MEETING REPORT

Overhauling the communicational inconsistencies in Indian science*

Science writing is a skill that all scientists require to communicate scientific data to specialists and non-specialists in an easy-to-understand manner. Although a few of them have naturally acquired the ability to write coherently and without grammatical mistakes, addressing a specific set of audience, this skill, in non-native speakers, begs for professional training and rigorous practice. Research institutes and universities in India used to have English proof-readers, who would polish, proof-read and edit scientific contributions. Unfortunately, this generation of proof-readers has not been completely replaced. Although the newly appointed proof-readers hold degrees in Mass Communication or Literature, without relevant training, they are by and large ill-equipped to communicate scientific material.

In an attempt to improve the writing skills of scientists and researchers, the Current Science Association collaborated with K. P. Madhu – a science writing consultant – to offer a week-long, intensive residential training programme at the Academy Fellows' Residency of the Indian Academy of Sciences (IAS), Jalahalli, Bengaluru.

In the seventh such workshop – held between 24 and 29 September 2018 – the organizers selected 11 enthusiasts across India, from a variety of streams; this team, comprising people from diverse fields like science policy studies, engineering, biotechnology, pharmacy, veterinary microbiology, ecology and molecular biology, had a common interest – to polish their science writing skills. The selection was based on the applicants' interest and experience in science writing.

The virtual pre-workshop orientation was unique; it included discussions on five different threads started by Madhu. The topics discussed included: self-introduction, personal viewpoints and interpretations on science and technology policies of India, scientific temper in the Indian constitution, vision of India as a global leader and science and infrastructure for scientific research in India. One of the threads discussed the differences among science, technology and innovation – which are often indistinguishable. This discussion was indeed an eye-opener.

Madhu began the workshop by priming the participants with a general plan of upcoming events. G. Madhavan and S. K. Satheesh warmly welcomed the participants and inaugurated the workshop. This was followed by a session of self-introduction by the participants. Opening his speech with a brief history of *Current Science*, Satheesh touched upon the journal's guidelines and the common mistakes made by authors while writing articles. He emphasized the reasons behind the rejection of articles and gave tips on how to overcome them. He also explained the reasons that lead to rejection of papers and reviews that include grammatical mistakes, brevity, language syntax, presentation, methodological inconsistencies and inadequate literature review.

The six-day workshop was a blend of presentations, group discussions and activity-based learning sessions. Madhu urged the participants to question without hesitation, no matter how uncouth or silly the question might be. He did so by explaining various topics like the definition of science, its nature, and the scientific processes involved therein; he also encouraged the participants to be more critical about scientific theories and to question everything under the Sun, and beyond. He debunked some famous, highly publicized travesties that are unreasonably hyped by current media – refuting the puff about the ozone layer with reasonable evidence and explaining the actual truth behind it; untangling issues related to the rise in global temperature and female foeticide. With a fervorous temperament, he argued against the idea of believing what we are told by the so-called authorities. Madhu expressed that there are no authorities in science; in a way, nobody holds a monopoly over science, and thwarting one's questioning ability is an abject idea. This was indeed an intriguing and thought-provoking idea of questioning everything.

The second day of the workshop was spent at IAS, Raman Research Institute campus – learning about the Web of Science, effective bookmarking tips and the use of different interactive apps for science writing. During this session, participants were introduced to many methods for acquiring, accessing and processing information; writing as well as editing the write-ups. The participants also visited the Raman museum and learn about C. V. Raman's life and his inquisitive scientific mind.

'It is not easy to communicate what is in your mind to a larger audience,' reiterated Shobhana Narasimhan (physicist and popular science writer from the Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru) in one of the sessions. This interactive session provided insights into writing a story in different ways and how each person's perspective of looking at the same things is different. She explained the importance of 'style and flow of writing', and demonstrated this by engaging the participants in various interactive visual exercises and thought experiments.

Sanjay A. Pai (Medical Doctor from Columbia Asia Referral Hospital, Bengaluru) in a simple and effective presentation, explained the importance of ethics in science writing. He briefed about the ethicalities of scientific/medical practices, scientific misconduct and plagiarism with an extensive set of examples. He also discussed why it is important to follow ethical practices.

Karthik Ramaswamy (Archives and Publication Cell, Indian Institute of Science (IISc), Bengaluru) emphasized the importance of proper grammar. He also mentioned that avoiding redundancies and using simple and short sentences are pivotal in grappling the attention and engaging the readers. He demonstrated the non-necessity of jargons, adjectives and adverbs by removing them from long winding sentences. 'A speaker can communicate with his speech, actions and body language, but a writer has only words to communicate', he highlighted,

*A report on 'Science Writing Workshop' organized by Current Science Association held on 24–29 September 2018 at Indian Academy of Sciences, Jalahalli, Benglauru.

'many of us may be excellent orators, but poor writers; whereas a researcher has to be adept at both'. He also demonstrated how to identify and address different parts of a sentence – clauses, elements, objects and subjects; he also confuted the construction of laboured and roundabout sentences.

The topics during the workshop covered issues like catching the attention of a reader by writing small and logical sentences, editing and reviewing an essay from the viewpoint of a reader, tips for effective scientific writing, etc. The brevity of sentences, syntactical diathesis and clarity of messages as perceived by the reader were particularly highlighted throughout the workshop. The problem with jargons, issues related to discontinuity in adjoining sentences and the drawbacks of clubbing multiple clauses in a single paragraph were also discussed. It was emphasized that while writing a paper, one must do so for a specific target audience. Also, one has to be clear about the message, the medium, the market and the masses.

The participants were given a hands-on exercise to write a 300-word story from a recent research publication of their choice. This exercise provided an opportunity for them to initiate and apply their learning in a simplified manner by addressing their audience.

Overall, the intense task-based exercises of the workshop, with frequent role-play and bespoke practice activities helped develop the essential writing skills of the participants. They also gained a better understanding of how to write science well.

Thus, the seventh workshop was a fruitful exercise for both the organizer and the participants. All the participants were satisfied with the content and method. After completion of the workshop participants have been encouraged and guided to contribute their scientific work to *Current Science*.

S. Badrinarayan, Electronics and Communication Engineer, Bengaluru 560 085, India; **Bhavisha P. Sheth**, Entrepreneurship Development Institute of India, Gandhinagar 382 428, India; **Kavita Pal**, ACTREC, Tata Memorial Centre, Mumbai 410 210, India; **Kshama Lakshman**, Everwell Health Solutions, Bengaluru 560 025, India; **Palatty Allesh Sinu**, Central University of Kerala, Kasaragod 671 316, India; **K. Sri Manjari**, Osmania University, Hyderabad 500 032, India; **Viswas Konasagara Nagaleekar**, ICAR-Indian Veterinary Research Institute, Izatnagar 243 122, India; **Wairokpam Premi Devi***, Entrepreneurship Development Institute of India, Gandhinagar 382 428, India.
*e-mail: premi@ediindia.org