

## **Parallel Session 11: PCST network: an added value for science communication training?**

### **A NEW CONCEPT OF SCIENCE JOURNALISM ON DEBATE**

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#### **Abstract**

Science communication not only informs but contributes for making the society aware of and active contributors on the science practice. Therefore, it is necessary that the media considers science as a broader concept that emerged in, influence and is influenced by society. Yet, it still prevails the concept of science as the discoveries, developments and results that are free and independent of social values. What the Brazilian electronic magazine *ComCiência* has practiced is to bring the humanities, history, education, science policy and culture as major elements in its content as a way to broad up the science concept.

**Key-words:** science journalism, interdisciplinary

#### **Text**

*Science* and *Nature* magazines, the most important science journals in the world, publish discoveries, developments and results of science based on empirical data and theories, all of which are supposed to be free and independent of social values as the concept of science is accepted. Lacey (1998), however, has showed that social values as part of human nature do play an important role and are essential for the scientific activity. That indicates that science is not immune to outside influences and rarely neutral and independent.

As S&T permeates our daily lives and increasingly deals with ethics, safety and environmental issues, they can't be well understood without considering the social values and the background that provides the conditions for them to be

developed. Therefore, human resources, education, investments, science policy, market, culture, and others are part of this making process. Likewise, humanities, education and philosophy experts contribute enormously to contest, comprehend, challenge and improve the science tasks on society.

Although Dijck (2003) has argued that the two cultures (humanities versus natural science) identified by Snow in 1959 has long been dissolved it seems that science communication still keeps them apart. One barely recognizes the voice of agents that differ from or oppose to experts on science news sections. On the contrary, the news is used to picture science as the concept showed in journals like *Nature*, which tend to consider it as the ultimate truth, since the data has been peer reviewed and anchored to undoubted figures.

In Brazil, science communication has delevoped significantly since the last decade, which can be partially attributed to the Genome Project, which placed Brazil in the world scenery of science, but also to GMOs, cloning, global warming and others. Therefore, journalists have improved their knowledge and the public got more interested in understanding those subjects. As a result, the country now has at least four important printed science communication magazines.

Yet, what can be verified is that the science news frequently focus on results and conclusions made by scientists in order to improve life quality. No doubt that kind of information is also important, but the public should also get to know the difficulties, interests, impacts, controversies and the long-term process that permeate science and technology. After all, the aims of science communication are not only to inform but also to make the public aware of and active contributors on the science practice, which makes it necessary to consider science as a broader concept. Consequently, subjects like health, climate change, ecology and economy - that directly impacts society and though are often in the spotlight - should be presented as interdisciplinary and multicultural issues that contain political, economical, social, cultural and scientific interests. Other issues as indigenous people, poverty, famine, landless workers movement, arts, politics, education and globalization, that are hardly ever read at science news sections, also concern and involve science and its relationship with society, development and culture.

That is what *ComCiência* ([www.comciencia.br](http://www.comciencia.br)) has practiced since 2000 as an electronic Brazilian magazine published by the Laboratory of Advacement Studies in Journalism of Unicamp and the Brazilian Society for the Advancement of Science. Created to be a lab for students of the MSc in Science Journalism of Labjor, the magazine is composed by: report of the month and daily science news. The first one includes interviews, book reviews, articles written by experts and reports written by science writers all of which exploring the same subject but by different spectrum. The second one, written by science writers, contributes for raising aspects or issues that did not appear on the great media, which brings the humanities, history, education, science policy and culture as playing a major role

in its content as it has been concluded through the analyses of news published in 2003.

As a comparison, the science news published at three other electronic science communication magazines have been analyzed for three months (from October to December of 2003). *Ciência Hoje* ([www.uol.com.br/cienciahoje](http://www.uol.com.br/cienciahoje)), *Scientific American Brasil* ([www.sciam.com.br](http://www.sciam.com.br)) and *NewsScientist* ([www.newscientist.com](http://www.newscientist.com)) were selected for being traditional printed science communication publications in Brazil (the first one) and worldwide (the last two) that have an electronic version.

*Ciência Hoje* has practiced a multicultural science communication frequently providing to its readers reports that deals with education, politics, economy, science communication, philosophy, anthropology, religion, sociology, history among the traditional fields directly linked to physics, biology, chemistry and medicine. While *Scientific American* and the *NewsScientist* bring topics that mainly describe science as experiments, results and conclusions, without dealing with social influences, therefore the humanities, philosophy and culture, for instance, are not present.

Although the comparison indicates that a multicultural science communication has been practiced among the magazines selected it shows that a broader debate must be motivated in order to change the concept of science that is still reproduced as a reflex of the traditional view of natural sciences.

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**VALUE OF INDUSTRY LINKS IN NEW SCIENCE  
COMMUNICATION DEGREES**

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**Abstract**

Science communication programs at The University of Western Australia (UWA), include a BSc (Communication Studies), Graduate Certificate, Graduate Diploma and research degrees. Strong links with both the science communication community and scientific research community are vital to the success of our program. Because of space constraints, this paper gives two examples: 1) staff external to the University who supervise student projects in a practical work setting and 2) University staff who provide subject material for a display assignment. Other collaborations not discussed in this paper include guest lectures, press release and fact sheet assignments, case studies and research projects.

**Key words:** communication, education, industry links

**Text**

Introduction

Who is '*the industry*'? We consider it vital to link with people who work in the "industry of science", both practising research scientists and science communicators. Strong support from University administration and staff provides excellent links with internationally recognised researchers. Western Australia has a strong science communication community and many contribute to UWA's Science Communication programs, including staff from Scitech Discovery Centre, Perth Zoo, CSIRO, the Western Australian Museum, and state agencies such as Western Australian Departments of Agriculture, Conservation and Land Management, Fisheries and Health.

The philosophy of the Science Communication program at UWA is based on constructivist theory in that a learner builds on their foundations of knowledge and that personal experience is a powerful way to learn. Assessment in all of the units is assignment based.

As discussed in a separate poster at this conference, we attempt to make all of the assignments in the Science Communication units authentic. Industry colleagues contribute to assignments and provide guest lectures, tutorials and project supervision. In this paper we discuss the contribution of industry

people in terms of students putting their learning into context via personal experience.

#### External links

Students enrolled in the undergraduate degree participate in a 130-hour practicum in their final year. Each placement involves a specific project as well as general duties in the host organization.

Not surprisingly, students have found the practicum experience to be valuable. Positives such as consolidating previous theoretical knowledge and learning, developing a suite of skills and allowing for a taste of potential further studies have all been identified. Having the opportunity to network and make future contacts are also seen as being significant.

One student mentioned these differences between studies and the workplace:

*“The University has deadlines defined in advance along with assignments and expectations that are fixed... Employment involves collaboration with others (especially government) for a shared product. Deadlines change, new projects/ deadlines arise overnight and you impact on other people. I feel this understanding is often lacking in some graduates and so professional placement is useful for all degrees.” (student, 2004)*

From the industry point of view, hosting practicum students can be difficult. Substantial time is required to manage the student and ensure that they are getting a worthwhile experience. It is therefore important that the practicum has benefits for the host agency apart from the opportunity to collaborate with the University.

The student might bring skills that are lacking in the organization or work on a task that would otherwise not be attempted. A young person can add a new dimension. One supervisor has said, *“as she is currently studying, she is also bringing contemporary thinking from her field to the E(ducation)&L(earning) Team. It is important for experienced employees to be challenged in their thinking and ways of doing things from time to time. Hosting a practicum student is one way of doing this (supervisor, 2004)*

#### Internal links

A number of assignments involve working with practising research scientists at UWA. In their ‘Display Assignment’, students work as a team and liaise with a researcher to create a poster.

In their Science Communication units, students learn the fundamental importance of simplifying complexity for communication with the general public. Practising researchers do not necessarily have that understanding. In this and other assignments, students learn the difficult tightrope act of trying to please the researcher they work with and provide a clear, concise picture of a research project(s).

Some staff express frustration by what they see as an oversimplification of their life’s work: *“My impression is that they decided it was too hard to come to grips with the subject matter and therefore did something rather shallow,” (participating academic, 2004)*

Most staff enjoy contributing to the assignments and are happy to do so again. For example, of the 11 staff who participated in the 2004 Display Assignment, ten replied to a survey. All of those were willing to participate again, eight 'anytime' and two 'occasionally'. Even staff who found the experience 'frustrating' or 'okay' as opposed to 'rewarding' were happy to participate again.

There was no correlation between staff perception of assignment end product and their willingness to participate. This may be explained partially by academic staff's acceptance of responsibility of providing learning experiences. In addition, however, we believe that academic and research staff value the experience themselves. "... *we as researchers can get some feedback on what students, the general public and/or other scientists may think about the presentations... ie Do they work? Do they grab people's attention?*" (*participating academic, 2004*).

### Summary

Good industry links to education programs provide benefits to students, program coordinators and participating staff. Benefits for students include putting their learning into real-life contexts, getting glimpses into the workplace and networking with potential employers. Program coordinators maintain their awareness of current practise in research and science communication and links help define useful research projects and collaborations. Participating industry staff benefit by the work contribution that students can make. A significant benefit can also be involvement in a university program with bright and enthusiastic students given professional science communicators frequently work by themselves within their own organization.

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**TRAINING SCIENTISTS TO COMMUNICATE WITH LAY AUDIENCES: SUCCESSES AND LIMITATIONS OF A SCIENCE COMMUNICATION WORKSHOP**

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**Abstract**

In recent years it has become widely accepted that scientists should discuss their work with different communities. Yet, in most countries science communication is not part of the formal education of researchers. We organized a pioneering workshop in Portugal to train scientists to communicate with lay audiences. Evaluation shows that participants feel more confident and are more pro-active in communicating, suggesting that a low budget activity can improve the participation of scientists. However, as we will discuss there is scope for improvement, raising the challenge to the PCST network to play an important role in setting goals and promoting exchange of practices.

**Key words:** scientists; workshop; communication-skills

**Text**

**Context**

It is becoming increasingly more accepted that the scientific community has a duty to discuss the implications of their work with society and to play a role in making knowledge and technologies meaningful to different communities. Yet, science communication (SC) is still not part of the formal education of researchers. Scientists are trained to do research and discuss it with their peers and students and only those expertises play a part in career advancement. Many researchers feel they need training in communicating with lay

audiences. In recent years several strategies have been developed, such as media training workshops, brochures with communication guidelines and media fellowships.

Many countries lagging behind in public awareness of S&T have made little effort in training scientists to communicate. That is the case of Portugal, characterized as a country with low knowledge and interest levels in EU surveys (Eurobarometer 55.2). In those countries, because there is less institutional participation and smaller budgets for science communication, it becomes more important to learn from the experience of other countries and adapt it to their own reality. While some strategies followed in other countries may be very expensive or may take a long time to produce results, skills training workshops are very attractive as they are generally not time-consuming; they can cover a variety of different topics and skills, and they do not need to be very costly. A short workshop can have some of the best trainers and strongly motivated participants from different parts of the country.

### Objectives

Our long-term aims were to train scientists to communicate effectively with the media and the public, and to motivate researchers to participate and organise science communication activities. With those aims in mind we organised a workshop to: develop skills, discuss SC contents with a view to changing attitudes, and finally to promote collaborations between people interested in SC.

### Methods

We organised a 3-day workshop, *Comunicar Ciência* (“Communicating Science”), at the Gulbenkian Institute of Science in Portugal. 17 scientists, from different parts of the country and 10 journalists and SC experts from Portugal and the UK participated in this workshop. The workshop comprised a mixture of “hands-on” exercises and discussions aimed at the development of skills (e.g. writing a press release; being interviewed; popularising science via websites; being proactive with the media; organising an event for the public and dealing with questions from the public) and a discussion of topics with the view to providing tools and changing attitudes (e.g. science vs. media; different models of SC). Interaction between participants and trainers was promoted in many sessions and many trainers suggested forms of getting SC information. Three components were evaluated through questionnaires during and after the workshop: the workshop as an activity, whether the aims set for the workshop had been achieved, and the impact of the workshop on its participants. Different questionnaires were used because of the need to measure changes in attitude, acquisition of skills and impact of the workshop: questionnaires were given at the beginning and end of the workshop and after three months (follow-up evaluation).

### Results

#### The workshop and its outcomes

Through evaluation of the workshop we have found that a key to its success are the “hands-on” sessions and discussions and the encouragement of contacts. Improving communication skills was the major motivation for participants to attend the workshop. At the end of the workshop both

participants and trainers felt there had been an improvement in skills. The majority changed their attitude towards the media, such as being “more understanding” or having “more respect for the work of journalists”. Additionally, participants may have genuinely shifted from a scholastic perception of communicating science to a more “engaging with science” mood. During the workshop they proposed four projects all of which tried to promote engagement with science. At the beginning of the workshop the major motivation to communicate was to improve lay audiences’ knowledge on scientific contents and processes of science; the evaluation of the workshop gives us no indication as to a change in this unidirectional form of communication.

#### The impact of the workshop

Summative and follow-up evaluation shows that scientists feel more confident in their communication skills and are more proactive towards the media and towards the organisation of activities. In fact, participants are now trying to organise three out of four projects that were born from one activity in the workshop. Continued contact with the participants will tell us more about its future impact. We think that more workshops similar to this one should be an important part of a strategy to improve the participation of researchers in SC and to improve the relationship between scientists and journalists.

#### Conclusions, challenges and the role of the PCST network in science communication training

This work shows that, in line with the trend in the rest of Europe, there is a favourable environment to promote SC in Portugal. Candidates from several different institutes, different fields of research and different stages in their career applied for the workshop. With some reservations regarding our sampling, this work has shown that researchers in Portugal need training in skills for communicating with lay audiences, and workshops like the one described here are a good strategy to address that problem. Additionally these workshops may promote the start of new initiatives and recruitment of other researchers to these activities. A workshop like this one only costs around €6000.

There are challenges for broad scope workshops like this one: how to better promote dialogue between scientists and the public? How to cover other “lay” audiences, such as policy makers and funding bodies? How to cover other topics, such as risk assessment? How to better measure the impact of these workshops, for example how to assess changes in attitude? How can the tools developed in these workshops be re-used through different media to reach scientists that do not attend these workshops? As different people in different countries try different science communication training experiments it will be important to promote the discussion and exchange of experiences, maybe through the PCST network activities.

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**GLOBALIZING SCIENCE COMMUNICATION TRAINING: CASE STUDY OF THE STANFORD RESEARCH COMMUNICATION PROGRAM**

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**Abstract:** This paper gives an overview of the Stanford Research Communication Program, which develops tools to help experts learn to communicate complex information to a broad audience. It also discusses collaboration efforts to expand the program internationally, and includes an overview of a study in progress that aims to deepen understanding of ways researchers can improve their written and oral explanatory communication skills across disciplines and cultures.

**Keywords:** explanatory discourse, research communication training

**Overview**

The Stanford Research Communication Program (SRCP) helps researchers learn how to communicate the nature and significance of their work to lay audiences. The program also works to identify specific problems of communicating between disciplines, and between researchers from varied locations.

SRCP consists of two programs and a public outreach effort. I-RITE is a series of workshops that focus on written communication, and I-SPEAK focuses on oral content and delivery skills. These programs have been offered in online and asynchronous formats, ranging from two-day workshops to two-month courses. SRCP also has experience integrating students from universities in Sweden into Stanford's course and workshop offerings. These pilot programs allowed SRCP researchers to refine approaches to helping non-native English speakers learn to communicate complex information in English.

Since 1999, SRCP programs have established a proven curriculum, a prototype Web-based submission/annotation tool, a draft evaluation plan, and extensive experience implementing the program under a variety of conditions. Based on preliminary results, SRCP believes that there is great potential to prepare I-RITE and I-SPEAK to be fully global programs that can be open to doctoral-level researchers from anywhere in the world. In line with this aim, SRCP continues to:

- *further develop the program's technological infrastructure* by evaluating current technologies for use in workshops and courses, developing appropriate new features, and implementing redesigned tools in a cross-cultural program;
- *establish a systematic research and evaluation effort* to a) validate and increase program effectiveness at improving explanatory writing skills, and b) investigate means of effectively using ICT to support our program aims.

### **Program Rationale**

While Information and Communication Technology (ICT) tools address problems of communicating at a distance, these tools are not sufficient to create a fuller interchange of research ideas. Within most fields, discussion of cutting-edge ideas is limited to highly technical discourse particular to a disciplinary, or sub-disciplinary, research program (Wear, 1999). A first step in equipping researchers with tools for interdisciplinary communication is fostering new modes of writing and speaking that make important ideas readily accessible to a broader audience (Gopen & Swan, 1990; Rowan, 1990, 2003; Whaley, 2000).

In an ideal world, researchers would be able to give effective written or oral accounts about their work to the types of academic audiences described above. This ability to engage in explanatory communication is essential to success in professional and academic contexts (Calandra, 2002; Jaffe, 2003). Unfortunately, considerable anecdotal evidence suggests that many researchers are not adept at explanatory communication designed to deepen a nonspecialist's understanding of unfamiliar information for a broad audience (Rowan et al. 2003).

### **International Collaboration**

While there has been a collaborative relationship between Stanford and two Swedish universities (Uppsala, KTH) since 2001, it has mostly been a voluntary effort to pilot integrated Stanford/Sweden I-RITE programs. In 2003, SRCP was awarded a grant from the Wallenberg Global Learning Network (WGLN) to formalize international collaborations, and the evaluation process.

Also, SRCP has been and will be conducting I-RITE workshops at universities in Norway, Denmark, Japan, and South Africa. With these pilots, SRCP is collecting data on cultural needs in training and program deliverables, investigating localized train-the-trainer scenarios, and is planning to continue these collaborations as a stepping stone for future research studies.

### **Program Evaluation**

A critical element in establishing I-RITE and I-SPEAK's validity is to include a rigorous research and evaluation program. In collaboration with faculty

experts in explanatory communication, SRCP has created a system for (a) measuring explanatory discourse generated to help lay audiences understand a student's research and (b) measuring the extent to which this discourse helps lay audiences appreciate the value of research being described (Rowan et al. 2003).

This system is currently being tested with I-RITE program participants providing pre- and post- "elevator talks" (short passages explaining a research project to nonspecialists).

Quantitative measures of program outcomes will be supplemented by other indicators of program effectiveness. SRCP uses several approaches to gather information about the processes through which participants build their communication skills (analysis of implementation conditions, discourse analysis of participants' face-to-face and online interactions, pre- and post-surveys, and interviews).

### **Sustainability**

Based on program refinement, evaluation outcomes, and research results in the upcoming year, SRCP plans to open the I-RITE/I-SPEAK programs to participants from interested research institutions worldwide. SRCP expects that funding for these participants will come from their home institutions, and foundations that promote international development in higher education.

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**TRAINING SCIENCE COMMUNICATORS IN COLOMBIA**

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**Key words:** science journalism, acpc.

**Text**

**The need Science Communicators**

Human beings have created many different ways to transmit knowledge: Since philosophical discussions at Greek public squares, formal and informal educational activities, until mass communication media, and modern information and communication technologies (ICT), like virtual spaces and the cyberspace.

Currently, science popularizers are professionals with some special characteristics and lots of alternatives to perform on diverse communicative activities, as they may have been trained either in social or natural science.

Transmission and appropriation of science journalism and science concepts need a professional training process that allow students, journalists and researchers to understand all the possible scenarios derived from scientific activities and their implications on social, economic and legal aspects. This training will result in the adequate transmission of science, which means accurate and easy to understand.

That is why it is necessary to train communicators and journalists convinced that society has the right to access to this information and therefore higher its levels of education. Those society professionals will be able to appropriate scientific knowledge, to transmit this information and build real communication channels with the citizens.

Like other countries in Latin America and around the world, Colombia does not have science communicators nor specialized journalists trained in this specialty. There is a lack of normativity by public institutions that rule the educative policies of the country. Universities do not promote the implementation of this kind of programs. Furthermore, mass media do not require journalists, specialized in this area.

**acpc trains Science Communicators**

The Colombian Association of Science Journalism – acpc - is one of the oldest in Latin America. Since the beginning this Association has promoted the training of Colombian science journalists, gaining national and international recognition. How can we train idoneous science communicators? what kind of abilities should these professionals have in order to transmit citizens the knowledge produced by

researchers? How can we attract the attention of citizens in order to obtain more knowledge? These are some questions we are trying to solve by organizing activities with universities and mass media. For this purpose acpc has as one of its main lines of activities, to train science journalists.

Since 1996 its members have designed and organized seminars, conferences, workshops and courses addressed to faculty, researchers and journalism students. According to the different audiences, we design the appropriate course. For eight years we have done it permanently getting excellent results.

### **Conquering Spaces**

Five universities with Social Communication Departments have hired members of acpc to offer science journalist courses. Since 1998 we have trained 543 science journalism courses. As a result of acpc experience at those universities since 2000 we offer some of the students the opportunity of doing an internship at our offices.

11 students have been trained at acpc. Nine of them did their internships at Noticyt, the Colombian Science and Technology news wire service, that started January 2003. One of them is working in the communication area of an important national research center, Cenipalma, and another two remain working at Noticyt .

Acpc has organized 18 courses in 14 cities, 15 universities, 5 research centers and 6 media institutions, reaching more than 3500 people from Colombia, Ecuador and Mexico.

The scientific community has been receptive to our call and have proposed programs to train researches on the dissemination of their research projects.

In order to be able to do that members of the Association are permanently trained.

As a result of many years of research and preparation of academic material, we have organized several conferences on specific topics that we are constantly adapting with new events.

This is how the acpc has developed a valuable approach to democratize scientific knowledge. This was one of the reasons why the acpc won on 2002 the Award Scientific Merit under the category of Popularization of Science, given by the Colombian Association for the Advancement of Science.

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**DEVELOPING SCIENCE WRITERS AND SCIENCE JOURNALISTS  
IN INDIAN LANGUAGES : A CASE STUDY**

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**Abstract**

Developmental changes emerge within specific economic, social and ideological contexts and in turn reshape thinking and working of institutions as well as individuals. Science communication using mass media can play an important role in making people aware of these developments. It requires a large number of trained science writers/ journalists especially in vernaculars. Incidentally, India has 18 well-developed regional languages. An innovative countrywide training programme has been devised and introduced to develop trained science writers/ journalists. The aim is to develop as many science writers/ journalists as possible to meet present and future challenges. This paper discusses and analyses various experiences learnt, methodologies applied, impacts achieved, and responses received, while implementing the programme.

**Key Words:** Training, science writing/ journalism, vernacular media.

**Introduction**

According to a study, science coverage in mass media in India is around 3%, which is abysmally low. We intend to increase it up to a level of 10-15%. It has been rather difficult to find enough science writers, especially in vernaculars, who can generate quality material in desired forms for media. We have observed that even in rural and far-flung areas, there are persons who have a natural bent of mind and talent to develop into and to write good stories, plays, poems and scripts. Yet the demand for appropriate science writers remains unfilled. To fill this gap, it is felt necessary to identify and encourage these writers and provide them some orientation and training to develop in them skills for science writing.

## **The Basic Idea and Concept**

The basic idea and concept behind this programme is to :

- (a) Bring together the writer, illustrator, scientist and medium at local level and provide them some orientation and training.
- (b) Bring budding science writers and illustrators together with experienced and established ones for close interaction; to expose the former to intelligent and constructive criticism of their writings by the latter, as also to issues of importance to both science writers as well as their readership.
- (c) Expose experienced writers and illustrators in fields like arts, economics, politics, etc., to science communication.
- (d) Develop basic science writing, science reporting and science illustration skills through actual practice and exercises.

## **Objectives**

The main objectives of the programme are as follows :

- (a) To increase science coverage in mass media.
- (b) To encourage reporting on scientific achievements of the country.
- (c) To train science writers for different media.
- (d) To investigate local scientific/ technical problems through science journalism to find solutions.
- (e) To develop skilled science writers/ journalists/ illustrators for undertaking various activities in science communication.

## **Methodology**

Under this programme, 3-5 days' training-cum-orientation workshops of 'local writers and journalists' are organized at district level and they are exposed to various techniques of science writing and reporting. The participants are science activists and enthusiasts, whether students of science at higher level or not. The idea is to develop grass root science writers/ journalists who can eventually write on 'local issues' of scientific importance with help of 'locally available resources' for 'local level mass media'. The work plan for development of science writers is divided into three phases.

## **Observations and Results**

A questionnaire survey of a select group of participants of this programme was conducted to obtain information on aspects like number of people writing on science and the type of writing they are engaged in, etc. Some of the observations and results derived from survey are summarised here :

- (a) Several groups devoted to science coverage are emerging at local level.
- (b) Several such writers are emerging, who can effectively write for folk forms, like skits, plays, songs, fiction, stories, etc.
- (c) A number of popular science books are coming out including these scripts.
- (d) The programme enables local writers to project local scientific/technical problems instead of imposing foreign fed information in media.
- (e) The local audience is able to get more indigenous S&T information relevant to their daily life through media.
- (f) As a sequel and follow up to these workshops, a few workshops on specialized topics are also organized.
- (g) The programme has been able to trigger a chain reaction at all levels to develop skilled science writers for specific needs.
- (h) At some places, neo science writers have formed Science Writers' Associations as part of Indian Science Writers' Association.
- (i) A countrywide science media network is being developed as an offshoot to this programme.
- (j) So far, over 200+ such workshops have been organized and over 10000 trainees were trained. Our target is to have similar activities in all 500+ districts.

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