

Effectiveness of Science Newspaper '*Vaigyanik Drishtikon*' in Science Communication: A Case Study

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ABSTRACT

In the present era, every citizen in society should have the opportunity to think, understand and work scientifically. Under the Fundamental Duties as per Article 51A (H) in the Constitution of India, it has been said that “*it will be the duty of every citizen of India to develop a scientific temper, humanism and a spirit of inquiry and reform*”. *Vaigyanik Drishtikon* which is a fortnightly science newspaper is being published for the last 22 years and is considered as the first science newspaper in India. It is playing a wide and vivid role in developing scientific temperament and awareness in society.

In this paper, an attempt has been made to investigate the effectiveness and role of the science newspaper *Vaigyanik Drishtikon* in science communication in Jaipur. The main objective of this study is to understand, analyze and check the effectiveness of this newspaper. For this purpose, the authors have used the online survey method to collect data for their analysis. Since Google form is quite a handy tool for collecting data, authors have circulated Google forms with a questionnaire comprising 22 questions. A total of 425 responses were received. Most of the people who participated in the survey responded that '*Vaigyanik Drishtikon*' has developed their scientific understanding to a great extent and made them aware of the logical, informative and interesting knowledge of science in simple language.

Keywords: Scientific temper, Science newspaper, Media, Online survey

Introduction

The definition of science communication in the field of scientific literacy has been dominated by an unfortunate inadequacy of clarity (Burns T W, O'Connor D J and Stocklmayer SM, 2003; Weingart P and Guenther L, 2016). Scientific temper has been a guiding principle of Indian civilisation as well as the Constitution. Gautam Buddha around 400 B.C. gave a doctrine for contemporary society to reach the truth and cling to it and make it the guiding principle of society (Patairiya MK, 2016; Subodh Mahanti, 2013). Over the period, scientific temper was accepted as the foundation of the modern age.

Scientific Temper is a way of life — a single and collective process of reasoning and acting which uses a rational method that includes inquiry, observation, testing, investigation and evaluation. The Scientific Policy Resolution (SPR) of the Government of India, adopted by both the Houses of Parliament in 1958, reflected the national aspiration based on which the government was able to build the concept of scientific temper (SPR, 1958). SPR was an expression of India's political leaders' faith in science and the role that technology could play a significant role in national development [Nehru, Jawaharlal, 1889-1964].

This sentiment was added to the Indian Constitution by the 42nd Constitution Amendment in 1976 as one of the ten fundamental duties. Its purpose is to fight orthodox hypocrisy (Raza Gauhar, 2015; Singh Ajai R and Singh Shakuntala A, 2004). A policy was also suggested in the document to empower people and benefit from the inclusion of the Science Technology and Innovation (STI) framework of the country, under which scientific thinking should be promoted among all sections of society.

But the biggest question was how to develop scientific temperament in a country which is so diverse and different in terms of languages, religions and self-belief. Mythologies and the stories narrated by the ancestors influenced the minds of the people. Still, it is hard to find scientific logic behind many stories. It is extremely difficult to bring change to people's minds. But no matter how hard the task is, efforts must be made for the public interest.

The 21st century is the world of information. Easy access to factual and scientific information must be provided to the public to develop a scientific temper in public. However, many tools are available for sharing information but media is always considered as one of the most influential and fast mediums. We can use various mediums of communication such as print media, electronic media, folk media, etc. Presently, social media has come in the form of another new rising media. India has a culture of conversation, especially when communicating with people in large numbers. Folk drama, songs and dances may be proven effective means for this purpose.

Print Media has a great impact on people from earlier times. A newspaper is a serial publication that has several formats of news on current events of particular or general interest. The individual parts are listed chronologically or numerically. It is usually published daily, weekly and fortnightly (Siddiqui JA and Kumar Devendra, 2011; Arulraj R and Viji, 2008). The modern newspaper is a European invention. The world's oldest direct handwritten newspaper was widely circulated in Venice in 1566. These weekly newspapers were full of information about wars and politics in Italy and Europe. The first printed newspaper was published weekly since 1609 in Germany (Bndaka, Eleni, 2007; Van Der, RJW, 2005). Talking about its history in India Bengal Gazette was the first newspaper published in the country. It was started by James Augustus Hickey on 29 January 1780, under the British Government. All types of media have their specialities, and they also have their limitations.

In the current time too, newspapers have proven the easiest way to disseminate information among the masses. Newspapers can deliver more content to a large number of people and are seen as the cheapest, and sustainable medium. People have been seen to rely more on the printed words in the newspaper than other mediums (Prasad R, 1982).

Describing news through stories is one of the most effective ways of communication. People grab it faster and content remains in their minds. This is why it is now considered the soul of science communication. Science communicators understand the complex facts of science and explain them to people in easy language as a story. Science is generally seen as a difficult

subject in society and is confined to people working in laboratories. But in a world where we see rapid growth of science and technology, it is imperative to reach the people for their benefit (Singh Ajai R and Singh Shakuntala A, 2004; Dhanshri M Patil, 2011).

The current demand is to identify the problems being faced by society and search the scientific solutions. In such a situation, it is imperative to encourage all citizens to secure a fair and sustainable future, which can only be possible with the help of science. To achieve this goal, science communicators must convey information related to science to people in simple language. This scientific information should also be attractive and relevant. We need to present facts and evidence and go in the direction of creation so that emotional connections between scientists and the public can be established. This need of building relationships must be fulfilled. We have enough evidence that storytelling can be a powerful way to nurture people. Those stories help people understand, process and make it easier to remember science-related information for a longer period. Science communicators should think of presenting stories as facts wrapped in emotion.

The development of science media can be understood by some notable examples like the first publication of the monthly "*Digdarshan*", a popular science magazine, published in 1818. It was an educational magazine that publishes popular science articles in Bengali, Hindi and English. In 1915, the publication of "*Vigyan*", a popular science monthly magazine in Hindi, was started from Vigyan Parishad, Allahabad, which exists without any hindrance. In the year 2014, it celebrated its centenary year. Two popular science magazines *Science Reporter* in English and *Vigyan Pragati* in Hindi are published by the National Institute of Science Communication and Policy Research (NIScPR), Council of Scientific and Industrial Research (CSIR), New Delhi. *Awishkar* and *Invention Intelligence* are the science magazines published by National Research Development Corporation (NRDC). *Awishkar* is a Hindi science monthly magazine started in 1971. It disseminates information about the latest technological inventions and innovations among the people. *Invention Intelligence* is an English Bi-Monthly science

magazine. Vigyan Prasar an autonomous organisation under the Department of Science and Technology (DST), Government of India, publishes *Dream 2047*.

Science Newspaper '*Vaigyanik Drishtikon*' was started on 15 July 2000 in Jaipur. At that time newspaper was four pages fortnightly. Educational institutions, schools, colleges, and universities subscribe to this newspaper. Common people, students, teachers, scientists and professors are regular readers. This newspaper is published in the Hindi language and has its own identity throughout the country. *Vaigyanik Drishtikon* is published to fulfil the needs of Article 51A (H) of the Constitution of India, which mentions that to develop the scientific temper, humanism and the spirit of inquiry and reform, scientific temperament proves to help human beings progress. Currently, the newspaper is sixteen pages fortnightly and, is on its path, to becoming a scientific daily. As it is a fortnightly newspaper, its frequency is higher. The ratio of its effectiveness is higher than other science media publications in the country.

To develop any country, it is necessary to develop scientific temper among people. To measure the development of a country we should check the amount of research work happening in the country and its benefit to the common people. In the research paper, the author has studied the impact of a fortnightly science newspaper named *Vaigyanik Drishtikon* in developing scientific temper in the public. The title of the science newspaper *Vaigyanik Drishtikon* was opted as this newspaper started around two decades ago with the spirit of developing scientific temper in society. This newspaper covers the details about the latest and ongoing research in almost all branches of science being published. Along with this, the life stories of great Indian scientists are also published. The scientific fraternity felt overwhelmed to realise the spirit behind this very challenging journey of bringing out a newspaper on science, technology and innovation including scientific temper that is generally neglected in mass media.

Methodology

For this study, the author has mainly chosen the survey method. In this paper, an attempt has been made to collect the data using

Google Forms regarding the effectiveness of the science newspaper *Vaigyanik Drishtikon*. The universe of the survey is Jaipur District, Rajasthan. Further, received responses have been analyzed by graphical representation and tables to find out the significance of this newspaper as an operative tool in science communication.

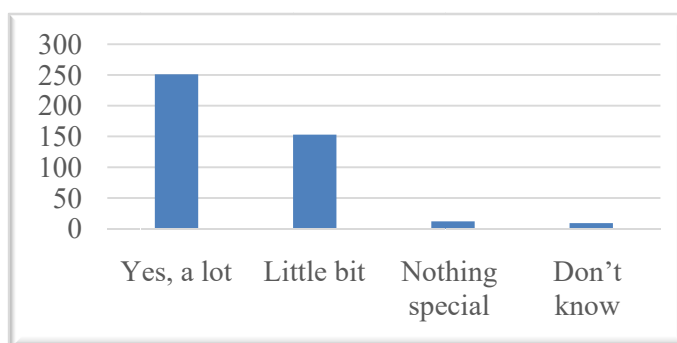
Data Collection and Analysis

In this segment received responses are analyzed. Five questions were included in the survey regarding various aspects of *Vaigyanik Drishtikon* newspaper.

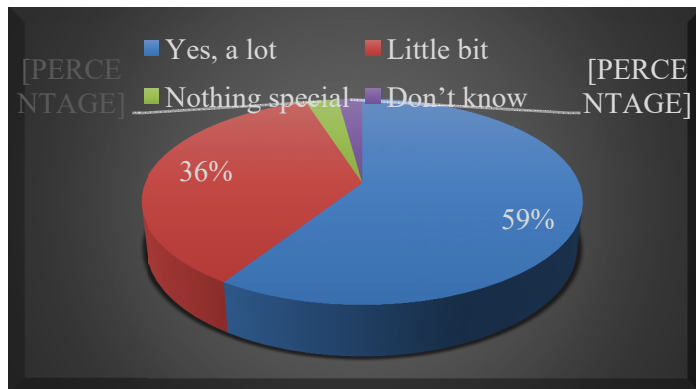
1. Has reading *Vaigyanik Drishtikon* increased your interest in science?

The majority of respondents think that reading *Vaigyanik Drishtikon* has increased their interest in Science. Only 2.8% and 2.1% of respondents answer no and don't know, respectively.

Response of <i>Vaigyanik Drishtikon</i> increased interest in science	Number of Respondents	Percentage (%)
Yes, a lot	251	59.1
Little bit	153	36
Nothing special	12	2.8
Don't know	9	2.1
Total	425	100



Graphical representation

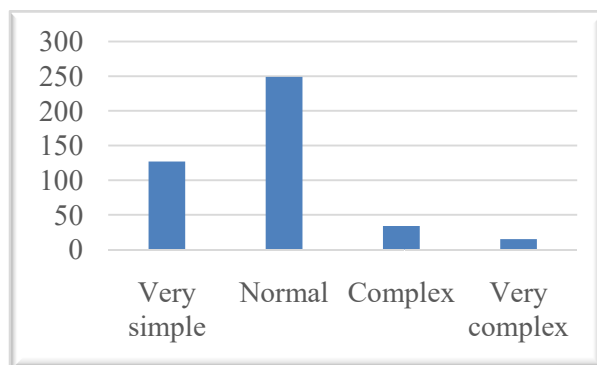


Pie chart representation

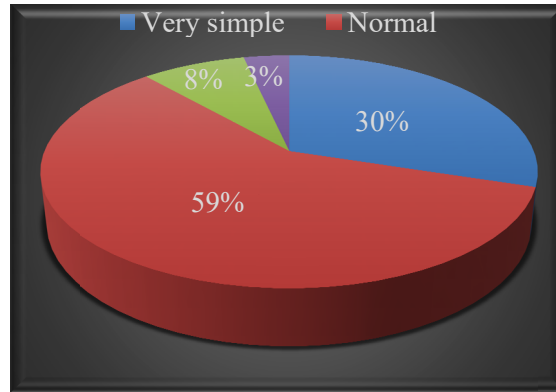
2. How is the language of *Vaigyanik Drishtikon*?

To check the readability of the newspaper, this particular question was asked to the respondents. 29.9% and 58.6% of participants think that the language of this newspaper is very simple and normal, respectively. While nearly 8% of participants think that the language is complex.

Responses of understanding language of <i>Vaigyanik Drishtikon</i>	Number of Respondents	Percentage (%)
Very simple	127	29.9
Normal	249	58.6
Complex	34	8
Very complex	15	3.5
Total	425	100



Graphical representation

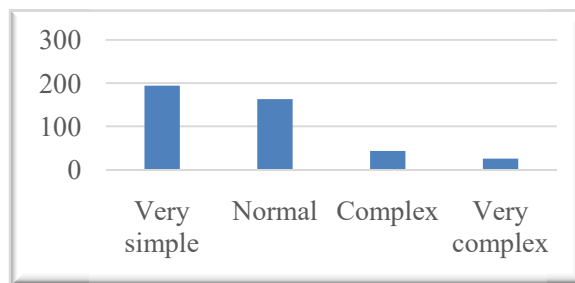


Pie chart representation

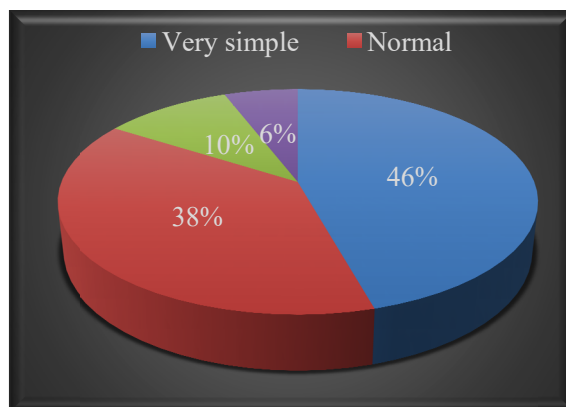
3. Does the *Vaigyanik Drishtikon* break social confusion and superstition?

This question is asked to check the impact of *Vaigyanik Drishtikon* in creating social awareness regarding superstitions. The majority of participants think that this newspaper has helped to break superstitions and social confusion in society. Only 10.1% of participants say no and 5.9% of participants say they don't know about it.

Responses on social confusion and superstition broken by <i>VaigyanikDrishtikon</i>	Number of Respondents	Percentage (%)
Yes, a lot	194	45.6
Little bit	163	38.4
Nothing special	43	10.1
Don't know	25	5.9
Total	425	100



Graphical representation

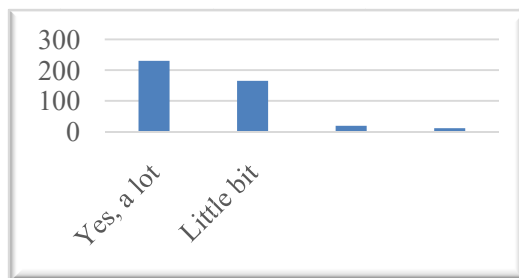


Pie chart representation

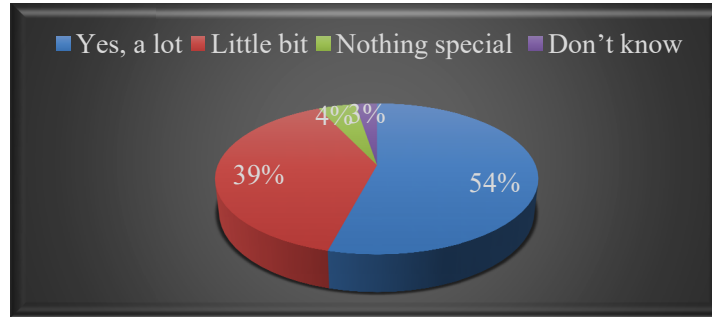
4. Is there any use of the knowledge in daily life you get by reading *Vaigyanik Drishtikon*?

54.1% of respondents think that *Vaigyanik Drishtikon* has helped them to understand the science of daily life activities. 38.8% of respondents think that the newspaper has helped them a little in this reference. 4.5% of people responded that newspaper has no special impact on them. 2.6% of respondents are not aware of this.

Responses on the impact of reading <i>Vaigyanik Drishtikon</i> help to get the knowledge in daily life.	Number of Respondents	Percentage (%)
Yes, a lot	230	54.1
Little bit	165	38.8
Nothing special	19	4.5
Don't know	11	2.6
Total	425	100



Graphical representation

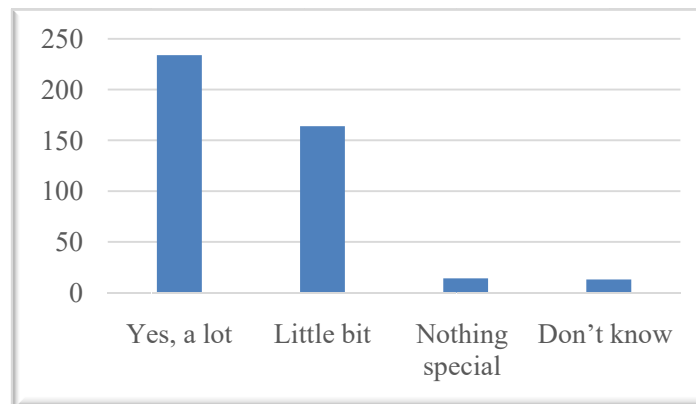


Pie chart representation

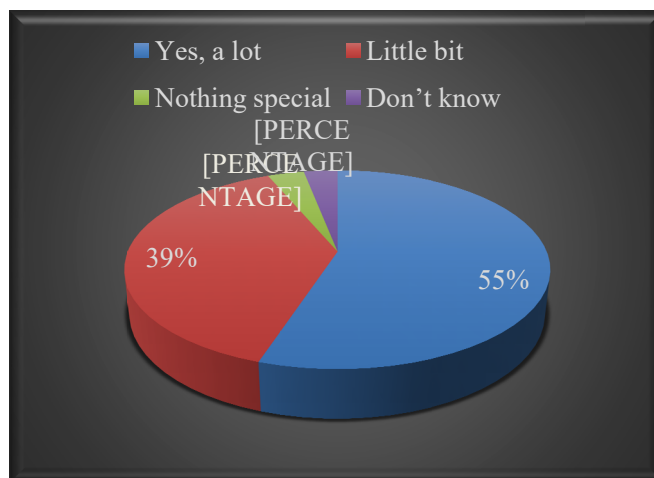
5. Is the *Vaigyanik Drishtikon* raising scientific awareness in society?

The majority of respondents replied that *Vaigyanik Drishtikon* raises scientific awareness in society. Where only 6.4% of participants have a different opinion regarding this.

Responses on <i>Vaigyanik Drishtikon</i> raising scientific awareness in the society	Number of Respondents	Percentage (%)
Yes, a lot	234	55.1
Little bit	164	38.6
Nothing special	14	3.3
Don't know	13	3.1
Total	425	100



Graphical representation



Pie chart representation

Conclusion

Science communication is an important discipline. Because only through science communication, useful and necessary information about science can reach the common man, which is important for society for awareness. A large part of society is still away from the factual knowledge of science, so they have to face many small and big problems unnecessarily. It is also important that science communication should be in such a way that it is understandable to the common man.

In the Jaipur district of Rajasthan, *Vaigyanik Drishtikon* is being studied as an effective tool for public awareness of science. It is published in Hindi, the most spoken language in India. The current study reflects that people read this newspaper to get more knowledge of science. Its language style is also in such a way that even ordinary people can understand science. Further, *Vaigyanik Drishtikon* is playing a significant role in society in terms of science communication. Reading newspapers has increased the interest of readers in Science. 59.1% of respondents accept that *Vaigyanik Drishtikon* has increased their interest a lot and 36% of respondents think that the newspaper has increased interest a little bit. This response shows that the newspaper is successful in this paradigm.

58.6% of respondents think that the language of the newspaper is normal. 29.9% of respondents find the language of the newspaper very simple. 8% of respondents think that language is complex. And 3.5% says the language of the newspaper is very complex. It indicates that its language is easy and understandable. This means the newspaper has readability.

Received responses also proved that *Vaigyanik Drishtikon* is breaking social confusion and superstitions in society. A total of 84% of respondents think that the newspaper is doing a great job in forming a society that views everything with the eyes of science.

This newspaper is bringing change to the lives of people. It is helping them to understand the science behind daily life activities. The content of the newspaper is helpful for them to understand simple things which happen to them in daily life. 54.1% of participants say that newspaper changed the condition a lot and 38.8% think newspaper helped them a little which concludes that 92.9% of respondents agree with the statement.

55.1% of respondents think that newspaper is spreading awareness in society a lot. Respondents have answered positively so it may be concluded that this newspaper is spreading awareness in society.

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