Experiential geoethical learning

Qs

?? First experience that
- endeared you to, or
- got you hooked on
- "geo-stuff" (geosciences, environment, oceans, sustainability, ...)

Mountains?
- Walking?
- Skiing?
- Beauty, majesty?
- ...?

Sea?
- Sailing?
- Diving?
- ...?

Travel?
- Discovery?
- Cultures?
- ...?

Injecting learning experience into geoethics for human & natural sustainability

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Warm thanks to Giuseppe Di Capua, Silvia Peppoloni, Nic Bilham, Eduardo Marone, Marie Chamire, Tony Mayer

Ideals, learning, geoethics

**Plan**
- Ideals, planetary pbs, experiential learning
- Becoming geo-ethical through experiential learning
- The experiential learning cycle & examples from simulation/gaming
- New journal

**Ideal**
- Geoethics, sustainability, CC, etc → in:
  - Every single class in the world
    - Primary → tertiary → professional training
    - All teachers have an ethical obligation to incl geo-dimensions
  - Should not be difficult ...
  - Annotated biblio: International Society for Environmental Ethics
  - (2008), N° of pages 1888 x 9 refs / page = nearly 18k refs
- Every media
  - Newspaper, TV programme, news broadcast, social network, ...
  - Every hotel, station, airport, airline, supermarket, ...
- Bring up all people to behave geoethically, to love & respect their environment
- Vote for politicians who put the environment first

**Experience & planetary pbs**

**GEOETHICS AND THE IAPG NETWORK**
- **THE ROLE**
  - Geoscientists can promote a culture sensitive to the environment, a correct information on natural risks, a more constructive relationship among scientific community, mass media, civil society and policy-makers.
  - Geoscientists can persuade people that geo-resources and geo-environment constitute a common heritage, to be considered as a cultural, educational and scientific value, as well as a social capital.

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“Active planet” needs Active learning

- If people were as active in learning to respect the planet as they are in plundering it, we would not have arrived at 400+ ppm for CO2

So the means & solutions need to be huge

Massive, world-wide adoption of geo-ethical principles, practices, life-styles, ethos, in all areas – later slides

- Climate change
- Dwindling resources
- Carrying capacity
- Pollution
- Envir destruction
- etc etc etc

Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2°C global warming could be dangerous

James Hansen1, Malika Sathe1, Paul Hurley1, Rita Hurley1,2,3, Maxwell Kelley1,2, Valerie Masson-Deenat4, Gary Hamill1, George Fairbridge1,4, Jürgen Caro1,4, Kevin Rigo5,6,7, Judith Velazquez1,8, Blair Tannor1,9,和Kathy Donavan1,9,10, and Koaku Wai1,2,8,10

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Becoming geo-ethical:
Through experiential learning (or learning from experience)

- **Environment, experience, ethics, learning**
- **EGU, Vienna, 2016.**

**Education ≠ Learning**
- Focus on experiential learning
  - By experience, example, active learning, engagement
    - [Edu / Schooling:] Teachings, classes (desks, textbooks) ≠ prep for exams
    - Lip service; Disconnected; Inadequate
    - Ivory towers; Leads to little deep learning
- ... despite education
  - We can learn without edu
  - Result of edu is not always learning

**Goal of geoethical exper learning**
- Geo-experiential learning; GeoEthical experiential learning = inter-generational
- Help people (to learn how) to
  - create a culture of respect for the Earth
  - develop ethics, knowledge, skills, attitudes & behaviours for caring for the environment
  - enable humanity to bequeath a decent planet

  As they grow up (pass on to new generation), they will:
  - take care of their environment, for sake of offspring
  - fight to protect their environment
  - vote for people who protect
  - bring up their own kids to care & act with care

**Experience**
- Types / hierarchies of experience

**Long-term; inter-generational**
- ?? Feasible before
  - before collapse ?? or irreversible CC ?
- Despite the scale of the pb.

  - experiential learning holds some hope
    - if experience processed properly
    - if widely implemented
    - if researched & improved

**EGU, Vienna, 2016.**
Environment, experience, ethics, learning
Potentially beneficial learning experiences / events

Examples
- Learning, experiences, events
  - huge potential for learning geoethics
  - if correct content AND
  - if proper protocols & processing mechanisms?
- 3Ps
1. Examples of missed opportunities to learn
   - to learn a deeper geoethics
   - ...

‘Ordinary’ classes (2 examples)
- Agriculture courses
  - How many teach the necessity of
    - Low-carbon agriculture
    - Organic farming
    - Non-GMO (OGM)
      - (Given high agr contribution to CO2 emissions)
- Business courses
  - How many emphasize
    - Green industry, circular economy
    - Internships include sustainability (not CSR)
    - Alternative banking

Disasters
- Place?
  - Nepal
  - Indonesia (?)

Article about
“Thai flooding disaster of 2011 and how it affected the insurance industry”
- 5.2 M acres of agricultural land destroyed
- 4 M homes damaged or destroyed
- 7 industrial estates affected
- 13.6 M People affected
- 815 deaths

- N° of learning programmes ????
Environment, experience, ethics, learning.

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**Internships – what learning?**

**Diving: Geoethical learning?**

“All ... classes are videotaped for educational and review purposes only. ... it is invaluable for students to visually focus on their individual in-water skills, situational awareness, communication, and team diving.”

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**In all subjects, areas & activities**

- Learn envir, geoethics & sustainability
  - in ALL subjects

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**Colo de vacances, activity holidays**

Old castle, falling into ruin
- campus of U of Toulon

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**Actionable ideas 1**

- Subsidizing environmental-care summer schools for families and teachers at all levels
- Require cinemas to show envir films
- Require geoethics in:
  - Cruises
  - All classes
  - History
  - Maths
  - Diving
  - Exchange progs
  - ...
Environment, experience, ethics, learning.
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**Actionable ideas 2**
- Pressuring governments to make geoethics, environmental care and CC central / important **components** of all educational programmes (in, eg. history, language, business, law, medicine, maths, communication, physics, etc)
- Develop geoethical dimensions of **internships**, in all areas
- Design rich affective-cognitive **learning experiences** for grappling with geoethical problems- eg. FISH BANKS, KEEP COOL

**Processing / transforming experience**
- Dave Kolb

**Exper ≠ Learn: Take away msg**
- Learning objectives ≠ Experience objective
  - **Experience** objectives
    - **end** when experience ends
      - we do not learn in the experience (while the exper is under way)
    - **Learning** objectives
      - **start** when experience ends
        - we learn outside, in breaks in & after the experience
  - Experience & learning = 2 separate things
    - Implications for how:
      - we help people learn,
      - we understand results of experience

**Simulation, role-play, gaming**
- Example: FISHBANKS (Dennis Meadows)
- 2. Examples of valid geoethical learning experiences / events
  - All above experiences if done properly
- Examples from simulation
  - + debriefing
    - (processing experience to transform it into learning)
Environment, experience, ethics, learning.
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### Variables
- **Participant groups**: fishing companies
- **Computer calculates results**
- **Decisions each round**

### Systems dynamic model

![Stella Diagram Depicting Structure of Fish Banks Model](image)

**Figure 13**: STELLA Diagram Depicting Structure of Fish Banks Model

### Debrief

**Individual form**

- **(start)**

```
Ships
Catch
Fish
```

**Individual debriefing**

- **Name**: [Your name]
- **Fishing company**: [Company name]
- **Total catch per year**:
  - [File upload]

**Questions**

1. **What is the main challenge in this model?**
   - [Describe the main challenge]

2. **What is the most effective way to increase catch?**
   - [Describe the effective method]

3. **How well do you feel your company succeeded in the negotiations?**
   - [Rate your company's performance]

4. **What changes would you make to improve the model?**
   - [Suggest changes for improvement]

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"Companies want to make the most money without considering our environment."

"The world of tomorrow is put in peril because of irresponsible industry."

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18. **Real world. What analogies can you make with the real world?**
   - What other natural resource commons are being plundered in this way? What kinds of overshoot & collapse are we witnessing today? (overshoot-using resources faster than they can regenerate, going beyond the limits of sustainability). (examples: trees, alcohol, urbanisation, debt, water, soil, etc.)

   - **What about tomorrow?**
   - **What are the main dangers in your lifetime?**
   - **Communication between the enterprises aim to find a solution common for the good of all.**

   - The real world needs to be considered when designing solutions. The actions of enterprises touch not only the other enterprises but also the population. It’s vital that the consumers manifest the dangers caused by the enterprises.
"We realized that each decision must be thought through carefully and that, to save our planet, the most important thing is to communicate."

22. Your future. In what ways will this simulation experience and especially your heightened awareness of the issues, influence your future outlook and your future career?

Cela nous permet d'être plus sensible sur la question de respect de l'environnement ! On a prise conscience que chaque décision prise doit être soigneusement réfléchie et que pour sauver notre planète, la première chose à faire c'est de communiquer. Tous ceux qui ne respectent pas les accords doivent être sanctionnés.

Etant donné que nous allons bientôt insérer dans le monde professionnel, il faut qu'on se mobilise et qu'on instaure cette problématique concernant l'environnement à nos choix et décisions.

Figure 1: Successive ComMod cycles conducted in Mae Salaep, Chiang Mai.

Contribution of simulation and gaming to natural resource management issues: An introduction

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Cemagref, France
Christopher Le Page
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Keywords: benefits; context; collective policy design; decision making; ethical issues; implementation; natural resource management (NRM); simulation; gaming; social learning.
Environment, experience, ethics, learning.
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An evolving simulation/gaming process to facilitate adaptive watershed management in northern mountainous Thailand

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Chiang Mai University, Thailand
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The decentralization of natural resource management provides an opportunity for communities to increase their participation in related decision-making. Research should propose adapted methodologies enabling the numerous stakeholders of these complex sociotechnical settings to define their problems and identify agreed-on solutions. This article presents a companion modeling (ComMod) experiment combining role simulations and multi-stakeholder scenarios conducted in a community in northern Thailand to support collective learning.

Climate Change and Simulation/Gaming: Learning for Survival

David Crookall

Simulation+debriefing & CC

Climate Urgency

James E. Hansen

Abstract

This composite of two presentations by Dr. Hansen outlines crucial topics in climate research and implores our President to support and defend the rights of young people and future generations. Unless urgent actions are undertaken to curtail fossil fuel emissions, today’s children and future generations will inherit a world in which irreversible climate effects are underway and largely out of our control. The tragedy of this situation is that the actions needed to avoid climate problems are economically beneficial for most people—but they are resisted by a powerful fossil fuel industry that uses its financial clout for undue influence on our governments.

Pb for all geo-experiential learning

Climate Change and Four Goals for Operational Gaming

1. Ignorance about CC
2. Long time frame for action
3. Vested interests
4. Increasing demand for energy & resources

Dennis Meadows

Abstract

This foreword highlights the danger of runaway climate change. It outlines four obstacles that appear to prevent world society from adopting a positive approach to climate change: (a) global ignorance about the dynamics of climate change; (b) the long time frame needed for action to produce effective results; (c) the blocking power of the rich and powerful (those with vested interests in greenhouse gas industries); and (d) the ever-increasing worldwide demands for energy and resources. Gaming can be a powerful tool to help develop imaginations in the right direction.

Processing envir experience

- Must process the experience to transform it into learning
- Unethical, irresponsible & unprofessional not to do

Implications

- Introduce / emphasize geoethical dimensions in all areas of society (examples above)
- Develop protocols / methods for processing people’s geo-experience
- Require all ‘educators’ & society actors to learn the rudiments of experiential learning

New journal
Environment, experience, ethics, learning.
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How to share? know? disseminate?

New journal

- Journal of Environment, Experience, Learning
  - JEEL
- Journal of Environment, Experience, Ethics, Learning
  - JEEEL, 3EEL, triple E L
- Journal of Geoethics, Experience, Learning
  - JGEL

Article (paper) ideas

- “Citizen experience of the Nepalese earthquake and how we learned from it”
  - by a small group of (a) citizens who actually lived through the earthquake, and of (b) geomorphologists and geoethicists.
- “Adapting to a new life after Typhoon Haiyan (Yolanda): Ethical and practical Lesson for others”
  - by villagers and scientists.

“Comparing climate change models: Using critical review techniques for more reliable interpretation”

- by climate change modellers

“Companion modelling: How to help communities help themselves”

- by experts in role-play, agent-based modelling and local stakeholders

“Translating environmental internship experience into transferable learning”

- by a group of students shortly after the end of their internship

Communicating about water resource issues: A system dynamics-based gaming approach

- by a group of citizens, elected officials & water management educators

A game to explore the influence of managerial myopia in mismanaging renewable resources

- already published??

Review of experiential learning methods in geoethics and sustainability

- by educators & students

How the variety of participant experiences at COP21 resulted in learning and an agreement

- by attendees, negotiators & …

People’s experience of climate change in reality and in a simulation: Issues of fidelity and validity

- by …

Lived experience of negotiations on land rights: What methods for what results?

Ethical dimensions of NGOs experiences with resilience: What and how can they learn from each other?

Goals of new journal

Level 1 ➔

- Share best practice, knowledge & research
  - On experiential learning for geoethics
  - On how we learn from geo-experience
  - Similar to most journals

Level 2 (higher / deeper / meta) ➔

- Increase the use & effectiveness of environmental experience for geoethical learning
- Reinforce geoethical learning: Goal = it becomes
  - the central thread in all edu programmes
  - a part of every commercial activity
  - a real & prominent concern in all orgs
  - a condition for all political activity & policy decisions
I welcome expressions of interest in the journal
- editor, author, volunteer, copy editor, reviewer, advisor, fund raiser, disseminator, etc.

We have an ethical obligation – to science, ourselves, the earth and our offspring (future generations) – to help the planet’s passengers learn about geoethics and create a culture of geoethical caring.

Humanity urgently needs to learn how to navigate their own safety on spaceship earth.

Danke – DE
Gracias – ES
Merci – FR
Ευχαριστώ – GR
Sukria – IN
Grazie – IT
Arigato – JP
Terima kasih – MY
Spasibo – RU
Khop khun – TH
Ta – UK
etc

Thank you

crockall.consulting
or journal.eeld
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Final thoughts

For edu, read learning

Learning is experience.
Everything else is just information.
— Albert Einstein

Human history becomes more and more a race between education (learning) and catastrophe.
H.G. Wells, The Outline of History

[ Learning ]
“Education is the most powerful weapon which you can use to change the world.”
— Nelson Mandela

end / fin

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Environment, experience, ethics, learning