continuous eight hours of broadcast during these 14 days will be analysed. The study will also include website content analysis of BBC World.

Review of literature

The research, which was undertaken from October 2013 from University of Kerala under the guide-ship of Prof Dr J.V. Vilanilam, is currently in the Review of Literature stage. Below are some studies that have been reviewed so far:

The Kerala study of S&T news and information

A study on S&T news dissemination through the print media in Kerala was taken up by Department of Communication and Journalism, University of Kerala, under the initiative of then HoD Dr J.V. Vilanilam in 1987-88. The study was done by analysing 10 dailies (eight Malayalam and two English) and eight magazines (all Malayalam). The study found that political and government news were the predominant theme in the newspapers and magazines analysed. S&T news did not figure prominently in any of the Malayalam or English paper (Vilanilam, 1993).

Anilkumar Vadavathoor published a historical study in 2001 on science journalism in Kerala since its beginning in the latter half of the nineteenth century (Vadavathoor, 2001).

In 1985 Kerala State Shasthra Sahitya Parishad brought out a book titled *KSSP: A People's Science Movement* detailing the organisations' experience and studies in science popularisation efforts. Bharvi Dutt and K.C. Garg conducted a study to analyse news items on science and technology in English newspapers published in different parts of India during 1996. The study titled "*An Overview of Science and Technology Coverage in Indian-Language Dailies*" identifies the newspapers that report more science news, and also the most reported themes. Shiju Sam Varghese undertook a study on public understanding of science in Kerala society by analysing Malayalam press in 2007.

S&T journalism: International perspective

BBC study on science news

In 2010 the BBC Trust launched a review of the impartiality and accuracy of BBC science coverage. The content analysis was taken up by a team of researchers from Science Communication Group of Imperial College, London. Steve Jones, Emeritus Professor of Genetics at University College London, was commissioned to write his own independent report as part of the review. The review covered specialist and non-specialist science content on TV, radio and online and science was defined to include not just natural sciences but also coverage of technology, medicine and the

environment relating to the work of scientists. The study titled ``*BBC Trust review of impartiality and accuracy of the BBC's coverage of science*'' published in July 2011 found that one in four of the BBC news programmes sampled included at least one item about science. On average, non-news programming which includes some science comprises a minimum of 2% of air time on the main four BBC television channels; the minimum for Radio 4 is almost double this. About a third of the Current affairs programmes in the sample from BBC News Online were found to be about medical science. Nearly half of the sampled science items on BBC broadcast news programmes were about new research, as was about two thirds of science news on the BBC website. In his analysis, although Prof Jones commends the overall quality of science news coverage by BBC, he does point out some significant lacunae, such as narrow range of resources used in science stories and a tendency to be reactive than proactive in news coverage (BBC Trust, 2011).

Debate initiated by *the Conversation*

The media's obsession with conflict and balance in science news reporting was also highlighted in an interesting series initiated by the news website *The Conversation*. *The Conversation*, a leading Australian news and commentary website, initiated a debate titled 'State of Science' in late 2011. It was basically a series of articles written by scientists, academics and journalists, delving on various aspects of science communication and science journalism. The focus was to assess the impact of scientific debate in public discourse. One pertinent point that was brought up in the series was the divergent frameworks of science and journalism. In their article 'Way off balance: Science and the mainstream media' Stephan Lewandowsky, a senior academic at University of Bristol and Steve Sherwood, Director of Climate Change Research Centre at University of New South Wales tried to probe the reason behind the uneasy relationship between science and the media? (Lewandowsky and Sherwood, 2011).

Preliminary analysis of two news websites

As this research is still in its nascent stage, a preliminary analysis of S&T news on the Home Page of two news websites was carried out for the purpose of this paper.

Methodology

The websites selected for analysis were <http://ndtv.com>, an Indian news website- the online subsidiary of the leading Indian news channel NDTV 24X7- and the international news website <http://bbc.co.uk/news>. The two websites were selected through random sampling to get a national and international perspective on treatment and prioritisation of S&T news on a normal day. Comparative content analysis of S&T stories that appeared on the Home Page of these two websites was done for this analysis.

Each S&T story/article that appeared on the Home Page of these websites on the same day (2014, February 3) has been analysed using the following variables: wordage, number of sources quoted, hyperlinks in the story, use of multimedia, pictures/illustrations/graphics and sub category of S&T covered. The two websites were also analysed for general parameters such as total number of headlines/top stories on home page, number of S&T top stories, total number of stories on home page and S&T stories on home page.

Operational definition of S&T news story

Any story or article that reports or explains a new/innovative concept or device or application of a new/innovative concept in an existing device or any article that provides information on such concept or device has been categorised as S&T story. The sub-categories under S&T have been broadly divided into Health and Nutrition, Environment, IT, Electronics, Tech (Gadgets), Climate Change, Weather and Basic Science.

Findings

Content analysis of NDTV home page published on February 3, 2014. (Refer Appendix 1)

General

Total No. of 'Top Stories' on Home Page	18
S&T Stories/Features/Articles in Top Stories	1
Total no. of Stories, features, videos and links on Home Page	99
S&T Stories on Home Page	8

Science story features

	1	2	3	4	5	6	7	8
Wordage of S&T Stories	2161	565	Video story	296	354	387	382	1598
No of sources quoted in Science Stories	0 Independent Review	0 Syndicated column by subject experts	3	0 Independent Review	2	3	1	0 Independent Review
Hyperlinks in S&T Stories	7	3	0	7	11	5	4	9
Use of Multimedia	0	0	Video	0	0	0	0	0
Pictures, Illustrations, Graphics accompanying story	11	1	Video	3	2	2	2	8
Science Topic Covered	Tech; Gadgets	Nutrition	Environment	Tech; Gadget	Tech; Gadget	Tech; Gadget	Tech; Gadget	Tech; Gadget

Inferences

- Only one S&T story appeared among the Top Stories section of the website
- Percentage of S&T stories vis-à-vis other stories on NDTV Home Page is 8 percent
- Total number of S&T stories on the home page is 8
- Of the eight S&T stories/articles featured on the Home Page, six were on gadgets i.e. 75 percent of S&T stories and articles
- The only two other fields of S&T covered were nutrition (A2) and environment (B1) (Refer Appendix 1)
- There is only one segment on the Home Page dedicated to S&T news: TECH segment
- All stories on TECH segment are gadget based
- Of the eight S&T stories/articles reviewed four did not have attribution to any source.
- Although it was the website of a television news channel there was only one S&T story in video format in the Home Page.
- None of the stories (excluding the video story) featured any multimedia
- Two stories had wordage above 1000 while four had wordage below 500

Content analysis of BBC News home page published on February 3, 2014 (Refer Appendix 2)

General

Total No. of headlines and 'Top Stories' on Home Page	16
Science Stories/Features/Articles in Top Stories	0
Total no. of Stories, features, videos and links on Home Page	118
Science Stories and articles on Home Page	11

Science Story Features

	1	2	3	4	5	6	7	8	9	10	11
Wordage of Science Stories	1046	Video Story	163	Video story	688	351	561	937	1270	616	1853
No of sources quoted in Science Stories	6	1	2	2	2	2	6	6	2	8	8
Hyperlinks in Science Stories	0	0	2	0	3	0	0	0	2	12	4
Use of Multimedia	0	Video	0	Video	0	0	1	1	0	2	0
Pictures, Illustrations, Graphics accompanying story	3	Video	5	Video	3	1	5	2	6	7	1
Science Topic Covered	IT	Tech; Gadgets	Environment	Environment	Environment; Climate Change	Electronics and Communication	Health	Health	Basic Science; Chemistry	Weather	Health

Inferences

- BBC News website Home Page features specific segments for science genres such as Technology, Health and Science/Environment. There is also a special segment called ``Best Science and Tech reads of the week``. ``From BBC Future`` is another futuristic segment on the Home Page that discusses current and future science and technology challenges.
- Percentage of science stories/articles vis-à-vis other stories in the Home Page is around 10.7 percent.
- No science stories/articles were included in the headlines or Top News section
- Of the 11 stories analysed, only five had hyperlinks
- Number of sources quoted was much more than ndtv.com
- Five stories had more than five attributions
- The Home Page included two video S&T stories
- Only two S&T stories had less than 500 words while three stories had above 1000 wordage.
- 36 percent (4/11) of S&T stories fall in the Environment/Weather category
- 27 percent (3/11) fall in Technology category that includes IT and gadgets
- Another 27 percent falls in the Health category
- Video and other multimedia tools have been exploited much better in this website
- The Technology Section of the Home Page features two stories which are not really S&T related. While one story is about an ongoing investigation on breach of data security in US hotels, the other is about tax evasion by some companies in the gaming industry.
- *More Special Reports* section on the Home Page of this website contains a multimedia series called `Digital Indians` which includes profile stories on eight Indians who made it big in the digital technology industry. Each of these stories, which open in a fresh web page, contains several hyperlinks, illustrations and videos.
- Local news from England has better coverage in terms of multimedia features and number of sources

Conclusion

It is quite evident from this analysis that science and technology reporting is not a major news priority for either news websites. Neither website had any major issue based S&T story in its Top Stories or Headlines segment. What can be inferred from this analysis is that on a regular day, when science is not hitting headlines for any particular reason, S&T news reporting and science communication takes a backseat in a general news environment.

There are also significant variations in the treatment of S&T news in the Indian and foreign websites. While the BBC News website <http://bbc.co.uk/newshad> segments dedicated to specific topics of S&T on its home page, NDTV home page <http://ndtv.com> had only once such segment called TECH. And even that segment had almost 100 percent stories/articles on mobile gadgets. Although the articles on new gadgets included in this segment do include information on new/innovative applications/devices, they focus more on the features of these gadgets from a consumerist point of view rather than a scientific point of view. For the same reason, this segment appears to look and read more like a product review segment rather than an S&T segment.

Considering that this type of gadget review and gadget launch reporting forms 75 percent of the entire S&T newshole on NDTV homepage it can be safely said that the term science reporting is a misnomer for this website. However dominance of stories relating to Information Technology and electronics is common for both websites. BBC News has also given special focus to stories relating to environment, climate change and weather. There is in fact a dedicated segment for environment news on BBC News home page.

Considering that the content analysis was done on the online platform, it can be inferred that multimedia and other digital tools were quite underutilised in majority S&T stories that were analysed. Here again BBC News stories fared much better than NDTV stories. According to the essay *Multiplying Meaning: Visual and Verbal Semiotics in Scientific Text* by J.L. Lemke of City University, New York, integration of non-textual presentation, including table, graph, drawings and multimedia genre, is important in science communication (Lemke, 1996). Since the scope of multimedia tools and animation is maximum on online platforms, where neither time nor space is a constraint, they could have been used much better to communicate scientific innovations in the S&T stories. However the series *Digital Indians* that appears on the home page of BBC News deserves special mention here for its commendable packaging of illustrations, video and photographs.

Recommendations

Due to several limitations, this analysis was taken up at a small scale. A detailed analysis of news websites from different categories, such as regional, national and foreign, can throw more light on the treatment of S&T news. Many more variables can be used for the analysis to find out why science is sidelined by mainstream media and what kind of news takes up the lion's share in our media.

References

- BBC Trust (2011). *BBC Trust review of impartiality and accuracy of the BBC's coverage of science*. Retrieved from http://www.bbc.co.uk/bbctrust/assets/files/pdf/our_work/science_impartiality/science_impartiality.pdf
- Lemke J.L. (1996). *Multiplying Meaning: L Visual and Verbal Semiotics in Scientific Text*. Retrieved from <http://www.jaylemke.com/storage/MultiplyingMeaning1998.pdf>.
- Lewandowsky, Stephan & Sherwood, Steve. (2011, November 24). *Way off balance: science and the mainstream media* (News article). Retrieved from <http://theconversation.com/way-off-balance-science-and-the-mainstream-media-4080>
- Vadavathoor, Anilkumar (2001). *Science Journalism: Vikasavum Parinamavum*. Kerala Language Institute, Thiruvananthapuram.
- Vilanilam, J.V. (1993). *Science Communication and Development*. Sage, New Delhi.
- ndtv.com. 2014, February 3
- bbc.co.uk/news. 2014, February 3