Report of the ISC Consultative Group on Science Education

Parallel Session 3A: Science Education for our Future: Building Capacity to address Global Challenges

Muscat Global Knowledge Dialogue

January 2025 | Muscat, Oman

Questions

1. What is needed to improve science literacy among young people and the general population across the world, in an inclusive way?
2. What is needed to equip scientists, including future leaders, with the tools and skills to address the challenges of today and tomorrow?

Objectives

1. Promoting understanding among scientists of the values, philosophy and ethics of science, science-society-policy interfaces, and disciplinary, interdisciplinary and trans-disciplinary approaches.
2. Promoting universal science literacy and the skills to discriminate between reliable and unreliable sources.
3. Motivating learners and the public (in both formal and non-formal / informal education) by showing the direct impact that science can have on their lives and careers, as well as their communities.

Process

The Consultative Group on Science Education was established by the ISC Governing Board in July 2023 in response to requests from ISC Members for the ISC to address issues around science education and science literacy. The Group met six times, virtually, to discuss challenges in science education:

- Enhancing science literacy
- Inclusive education
- Transdisciplinary research capacity
- Resource compilation and dissemination
- Engaging youth and early career researchers
- Supporting displaced scholars
- Communicating with society
- Commitment to collaboration

Group members

1. Motoko Kotani, Tohoku University, Japan (Co-Chair)
2. Mei-Hung Chiu, National Taiwan Normal University, China-Taipei (Co-Chair)
3. Irasema Alcántara-Ayala, National Autonomous University of Mexico (UNAM)
4. Yuri Belfali, OECD
5. Karina Batthyány, CLACSO, University of the Republic, Uruguay
6. Jacquie Bay, University of Auckland, New Zealand
7. Mark Ferguson, European Innovation Council
8. Peter Finegold, Royal Society UK
9. Kevin Govender, IAU Office of Astronomy for Development
10. Hiromichi Katayama, UNESCO
11. Joseph Krajcik, Michigan State University, USA
12. Chee-Kit Looi, The Education University of Hong Kong
13. Magdalena Skipper, *Nature*
14. Jane Yau, DIPF Leibniz Institute for Research and Information in Education

Recommendations and actions for the ISC

Recommendations	Actions
1. Develop Global Science Education Principles	The ISC is not currently active in this area, but could lead or co-lead a multistakeholder initiative. Resources needed would primarily be staff time
2. Foster transdisciplinary research approaches	The ISC systematically promotes transdisciplinary approaches. In the coming two to three years it will spearhead a new programme of 'mission science' which will be strongly transdisciplinary and which will mobilize funding from diverse sources. The ISC has experience in promoting transdisciplinary research training initiatives and is ready to support and collaborate with its Members and potential partners, to build capacity for transdisciplinary research.
3. Facilitate mentorship and career development	The ISC has an active programme for Early- and Mid-Career researchers built on providing a shared space for established and young organizations. The Early- and Mid-Career Researcher Forum was established in 2023; involving them in governance and project steering groups; developing training programmes targeted at early- and mid-term researchers.

Recommendations	Actions
4. Mobilize and provide support to displaced scholars	Guided by the *ISC Committee for Freedom and Responsibility in Science* (CFRS), the ISC is very active in this area. The ISC is collaborating with the International Institute of Education/Scholar Rescue Fund to develop a mentorship programme that will match its Members with displaced scholars. The programme should be launched in 2025, subject to final approval and financing.
5. Enhance communication with society	The ISC has put significant effort into communicating with non-academic publics in recent years and will continue to promote initiatives to enhance communication between science and policy and improve trust in science.
6. Develop a science education webpage on the ISC website	This recommendation could be acted on in the near term.
7. Create a Global Science Education Platform	This recommendation could be an extension of Recommendation 9 but is probably better carried out by other international actors already active in the field, with input from the ISC.

Recommendations

1. Develop Global Science Education principles
2. Foster transdisciplinary research approaches
3. Facilitate mentorship and career development
4. Mobilize and provide support to displaced scholars
5. Enhance communication with society
6. Develop a science education webpage on the ISC website
7. Create a Global Science Education Platform
8. Organize international workshops and conferences
9. Promote problem-based learning
10. Support digital technologies in education
11. Promote inclusive science education

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Thank you!

Contact us at **secretariat@council.science**