

Global Forum Thematic Webinar II - 2023

Wednesday, April 26th, 2023

Sustainable Future: Infrastructure, Climate & Global Education

Participants (39):

Jawad J. Abbassi, Helène Abrand, Prospero Aguirre, Sylvie Albert, Ingrid Andersson, Maria Asenius, Jean-Eric Aubert, Jean-Pierre Bienaimé, Mariane Cimino, Pierre de Geest, Robert Deller, Guido Ferilli, John Giusti, Alix Jagueneau, Hugo Kerschot, Jean-Yves Le Gall, Corine Le Mouel, Mervyn Levin, Fredrik Lindén, Judy Logan, Diane Luquiser, Eikazu Niwano, Phil Noble, Ana Pereira Lopes, Pascal Poitevin, Giorgio Prister, Fernando Reimers, Aasia Saail Khan, Otto Schwetz, Susanne Siebald, Baila Sow, Johan Stronkhorst, Enayon Sunday Taiwo, Günther M. Szogs, Lynn Thiesmeyer, Sylviane Toporkoff, Daniel Van Lerberghe, Alf Westelius, Paul Wormeli.

The Global Forum Thematic Webinar #2 2023 on Sustainable Future: Infrastructure, Climate & Global Education took place on April 26th, 2023 from 13:30 to 15:00 CET via Zoom.

The webinar was the second in this year's series of Global Forum thematic webinars. The webinar was attended by a global audience of about 40 experts with very different backgrounds which generated extremely lively, meaningful and open discussions between the participants.

This report sums up the discussions of the Global Forum Thematic Webinar II/2023

Programme

Welcome and Introduction

Topic 1 – 45 min

Sustainable Future: Infrastructure & Climate

Progress Towards Net Zero in the Global Mobile Industry - Alix Jagueneau, Head of External Affairs at GSMA

The Importance of Earth-Observation Satellites for Climate Monitoring - Jean-Yves Le Gall, Former President CNES, ESA Council and Arianespace/ Chair of the Strategic Oversight Council at Paris-Saclay University/ Member of the IAA and of several international public and private bodies active in the high-tech and space sectors, France

Topic 2 – 45 min

Global Education in the Era of AI, Climate Change and Global Citizenship

Moderator: Phil Noble, Founder of World Class Scholars

Artificial Intelligence and Education - Sylvie Albert, Professor, Department of Business & Administration, University of Winnipeg, Canada

Global Education and Climate Change - Fernando Reimers, Graduate School of Education, Harvard University

Welcome and Introduction

Ingrid Andersson, moderating, together with Sylviane Toporkoff, welcomed the participants to this second webinar of the Global Forum webinar series 2023.

Sustainable Future: Infrastructure & Climate

Alix Jagueneau, Head of External Affairs at GSMA, spoke about the progress made in the global mobile industry towards Net Zero.

According to a study published by GSMA Intelligence on consumer and business attitudes to sustainability, climate change is considered as the most pressing global challenge. Four years ago, GSMA announced its ambition to become a Net Zero industry by 2050. To this end, GSMA set up a Climate Action Taskforce bringing together about 60 mobile operators from all parts of the world. The Climate Action Taskforce shares best practices, identifies opportunities and challenges for decarbonisation, but also engages with policy makers and international organisations. It rapidly became one of the highest attended GSMA working groups.

The GSMA takes part in the Carbon Disclosure Project (CDP). In 2023, 67 operators disclosed to the CDP, which is an impressive share as they represent 66% of the global mobile connections and 79% of the global revenue. Environmental, social and governance (ESG) has become increasingly important for investment and decision-making and the GSMA has launched 'ESG Metrics for Mobile', a first-of-its-kind mobile sector ESG reporting framework.

Most of the energy usage of the operators comes from the core network (87%). Reducing emissions can be achieved by switching off legacy networks (2G, 3G) and moving to more energy efficient generations, but also by employing AI to optimise the way network operate. In 2022, almost a quarter of the electricity used by mobile operators is renewable (compared to 18% in 2021).

Circularity of the mobile industry is another important topic. Ideally, this means devices with as long a lifetime as possible made with 100% recyclable and recycled content, using 100% renewable energy and where no device ends up as waste. However, extending the lifespan of products and improving waste sorting and recycling is a longer process as it requires a system transformation across.

Mobile technologies can help enable up to 20% of global carbon reductions by 2030. The GSMA is also engaged in the European Green Digital Coalition (EGDC), an initiative of companies, supported by the European Commission and the European Parliament.

The GSMA Report "Mobile Net Zero: State of the Industry on Climate Action 2023" is available at <https://www.gsma.com/betterfuture/resources/mobile-net-zero-state-of-the-industry-on-climate-action-2023>.

Jean-Yves Le Gall, Former President CNES, ESA Council and Arianespace/ Chair of the Strategic Oversight Council at Paris-Saclay University/ Member of the IAA and of several international public and private bodies active in the high-tech and space sectors, France, addressed the importance of earth-observation satellites for climate monitoring.

A network of about 200 satellites provides measurements of the temperature of the oceans, the land and the atmosphere. It was also satellites that proved that global temperature has risen at an unprecedented rate in the last century and that it is still rising.

In 1938, by collecting records from 147 weather stations, Guy Callendar discovered that the planet had warmed 0.3 degrees Celsius over the previous 50 years. But it was not until the advent of satellites 30-40 years ago that Callendar's measurements could be confirmed. Space science is important to track climate change—but it is also something rather new.

The first satellite providing accurate measurement of earth atmosphere temperature was NASA's Nimbus 3 launched in 1969. Today's satellites are much more capable and able to make extremely sophisticated measurements of a variety of climate-related variables. Sentinel satellites are part of Copernicus, the European earth observation programme. The instruments on board of the satellites are highly sophisticated and a lot of work goes into testing and calibrating these instruments to assure accuracy of the measurements. Today, satellites are becoming a kind of multipurpose climate observatory. Satellites can measure sea surface temperatures from 800 km away, collect data that are vital for understanding global warming but also to see the impact of net-zero policies on climate change.

Earth-observation satellites not only track global warming, they also help to fight climate change, for instance by monitoring wildfires. During the 2019/20 wildfires in Australia, scientists kept a close eye on near-real time satellite observations. In addition to the visible plumes of smoke, they also tracked gases of carbon monoxide and methane and were able to show that forest fires can have an effect on the air quality all around the world as the carbon monoxide plumes travelled all the way around the southern hemisphere, over to South America and back to the west coast of Australia.

Satellites help detecting fires on the ground and satellite data can also be used to measure the health of forests. Earth-observation satellites have become an invaluable tool helping to preserve our planet and understand and fight climate change.

Global Education in the Era of AI, Climate Change and Global Citizenship

The topic's moderator, **Phil Noble**, Founder of World Class Scholars and leader of the education cluster of the Global Forum, set the scene with some introductory remarks.

Two of the most discussed subjects in the world today are AI and climate change. What will be their impact in education globally and what are the implication for global citizenship?

Sylvie Albert, Professor, Department of Business & Administration, University of Winnipeg, Canada, discussed whether or not AI will revolutionize Global Education.

Bill Gates has suggested that in the next 5-10 years, AI-driven software will revolutionize the way people teach and learn. Teaching and learning are two different things, one is controlled by institutions, the other by individual learners and often their families.

One very appealing aspect of AI as an educational tool is the possibility of mass personalization in the self-help category. An AI can determine what you need and how you learn to give you the best tools to suit your style. You can use it as a tutor or as a feedback loop, something that many parents are ill-equipped to do. Or you can use it to do the work for you which will limit your learning. There are always positive and negative uses of any system and we need to account for the risks and how we will mitigate these.

There are many self-help tools available such as Khan Academy; adaptive math programs such as NetMath or IXL that provide a cycle of mastery approach. These have been available for years, yet the uptake is minimal compared to a worldwide child population. Technologies need to become more affordable and available, but there is also a socio-cultural challenge – we have left the job of education largely to institutions and therefore are reliant on them to adopt these technologies.

On the second issues of teaching, there is a need for change and an opportunity to use AI for bringing education to a new age. But of course, there is resistance to change. Where there are incentives, such as in assisting in research (as long as we can check the accuracy of data), or pedagogies that are forced to adapt because AI use cannot be curbed; or if there are broader perspectives that are accepted in what students need to learn, such as soft skills and critical thinking, and a tempering in our desire to control such things as writing skills (as we did with math and calculators), then perhaps there will be significant changes in teaching.

At the moment, we are holding the educational dam together with adhesive tape: attempting to keep up to GPT implications, more solutions sharing sites, fast-paced technological change, new educational providers, and varied educational practices across institutions – it is very difficult to affect change in highly bureaucratic organizations such as schools to begin with, and more so when the environment is volatile and there is little opportunity to adapt to change before the next wave comes to you. Perhaps AI will provide some answers but won't be a significant game changer – at least not in the short to medium term.

The moderator **Phil Noble** introduced the concept of global citizenship and lead over to the next speaker. What do you get when you combine global education, young people and the concept of global citizenship? Given climate change and AI, are these two forces going to drive a new empowered global citizenship among young people? Where are we heading?

Fernando Reimers, Graduate School of Education, Harvard University, addressed the issue of global education and climate change by presenting an honest view on the mismatch between the skills acquired through traditional education methods and the development of skills required to enable students to act.

Educating students to address climate change is a growing priority for educational institutions but there is a kind of “climate change education paradox”: educational institutions are increasingly recognising the problem and are teaching the science of climate change—but they make it worse, because they produce students that are becoming knowledgeable of the problem, but who are frustrated, feel hopeless and do not believe that they can do anything to address it effectively.

However, studies have shown that there is hope in teaching climate change differently: Learning climate change science while being engaged in project-based activities helps students finding a point of entry, doing something and feeling less helpless about the problem.

Some of the ideas Fernando Reimers presented during the webinar are elaborated in greater detail in some of his books and papers (some free to download, some for purchase) available on:

- Google Scholar: <https://scholar.google.com/citations?user=fRbboLwAAAAJ&hl=en>
- ResearchGate: <https://www.researchgate.net/profile/Fernando-Reimers>
- Amazon:
https://www.amazon.com/stores/author/B001HOMNHG/allbooks?ingress=0&visitId=33d6728e-2093-41fc-a560-d1c61d343475&store_ref=ap_rdr&ref=ap_rdr

During the webinar, Fernando Reimers shared a number of interesting references to further reading (some free to download, some for purchase):

- **Education and Climate Change - The Role of Universities:**
<https://link.springer.com/book/10.1007/978-3-030-57927-2>
- The UNESCO's paper on the Future of Education: **Reimagining our futures together: a new social contract for education:** <https://unesdoc.unesco.org/ark:/48223/pf0000379707.locale=en>
- Global Citizenship Education: **Educating Students to Improve the World:**
<https://link.springer.com/book/10.1007/978-981-15-3887-2>
- The **Times Higher Education Impact Rankings 2022** (global performance tables assessing universities against the United Nations' SDGs):
<https://www.timeshighereducation.com/rankings/impact/2022/overall>
- Information about **how Harvard is addressing the climate crisis:** <https://www.harvard.edu/in-focus/climate-crisis/>
- **University and School Collaborations during a Pandemic** (Sustaining Educational Opportunity and Reinventing Education): <https://link.springer.com/book/10.1007/978-3-030-82159-3>
- **The Voices of the Trees**, a children's book, designed to stimulate conversations between children and adults about climate: https://www.amazon.com/-/es/Elisa-Guerra/dp/6073256310/ref=sr_1_3?hvadid=616863275718&hvdev=c&hvlocphy=9002061&hvnetw=g&hvqmt=e&hvrnd=15980636678766932945&hvtargid=kwd-29758494924&hydadcr=24657_13611735&keywords=voice+of+the+trees&qid=1682513267&sr=8-3
- **The Adventures of Filomena**, children's books to foster values that are aligned to sustainability:
<https://theadventuresoffilomena.squarespace.com/>
- **The Good Life:** Helen and Scott Nearing's Sixty Years of Self-Sufficient Living:
https://www.amazon.com/s?k=the+good+life&hvadid=616991151839&hvdev=c&hvlocphy=9002077&hvnetw=g&hvqmt=e&hvrnd=687318351776552166&hvtargid=kwd-39492090&hydadcr=24662_13611802&tag=googhydr-20&ref=pd_sl_24gjjdj3ql_e

Concluding Remarks

The moderator, Ingrid Andersson, together with Sylviane Toporkoff, thanked the speakers and reminded the upcoming webinar:

Global Forum Thematic Webinar III/2023:

When: September, 2023 | 1:30 PM – 3:00 PM CET

Exact topic and date TBD