Round table: Educational resources and climate change

Co-organised by IARTEM and Circle U Knowledge Hub on Climate

Université Paris Cité

Co-funded by the Erasmus+ and Horizon Europe programmes of the European Union.
About Circle U.

Knowledge Hubs:
- **Climate**
- **Global Health**
- **Democracy**
Programme

• Yacine Boufkhad, Paris Cité University. Sensors networks for energy monitoring in educational buildings
• Marnik Vanclooster, UC Louvain. Water, agriculture and food security
• Yoko Mochizuki, Paris Cité University. Interrogating educational responses to climate crisis: Reimagining climate change education in the Anthropocene
• Marcel Robischon, Humboldt Universität Berlin, Agroecology place- and object-based approaches and narrative forms in education for sustainable development
• Wendy Morel, Humboldt Universität Berlin, Solution oriented teaching and engagement - The Handprint Initiative

Debates
The Integration of Climate Change Issues into Educational Activities

Talking about Climate Change without talking about Climate Change

Yacine Boufkhad
Sencing, Measuring, Collecting data

Fig.1 : L'architecture du réseau de capteurs multi-physiques qui seront déployés sur le bâtiment IUT Pajol
Measuring Carbon Dioxide concentration in everyday life
An example...

- To verify a $\text{CO}_2$ sensor. Is the value it gives outdoor correct? What is a good value? (few students know this)

- We look it up on the internet... We find a value, but be careful, we need to check the date... Was it the current value or the value ten years ago? Sixty years ago? 60 years ago the concentration was 25% lower.

The increase in greenhouse gases in the atmosphere is a concrete measurable reality.
A concrete reality...

- In a world where information flows abundantly, too much information tends to kill information. Climate change tends to become a trivial topic.
- Add to this the conspiracy theories developing around the subject.
- Often advocates of climate change present things in a moralistic way.
- Being able to concretely measure what we are talking about, even just a small part of it, allows us to be already in action rather than passively receiving moral lessons.
Facing climate and societal change:

Concepts for designing, sharing, and using educational resources in traditional and new subjects in compulsory and higher education

*Educational resources supporting advanced water resources agency*

29–31 May 2024, Paris

M. Vanclooster, UCLouvain – Earth and Life Institute
Chair, Climate Knowledge Hub
How humans can build a climate resilient world

- Capacity building
- Training - education
- Research Innovation
Climate change: It’s all about water
Yes, there is scope for a technical narrative
Rescif MOOC resources
https://www.rescif.net/en/projects/moocs/
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Interrogating educational responses to climate crisis: Reimagining climate change education in the Anthropocene

Yoko Mochizuki, EDA, Université Paris Cité
Audrey Bryan, Dublin City University
What is invisibilised, obscured or neglected within dominant framings of climate change education?

• Where does each of the panel presentations fit in the five narratives of the Anthropocene?
• How is the learner conceptualized in climate change education and more broadly in education for sustainable development?
Five narratives of the Anthropocene (Dürbeck 2019)

1. The disaster narrative
2. The court narrative
3. The Great Transformation narrative
4. The (bio-)technological narrative
5. The reflexively oriented interdependency narrative
If we see climate change as the failure of the “modern Baconian project” which has upheld the human subject capable of controlling “nature”, what constitutes meaningful social – including educational – responses to the climate crisis?
Rethinking education

**Education orthodoxies**

- Colonial, individualistic, learner-centered, developmentalist orthodoxies
- Anthropocentric understandings of humans as unique, separate or separable from nature, and as inherently superior to other species or elements
- An understanding of agency as a capacity that individuals possess

**Towards interdependence narratives**

- A more relational approach that problematizes modernist hierarchies of being and destabilizes human-centric orthodoxies
- New ways of understanding and imagining the complex entanglements of the human and nonhuman
- Humanity as part of multispecies agential networks, calling into question the dichotomy of humans as subject and nature as object, blurring nature-culture dichotomies, and putting forward the concept of distributed and multispecies agency
Place- and object-based experience and narrative forms as a means to foster epistemic curiosity.
Enquiry-learning uses place, employs objects or explores the power of narrative forms.
Enquiry-learning uses **place**, employs **objects** or explores the power of narrative forms.
Place-based and object-based learning

Sensory Education ... Trains sensory observation and the senses

Explorative forms of learning and teaching

Narrative forms of teaching and learning

Outdoor learning

Research-based learning - fosters competencies of research by doing research
Object-based Learning - plants invite sensory exploration

- olfactory
- gustatory
- haptic
- acoustic
- visual

Decaisnea fargesii (Lardizabalaceae) „Dead man’s finger“, „Mau shi gua“
Object-based Learning -
the plant kingdom abounds in illustrative examples

- striking morphological and physiological adaptations
- novelty may trigger epistemic curiosity
- engagement with an unusual plant may lead to new hypotheses
Asimina triloba
Ectopistes migratorius
Ectopistes migratorius
The Passenger Pigeon

We were counted not in thousands, nor millions.

Billions we were, numerous as the stars in the sky.

As grains of sand at the sea, as the buffalo on the prairie.

When we burst into flight we so filled the sky
That the sun was darkened and day became night.

Humbled was the sun we were!

The world inconceivable without us.

Yet it's 1914, and here I am

Alone caged in the Cincinnati Zoo.

J. Patrick Lewis

From The Silver Palace Restaurant (MOUP, 2005)
Work in progress...
we aim to explore further forms of place-, object- and narrative- centered forms of learning and teaching and their effect on ‘epistemic curiosity’.
Sharp decline in children reading for pleasure, survey finds

Modern life means children miss out on reading a good book

Teachers in UK report growing ‘vocabulary deficiency’

Problem exists throughout primary and secondary school, leading to lower self-esteem and negative behaviour

Reading at Risk presents the results from the literature segment of a large-scale survey, the Survey of Public Participation in the Arts, conducted by the Census Bureau in 2002 at the request of the National Endowment for the Arts. This survey investigated the percentage and numbers of adults, age 18 and over, who participate in various arts-related activities, such as attending concerts, museums, or theatres. The survey sample included approximately 1,000 individuals, representing the most comprehensive and accurate measure of arts consumption in the United States.

10 Key Findings

Decline in Literary Reading

<table>
<thead>
<tr>
<th>Year</th>
<th>% of U.S. Adult Population Reading Literature</th>
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<tbody>
<tr>
<td>1992</td>
<td>56.0</td>
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<tr>
<td>1992</td>
<td>54.0</td>
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<tr>
<td>2002</td>
<td>48.7</td>
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</tbody>
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1. The percentage of adult Americans reading literature has dropped dramatically over the past 20 years.
2. Less than half of the adult American population now reads literature.
3. The 10 percentage point decline in literary reading represents a loss of 20 million potential readers.
4. Only the strong growth in overall U.S. population of nearly 40 million adults from 1992 to 2002 allowed the actual number of readers to remain flat at 96 million.

Literary fiction in crisis as sales drop dramatically, Arts Council England reports

New figures show that few readers re-read books, as ACE blames falling

Fewer than half of readers finished bestselling novels

Having a bestselling novel is no guarantee it will actually be read, according to a study

In Buchstaben fehlt der Sinn

Feuerbuchstaben - Feuilleton

PUBLISHING
The Riddle of the Voodoo Tree: An Ecological Thinking, Using the Example of the Honey Locust (Gleditsia triacanthos) 

Honey Locust (Gleditsia triacanthos) 

Object-based learning is an approach that aims to foster observational skills and sensing awareness. Paradoxical plant objects, that do not lend themselves to all-too-easy explanations and interpretations, can be used to practice the search for ecological explanations and the formation of evolutionary hypotheses. They can be the basis of particularly fruitful and rewarding learning experiences. Gleditsia triacanthos, the honey locust, is a commonly planted ornamental tree. It exhibits striking structures of defense against—and fruit that point to a mutualism with large animals. These structures, possibly developed in coevolution with Pleistocene faunas, invite a discussion of the complex, neither fully antagonistic nor fully mutualistic, relationships between plants and animals.

Keywords: Gleditsia triacanthos, honey locust, ecological thinking, systems thinking, plant defense structures, extinct megaherbivores, plant-herbivore interactions
The Handprint Initiative

Wendy Quetzal Morel Schramm
Humboldt University - Agricultural ecology

Visit www.thehandprintinitiative.org
MEXICO
MEXICO
Two visions, one reality
It all starts with...

Perception

Value

Attitude

Favorable or unfavorable beliefs, affect, and behavioural intentions towards environmentally related activities or issues (Gifford & Sussman, 2012; Macías Zambrano L. H., 2017; Schultz et al., 2004)
The world is about to end... and it's your fault

- We are born with an environmental debt
- Leanerd hopelessness (Nagel, 2005)
- Apathy, one of the largest barriers of education, ("So why should I care?")
- Perspective about the future contributes to the actions and meaning we give to our present (Bell, cited in Schreiner & Sjøberg, 2004)
Their eyes...

...their future
The Handprint Initiative

Learning in and with the world

Development of the key competences for sustainability

Overcome limitations of other approaches
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