Finnish National Perspective on Open Science

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Ministry of Education and Culture
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Finland is the world’s…

- Best in Press Freedom (Reporters without Borders, World Press Freedom Index 2015)
- Least Fragile State (Fund for Peace, Fragile States Index 2014)
- Best in Wireless Networks per Capita (OECD, Broadband Portal 2014)
- Second Best Place to be a Mother (Save the Children, State of the World’s Mothers Report 2015)
- Second Best in Gender Equality (World Economic Forum, Global Gender Gap Report 2014)
- Third Least Corrupt Country (Transparency International, Corruption Perceptions Index 2014)
- Fourth Most Competitive Country (World Economic Forum, Global Competitiveness Report 2014)
- Fifth Best in Education (Economist Intelligence Unit for Pearson 2014)
- Sixth Happiest country (Sustainable Development Solutions Network, World Happiness Report 2015)
- Best Country (Newsweek 2010)
- Top-ranking Country in PISA
Ten-year objective:

- To encourage people to continuously learn
- Risen skills promote the renewal of the society and equal opportunities
- Finland as the vanguard of education, skills and modern learning techniques

Some of the objectives for 2015-2019:

- Learning environments have been modernised and the opportunities offered by digitalisation and new pedagogical approaches are grasped in learning
- Dialogue between educational institutions and working life is more active
- The quality and effectiveness of research and innovation have begun to improve
- Education and research have become more international
Cooperation between HEIs and business life strengthened to bring innovations to the market

The **impact** and **utilisation** of research results will be **strengthened**. The profiles and respective responsibilities of HEIs and research institutes will be clarified and cooperation between them will be increased.

- Collaboration intensified between ministries in steering and funding of HEI’s and research institutes to enhance closer cooperation (KOTUMO)
- **Open Science and Research Initiative 2014-2017**
- OECD review of Finnish STI system, first results 1/2017
- State of Finnish Scientific Research by Academy of Finland (AoF) 12/2016
- Additional competitive funding by AoF for profiling for universities and for utilisation
Open Science and Research 2009-2017

ATT Target 2017

Research Data Survey Initiative TUTA 2009-2011

Finnish Research Data Initiative TTA 2011-2013

Open Science and Research Initiative ATT 2014

To make Finland a leading country for openness in science and research by 2017
Open Science and Research Initiative 2014-2017

- The whole research process open → Visibility and impact of science and research improved
- More transparent, collaborative and inspirational research process to be promoted → Research system’s competitiveness quality improved
- Measures
  - open publications, open research data, open research methods and tools
  - skills and knowledge and support services
- All research system actors to change the culture towards openness
- International collaboration to promote open science and research
Vision 2017: Open research leads to surprising discoveries and creative insights

- Reinforcing the intrinsic nature of science and research
- Strengthening openness-related expertise
- Ensuring a stable foundation for the research process
- Increasing the social impact of research
Enabling Factors for Finnish Model

- Active cooperation among different stakeholders
  - Close collaboration between research institutions and universities
  - Finnish library network and scientific libraries active and appreciated
- Special features supporting openness in research
  - High investments in R&D&I
  - High educational level and science and research appreciated
  - High quality research infrastructures and environments
- Success in previous and still ongoing projects fostering openness
  - Shared vision enables breakthroughs in open science
Openness as a Means to an End

- **Skills and capabilities**
  - Knowledge hubs and knowledge transfer
  - Disruptive innovations

- **Reproducibility and excellent quality of research**
  - Involving all stakeholders

- **Re-usability of results in different and new contexts**
  - Discovery of results as input for new studies and innovation
  - Maximum impact from financial inputs

- **Interoperability**
  - Building interoperability on metadata level
  - Federation of existing resources, infrastructures and data
  - Understanding that there is no one-size fit all solution, leave room for diversity and new ideas
**Open Research Process**

**Preparing to conduct research**
- Defining the research problem
- Planning research
  - Research environment specification
  - Funding and resourcing research
  - Organising research

**Implementing research**
- Choosing or developing research methods
- Choosing and collating research data
  - Processing research data
  - Documenting research events
- Finding and identifying research results

**Generating research outputs**
- Generating research outputs and describing research results
- The storage and preservation of research outputs and methods

**Utilising research**
- Utilising research results
- Utilising research outputs
- Measurement
- Curating research outputs

**Assessing results**
- Assessing results, for example, peer reviews
- Assessing preservation requirements

**Publication and dissemination**
- Evaluating and publishing research outputs
- Distributing research outputs
- Communicating research results
- Ensuring long-term accessibility

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