



TIEDONJULKISTAMISEN NEUVOTTELUKUNTA
DELEGATIONEN FÖR INFORMATIONSSPRIDNING

**Bold communication, responsible influence.
Science communication recommendations**

The science communication recommendations were drafted in two phases. A working group consisting of Risto Nieminen, Academician of Science and chair of the Committee for Public Information, Katja Bargum, a producer and vice chair of the Committee, Professor Erkki Karvonen and Professor Esa Väliverronen, both members of the Committee, and Maria Ruuska, a senior communications specialist, drafted the first version of the recommendations and published it online for commenting. A consultation event was also held in conjunction with the *Liikutu tiedosta* event on 22 May 2017. The comments received were taken into consideration in the following phase of drafting work on the recommendations. The Committee approved the recommendations in November 2017. Recommendations have been produced as part of the project Tiedon jakaminen luo vaikuttavuutta: tekijyys, tiedon kuratointi ja hyvät tiedeviestinnän käytänteet funded by the Ministry of Education and Culture (OKM/122/524/2015).

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Foreword to the recommendations

Science communication enables the flow of information and interaction between information producers and users. It serves science and researchers, and lays the foundations for societal discourse. Science communication increases trust in scientific information and enables the results of science to be used in support of societal decision-making.

The Committee for Public Information in Finland published its first national science communication action plan, entitled *Science belongs to everyone! (Tiede kuuluu kaikille!)*, in 2013. In the intervening years, changes to the field of media and the strengthening of social media have increased the equality of the publication and availability of information. At the same time, audiences have diverged and begun to communicate in their own bubbles. The tone of societal debate has become harsher and the shared culture of information exchange has been challenged. Inappropriate feedback, pressure and hate speech directed towards researchers appears to have become more widespread and intense.

Science and research are subject to demands for transparency and impact, which require science communication to be closely integrated into the execution of professional research. Science communication also occurs in channels other than the established academic ones – examples of this include social media and various interactive events.

Changes in the operating environment of science communication call for bolder, more active science communication in various communication channels. Communication skills are a natural part of a researcher's education. It is essential to build an operating culture that encourages and supports researchers in participating in societal debate. The methods for monitoring, rewarding and critically evaluating the societal impact of research must be improved. An active approach by the scientific community in drafting practices for specific fields of research will be instrumental in achieving this.

Whom are the recommendations intended for?

The national science communication action plan drafted by the Committee for Public Information – entitled *Science belongs to everyone! (2013)* – set out a series of measures and the parties responsible for taking the measures. Science communication is being carried out by an increasing number of parties. The recommendations, entitled *Bold communication, responsible influence*, will help science to become more visible and influential in our society. They are intended for everyone who works with science and those who communicate on science: science belongs to everyone.

What is science communication?

Science communication is information about science. It is the exchange of information and interaction regarding the information obtained from research, research results, scientific ways of thinking and methods, and the theoretical basis of scientific disciplines within and beyond scientific communities.

1. Science belongs to everyone

An open culture of science and research promotes debate regarding the application of science and technological innovations.

Science communication is an essential component of conducting research and good scientific practice. Research conducted with an open and public approach is science. Citizen science and interactive science communication offer numerous ways of bringing audiences and researchers into contact with each other.

Science events also promote encounters between citizens and researchers. Good science events take into consideration the pluralism of society, are inclusive and entertaining, and take place in a physical location or online. They are also a way of dealing with the criticism levelled at science. Interaction between

experts and the public is welcome when it is respectful of both parties and involves open debate. Researchers who appear in the public eye are role models for future scientists. That is why it is important to provide visibility to researchers from different cultures, with equal attention paid to younger and older people, women and men.

Encounters between art and science also create new spaces and audiences for science. Science offers countless subjects, while art provides new ways of introducing science to different audiences. At its best, science communication is multichannel, multifaceted and multi-sensory.

- Science events are interactive and reach different societal groups. This requires new and open-minded ways of conducting science communication.
- Citizen science provides an opportunity to participate in research, as well as in the societal evaluation of research and ethical debate.
- Citizen science is supported by building new partnerships.

2. Information is the building block of society

Public information and non-fiction literature offer new ideas for building an expert society.

Public information and non-fiction literature published in the official languages of Finland are a key part of Finnish culture and the creative economy. Textbooks and digital learning materials reach out to all citizens via schools.

Science education reinforces individuals' ability to acquire, present and analyse information. Education begins in

childhood, is a part of teaching and is also directed at adults. Science education is offered in all scientific disciplines.

The media plays a key role in communicating research information to citizens, decision-makers and politicians in a comprehensible and accessible way. Fact-checking and critical evaluation of information sources are important facets

of reliable communications. Media literacy is also an increasingly important skill for citizens to possess. Combining media content to create new entities (content curation) enriches the field of media and the creative economy.

In the information society, information and data are accessible to citi-

zens and are one of the basic resources of society. The library system offers citizens access to printed and digital information, and it promotes the use of this information by teaching information literacy skills.

- Sufficient and appropriate public support is available for non-fiction literature and other information products.
- Publication in the official languages of Finland and on Finnish publication platforms is an important part of the publicity of science, and it is taken into consideration when designing incentive schemes.
- The diversifying language environment of Finland is taken into consideration in public information.
- Science education is included in the basic education curriculum and in further/higher education. Scientific literacy is advanced through conventional teaching as well as informal learning, and it also reaches adults by means such as science centres, exhibitions and museums.
- Libraries, schools and the media promote citizens' scientific education, as well as media and information literacy.

3. Making science visible

Science communication includes information about new results, as well as the principles of conducting research and evaluating the reliability of information.

The fundamental values of science include openness and promoting research via justified criticism to build reliable information. Scientific methods for generating new information are systematic and verifiable, and the results of research can be validated. Scientific expertise arises from profound and systematic knowledge of the field of research.

Science communication and journalism require an understanding of the operating methods and subject matter of science and research to ensure that the significance of new research results can be assessed in the correct proportion to the existing base of knowledge. Commu-

nication concerning the scientific way of thinking and the theoretical foundation of scientific disciplines is an important part of the publicity of science.

The publicity of science should not be based solely on the novelty value of new research results. Basic research that progresses slowly and the type of research that validates new results are valuable components of research and innovation development. Science also plays an educational role. Cultural capital grows when science builds a worldview and increases understanding.

Scientific debate and publicity should dismantle artificial confrontation to

prevent false impressions of scientific controversy from arising. A special feature of scientific knowledge – self-

correction – is a way to distinguish research information from other content competing for media attention.

- Scientific institutions should arrange science journalism courses for journalists, covering the processes of science and research and the principles for promoting science. The courses should also include basic information on specific fields of science and research.
- Long-term collaboration projects between research institutes and media firms should be supported.
- Researchers could make use of direct publication channels and commit to long-term communication on research.
- The importance of the educational effect of basic research and science should not be forgotten when research is evaluated.

4. Support for science communication

High-quality, multifaceted science communication and science journalism build an open science culture and trust in science and research.

Publicly financed research must achieve visibility, impact and openness, and the research results and material must be openly accessible. In the era of open science, publication practices must be developed around making information easy to find and use, and they must be based on the principles of reliability and honest use of information.

Researchers have a greater responsibility for communication and an increasing requirement to participate in societal debate. These new roles demand support from the scientific community and scientific institutions (institutes of higher education, universities, research institutes, scientific societies and science academies, as well as financiers of research). Science communication is promoted through incentives, which include

support and rewards for communication. Evaluation and research in the field serve to improve science communication.

Social media is increasing openness and enabling researchers to engage directly with societal actors. At the same time, the amount of feedback received by researchers is increasing. The feedback may be positive, appropriate or inappropriate – sometimes even hostile and threatening. Together, the scientific community and scientific institutions must collectively defend researchers' entitlement to freedom of expression and safeguard the freedom and societal status of science and research regardless of which member of society is questioning their worth.

- Science communication is part of a culture of open science.
- The communication services of scientific institutions are up to date and publish in a wide range of channels. Communication services serve the producers and users of information.
- Scientific institutions build functional practices to support researchers if public appearances lead to malevolent reactions.
- Societal impact and science communication are a part of the operations of scientific institutions. Awards are granted for this work, and it is systematically and critically evaluated. The scientific community participates in drafting best practices for each field of research in terms of evaluation criteria and incentives.

5. Bold communication

Science communication is a key part of research work. Researchers are motivated to participate in societal debate.

Making use of the opening media field is a part of science communication and a culture of open scientific work. Parties engaged in science communicate within the scientific community and in society. Researchers are expected to provide visible communication, expertise and a bold approach to engaging in public discourse.

The change in the operating field offers researchers direct channels for wielding influence, along with new opportunities to publish results and talk about their work and its implications.

Planning and executing communication are a part of the internal division of labour within research groups.

Changes to the media field will split audiences into increasingly smaller groups. Communication will take place in the bubbles of increasingly divergent audiences, some of which may approach science and research results with suspicion. Science communication requires new habits and methods for reaching different audiences.

- Financiers and employers of researchers must encourage and support researchers in communication. Science communication and societal interaction must be appreciated as part of researchers' career progression. Researchers must be offered systematic training in science communication from the early phases of their studies onwards.
- Science communication covers the entire life cycle of research: it is a factor in the planning and execution of research, publication of results and further use of research material.
- When research plans are drafted, science communication must be an integral part of the research work. The plan, which may be a communication, interaction or utilisation plan, is assessed when funding decisions are made and when the research is evaluated.

- A bold approach should be taken to using new forms of communication and interaction to reach out to audiences that are difficult to approach and to promote societal dialogue.

6. Responsible influence

Science is visible and influential, and it is a valuable part of societal decision-making. Researchers, people who communicate on science and journalists talk about research results and their applications in an honest and truthful way.

The societal impact of science and research is a key target of science policy. Impact can be promoted by ensuring that science communication and related interaction enable the results of scientific activities to be put to use in society.

Research information can be utilised in societal decision-making, providing that it is offered at the right stage of the preparation process and in the right way. Functional practices should be built to support interaction between researchers and decision-makers.

Research information forms part of the base of knowledge used for political decision-making. Other forms of expertise operate alongside traditional scientific expertise. Different ways of creating reliable information enrich the base of

knowledge available to society. However, every form of information and expertise should always be critically evaluated.

Researchers are required to act responsibly and comply with ethical guidelines and good scientific practice when communicating on their research. Similarly, spokespersons and journalists comply with their own professional ethics guidelines.

Opening up scientific work, guaranteeing maximum transparency and openly involving researchers and research organisations in societal debate will build trust in science and research. The value and trust that people feel towards science and research also influence the willingness to utilise scientific information in society.

- Responsible science communication should be a key focal area of education in good scientific practice and research ethics at institutes of higher education.
- Researchers and parties engaged in science must be encouraged and supported to participate in societal debate.
- Cooperation and interaction between researchers and decision-makers must be supported by encouraging experimentation with new forms of science communication and interaction.
- Care must be taken to ensure that political decision-makers at all levels receive research information services.

The Committee for Public Information is an expert body attached to the Ministry of Education and Culture. It follows progress in various fields of research, arts and technology in Finland and abroad, as well as the development of science communication. As an expert body, the Committee is able to influence the objectives and operations of the Ministry and scientific organisations.

When results are negotiated and decisions are made, the Committee is tasked with the following:

- Making proposals and initiatives for the Ministry of Education on different ways of promoting the dissemination of information in Finland, issuing statements on matters related to its field, and instigating debate on matters related to its field
- Making an annual proposal to the Ministry of Education and Culture on granting State Awards for Public Information
- Awarding targeted grants for public information and preparing a purchase grant proposal for libraries to buy high-quality, low-circulation non-fiction literature
- Conducting research and studies in the area of public information
- Promoting education in science communication and non-fiction writing
- Performing the other tasks set by the Ministry of Education and Culture.

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