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What does future-ready social studies education look like?

Insights from teaching and learning geography

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70 1950-2020 Years of
Inspiring Learning
Transforming Teaching
Advancing Research

Outline

The new “doughnut” normal

Why Sustainability?

What is our aspiration for a sustainable future?

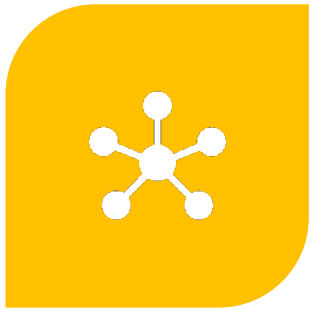
“If we teach today’s students as we taught yesterday’s, we rob them of tomorrow.”

— John Dewey

What does today look like?

VOLATILITY

UNCERTAINTY



COMPLEXITY

AMBIGUITY

The Anthropocene

What was it like in 2010 looking at 2020?

Science 2020

2010 is likely to see the final flights of NASA's workhorse, the space shuttle. The forthcoming space race will be among private enterprises. We will see the creation of "synthetic life". Since 2007, American Craig Venter has been on the verge of unveiling a living bacterium carrying a DNA code made from scratch in the lab. Others are working on an entirely synthetic cell. We will see attempts at a planetary fix (geoengineering), a Manhattan-scale global project to curb harmful climate change.

Dr Roger Highfield, editor of *New Scientist*

Consumer technology 2020

Technology will infiltrate every aspect of our lives – the mobile phone will become a gateway to global communications, and link seamlessly to the web and every screen in homes and offices. Supermarkets will restock your internet-connected fridge automatically. Expect a pervasive sense of being watched – probably not by government, but by big corporations.

Matt Warman, DT technology editor

Environment 2020

It will be the hottest decade ever as global warming continues, though individual years will vary. Renewables will boom, especially solar power, as new technologies and falling prices kick in. Nuclear power will make no real contribution; any new reactors will not come on stream before the end of the decade. Evidence that mobile phones endanger health will increase. Continued shrinkage of the Arctic ice-cap could provide the first climate “tipping point”.

Geoffrey Lean, DT environment columnist

Internet 2020

There are now three times more mobile phone subscribers than internet users. In the decade ahead, mobile and web will collide to fulfil the promise of technology: helping people help themselves. The open exchange of information will lead to a more informed, engaged, and more empathetic global citizenry.

Biz Stone, founder, Twitter

- Immersive technologies replaces screen
- Gene editing will become common
- Biofacturing – growing organs and skyscrapers; impossible?’
- Advertisers will find clever ways to influence your behavior
- The age of implantables

2030

What will 2030 look like (WEForum)

2020 - 2030

What would someone from the early 1900s say?

Who would have thought…

Wider societal and global forces will place new demands on our education system

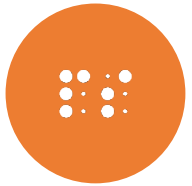
Rapid Technological Change and Disruption

Higher Public Expectations & Aspirations

Ageing population & falling cohort sizes

Economic Weight Shifts to Asia

Inequality and Mobility - a Growing Concern



More Diverse Society, with More Diverse Needs (e.g. SEN)

Sustainability

Education for sustainable development

By 2030,

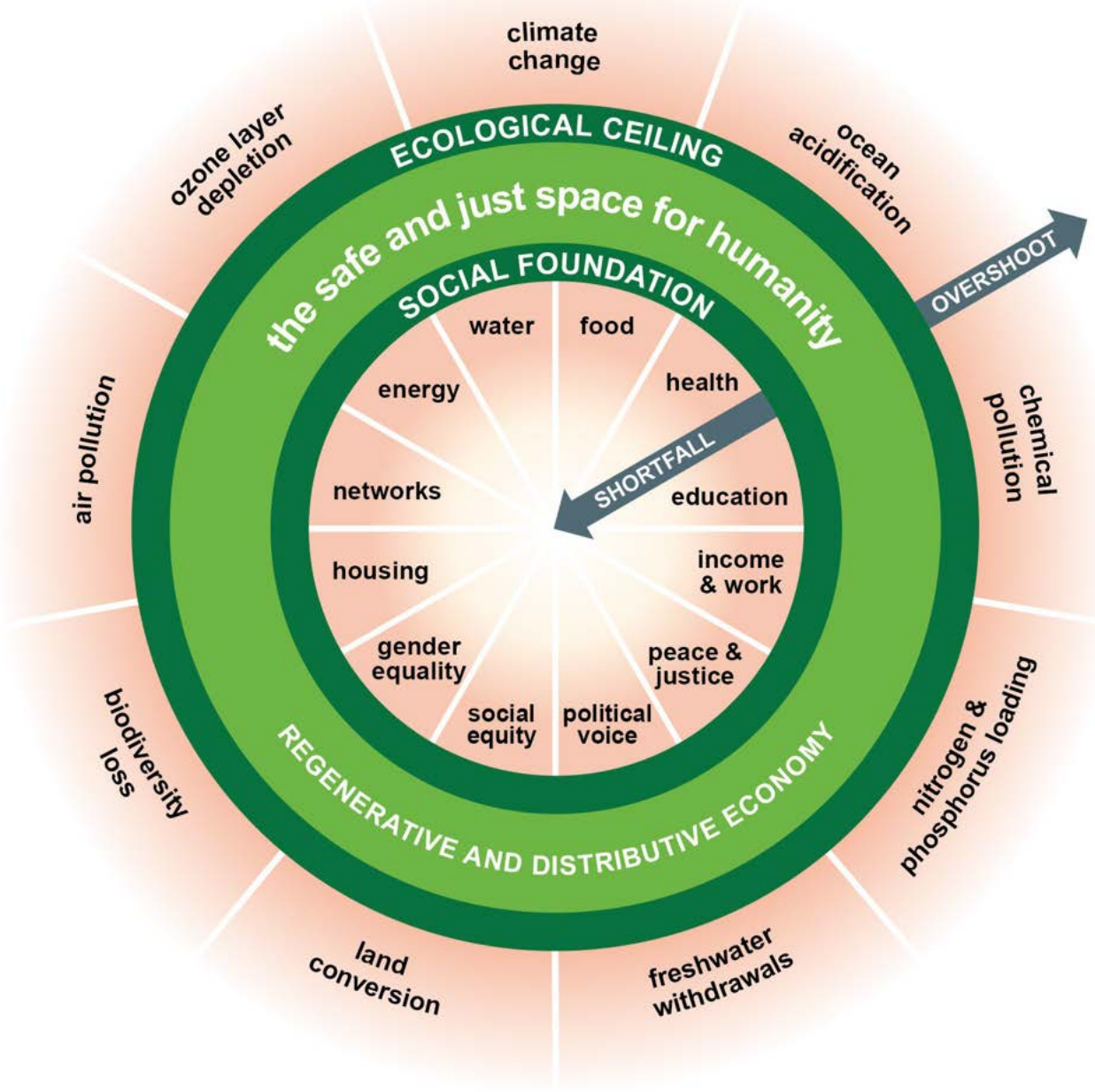
- ensure that all learners acquire the **knowledge** and **skills** needed to promote **sustainable development**, including, among others,
- through education for sustainable development and sustainable **lifestyles**, human **rights**, gender **equality**,
- promotion of a culture of **peace** and non-violence, global **citizenship** and
- appreciation of cultural **diversity** and of culture's contribution to sustainable development.

See: https://en.unesco.org/education2030-sdg4/targets


OECD LEARNING COMPASS 2030
Action
Transformative competencies
Core foundations
Knowledge
Creating new value
Attitudes
Competencies
Values
Skills
Taking responsibility
Reconciling tensions & dilemmas
Anticipation
Reflection
Co-agency with peers, teachers, parents, communities
Well-being 2030
Student agency
OECD

OECD 2030

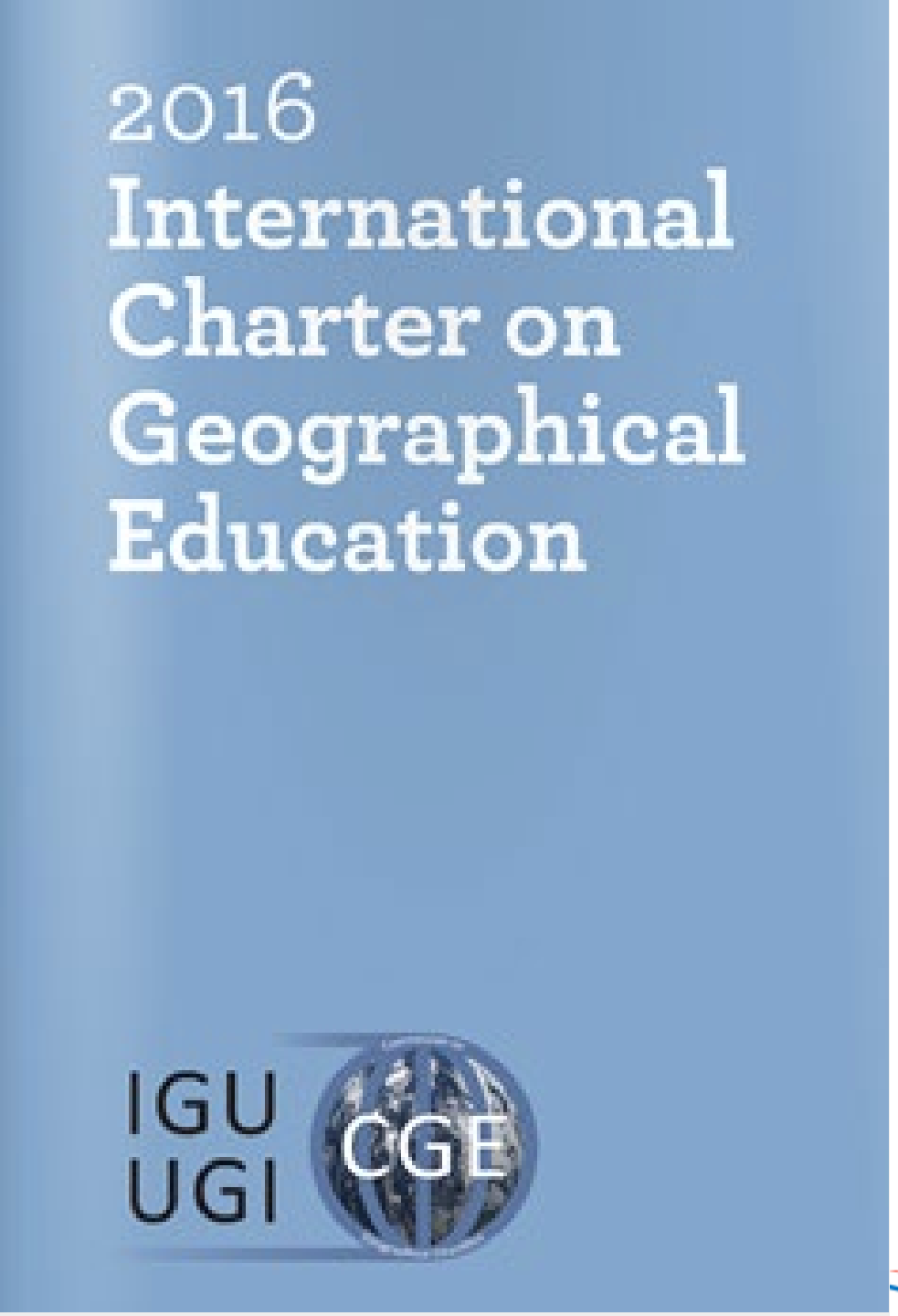
- When students are agents in their learning, they are more likely to have “learned how to learn” – an invaluable skill that they can use throughout their lives.


climate change
ozone layer depletion
ocean acidification
chemical pollution
nitrogen & phosphorus loading
freshwater withdrawals
land conversion
biodiversity loss
air pollution
ECOLOGICAL CEILING
the safe and just space for humanity
SOCIAL FOUNDATION
OVERSHOOT
SHORTFALL
water
food
health
education
income & work
peace & justice
political voice
social equity
gender equality
housing
networks
energy
REGENERATIVE AND DISTRIBUTIVE ECONOMY

Social Studies

Knowledge and Curriculum

- A child in a future-ready curriculum should **engage** the information he or she encounters within the contextual understanding of school knowledge and be able to ask **critical questions** that will develop **deeper understanding** an issue (Young, Lambert, Roberts & Roberts, 2014).



Insights from Geography Education

- Geography is … a vital subject and resource for 21st century citizens living in a **tightly interconnected world**. It enables us to face questions of what it means to live **sustainably** in this world.
- Geographically educated individuals understand human relationships and their responsibilities to both the natural environment and to others. Geographical education helps people learn how to **exist harmoniously** with all living species.
- Building on people's own experiences, learning geography helps them to formulate questions, develop their intellectual skills and **respond to issues** affecting their lives.

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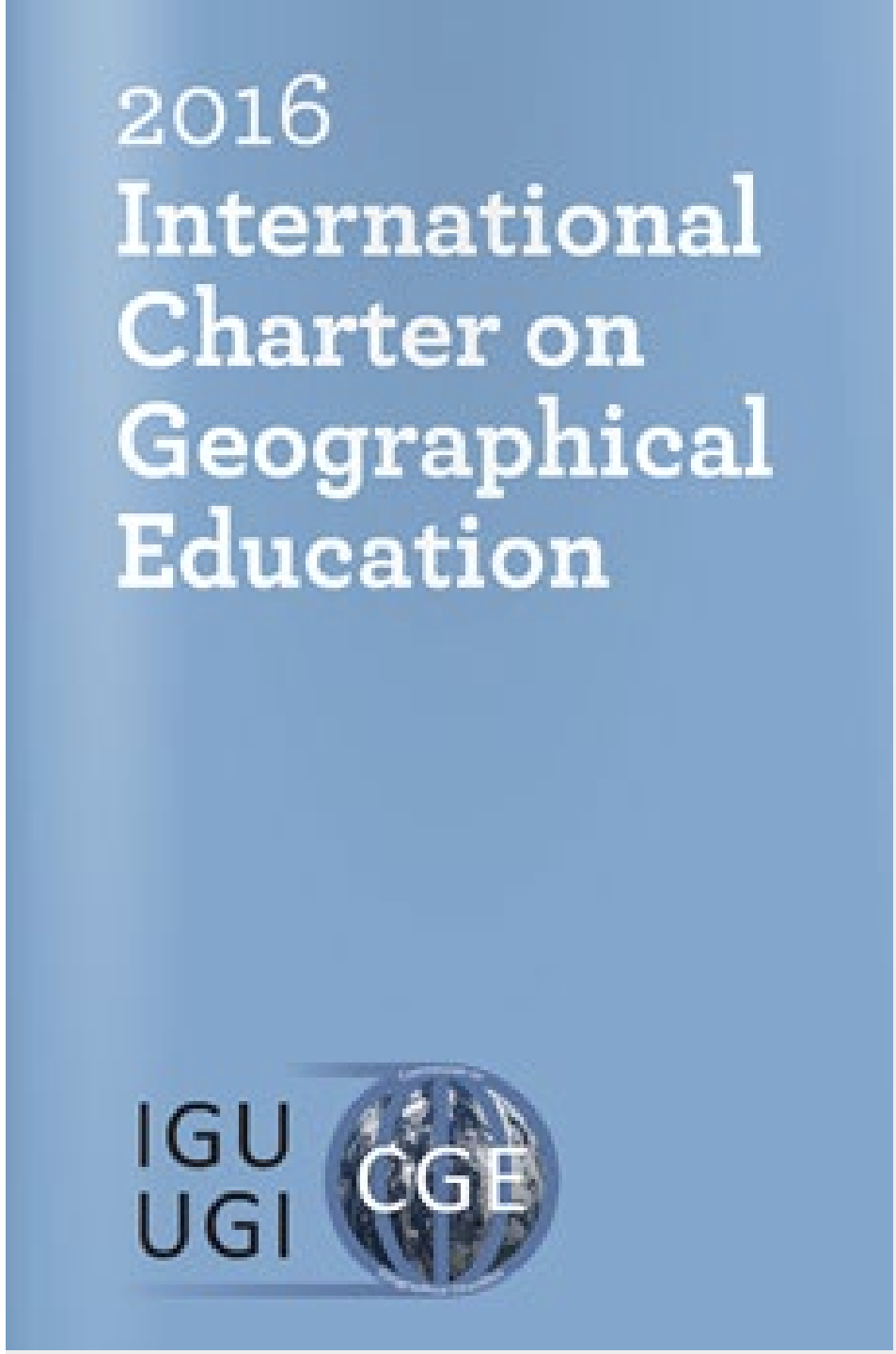
2016 CGE CHARTER

- geographical education is indispensable to the development of **responsible** and **active** citizens in the present and future world.
- geography can be an informing, enabling and stimulating subject at all levels in education, and contributes to a lifelong enjoyment and **understanding** of our world.



2016 CGE CHARTER

- Geographical perspectives help deepen understanding of many contemporary challenges such as **climate change**, **food security**, energy choices, overexploitation of natural resources and urbanization.

Geography Knowledge

- “new ways of thinking about the world.”
- powerful ways of analysing, explaining and understanding.
- gives students some power over their own geographical knowledge.
- enables young people to follow and participate in debates on significant local, national and global issues.
- Knowledge of the world

- A. Maude （2017）

Capabilities

- “individuals’ capability of achieving the kind of lives they have reason to value”

- “A person’s capability to live a good life is defined in terms of the set of valuable ‘beings and doings’ like being in good health or having loving relationships with others to which they have real access.”

GeoCapabilities
(Solem, Lambert & Tani, 2013)

Promotes individual autonomy and freedom to think and reason.

Identify and exercise life choices with regard to citizenship and sustainability.

Understanding the creative and productive potential in the context of culture and world economy.

GeoCapabilities

- “Without geography education young people would not be able to understand or even question their position in the world”
  - Who are the children we teach?
  - What do the children need to be fully educated in this day and age?
  - How can teaching geography contribute to the education of young people?

Education provides children with knowledge, skills and understandings so that they can function in society. These functionalities empower them with capabilities.

The 21st century world

- volatility, uncertainty, complexity and ambiguity
- **volume** and **velocity** of change and the **variability** in impact these changes bring, both to the environment and society
- Challenges to sustainability

Education for 21st Century

- *Learning: The Treasure Within*, commonly referred to as the 'Delors Report' of 1996
- report to UNESCO of the International Commission on Education for the 21st Century

Premises and outlooks

From the **local** community to a **world** society

From social **cohesion** to **democratic** participation

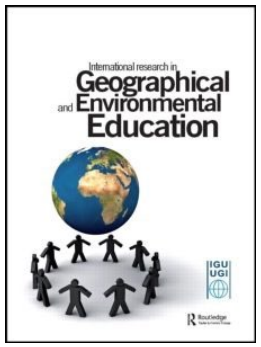
From economic **growth** to human **development**

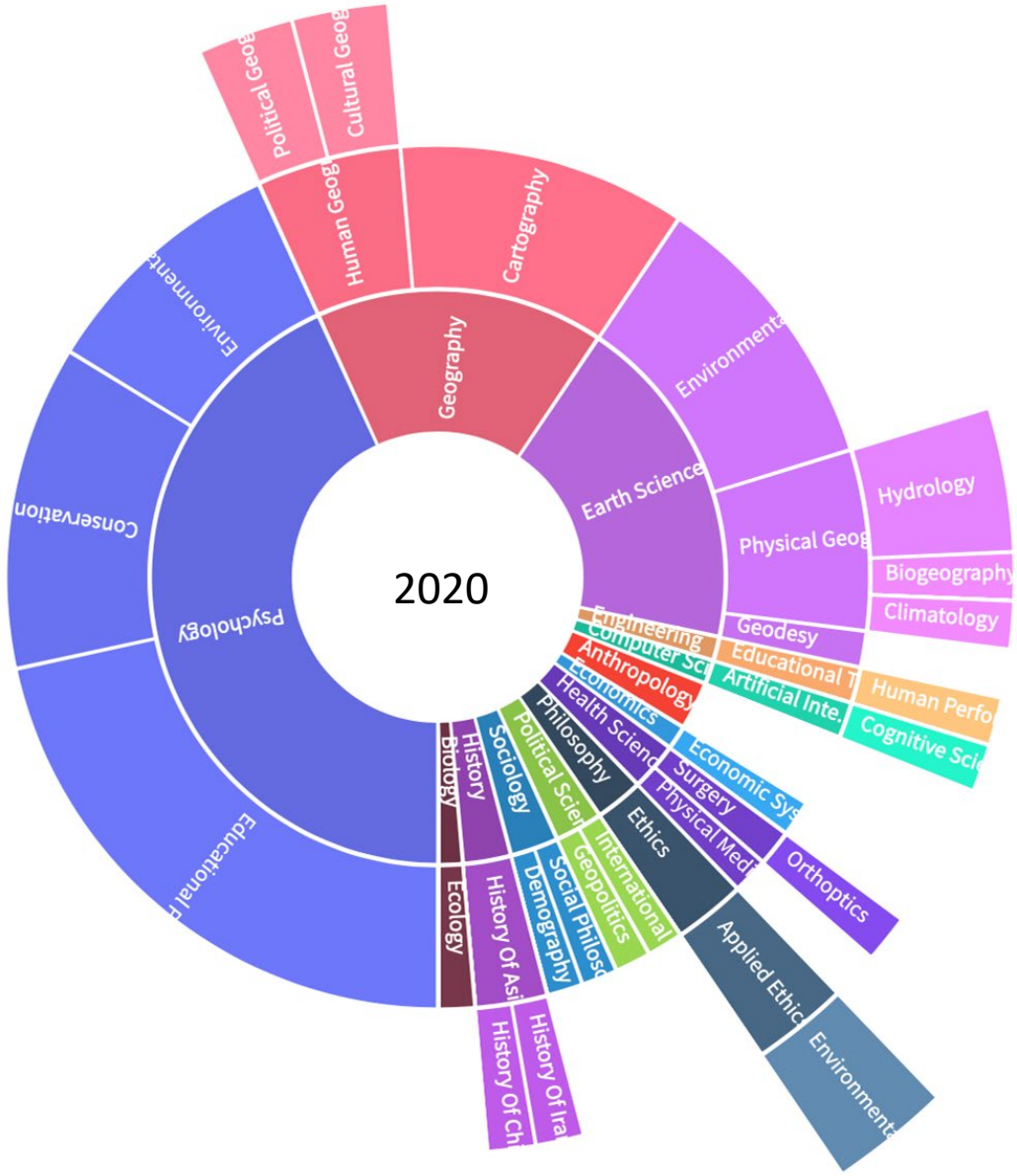
4 paradigms

- Learning to **know**
- Learning to **do**
    - From skill to competence
    - the ‘dematerialisation’ of work and the rise of the service sector
    - work in the informal economy
- Learning to **be**
- Learning to **live together**
    - discovering others
    - working towards common objectives

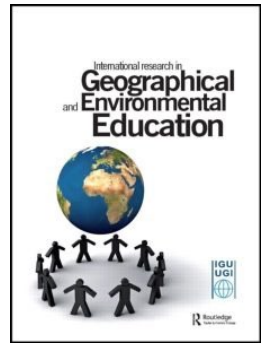
Outlook in Geographical and Environmental Education

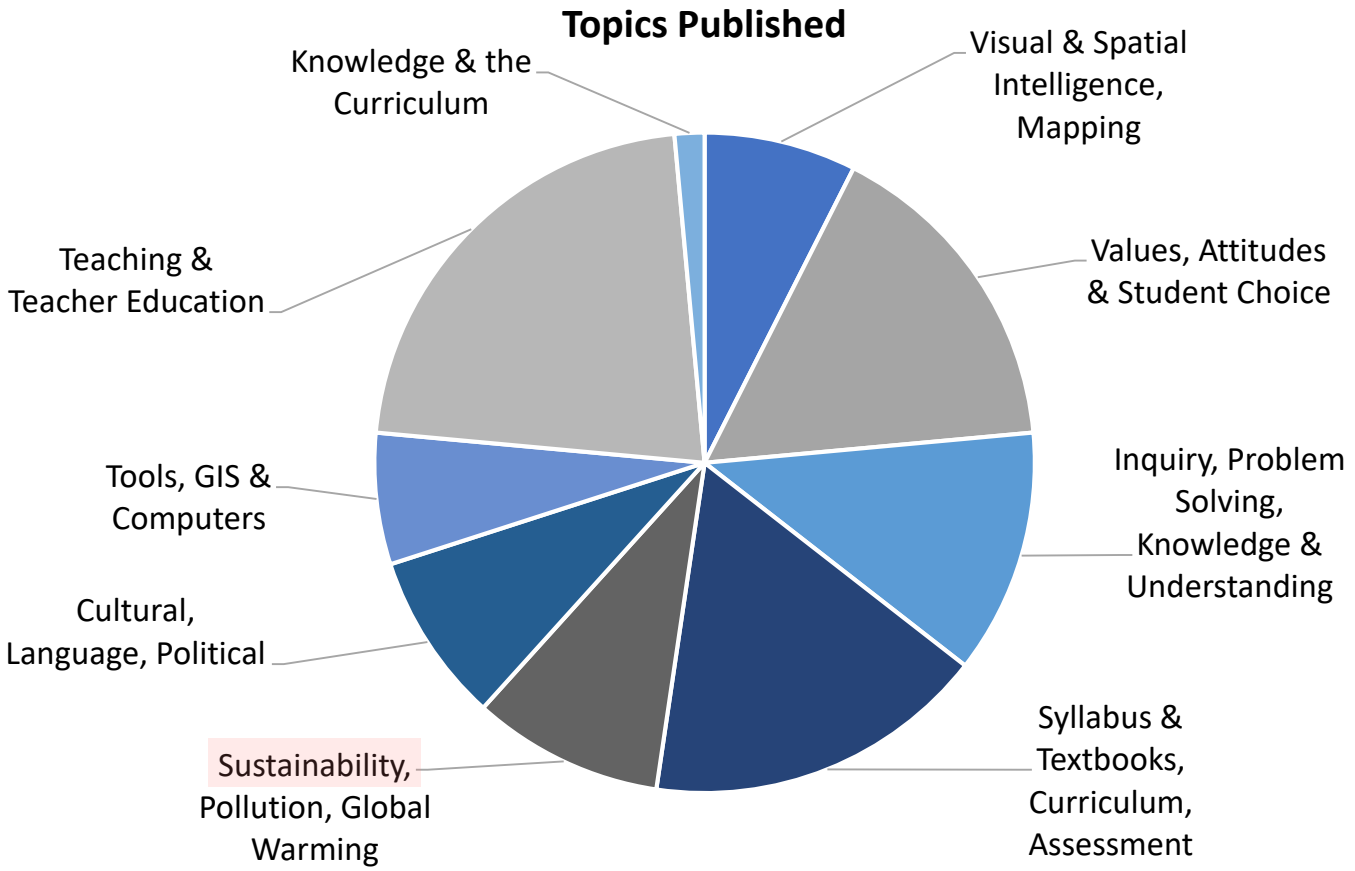
International Research in Geographical and Environmental Education (IRGEE)





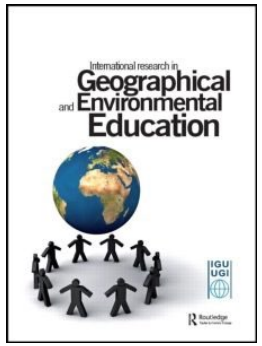
IRGEE 1992 - 2017

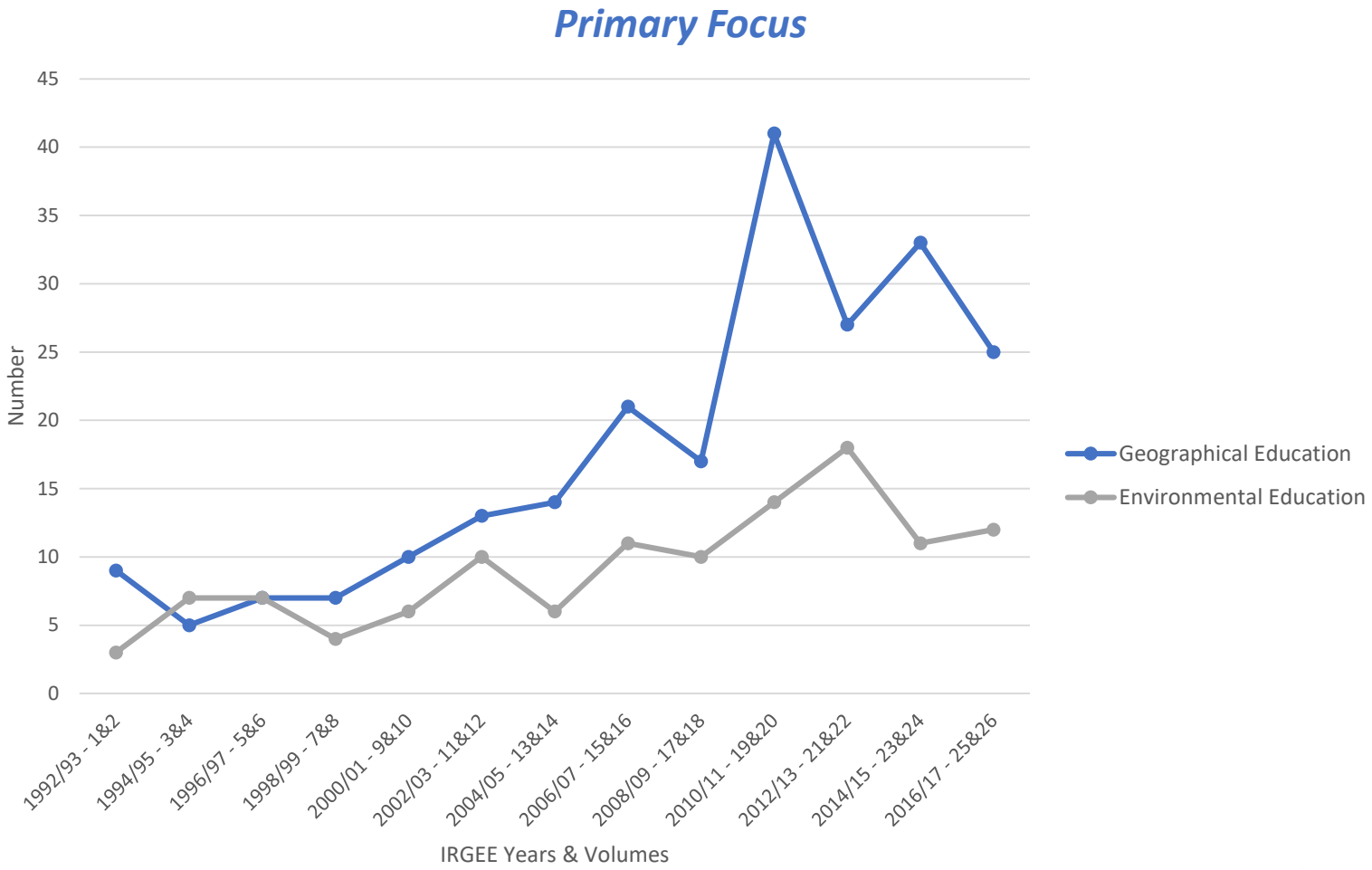




Kidman and Chang (2017)

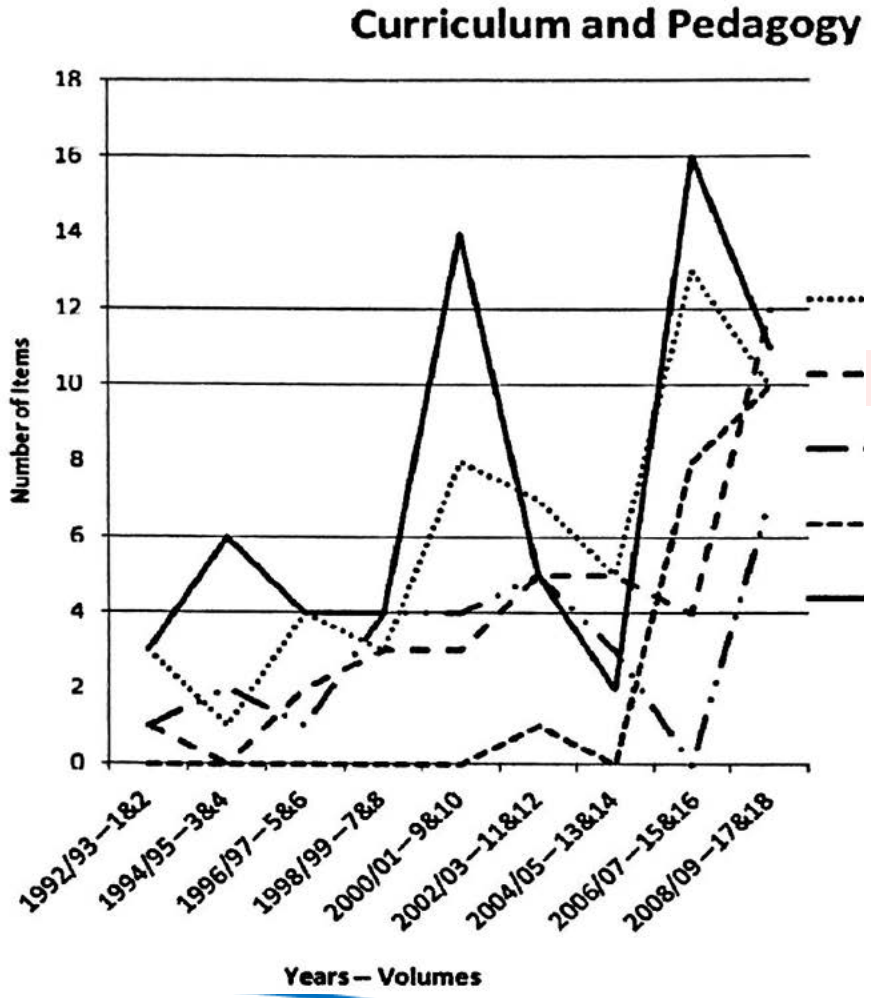
IRGEE 1992 - 2017





Kidman and Chang (2017)

IRGEE 1992 - 2009



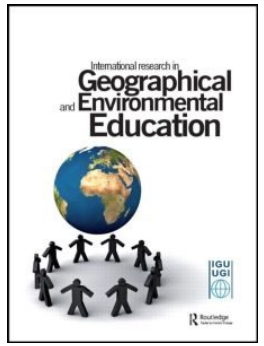
Syllabus and textbooks, Curriculum, Assessment

Sustainability, Pollution, Global Warming

Cultural, Language, Political

Tools, GIS and Computers

Teaching and Teacher Education



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What does a sustainable future look like?

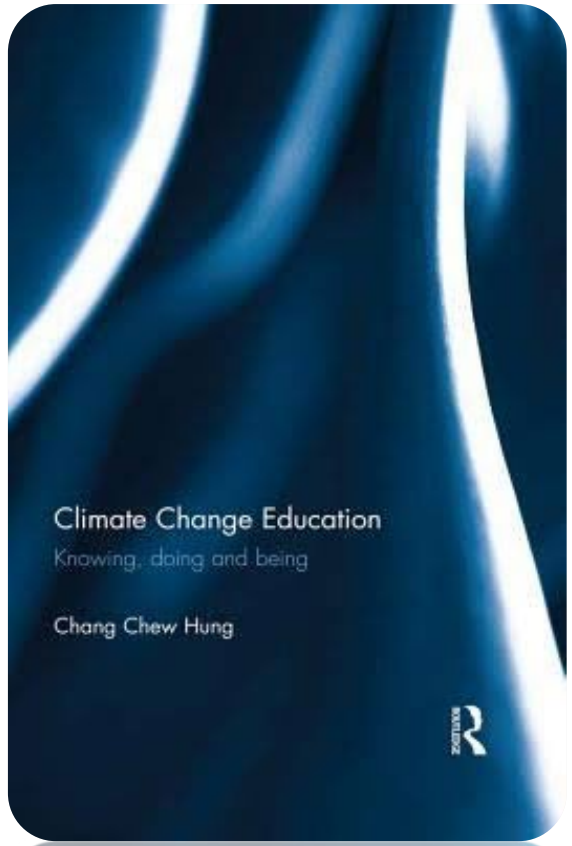
What does a sustainable future look like?

Climate Change

- Climate change as a **very serious problem**, but the issue is neither among people's top concern nor of personal relevance (Adger et al., 2009; Leiserowitz, 2005; Patchen, 2006).
- It is an **"others" problem** that does not affect their lives. Eg, they don't link climate-related events to extreme weather phenomenon (Whitmarsh, Lorenzoni, & O'Neill, 2012).
- As a global issue, extensive media coverage on climate change has left individuals wondering what they can or cannot do and whether it is the state's responsibility to manage climate change. **Whose job is it**?

Learning about Climate Change

- A critical **life** skill?
- High awareness, **low understanding**
- Shallow **comprehension** and the growth of chronic **apathy**
- **Teacher as curriculum maker** crucial in engaging students through geographical thinking



Chang, C.H. (2014). *Climate change education:* ***Knowing, doing and being***. Routledge.

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Learning to know

- Public understanding about climate change remains **flawed** and limited despite heightening general awareness
- Among the concepts most commonly identified and misunderstood, are global warming (Henry, 2000; McBean & Hengeveld, 2000) and the greenhouse effect (Pruneau, Liboiron, Vrain, Gravel, Bourque, & Langis, 2001; Bord, O'Connor, & Fisher, 2000).

What teachers thought students knew

- Several studies show that students' knowledge of climate change found **similar issues as the general public** (see Gowda, Fox & Magelky, 1997; Lee, Lester, Ma, Lambert & Jean-Baptiste, 2007; Cordero, Todd & Abellera, 2008; Hansen, 2010; Francis, Boyes, Qualter & Stanisstreet, 1993; Daniel Stanisstreet, & Boyes, 2007; Koulaidis & Christidou, 1999; Andersson & Wallin, 2000; Kilinc, 2008).
- As Bord et al. (2000) assert, **accurate knowledge precedes sensible decision-making** and purposeful action.

‘The hole in the sky is causing global warming’

- Example of misconceptions:
  - Greenhouse gases form a layer that becomes thicker as humans release excessive amounts of CO2 into the atmosphere, enhancing the greenhouse effect
  - The Ozone is depleted due to pollutants. This leads to global warming.
  - CFCs as main culprits. Since CFCs are no longer in use, the world is safe from global warming

It is difficult to engage people to **DO**!

There were results

- The 173 participating households in an intervention study made an average **saving of $5.60 a month** in their utility bills as compared to the participants in the control group. This difference was statistically significant, t(171)=3.2665, P<0.01

Savings in dollars and cents

- Avg household utility bill is $75,
- 5.6/75 = 7% reduction in avg utility bill

- 1,263,600 households (DoSS, 2016)
- Est savings of $7,076,160 per month

Savings in electricity (kWh)

- Tariff $0.195 per kwh
- $5.60 savings is about 28.7 kWh saved

- 1,263,600 households (DoSS, 2016)
- Est savings of 36.3 gWh per month

- 1 bolt of lightning = 2.5 gWh

Opinion and Beliefs	Control (n=95)			Experimental (n=78)		
	Pre	Post	Diff	Pre	Post	Diff
One person can make a difference	47.4%	71.6%	**24.2% (23)**	56.4%	78.2%	**21.8% (17)**
Climate conscious behaviour will not affect the quality of life	54.7%	49.5%	**-5.3% (5)**	55.1%	79.5%	**24.4% (19)**

Learning to **BE**

Best practices highlight the importance of collaborative, whole-school approach

Do not forget the Joy of Learning

The elephant and 6 visually challenged people

Singapore – a Sustainable City?

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Thank You

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