Report of Results from a Survey of Science Literacy in Developing Countries

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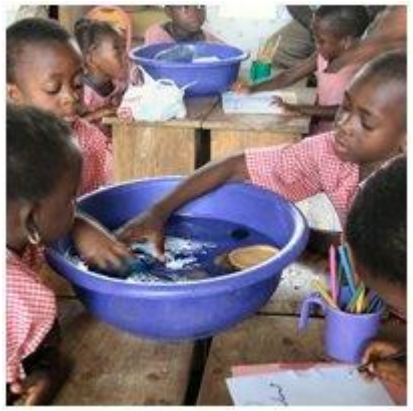

ECIL 2017 St Malo, France

Special session on Science Literacy

Starting points for the research

- New definitions of science literacy are required to ensure that public communication of science and technology addresses the real needs of people and societies in the developing world
- *"The developed world has the luxury of detached interest in reliable knowledge about the natural world. In contrast, public understanding in the developing world must focus on knowledge upon which one can act immediately".*
- Science belongs to and benefits everyone despite:
  - male dominance
  - Eurocentrism
  - the idea that it is the only answer to all humanity's problems

Research process (2016)

- Literature search
- Communication through NIDA network (2000 specialist individuals, organisations worldwide)
- 2 key aspects:
  - definitions
  - Recommendations of innovative initiatives of good practice
- Correspondents (1500 responses in all)
  - science community via networks, related bodies (IAP, ICSU, AAAS, national)
  - 'literacies' bodies (GAPMIL, ECIL, CODE, IFLA WGIL)
  - International development community (UN bodies, multi-lateral, bi-lateral, foundations, NGOs, individuals - Africa, Asia, Latin America)

What is Science Literacy?

Examined the respective meanings in practice, roles and relationships of:

- Public Appreciation of Science (PAS)
- Public Understanding of Science (PUoS)
- Science (and Technology) in Society (STS)
- Science Literacy, Health Literacy
- Citizen Science

Considered aspects such as:

- Role of formal education
- Role of basic literacy
- Access
- Gender
- National and international policies
- The link to innovation

Major areas of impact opportunity

Considered the case for focusing on three major areas to demonstrate impact of SL:

- Climate change
- Biodiversity, environmental degradation and conservation
- Maternal health, reproduction and birth practices (Kerala pilot project)

Science literacy in developing countries

- Numerous aspects of life in developing countries upon which science literacy could have a beneficial impact including
  - food security, food safety
  - disease prevention
  - maternal health
  - water management
  - safety and sanitation in urban environments
  - agriculture and rural development
  - diet and nutrition etc.
- **As for many initiatives, evidence of the impact of science literacy activities on individuals and society is needed to encourage adoption of good practice elsewhere**.

Conclusions and recommendations

1. Strong need for improved science literacy in developing countries.
2. Recognition and adoption of coherent policies and actions remains sporadic and lacking cohesion.
3. Continued attention required to strengthening the practical and theoretic basis for advocacy and implementation.
4. Support for pilot projects in high impact areas
5. Demonstrate the role of improved service infrastructure in supporting SL.
   - Makerspaces
   - Events in community spaces (schools, libraries, museums, centres)
   - Online, mobile, social network applications
6. Promote Citizen Science activities
7. Cooperation between strategic bodies to establish a clearer understanding of the relationship between the various basic and issue literacies
8. Form a Science Literacy network to share experience
9. Establish an annual award - ISLA

Case studies (1)

- e-Bug – Educational resources on hygiene and infection for classroom and home use.
- CASA -Communication training with medics, patients associations and patients in HIV and AIDS
- Scientific Animations Without Borders (SAWBO) - Training, research and creation of educational materials for Agriculture, health, women's education.
- Ebola
- PuebloScience – Science literacy through training teachers – Philippines & adapted to Guyana and also international summer schools
- Unizulu - Science educators and learners in KwaZulu-Natal schools
- Zoouniverse - major Citizen Science initiative
- Namib Desert Environmental Education Trust (NaDEET) - Protecting Namibia's environment by educating people to live a sustainable lifestyle

Case Studies (2)

- Kyrgyz Mountains Environmental Education and CitizenScience - A pilot project/research CAMP Alatoo Public Foundation & University of Central Asia
- 'Biofertilizers and Biofuels of My Land', Colombia
- La Fondation La main à la pâte,Togo
- HAGAMOS "¡Hagamos un MILAGRO por el aire!" ("Let's make a miracle for the air!")
- alive&thrive - Advocacy, education, program implementation, and knowledge partnerships around infant and young child feeding (IYCF) and maternal nutrition
- The eHealth pioneers of Laos – Using mobile phones and SD cards to disseminate health message

Next steps: new research project starting 2018

- What delivery models are in existence (globally)?
  - Implementers, duration, funding, coverage, audience, reach, performance indicators/impact evaluation, results, lessons learned
- Gaps
  - How might these best be met - extension/adaptation/ replication of existing models??
  - adaptation/development to new models?
- Impact
  - examine good practice in impact evaluation methodology with the aim to provide guidance on potentially adaptable and replicable methodologies
- Field tests

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NIDA
Network for Information and Digital Access

Thank you!

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Landscape survey report: http://www.nida-net.org/en-gb/