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25 YEARS

Education Data and Statistics Commission

Greening curriculum indicator

11th Education Data and Statistics Commission meeting

27 February 2025

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Outline

1. Methodology
2. Indicative results
3. EDSC 10 decision and feedback
4. Developments during 2025 Comprehensive Review

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1. Methodology

Conceptual framing

- Green content should be integrated in all subject curricula and at all education levels to influence teaching and learning processes
- A curriculum content indicator can be linked to outcomes such as student knowledge
- Curriculum mainstreaming of green content can be seen as country fulfilment of SDG and UNFCCC §6 commitments (‘expand education … to contribute to climate mitigation and adaptation’)
- Three ‘themes’: (1) environment/sustainability (2) climate change (3) biodiversity
- Capture themes through keywords in key documents

1. Methodology

Two document types – with different authors, in general

- **National curriculum frameworks**
  → aims, philosophy, structures, guidelines, standards, assessments
- **Subject curricula/syllabi** in two domains: science and social science
  → teaching rationale; intended aims and learning outcomes; clearly defined content; timetable

  Up to 4 subjects per domain
  - many countries only have a single science and/or social science subject (grades 3/6) rather than numerous specialized subjects (grade 9)
  - some countries teach interdisciplinary subjects, e.g. environmental education

Countries included if they have at least 3 of 4 main document types

1. Methodology

Keyword selection

- 4-5 keywords selected per theme:
  - best represent the theme
  - translatable into all relevant languages
  - prevalent enough in documents

Theme	Keywords		Keywords
Environment and sustainability	• environmental* • sustainability	• greening • “sustainable development”	4
Climate change	• “climate change” • “global warming” • “greenhouse gas*"	• "climate justice" • “renewable energy”	5
Biodiversity	• biodiversity • ecosystem*	• extinction* • invasive species	4
Total			13

- Each keyword includes its singular/plural and all forms the word may take
- Language-/Country-specific distinctive keywords also included, if appropriate.
- Keywords and translations into 40 languages reviewed and validated by experts

1. Methodology

Indicator calculation – initial steps

- Develop standardized keyword counts
  - frequency of keywords standardized per theme (count divided by number of words)
  - multiplied by 1 million = keyword count per million words for each theme
- Transformation of standardized keyword counts into an ordinal scale = deal with long tail
  - standardized numbers are transformed into an ordinal scale (0 to 10)
    - 0 if there are no keywords
    - from 1 to 10 using a half-life logarithmic transformation
    - 10 = 10,000 (environment), 5,000 standardized keywords (climate, biodiversity)
- Federal countries = sub-national scores averaged into a national score

1. Methodology

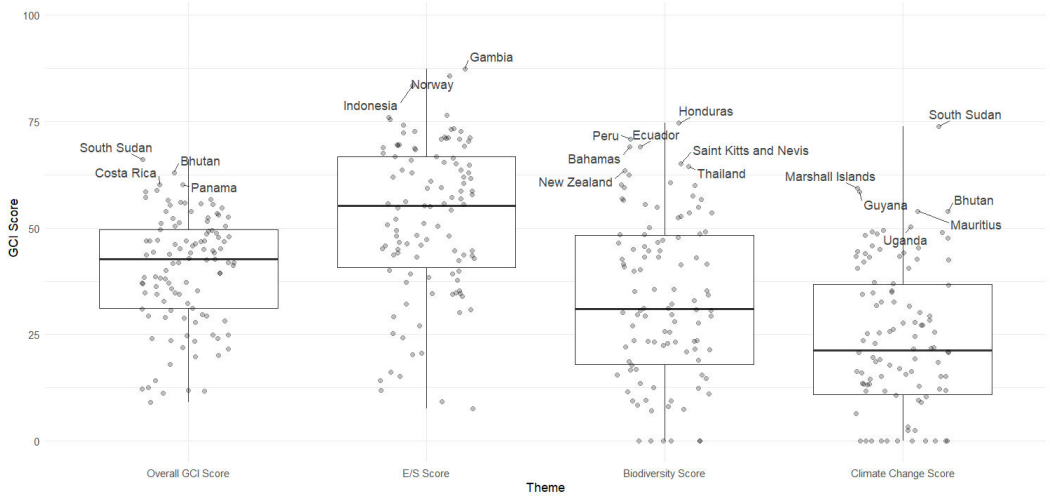
Indicator calculation – final step

- Within each theme, the three grade level scores and the NCF score are averaged
  Each country has 3 or 4 document-specific scores (ranging from 0 to 10) for each of the three themes, i.e., 9 or 12 total scores
  - If there are 4 document types, each contributes 25% of the total score per theme
  - If there are 3 document types, each contributes 33% of the total score per theme
- A single overall score is calculated based on a weighted mean
  - Environment/Sustainability core theme weighted 50%
  - Climate change and biodiversity themes each weighted at 25%

2. Indicative results

First release

- Coverage of 110 countries, of which 29 have are missing one document set (mainly NCF)
- Global average score characteristics
  - Mean 40.2 (s.d. 13.1)
  - Median 42.7
  - Range 9.1 to 66.0 (out of max 100)
  - Higher for environment (median = 55.1) than biodiversity (median = 31.0) or climate change (median = 21.3)
- Policy relevant implications



3. Feedback during the EDSC 10 decision making process

Almost universal approval to propose indicator to use it to report on indicator 13.3.1

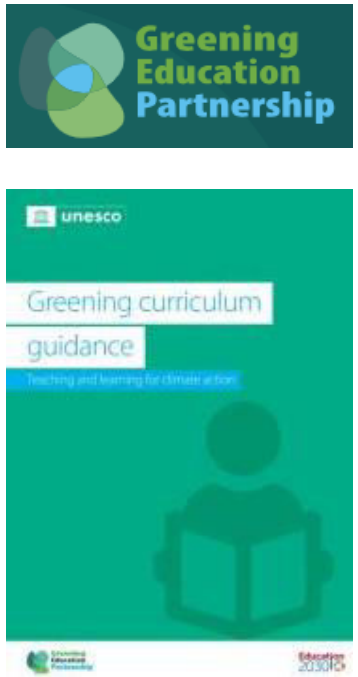
Comments

- Should ‘science and social science’ subjects be replaced by ‘respective’/‘all’ subjects?
- How is greening captured if it is implemented throughout primary and secondary education (explicitly in many and implicitly in all subjects)?
- Should grades 3, 6 and 9 be replaced by primary, lower and upper secondary levels?
- Should countries be involved in the keyword development process, e.g. through a questionnaire to indicate the contextualized meaning and connections with the specified keywords?

3. Feedback during the EDSC 10 decision making process

Greening Education Partnership

- Four pillars, of which greening curriculum with six concepts
  - Climate science
  - Climate justice
  - Post-carbon economies
  - Ecosystems and biodiversity
  - Resilience building
  - Sustainable lifestyles
- Most of these concepts reflected in the keywords



4. Comprehensive review

Proposal to the IAEG

- Adopt metadata as 13.3.1
  Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary, and tertiary curricula
  – Rejected
- Adopt metadata as part of 4.7.1
  – Accepted

	Global citizenship	Sustainable development
a) national education policies		
• UNESCO Recommendation	X	X
b) curricula		
• UNESCO Recommendation	X	X
• Greening Education Partnership	—	X
c) teacher education		
• UNESCO Recommendation	X	X
d) student assessment		
• UNESCO Recommendation	X	X

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