Pieces of Knowledge: Multimodal Emergence and Trajectory in Socio-Scientific Educational Debates
Claire Polo

To cite this version:
Claire Polo. Pieces of Knowledge: Multimodal Emergence and Trajectory in Socio-Scientific Educational Debates. 6ème Conférence de l’Association Française de Linguistique Cognitive, May 2015, Grenoble, France. <halshs-01382548>

HAL Id: halshs-01382548
https://halshs.archives-ouvertes.fr/halshs-01382548
Submitted on 9 Dec 2016

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
ARGUMENTATIVE RESOURCES IN SOCIO-SCIENTIFIC EDUCATIONAL DEBATES

A great heterogeneity

- Appeal to students’ “system of mental representations and knowledge” (Belbone & Legardez, 1995, système de représentations-connaissances)

PEDAGOGICAL SETTING: the YouTalk Scientific Café

- Participants: 12-14 year-old students (Specially trained student moderators)
- 15-17 year-old students (12 in Mexico, 1 in USA, 1 in France, 2 in Brazil)

MODERATORS’ TRAINING (1 day)

- To lead the YouTalk Scientific Café about Drinking Water Management in pairs
- Multi Question (MQ)
- First Individual Anonymous Vote

YOUTALK - INTRODUCTION (10 min)

- Game rules
- Main Question (MQ)
- First Individual Anonymous Vote

YOUTALK - THEMATIC PHASES (3 x 20 min)

- Reading and group discussion
- Individual vote
- Answer and explanation
- Group debate
- Group vote and class debate
- Individual vote and results displayed

YOUTALK - CONCLUSION (15 min)

- Synthesis of class debates (OQ)
- Reading and group debate
- Group vote and class debate
- Individual vote and results displayed

FIRST RESULTS FROM THE US CORPUS: MTL

- Different spatio-temporal localizations associated with different scenarios of material environment exploitation

- Mostly consists of:
  - Reading the slide or referring gesturally to the screen
  - Using something to point
  - Handling the clicker to display determination to select an option or emergency to get to a conclusion (positioning or interactional function)

- Exploitation of the material environment mostly occurs at the group level
  - Initial group discussion for quiz elucidation (KQ)
  - Reinvestment in group debate to select an answer (OQ)

- Supporting meaning-making process (mostly Referential function)
  - Appeal to authority and interactional functions

- Different knowledge units associated with different gestural scenarios

- "Virtual water": Less and smaller gestures
- Less and smaller gestures
- More redundant with speech
- Diversity of functions
- Greater with other words or gestures

- Exploitation of the material environment is not very sensitive to the knowledge content.

HOW DO THE STUDENTS CO-CONSTRUCT AND REINVEST MICRO-UNITS OF KNOWLEDGE-BELIEF?

- Temporal tracking (Transana)
  - Training, YouTalk pedagogical sequence

- Spatio-communicative specificity
  - Group discussion on quiz elucidation
  - Group debate about an MQ

- Multimodal characterization (ELAN)
  - Use of material environment
    - Gesture features
      - Functions
      - Relation to speech
      - "Record" status
  - Use of daily life vocabulary
  - Institution of the MQ

ARE EMERGENCE AND TRAJECTORY FEATURES KNOWLEDGE-SPECIFIC?

- Focus on units of different epistemic status
  - Knowledge piece specific to environmental education
    - Virtual water": water for the production of other goods
  - Classical distinction between the cost and the price of a good or service, both school target knowledge in economics and part of daily life vocabulary

- Comparison of emergence multimodal features and spatio-temporal trajectory

This research is supported by LABEX ASLAN of Université de Lyon, program Investissements d’Avenir of the French government, operated by the National Research Agency.