

# INTERNATIONAL BASELINE STUDY OF STUDENTS' KNOWLEDGE AND BELIEFS ABOUT CLIMATE CHANGE

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# Purpose of study

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*“Climate change is the greatest public policy issue of our time. If humanity is to respond to the challenges, education has a key role to play in promoting understanding and helping individuals, society and governments to make informed choices.”*

(International Network of Educational Institutions, 2009)

# Mind the gap!

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## Previous work:

- Knowledge gaps,
- Students' attitudes and belief
  
- Small scale or country specific
- Focus on environmental education rather than climate change

# Closing the gap!

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- Baseline study of knowledge AND beliefs
- Multi-national
- Focused on climate change

# Research Questions

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1. What do students know about climate change?
  - a. What do they know about the science of climate change?
  - b. What do they know about the management strategies for climate change?
  - c. What do they know about the debates within climate change?
2. What are students' beliefs about climate change?

# Phase 1

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## Literature Scan

### Countries included:

- Australia
- China
- Greece
- Iran
- Malaysia
- Norway
- Singapore
- Spain
- Sweden
- Turkey
- United Kingdom
- United States of America

# Phase 2

## Knowledge dimensions

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### Causes of global warming

- types of and relative contribution of greenhouse gases
- mechanism and processes of the greenhouse effect

### Distinction between climate change and global warming.

### Effects of climate change

- Impact on the physical and human environment
- Scale and variation in space and time

# Causes of global warming

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## Greenhouse Gases and their relative contributions

- distinguish between the Greenhouse Warming Potential (GWP) and the relative contribution.
- For instance, CFCs have high GWP but CO<sub>2</sub> and H<sub>2</sub>O are the key contributors (>95%) of global warming.
- Gases include CO<sub>2</sub>, H<sub>2</sub>O (g), Natural Gas, Methane, CFCs.



# Distinction between climate change and global warming

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Difference between climate change and global warming as well as the ability to tell the difference between weather and climate.

# For example ...

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When we examine the earth's climate history, climate change refers to

- \_\_\_\_\_.
- A. Global warming
  - B. Global cooling
  - C. Neither A nor B
  - D. Both A and B

The reason for my answer is:

- a. The earth's temperature has been increasing due to human activity
- b. The earth's temperature has been both warmer and colder than now
- c. The earth's temperature tends to be lower due to human activity
- d. Others: \_\_\_\_\_

# Impact of climate change

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## Including ...

- Hydrosphere
- Atmosphere
- Cryosphere
- Lithosphere
- Economy
- Society
- Culture

# Belief dimensions

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## Values and Attitudes:

- About climate change
  - Causes and consequences
- Certainty of knowledge
- Trust

## Behavioural intentions:

- Responsibility

## Behaviours:

- Engagement and agency

(Adapted from ICCS 2009 International Report)

# Values and attitudes

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Fundamental beliefs about climate change; more constant over time, more deeply rooted, and broader than attitudes.

Self-cognitions related to climate change, attitudes toward the rights and responsibilities of individuals and groups in society, and attitudes toward institutions.

# For example ...

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Attitudes towards climate change:

“Climate change is an important issue to me.”

“I feel personally responsible for dealing with climate change.”

“My government should take more action to limit climate change”

- Using ... Likert scales, ranking

# Behavioural intentions

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Expectations of future action, such as preparedness to participate in forms of environmental protest and anticipated future participation in climate change-related activities.

Possible activities: Contacting an elected representative, taking part in a peaceful climate change march or rally, changing personal behavior

# Behaviours

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Participation individually, through school or wider community

Items asking students to state when they had participated in different environmental organizations or activities



# Plus ... Context summaries

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## National/State policies and discourses

- Climate change
- Education about climate change

## Previous exposure

- Curriculum
- Media
- Society

# Our next steps

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- Development of a framework:
  - Context summary
  - Survey of students
    - Knowledge dimensions
    - Belief dimensions
- Development of the research instruments
- Prepare context summaries
- Pilot test the survey