

# Module 1: Enhancing communication in academic environment

## TRAINING PROGRAM

How effectively communicate in  
research and teaching on  
international level



- MENDELU
- Provozně
- ekonomická
- fakulta

***"The single biggest problem in communication is  
the illusion that it has taken place"***

George Bernard Shaw

# Purpose of communication in academic environment

Enhancing communication in academic environment is essential for effective collaboration, sharing research findings, and advancing knowledge.

**Inform, educate and raise awareness  
of science-related topics among the  
general public**



**Science  
communication**



**Scientific  
communication**



**Communicate new knowledge to  
scientists and technical experts,  
following scientific methods**

# Basic elements and weaknesses of models of science communication

Model	Basic elements	Weaknesses
1. Knowledge deficit model	<ul style="list-style-type: none"> <li>• Scientists are experts and are knowledgeable.</li> <li>• The public have a deficiency of knowledge.</li> <li>• Delivery of simplified scientific information leads to public understanding and acceptance of science.</li> <li>• Transfer of knowledge is one way, from scientists to the public.</li> <li>• Good transmission of scientific information leads to a reduced deficit in knowledge.</li> <li>• A reduced knowledge deficit leads to better decisions, and often better support for science.</li> </ul>	<ul style="list-style-type: none"> <li>• Perception and utilization of scientific information is more complex than portrayed in the deficit model.</li> <li>• Overlooks importance of background knowledge and sociocultural circumstances in science communication.</li> <li>• The public is not homogeneous. Reception of information will vary from person to person.</li> </ul>
2. Contextual model	<ul style="list-style-type: none"> <li>• Communication of science is considered to be based on the needs, attitudes and existing knowledge and situations of the different audiences.</li> <li>• Individuals respond to messages based on their unique circumstances.</li> <li>• There is one-way transmission of information from scientists to the public.</li> <li>• Audiences have ability to quickly gain knowledge about topics that are relevant to them.</li> </ul>	<ul style="list-style-type: none"> <li>• According to this model, communication is one way: no interaction between the source and recipient of knowledge.</li> <li>• Absence of adequate opportunity for feedback.</li> </ul>
3. Lay expertise model	<ul style="list-style-type: none"> <li>• Acknowledges the limitations of scientific information.</li> <li>• Acknowledges that audiences might have some pre-existing knowledge.</li> <li>• Highlights interactive nature of scientific process.</li> </ul>	<ul style="list-style-type: none"> <li>• Undermines the expertise of scientists.</li> </ul>
4. Public engagement or participation model	<ul style="list-style-type: none"> <li>• Two-way flow of information between scientists, the public and policymakers.</li> <li>• Communication strengthens relations between science and the public.</li> <li>• Focuses on policy issues involving scientific and technical knowledge.</li> <li>• Tied to democratic ideal of wide public participation in policy process.</li> <li>• Builds mechanisms for engaging citizens in active policymaking.</li> <li>• Real public authority over policy and resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Diminishes the scientist's power.</li> <li>• Citizens can participate in a more emotional than rational way, which can undermine the objective of communication.</li> <li>• More complex, and therefore difficult to explain to donors and policymakers.</li> </ul>

Source: <https://www.cabidigitallibrary.org/doi/10.1079/9781789249675.0002>

# Options for improving of communication in academic environment

- ✓ **Clear and Precise Communication:** Use clear and precise language when communicating scientific concepts. Avoid jargon or technical terms that may be unfamiliar to others in the field. Strive for clarity and simplicity in presenting complex ideas.

# Options for improving of communication in academic environment

- ✓ **Peer-Reviewed Publications:** Encourage researchers to publish their work in peer-reviewed journals. Peer review ensures that research findings undergo rigorous evaluation by experts in the field, enhancing the credibility and quality of the communicated information.

# Options for improving of communication in academic environment

- ✓ **Conference Presentations and Posters:**  
Participate in scientific conferences and present research findings through oral presentations or posters. These platforms provide opportunities for researchers to engage with peers, receive feedback, and exchange ideas. Effective presentation skills are crucial for communicating research in a concise and engaging manner.



# Options for improving of communication in academic environment

- ✓ **Collaborative Research Projects:** Foster collaboration among scientists working on related research projects. Collaborative efforts allow for the pooling of knowledge, resources, and expertise, leading to more comprehensive findings. Encourage regular communication and progress updates among team members to ensure effective collaboration.

# Options for improving of communication in academic environment

- ✓ **Scientific Meetings and Seminars:** Organize regular scientific meetings and seminars within the institution or research community. These events provide a platform for researchers to share their work, discuss emerging trends, and engage in scientific dialogue. Encourage active participation and constructive feedback during these meetings.

# Options for improving of communication in academic environment

- ✓ **Online Research Communities and Forums:**  
Engage in online platforms and forums dedicated to scientific discussions. Platforms like ResearchGate, academic social media, or specialized forums provide opportunities to connect with researchers worldwide, share findings, seek advice, and collaborate on specific research areas.

# Options for improving of communication in academic environment

- ✓ **Data and Results Sharing:** Encourage researchers to share their data and results openly, following ethical considerations and intellectual property rights. Open data initiatives facilitate transparency and allow for the replication and validation of research, leading to scientific progress and collaboration.

# Options for improving of communication in academic environment

- ✓ **Effective Visual Communication:** Utilize effective visual communication techniques when presenting scientific information. Use graphs, charts, diagrams, and illustrations to present data and concepts in a visually appealing and easily understandable manner. Visual aids can enhance the clarity and impact of scientific communication.

# Options for improving of communication in academic environment

- ✓ **Interdisciplinary Collaboration:** Foster collaboration between scientists from different disciplines. Interdisciplinary collaboration encourages the exchange of ideas, methodologies, and perspectives, leading to innovative solutions and discoveries. Establish platforms or initiatives that facilitate interdisciplinary communication and collaboration.

# Options for improving of communication in academic environment

- ✓ **Continuous Learning and Professional Development:** Encourage scientists to engage in continuous learning and professional development opportunities related to communication skills. Workshops, courses, or training programs on scientific writing, effective presentation skills, and science communication can enhance researchers' abilities to communicate their work to diverse audiences.

# Options for improving of communication in academic environment

- ✓ **Science Communication Outreach:** Encourage scientists to engage in science communication outreach activities, such as public lectures, workshops, or writing for popular science publications. These activities help bridge the gap between the scientific community and the general public, promoting scientific literacy and understanding.



# Rules for improving communication among scientists



Source: <https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1010130>