



Final Recommendations



Statement adopted by the Workshop on Children and Sustainable Development: A Challenge for Education

13-15 November 2015

Fifty percent of the world's children are currently with insufficient schooling, or out of school, in a world affected by serious sustainability issues. This worrying situation requires urgent, long-term attention. Investing sufficiently in education may seem demanding, but the costs of ignorance are much higher. The future of our globalized society is at stake. Children all over the world need to be included and prepared for the tasks ahead.

Based on scientific evidence of the human impact on climate and environmental crises affecting the inhabitants of our planet – the most vulnerable of whom are those living in extreme poverty, and especially their children – this Workshop aimed to define a set of focused and manageable recommendations for school education, with inclusion as its main goal. Basically, the Workshop was about childhood, children's rights, teacher support, justice and intergenerational responsibility.

The Workshop and its conclusions are built on earlier statements from the Pontifical Academies.[1] They also reflect the principles set out in the UN Sustainable Development Goals (SDGs), especially SDG#4 on universal education. Significantly, the Workshop was greatly inspired by Pope Francis' Encyclical *Laudato Si'. On care for our common home*,[2] which calls for "ecological education and spirituality" (2015).

In 2016, 125 million youngsters[3] (aged 0 to 15 years) worldwide are not attending school. The one billion who live in poverty – with inadequate schooling and lack of attention to early childhood results – lag many years behind their peers in more advantaged contexts. The 60 million refugees – their number has doubled in the last five years – experience extreme difficulties in childhood education. The children of the growing number of other forced migrants – due to environmental change, for example – are equally a concern. Climate impacts and wars will worsen these migration trends. They require action both in developed and developing countries. Inequalities in education have recently increased in 14 out of 29 developed countries.[4]

In view of the immense challenges ahead, the main goal is to provide every child with knowledge, competencies, self-confidence, hope in human solutions and resourcefulness. When these children become adults, they will be able to build a global society that respects the human person and the Earth, cultivates empathy and reason, and recognizes the spiritual and holistic dimensions of each individual. Education, with its inherent ethical and moral components, must responsibly meet these challenges with two imperative and urgent mandates:

1. **Justice in access to quality schooling.** Inclusive schooling must be implemented, especially for the marginalized, refugees or forced migrants. This implies international mobilization, global cooperation and government attention to necessary changes.

2. **Learning goals for all students.** In the global North and South, strong, high-quality academic programs must commit to curricula and teacher training that promote learning about sustainability. These should be climate-aware, emphasizing innovative solutions, increasing appreciation for our common home, and changing behaviors in view of responsible consumption choices. It is imperative that children be encouraged in their inborn love for the inhabitants of our planet and instilled inherent love for our planet itself.

In addition to these fundamental mandates, three essential educational **themes** emerged from the Workshop, whose participants urge education authorities and stakeholders to progressively implement them.

- **A New Educational Paradigm.** In all areas of education, a new curricular framework has to be designed to promote education about the prospects of life and human history on Earth and an understanding of global issues. It has to convey both the knowledge and the means to act locally, as well as moral values and the importance of community involvement. Interdisciplinary education and age-appropriate awareness are necessary to teach the complex interactions among natural and social systems. Science and technology education play a critical role in teaching and learning how to think, reason and act sustainably.

- **Teaching & Learning Technologies.** New communication technologies offer outstanding educational opportunities, but can remain ineffective without strong and nurturing interactions between students and teachers. Hence, teacher preparation quality and professional development within this new framework demand considerable care, support, and effort. Additionally, educators must apply scientific findings on biological evolution, neuroscience, and tools (incl. technologies) to better understand a child's developmental process, and to optimize learning experiences.

- **Youth as Agents of Change.** Children and teenagers are not just recipients of knowledge: they must be inspired to act in their local contexts, and design sustainability initiatives in their schools and communities. Youth can encourage change through constructive interaction not only with other young people, but by positively influencing adults. Social media and social networks can be an asset. The education and empowerment of girls is essential to serve as agents of change.

In an unprecedented session, the Academy invited 19 teenagers representing 12 nations to present their views on education for sustainable development. Their presentations and discussions with members of the Academy deeply impressed the audience and contributed to this Statement.

This Statement strongly encourages education authorities, religious leaders and other stakeholders to foster stronger relationships with the following sectors, in order to enact positive changes:

- **Scientists and scholars:** Close cooperation is required between school systems and scientific communities given that science and technology are essential in the diagnosis of developmental issues and risk factors, and critical for finding the means to act.

- **Leadership, policy, and funding:** Collective engagement and the moral obligations of our common home require global leadership, generosity, funding of innovative projects, and long-term visions that will improve human wellbeing and the environment for present and future generations.

In cooperation with the Pontifical Academy of Sciences, the undersigned will devote their energy to implementing these guidelines by various actions, especially in the context of the Encyclical Letter *Laudato Si'*, the UN SDGs, and the conclusions of the UN COP21 held in Paris.

**

1. Detailed Appendix to the Statement

Sustainability issues to be addressed by education in new ways

1. *A new world.* Deep global changes challenge education systems to think anew their tasks and prepare students to play active and responsible roles. In this context of climate change, education needs to deal with globalization and cross-cultural understanding; migratory imbalances; work profiles; digital revolution; urbanization and neighborhoods; rural change; health, food, water and sanitation; Interdisciplinary education recognizes the need to educate the young on the complex interactions between natural and social systems, termed "Integral Ecology" in *Laudato Si'*.

2. *Inclusion and poverty.* "Childhood" needs to be re-defined with an inclusive perspective. Necessary school changes ought to benefit all children: broken families, girls, children of migrants (intra- or inter-national), refugees, victims of trafficking, disabled, ethnically excluded, and individual children that drop out. Education alone will not eradicate poverty, but is a necessary element.

- Gender equality in education will be most effective for economic and social wellbeing, as well as demographic transition.
 - Education is inseparable from environmental, economic, social and cultural dimensions. UN Sustainable Development Goal #4 (universal education) cannot be separated from others, for instance #10 (reduced inequalities). UNESCO[6] estimates that external donors should offer US\$ 39 billion/annum to enable low-income countries to finance the SDG#4.
3. *A better understanding of learning and teaching.* The cognitive abilities of human beings evolved biologically to cope with a simpler 'pre-cultural' world. Humankind now needs to adapt to complex systems and long-term effects. Science provides knowledge and tools which can inspire education: brain and neurosciences; global access to information and new digital tools; and inquiry-based science education. These have the potential to foster self-confidence, creativity, and critical thinking among youth.
- The potential power of Information and Communication Technology (ICT) in education should be utilized much more in low-income countries, yet requires appropriate guidance, funding and international cooperation.
4. *A new vision on curricula.* Including, but going beyond literacy and numeracy, curricula have to help students understand systems complexity and interconnectedness in the new world, and foster awareness of the challenges that humans will face in the future.
- Science education should be expanded internationally, especially in low-income countries, and the necessary resources mobilized, as science education is a precondition for today's children to be responsible and effective actors in the future.
 - As literacy positively interacts with brain development, enhanced literacy needs to be given much more attention in order to increase the capacity of future generations to deal with the growing complexities of socio-ecological systems.
 - Education of children should be holistic, including body, mind, spirit, health, sense of happiness and beauty. It aims at knowledge as well as skills.
5. *The key role of teachers.* Teachers themselves need to be brought up to date on sustainability issues. In an integrated world, events in distant and seemingly remote areas can have a global impact. Teachers need to be prepared to implement such concepts in their schools, supported by pre-service and in-service training and coaching. Their behavior must also be exemplary, since role models are crucial in education.
- To facilitate this role, teachers should be able to network globally, to allow them to exchange experiences and resources, and develop their confidence in young people's capabilities. IT platforms that systematically collect and present sustainability education examples and report experiences should be further pursued and linked.
6. *The central role of children themselves.* Children's rights need protecting. Potential for age-appropriate child development must be taken into account. Acting *with* children goes beyond acting *for* children. Children and youth can be agents of change for sustainable development. Children can also effectively teach their families and communities.
- Education must consider the hugely diverse contexts of people's livelihoods, which are often impaired and marginalized (in slums and in poor villages), while valuing the power of solidarity and the opportunities available in school community and family contexts.
 - Local communities are the natural spaces where formal and informal education act jointly and can devise tailored strategies for young people and with young people.
7. *A new role for scientists and scholars.* Science and technology are central in the diagnosis and for the means to act. Close cooperation is required between school systems and science communities, especially in interdisciplinary approaches that are so important for sustainability teaching.
- Experiments on educational innovations for sustainability should be systematically designed, evaluated and combined with concepts for scaling up from small examples. Many interesting examples of innovations were shared during the Workshop.
 - Education should be combined with practical initiatives and be accompanied by well-designed research; an example is improved health and sanitation in low-income contexts.
 - Research into brain development and brain functions needs to be expanded and its links with education embraced.

8. *Ethics and responsibility.* Over millennia, societies have been characterized by division, competition, and rivalry. Educators must emphasize the contexts in which social and cultural history has developed commonalities, empathic connections and mental habits that are open and flexible, fostering new thinking models that erode a tendency toward fixed beliefs. Changing people's attitudes and behaviors towards nature and towards one other is crucial today. The *Encyclical Laudato Si'* calls for an ecological conversion through education, recognizing the need for lifestyle, production and consumption changes. Education systems must embrace the spiritual dimensions of every person, the notion of common good and the need to take local actions for the global good.

- The young should be encouraged to respect and befriend others irrespective of their race, culture or religion. In this globalized, interconnected world, they should be made aware early on that lack of peace and prosperity in any remote location will have global implications. This needs to be grounded in an ethical and moral vision.

- Teaching values with firm moral foundations must be part of any education geared towards sustainability, whereas best practices may differ by context. Religious schools should embrace science and sustainability issues, thereby playing an important role. The issues of violence, marginalization and exclusion should be considered as sustainability failures.

The communications presented at the Workshop shall be available online by March 15, 2016. The final publication, as a book, is expected before the end of 2016.

FOOTNOTES

[1] *Globalization & Education* (2005); *Brain & Bread, Education and Poverty* (2013); *Sustainable Humanity, Sustainable Nature: Our Responsibility* (2015)

[2] Encyclical Letter *Laudato Si'* of the Holy Father Francis *On Care For Our Common Home*, 24 May 2015 http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

[3] UNESCO <http://www.uis.unesco.org/Education/Pages/oosc-data-release-2015.aspx>

[4] Data for 29 OECD countries, over the period 2003-2012. In *PISA 2012 Results*, OECD Publishing, Paris (2013).

[5] Available online: www.pas.va

[6] <http://sd.iisd.org/news/education-for-all-warns-of-us39-billion-gap-reduced-ambition-in-sdgs/>

SIGNED BY

Pierre Léna, astrophysicist; member of PAS and Académie des sciences, France
Jorge Allende, Professor, University of Chile, Chile
Fr Tohechi Anyadike, ASCO, Nigeria
Luis Arancibia, Federación Internacional de Fe y Alegría
Antonio M. Battro, PAS Academician, OLPC, Argentina
Jacques Blamont, Académie des sciences; Conseiller du Président du CNES, France
Joachim von Braun, PAS Academician, Director, Center for Development Research (ZEF); Professor for Economic and Technological Change, University of Bonn, Germany
Yves Coppens, PAS Academician, anthropologist, France
Sir John Holman, Department of Chemistry, University of York, UK
Bernard Hugonnier, Former OECD Director, France
María Paz Jurado, Scholas Occurrentes, Argentina
Hideaki Koizumi, Engineering Academy of Japan, Japan
Dato Ir. Lee Yee Cheong, ISTIC Malaysia

Sr Marguerite Léna, communauté apostolique Saint-François-Xavier, France
Prof. Dr. Jürgen Mittelstraß, PAS Academician, Fachbereich Philosophie, Universität Konstanz, Germany

Elena Pasquinelli, Fondation La main à la pâte, France
Carola Suárez-Orozco, Professor of Education, Co-Director, Institute for Immigration, Globalization, and Education, UCLA Graduate School of Education & Information, California, USA
Marcelo M. Suárez-Orozco, Wasserman Dean & Distinguished Professor of Education, UCLA Graduate School of Education & Information, California, USA
Bhavani Rao, Professor, Amrita University, India
Courtney Ross, Founder, Ross Institute, USA
Prof. Jeffrey D. Sachs, Director of the Earth Institute at Columbia University; Special Advisor to UN Secretary-General Ban Ki-moon on the Sustainable Development Goals
H.E. Msgr. Marcelo Sánchez Sorondo, Chancellor, PAS & PASS, Vatican City
Prof. Dr. Dr. hc. mult. Wolf Singer, PAS Academician, Max Planck Institute for Brain Research, Germany
Prof. Dr. Manzoor Hussain Soomro, Order of Academic Palms; President, ECO Science Foundation (ECOSF), Pakistan
Sidney Strauss, School of Psychology, Center for Academic Studies, Or Yehuda, Israel
Ignacio Suñol, Coordinador General, Federación Internacional de Fe y Alegría, Colombia
Sally Tomlinson,

University of Oxford, UKH.Em. Cardinal Peter Turkson, President, Pontifical Council for Justice and Peace,
Vatican CityRafael Vicuña, Pontifical Catholic University of Chile, SantiagoDaniel A. Wagner, University of
Pennsylvania, USADavid Wilgenbus,
Fondation La main à la pâte, France

Maryanne Wolf, John DiBiaggio Professor of Citizenship and Public Service, Eliot-Pearson Department of Child
Study and Human Development; Director, Center for Reading and Language Research, Tufts University, USA