How mapping controversies can help students learn argumentation skills

Dominique BOULLIER
To learn in the XXth century
Cognition - memory

- Listen
- Read
- Obey
- Repeat

- Lecture
- Reference books
- Classroom and assigned places
- Exam Paper

- Audio asymmetrical
- Library
- Lists Rankings
- Dissertation
To learn in the XXIst century
Cognition-action

Contribute
Build
Debate
Explore

Collaborative videos and websites
Gaming
Realistic negotiations
Maps and datascapes

Video and web literacy
Serious game
Simulation
Mapping controversies
The main stakes of contemporary education

- Uncertainty
- Cooperation
- Creativity
- Publication skills and literacy
- Science and technology issues everywhere
- Learning by doing
Exploring controversies for educational purposes and for a media of dialogic democracy.
Looking for « society in the making »: controversies are everywhere
Looking for « society in the making »: controversies are everywhere
Photos prises par François Gemenne
Our challenges

- Provoke interest in scientific and technical knowledge is critical for political science
  - By getting involved into the issues
  - By accepting the uncertain and controversial status of scientific knowledge in-the-making

- Argumentation skills of various kinds are displayed by actors: does it help students enter into the scientific issues?
Situated argumentation (Lave, Suchman)

- No argument out of a situation:
  - made of actors, time/space properties, roles, history and equipment.

- Arguing to learn:
  - playing a role in a role game situation, in a debate (various forms) and in simulations (with goals to reach, such as agreements in negotiations)
What is at stake?

- To **embody an argument**, to personify or to display its full properties

Theater and public speaking in order to combine mind and body engagements, within dialogical situations = debates and simulations
Copenhague : ça s’est passé autrement !

Dépêche AFP, LeMonde.fr et vidéo

Du 6 au 10 juin, les étudiants de Sciences Po ont rejoué les négociations sur le climat qui, en 2009 à Copenhague, avaient abouti à un échec. À Sciences Po, un accord a été trouvé, non sans mal, à l’issue de plusieurs journées et d’une nuit de négociations. 18 États étaient représentés (contre 190 lors du véritable sommet). L’événement donnait aussi la parole aux ONG, au secteur privé et aux scientifiques. Et des “side events” étaient organisés en marge des négociations.

Lire l’article LeMonde.fr
Lire la dépêche AFP.
Distributed argumentation

- (cf. Ed Hutchins’ distributed cognition)

- No such thing as « a mind »:
  - always traces and external devices that help support the situation, the argument, that create resources to make people think and to make situations produce thought

- This is why we speak of « cartography of controversies ».
  - Mapping is an activity that produces traces, reflexivity, and can act as an argument
  - A rhetorical device, a cognitive technology (Goody), a manipulation of representations (Vigotsky)
Ground zero actors and topics map
Blogosphere topology of the French presidential campaign; to be crawled over time.
To learn by investigating arguments

- How to learn through argumentation, especially using « investigational capabilities » (Schwartz)
  - Requires a non scientist view of scientific activity
  - Requires the experience of decentration (Piaget, Perret-Clermont) of one’s beliefs through the exploration of others’ points of view (conflicting ones)
  - Explore and compare arguments and design the arena of an issue: no such a thing as an argument or a controversy without a focus on a specific issue. From « public opinion » to issue-specific publics (Lippmann)
Policies of exploration
(a cosmopolitical compass)

Uncertainty

Relativism

Detachment

Modernism

Cosmopolitics

Attachments

Tradition

Certainties
Cosmopoliticians require to adopt a point of view and to make other points of view coexist, confront and learn from each other.

Everything goes. Just display and navigate.

Modernist overhanging of conflicting arguments. Do not be affected.

Back to the traditional assessment of rhetorical protocols. Follow the rules.

Detachment

Uncertainty

Attachments

Certainties
What controversy mapping is made of

- Contextual evidence glossary
- Specific points of dissent
- Scientific literature analysis
- Public opinion and media coverage mapping
- Controversy timeline
- Table of actors and groups
- Representation of the various « cosmos » involved
a/ Contextual evidence glossary

- Points of agreement necessary for understanding the controversy (framing)
b/ Specific points of dissent

- Contemporary art exhibition in Versailles
The agency of an argument

- How to train
  - against relativism,
  - against overhanging attitude (observers know better than members of the society),
  - against strategical interpretation (where intentions are everywhere)

- The power of an argument is the power of the attachments it builds with powerful entities and its specific ability to display these attachments to other members of the controversy (semiotic features)
c/ Scientific litterature analysis

- Scientometrics
Can we train students to inference while observing controversies?

Arguments are supposed to be rational and discursive: shift to a « dialogic reasoning », where interaction is the key.

How to learn to detect it (facts are « science ready made » vs « science in the making »)
« Science ready » made vs « science in the making »

☐ A modus on a dictum in discourse can work as an argument

☐ the DNA molecule is in the form of a double helix vs

☐ Professor A. Wilson, a biochemist at the University of California, Berkeley, says that a completely new species of man appears in Africa and only in Africa between 100,000 and 200,000 BC. Wilson and those who support the hypothesis of the primitive era argue that this invasion by a new species has left its mark on our RNA from an hypothalamic origin.
Getting into the scientific and technical terms of the debate
Private conversations are essential in negotiation

Diplomacy depends on trust in frank, private conversations

Private conversations are essential in negotiation

Diplomacy should be protected

Private conversations should be protected

Diplomacy depends on trust in frank, private conversations
What do students learn from the display of arguments?

- How to learn from the taxonomy of loci that arguers display in a controversy?
  - cf the taxonomy of loci: syntagmatic, paradigmatic and complex (Rigotti and Greco Morasso, 2009)

- Decentration (Piaget) is a key process in education: we must keep on improving it because it is the key factor of any scientific activity.
d/ Public opinion and media coverage mapping

London Olympic stadium actors map
Always combine media and science on a specific issue

- Matters of fact and matters of concern are intertwined

- But arguments follow different rules in order to be accepted in specific media and communities (rhetoric skills to be learned from exploration)

- E.g. « burrying nuclear waste » vs « long-term storage », poem vs data
e/ The controversy timeline
Timeline as a resource for learning

- What makes an argument survive in a controversy:
  - Truth? Accuracy? Legitimacy?
  - Anything that has a connecting power and that aggregates new allies, including scientific demonstrations
  - The more heterogeneous, the better
Tables of actors and groups
Following actors and their connections

- Do not invent positions or look for the final « explanans » when not mentioned by actors

- Learn from
  - the exposure to contradictory arguments
  - the investigation not only related to arguments but to data, alliances, strategic moves, historical perspective, cultural perspective (various points of views)
g/ Represent the various cosmos involved

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<th>Collectivités locales</th>
<th>État</th>
<th>Associations écolo</th>
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Objet dont il faut se détacher
Signe d’une autre pollution contre laquelle il faut lutter
Nuisance contre laquelle il faut lutter
Ressource
Objet d’étude
Pollution aux Phosphates
Pollution aux Nitrates
Productivisme & Cheptel
Activités domestiques
Cause non recherchées

Green algae on Brittany’s beaches
Explore the backing (= the cosmogram)

- Toulmin’s model revised by Rigotti and Greco

- Claims
- Warrants (allies in controversies, of all kind and not only rhetorical ones)
- Backing is much more extended than a general rule. Explore the backing i.e. the cosmogram means explore the ontology

- Example given: the cosmogram of the controversy of Valladolid (cf. Argumentum):
  - do Indians have souls?
  - Levi Strauss account of the experiment of indians: do Spaniards have bodies?
  - By immerging them in water and watch whether they will putrefy or not.
  - Ontological gaps (or wars)
How to assess the outcomes of a controversy mapping training?

- Many indicators are built based on the final production (video, web site, theater, debates and so on)

- A lesson we learned: what is the most important is the personal decentration process (whatever the starting point)

- This is why we ask for logbooks for students to account for the experience they lived day after day

- To be affected (Haraway)