

Education and Climate Change: Learning to Act for People and Planet

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The Sustainable Development Goals were designed to be interlinked: An unfulfilled promise

The Sustainable Development Goals (2016 – 2030)



- Integrated environment and poverty agendas
- Aspired to be interconnected
- Aspired to be universal, not just about the poor countries

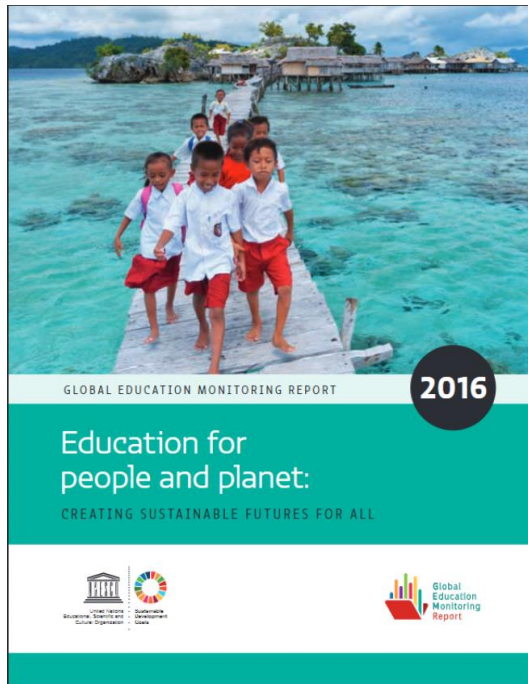
Nearly 10 years later

- ❑ At the High Level Political Forum, the only official monitoring mechanism, the interlinkages discussion is a gap in monitoring in the SDGs; the high-level reporting is fairly siloed
- ❑ The multilateral environment far less favorable compared to 2015/16, leading often to regress to 'older' issues (foundational needs such as hunger and basic literacy and numeracy)
- ❑ Climate and digital transition has moved up the agenda
- ❑ Youth leadership has gained visibility and prominence



The education community believes education is deeply interconnected with all other SDG outcomes and issues: A strong assertion

Since 2016, the GEM Report monitors education (SDG 4) progress, and education in the SDGs



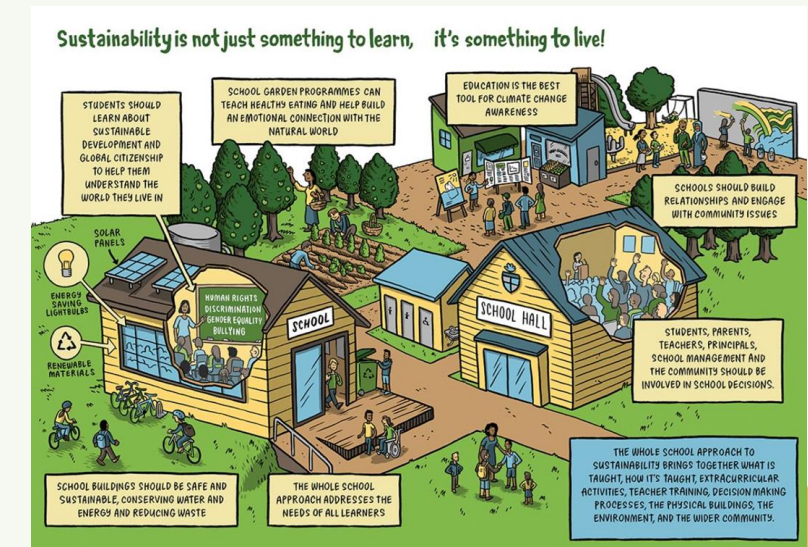
Education progress is a must to

- ❑ shape knowledge, behaviors and attitudes, which benefit other SDG outcomes
- ❑ Develop the professional capacities for all sectoral transformation

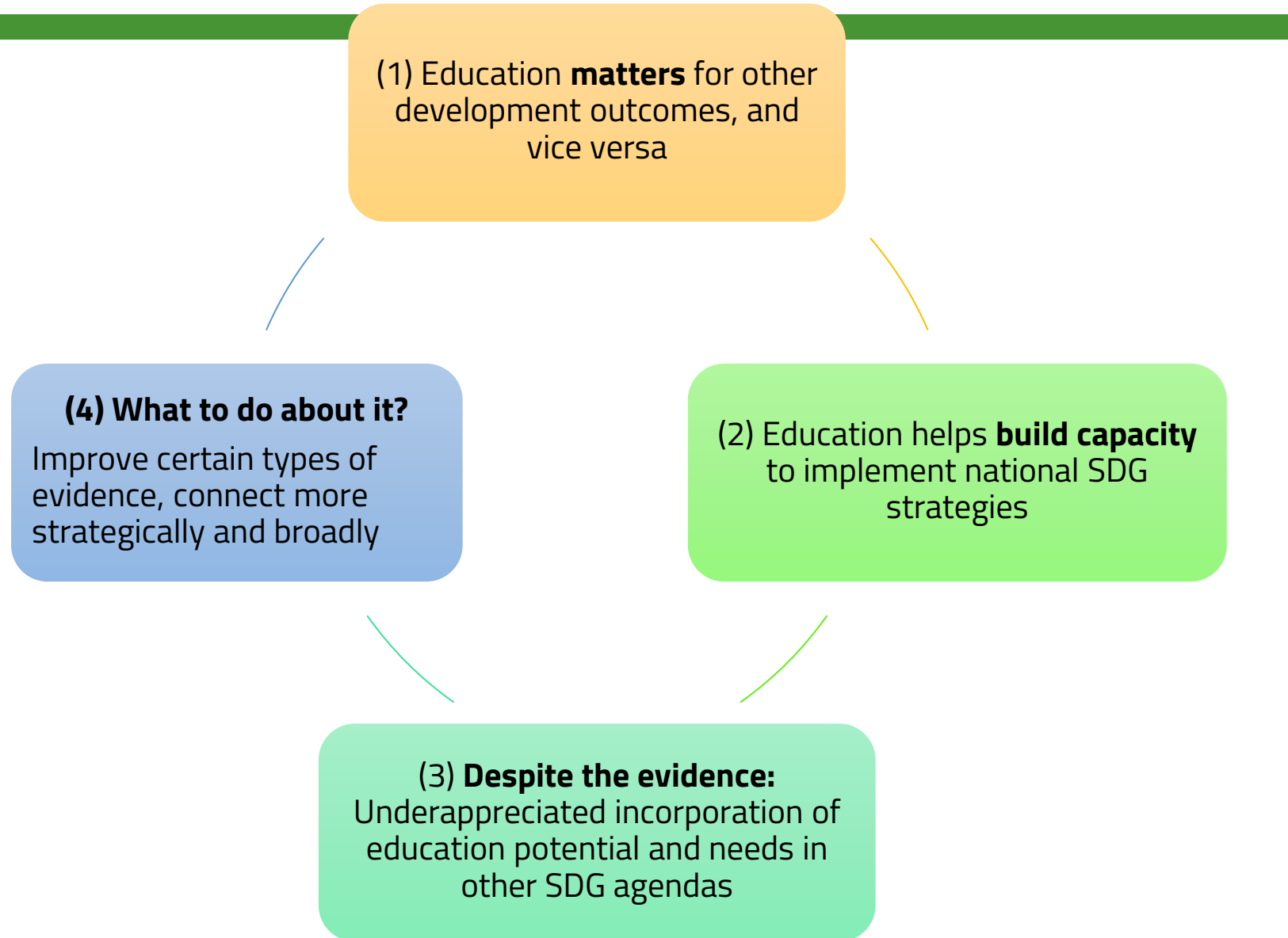


For education to achieve its potential for the SDGs

- ❑ We need to focus on the right kinds and types of learning
- ❑ [Target 4.7: Education for Sustainable Development and Global Citizenship Education]



We are in a “Despite the Evidence...” and “Lack of Evidence” situation



1st paper in an Education in the SDG series on Climate Change



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- ❑ Motivation: Education receives some policy attention in the global frameworks, **but largely underemphasized in broader climate conversations**
- ❑ Objective: Bring the education and climate change community conversations closer
- ❑ Partnership: Continued partnership with the MECCE project (including the climate change communication and education profiles work – 80 countries)



Climate change communication and education country profiles: Approaches to greening education around the world

WHY IS CLIMATE CHANGE EDUCATION IMPORTANT?

Climate change communication and education (CCE) is a critical tool to help citizens understand and address the impacts of climate change. It aims to develop understanding, values and behaviours that can advance collective climate action. It addresses both climate change mitigation and adaptation, and includes a focus on climate justice and, where appropriate, Indigenous knowledge (UNESCO, 2021). The elements of 'good' CCE include learning to know (cognitive), learning to be (affective-emotional), learning to do (action-oriented), and learning to live together (justice-focused) (SEPN, 2020).

Public sentiments increasingly reveal the extent of people's concerns about the impact of climate change on their lives. The majority of respondents in nearly every area covered in the Yale 2022 international public opinion survey on climate change are either 'very' or 'somewhat' worried about climate change. In countries (such as those in Latin America) where respondents are most concerned about climate change, respondents are also more likely to think that climate change will harm future generations 'a great deal' (Leiserowitz et al., 2022). Similarly, the World Risk Poll developed by Lloyd's Register Foundation and conducted in 2021 in 118 countries, found that in 56 countries, more than 50% of respondents think that climate change is a very serious threat (Lloyd's Register Foundation, 2022).

Children and young people are more vulnerable to climate anxiety, which is associated with several negative and complex feelings and emotions

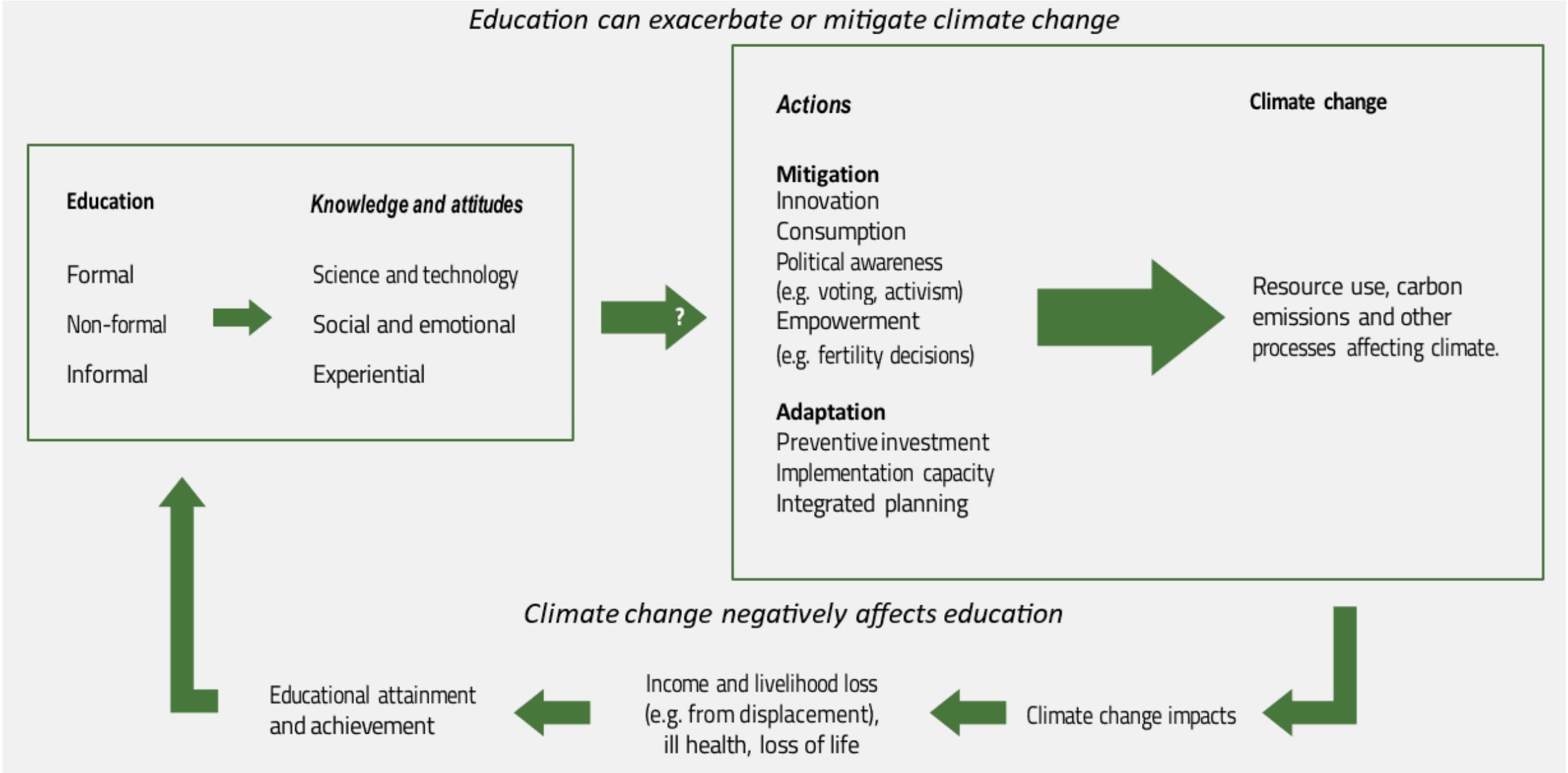
(Hickman et al., 2021). For example, in a 2021 survey, 59% of 16- to 25-year-olds in Australia, Brazil, Finland, France, India, Nigeria, Philippines, Portugal, the United Kingdom and the United States were 'very' or 'extremely worried' by climate change. 75% said that 'the future is frightening' (Hickman et al., 2021).

Quality CCE should help learners overcome feelings of grief, anxiety, denial and apathy (Ojala, 2017; Stevenson and Peterson, 2016). Participatory learning and taking action towards solutions fosters hope and a sense of greater collective agency (Bright and Eames, 2022). Indeed, estimates suggest that behavioural solutions in different areas including food, transport, energy and materials, and agriculture could help reduce emissions by up to 37% by 2050 (Williamson et al., 2017).

Levels of knowledge about climate change vary among students and teachers. For example, less than 40% of 58,000 teachers from 144 countries interviewed by UNESCO and Education International felt confident teaching the severity of climate change (UNESCO, 2021). While 79% of 15-year-old students in the 2018 Programme for International Student Assessment indicated they were aware of climate change, knowledge varied considerably across countries and groups of students (OECD, 2018). Understanding climate change is more difficult where young people lack basic skills. In 18 of 31 low- and lower-middle income countries for which data has existed, since 2010, fewer than 10% of children are reaching minimum proficiency in reading and/or mathematics (UNESCO, 2023a). This highlights a concerning trend in levels of educational preparedness for understanding complex issues like climate change.

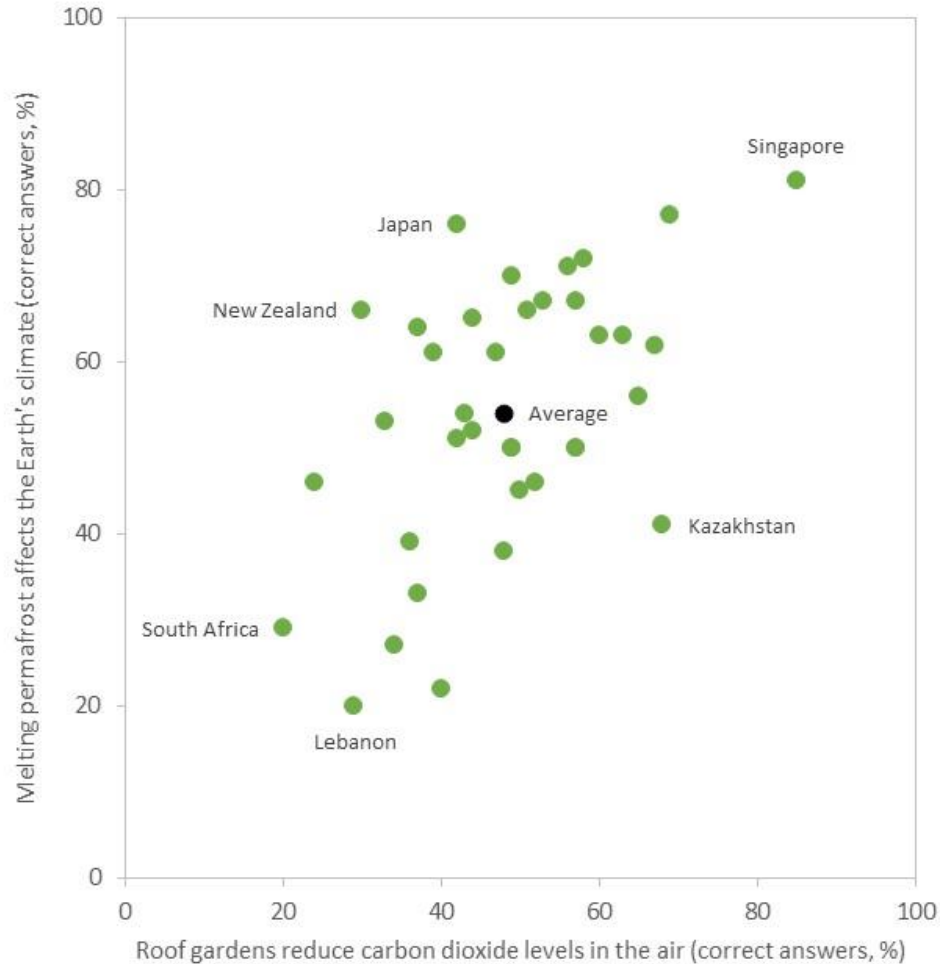


The role of education in addressing climate change is critical, but not sufficiently mobilized



Education increases knowledge and awareness...

Percentage of grade 8 students who answered correctly questions related to the environment, 2019



...and leads to climate adaptation and mitigation actions

- ❑ If universal secondary education is achieved by 2030, there will be **30,000 to 50,000 fewer disaster-related deaths** per decade by 2040–50 in a context of increased disaster frequency
- ❑ Girls' secondary education completion in Bangladesh empowered them to make life and childbearing decisions
- ❑ **Farmers** more likely to **diversify crops, alter crop calendars** and **use farm insurance** to cope with negative climate change effects



Education is key for developing skill for climate change



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Train workers for job creation and green transition to go hand in hand
>80% of 12,500 EU businesses said **skills shortages** hold back climate change projects

Various examples

- ▶ From wind power professionals in Uruguay to solar technicians in India
- ▶ From private forest owners in Sweden to extension workers in the Dominican Republic
- ▶ From waste pickers in Brazil to construction workers in Estonia
- ▶ Central (Bangladesh and Canada) and local government officials' capacity (Korea and New Zealand)

Challenges remain from ocean sciences to urban planning university curricula

Universities typically focus on climate change in governance and operations
but less in teaching and learning, community partnerships, and research policies



But, the conundrum

Common sense

'Educating those currently at school about climate change will help to shape and sustain future policy-making, and a broad public and international debate will support today's policy-makers in taking strong action now'. 2006 Stern Review on climate change

▶ In 96 cities, educational campaigns were the **third-most common action**

More education = more consumption = more carbon emissions per capita

▶ Growth in educational attainment and in related economic activity is expected to result in a **5-25% increase in greenhouse gas emissions** by 2100

More education = more concern ≠ more action

"I am participating in a group working to convince leaders to take action"

▶ **No difference by education level**

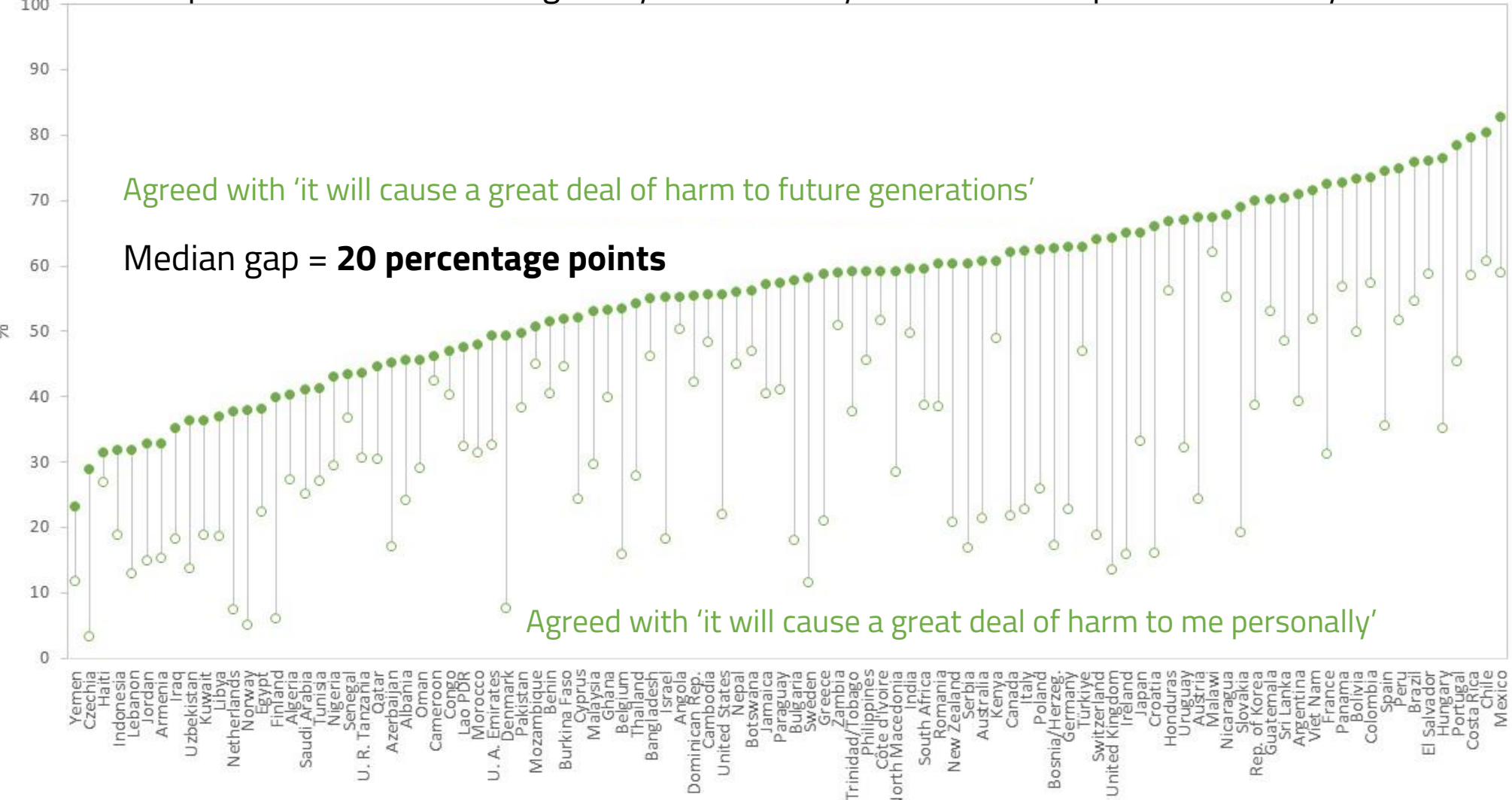
12% lower secondary, 9% upper secondary, 9% post-secondary



Knowledge is only one aspect of behavioural change



Consequences of climate change may feel far away and difficult to prioritize in daily decisions



Climate change will cause **personal harm**

- ▶ 33% lower secondary
- ▶ 34% upper secondary
- ▶ 36% post-secondary

Climate change will cause **future harm**

- ▶ 51% lower secondary
- ▶ 59% upper secondary
- ▶ 66% post-secondary

Source: GEM Report calculations based on Leiserowitz et al. (2022).



Therefore, a focus on knowledge is not enough



Values, ideologies, world views and political orientation **more important** in predicting climate change belief **than education**, gender, experience or knowledge

Climate change education needs to be **transformative**:

- ▶ embrace uncertainty, complexity and nuance;
- ▶ provide comprehensive empirical knowledge;
- ▶ engage in critical inquiry and cross-disciplinary perspectives; and
- ▶ ensure experiential and inquiry-based active collaborative learning.





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Levels of knowledge about climate change vary among students and teachers. For example, less than 40% of 58,000 teachers from 144 countries interviewed by UNESCO and Education International felt confident teaching the severity of climate change (UNESCO, 2021). While 70% of 15-year-old students in the 2018 Programme for International Student Assessment indicated they were aware of climate change, knowledge varied considerably across countries and groups of students (OECD, 2018). Understanding climate change is more difficult where young people lack basic skills. In 18 of 31 low- and lower-middle income countries for which data has existed, since 2019, fewer than 10% of children are reaching minimum proficiency in reading and/or mathematics (UNESCO, 2023a). This highlights a concerning trend in levels of educational preparedness for understanding complex issues like climate change.

□ Climate change education is part of government policy in many countries

- Of 80 countries (2023), covering 75% of the global population, 87% have laws, policies or plans addressing climate change in primary and secondary education curricula, and 95% have some communication and awareness programs

□ But, education's role in climate action remains underappreciated

- Education systems are underfinanced and millions are not accessing quality education
- Education is consistently neglected as a solution in climate action plans and financing
- Education systems have not transformed adequately to focus on climate action (youth, teachers, employers; research and evaluation evidence)



A broad vision for climate change education is needed



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unesco

Global Education
Monitoring Report



Formal
education

Knowledge,
skills, awareness

Beliefs and
attitudes

Behaviors and
outcomes

Evidence base is primarily from small-scale research

- South Africa: collaborative teacher training Keep it Cool project improved teaching practices and ability to incorporate local knowledge among 300 teachers

School networks with action-oriented approaches

- UNESCO Associated Schools Project Network over 10,000 schools in 181 countries with a whole-school approach to learning
- Eco-Schools program in over 59,000 schools in 68 countries
- Climate Action Schools in 2022 with 100 founding schools from 26 countries

Policy shifts in school systems

- Examples: Finland – phenomena-based education;
- Indonesia – cross-cutting integration of disaster risk reduction

But, teachers are challenged

- A survey of over 1,000 teachers and staff from 38 countries on climate action – nearly half cited a lack of available or suitable resources as a major challenge.
- In India and Romania, inadequate training, lack of time, financial and other resourced made it difficult to deliver education focused on climate action





Student and Youth lead these demands



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Formal education

Knowledge, skills, awareness

Beliefs and attitudes



Behaviors and outcomes

Youth find formal education lacking..

- Expressed a preference for more action-oriented learning, for creating concrete solutions, and more national and regional context to understand climate change and justice history

Learn informally

- Climate strikers are learning through strike participation – teaching themselves how to deal with regulations, negotiating with police, developing demands etc.

Demand changes in formal education

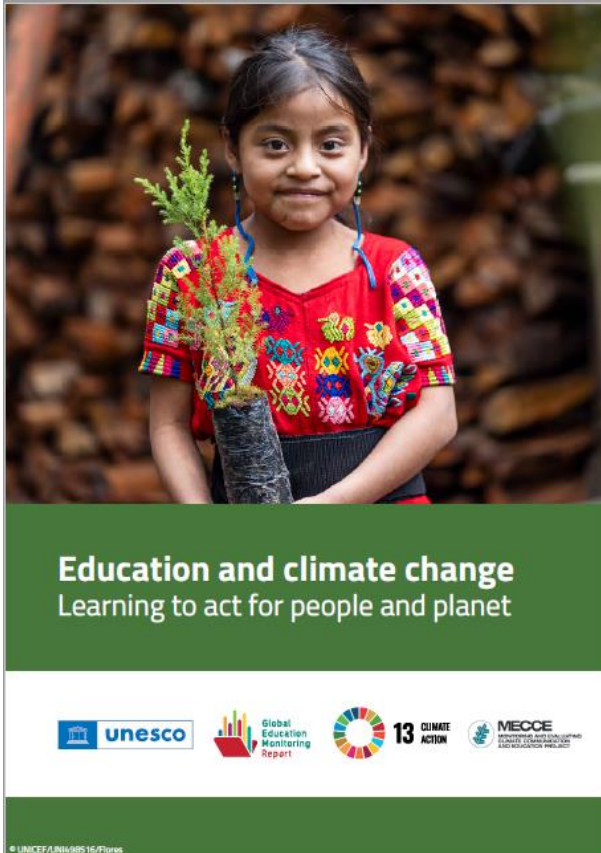
- Highlight textbook inadequacies (Australia, France, Germany, UK, US textbooks)
- Medical students founded the Planetary Health Report Card to inspire medical schools to deal with climate change (Canada, Ireland, Malaysia, UK, US)

Demand justice

- Litigation by youth portraying climate change as a human rights violation (in Colombia, on deforestation in the Amazon); Montana
- Fossil fuel divestment movements at universities and colleges (US, Canada)





To help achieve education's potential for climate action



1. Shift the **paradigm** so that education can rise up to the demands posed by the climate change challenge
2. Recognize education for its role in **developing** mitigation and adaptation **solutions** to climate change challenges
3. Include investment in education under **climate finance** programmes
4. Commit to **monitor** efforts to greening education, starting with the curriculum




Widen conversation partners for follow through



“
This policy paper recognizes the impactful role that education must play in advancing climate action.

MR. LI JUNHUA
UNDER-SECRETARY-GENERAL
FOR ECONOMIC AND SOCIAL AFFAIRS,
UNDESA



“
This report is a wake-up call for policymakers — from all sectors — to find innovative ways to embed education in their strategies to address climate change.

RUTH DEFRIES
PROFESSOR, COLUMBIA UNIVERSITY,
AND CO-FOUNDING DEAN, CLIMATE SCHOOL,
COLUMBIA UNIVERSITY



“
This paper urges world leaders and climate experts to understand and better incorporate the human transition needs – education, skilling and behavior change – in approaches to transform systems of energy use, land and water management, agricultural adaptation, and more.

RACHEL JETEL
CO-DIRECTOR, SYSTEMS CHANGE LAB



“
This paper calls for rigorous evaluations to bridge the evidence gap regarding climate change education that can be impactful in engaging youth and adults in climate action.

TULIKA A. NARAYAN
VICE PRESIDENT, CLIMATE CHANGE,
MATHEMATICA



“
Active global citizens worldwide are eager to take action to address climate change — and education is one of the most powerful tools they can have.

DANIEL OBST
PRESIDENT AND CHIEF EXECUTIVE OFFICER,
AFS INTERNATIONAL PROGRAMS



“
The clock is ticking. We need to tackle climate change and build resilient communities of active global citizens for enduring action and impact.

NATHAN SPEES
GLOBAL EDUCATION AND ENGAGEMENT LEAD,
WORLD WIDE FUND FOR NATURE (WWF)

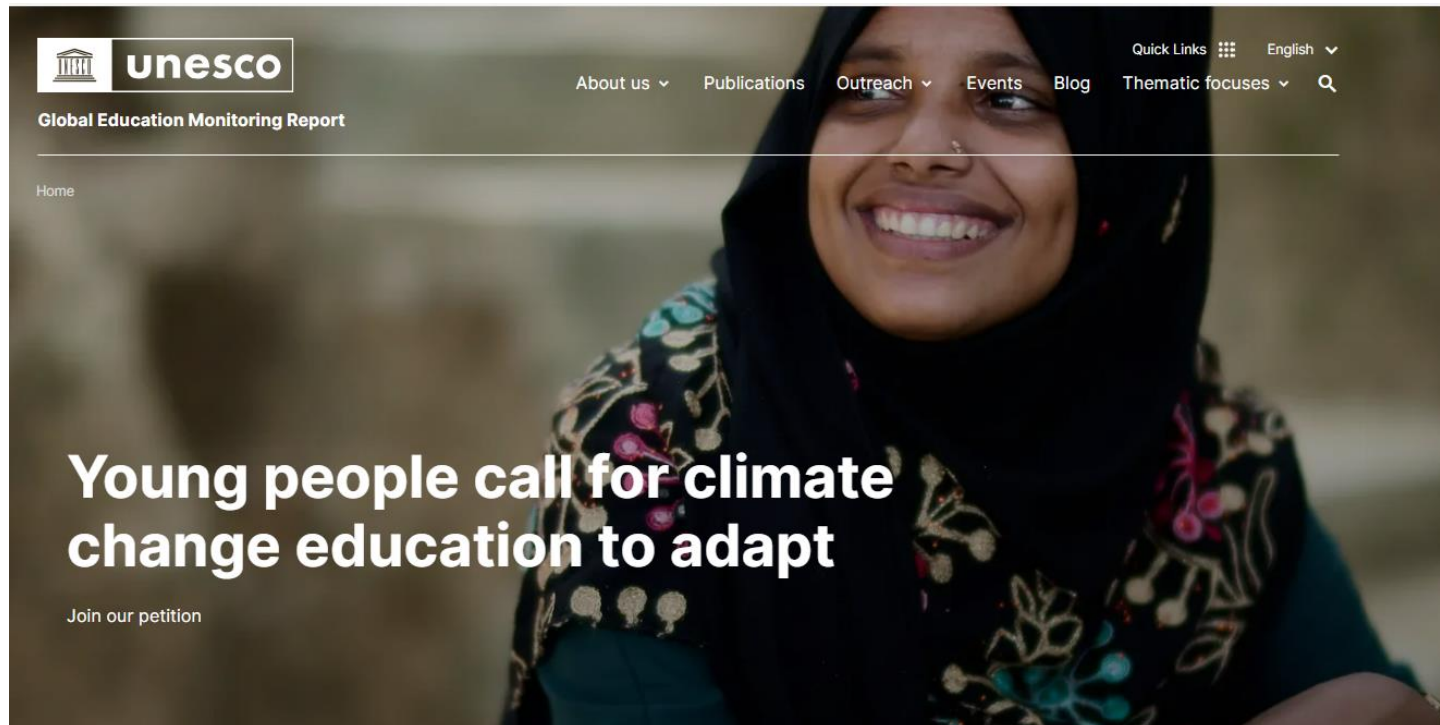


With diverse strategic engagements

Build our momentum, and build on the education community, youth, and to connect beyond the sector



And a call to action for youth



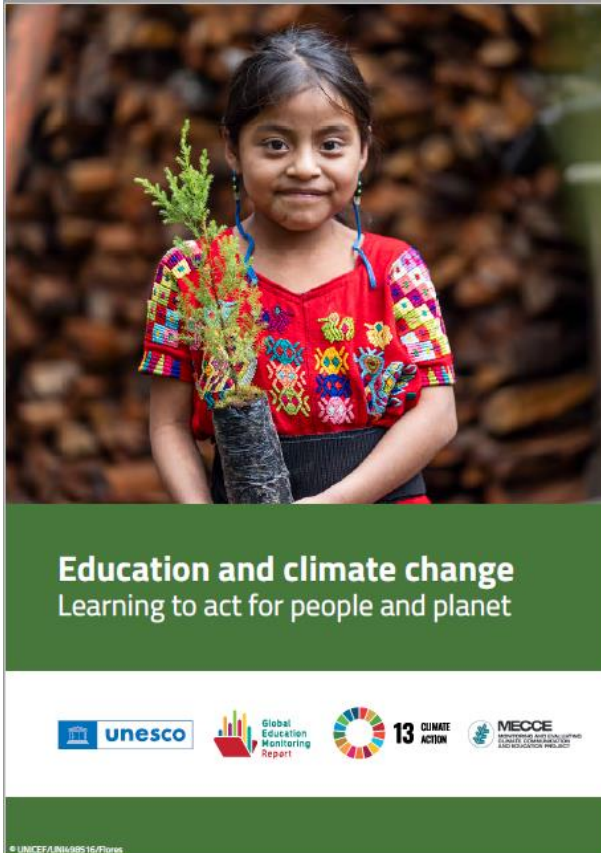
The future belongs to us: youth

To coincide with the UN Summit of the Future in New York (22-23 September) and COP29 (11-22 November) we are using our voices to urge governments to prioritize action for a shared, sustainable future by **strengthening climate change education.**

<https://www.unesco.org/gem-report/en/2024gemreport-petition>



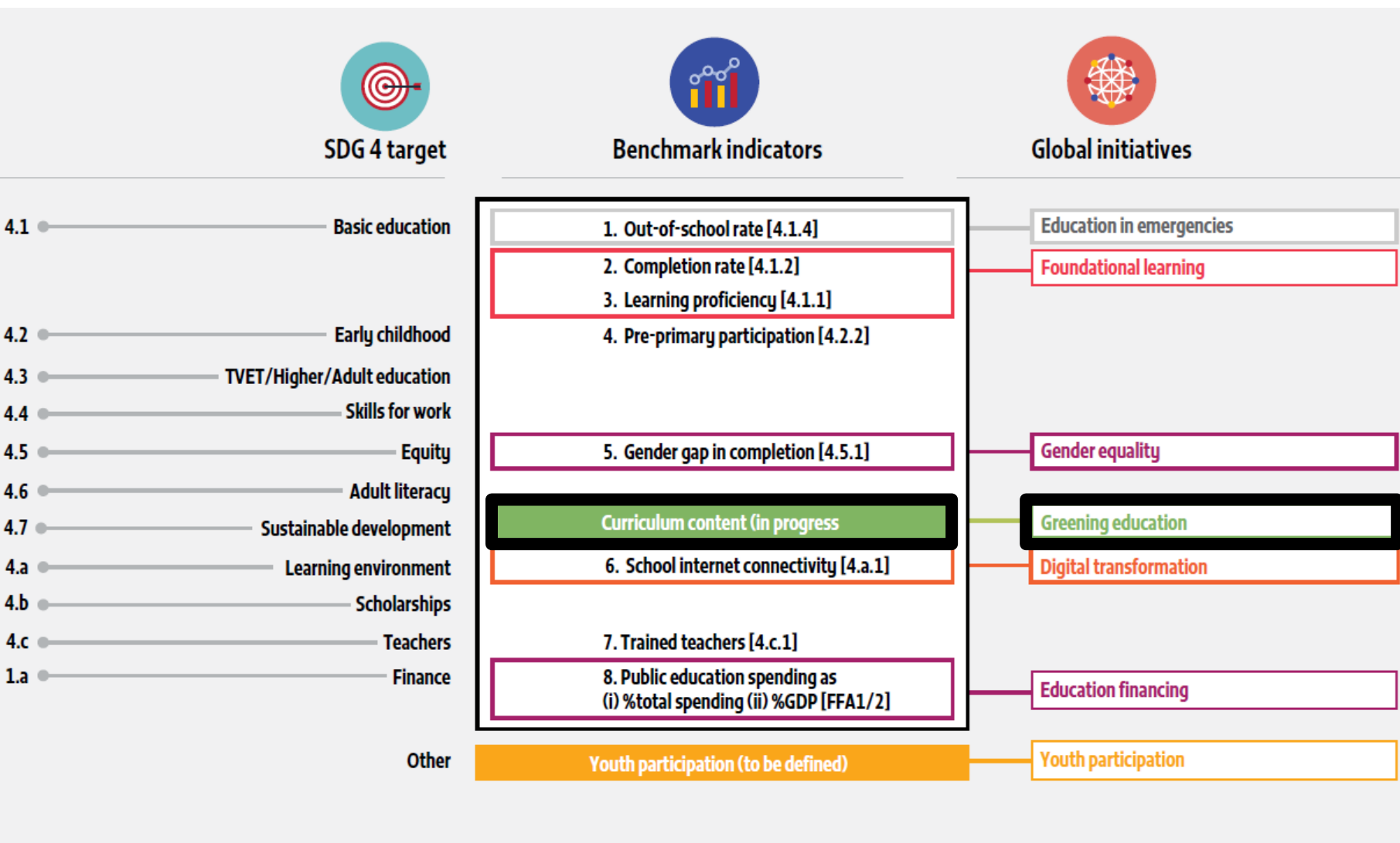
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Monitoring: SDG 4 benchmark indicators

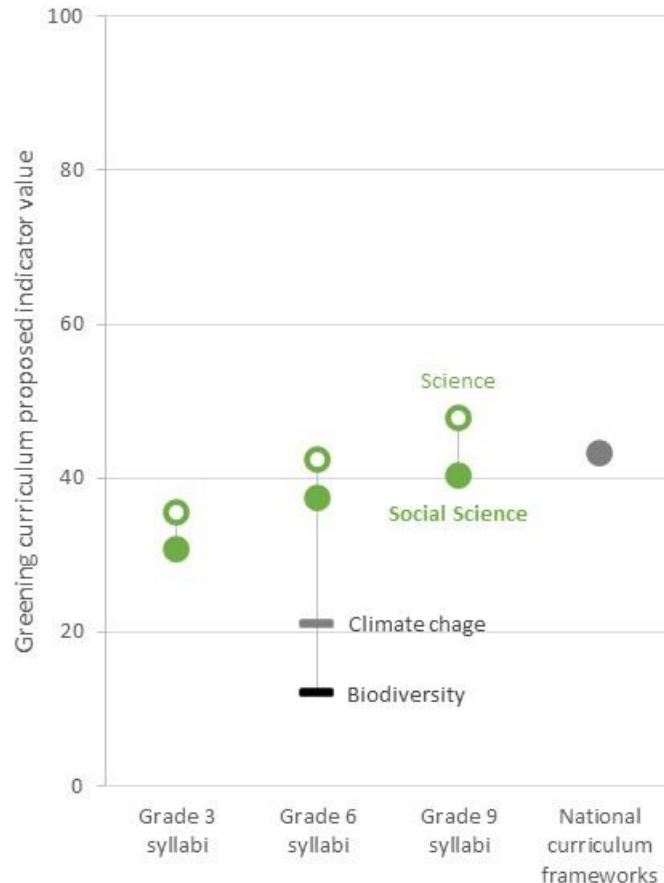


Schools
Curriculum
Teachers
Communities



A curriculum-based indicator proposal

Green content is more common in higher than in lower grades and in science than in social science subjects



Source: MECCE (2024).

Based on **national curriculum frameworks** and **syllabi** of science and social science subjects in grades 3, 6, 9

35 environment, sustainability and climate **keywords**: 1,500 documents in 76 countries and 30 languages

A mean value of **40** out of a maximum of 100 but:

- ▶ Lower in social science than in science
- ▶ Lower in grade 3 than in science
- ▶ Much lower for climate and biodiversity

National curriculum and syllabi content uncorrelated

Potential to develop in the future



Thank you

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