The representations in question

Coordinated by Hubert VINCENT

Summary of articles

- **HUBERT VINCENT**
  
  "Taking care of représentations" versus "studying représentations": a traditional and philosophical approach

  « Taking care of représentations » is nowadays a kind of slogan among educationalists. Nevertheless, it’s not hard to show that this orientation of pedagogy has its origins in the beginning of the philosophical tradition, and especially in Plato. The famous socratic method called « réfutation » (elegkhos) is able to attest this point. This return to the source of the notion allow, in one hand, to situate this orientation among others, and so to put it into perspective, and, in the other hand, to criticize this orientation by making more way for the spontaneity of activity.

- **JEAN-FRANÇOIS GOUBET**
  
  Moving representations. Meanings and Uses of a Pedagogical Metaphor

  « Moving representations » is a commonly heard expression in teacher’s training world. Two major uses of this expression exist. The first concerns the child, in particular when he or she learns experimental sciences. The second concerns the teacher, who is supposed to wear mourning for some conceptions as he or she begins professionalizing. The sense of the expression, in addition, can be very various. Three meanings are set apart: moving as removing an obstacle, moving as conversing a preconception in a correct idea, moving, at last, as shifting an affect quantum placed on a representation. Certain contemporary French-speaking specialists of experimental sciences didactics appeal to Bachelard. I try to understand what “moving representations” means exactly in different contexts in which Bachelard’s name is often evoked.

- **ALAIN FIRODE**
  
  Representation and theory: a critical analysis of the constructivist point of view

  Many contemporary science didacticians claim that a successfull learning is a long-term change in mental representations. This paper aims at showing, by using some analysis taken from the popperian epistemology, that this point of view involves a confusion. A confusion between, on the one hand, the psychological effects which can result from the learning of a scientific knowledge and, on the other hand, the intellectual activity by which this learning takes place. According to Popper, the process by which we succeed in knowing an intellectual object, such as a scientific theory, is not essentially different from the process by which we learn to know a physical object. It consists of « operating with world three objects » and not of changing our « mental representations ». 
CHRISTIAN ORANGE & DENISE ORANGE RAYACHOL

The concept of conception in science education: the necessary epistemological component and its consequences

In science education, the notion of conception has necessarily an epistemological reference, despite coming initially from the psychology field. Based on the fundamental role of this notion in science education, we discuss in this paper its implementation and shows the difficulties met to avoid the different kind of reification. Then, from a specific didactic and epistemological framework (i.e., the problematization), we show how such a framework is involved in the renewal of issues related to conceptions.

MICHEL FABRE

Epistemologic break and changing conceptions

In this paper, we try to answer the question of changing conceptions from Gaston Bachelard's point of view. From the example of teaching Kepler's laws, it describes the cathartic strategies of the psychoanalysis of the knowledge. Changing conception means awareness (topical dimension), investments (energetic dimension), and intellectual supervision (dynamic dimension). Bachelard so defines a dialectic of continuity and break (and not cut) in which psychology is working to free the reason from epistemologic obstacles which hinder it. From this point of view, changing conceptions is thought as problematization, that is to take away from opinion to a rational knowledge.

JANINE ROGALSKI

Representations in work and training psychology, and didactics of scientific fields

The paper proposes a tour d'horizon of the notion of « representation » and the use of the term, in the general framework of cognitive psychology; its polysemy and multidimensional caracteristics are recalled. Two active problematics, from the one hand in cognitive ergonomics and vocational didactics, from the other hand in didactics of scientific fields, are then considered. Firstly, the difference and relationships between "internal" and "external" representations – expressed in various semantic registers – are discussed. Internal representations are "constructs" inferred from the subjects' behaviour (including theirs producing external representations such as verbalisations, drawings, aso.). External representations constitute material representatives of the referent, that can be manipulated within the used register(s). The materialarity of external representations implies the existence of both producing and reducing features, whose didactical effects will be shortly discussed. Secondly, an organisation of several systems of representation will be presented: two were produced by communities of reference (professional or didactical pratisces) in a socio-historical process, oriented towards epistemic and pragmatics purposes, a twofold system is concerning the operator's or student's mental models, and the last one is related to the analysts activity in their modelisation process of subjects' mental models. Conclusion opens on two issues: the use external representations as didactical tools, and the status of mental representations in collective activities.

Varia

ANNE DELBRAYELLE

Language practice and knowledge at stake in French for native speakers in « cycle 3 »

This article raises a question: in what way does the oral communication of one teacher vary according to the teaching content which is at stake? Therefore, our research focuses on a primary school teacher oral communication in “cycle 3”, CM2 (11 year old pupils). This teacher implements two learning sequences about language games and literature. The point is to know about his/her oral communication style and see whether it varies depending on the teaching content at stake beyond the teacher's own regular style. Analyzing the learning sequences and also focusing on their implementation along the different steps show that the way the teacher communicates differs – we can notice variations of density regarding frequency and contents depending on the sessions. Finally, taking into account the theory of the joined up action, the way the sessions are cut show a real difference as for the moments when the teacher communicates – which enables us to answer the question initially asked.
FREDERIC DESCHENAUX

Teaching issues for university professors in Quebec

In Quebec, the task of university professors must be shared between the three main components that are teaching, research and service to the community. However, all these tasks are not of equal value in the eyes of teachers in a context where research is highly valued. While the relationship with students is a tangible source of job satisfaction for teachers, even the most satisfying aspect of their work, it appears that the teaching generating stressful situations and anxiety, sometimes leading to burnout. The qualitative analysis of an open question (768 answers collected by an online survey) allows to infer three issues of concern to teachers about the university: 1 - the imbalance between tasks, 2 - threats to the quality of education and 3 - the relationship to knowledge of students. These elements lead to question the “idea of a university” advocated by teachers Quebec as the transmission of knowledge in the university.

GUILLAUME DURAND

Education and Medical Care: a common ethics?

Medical ethics and ethics of education both have to solve a fundamental problem: to reconcile respect for freedom and beneficent constraints. In the area of medical care, it is often for the benefit of the patient, a schizophrenic for instance, that we force him to take a treatment. In the area of education, any teacher would dream that his students always want and wish to learn, the reality of the teaching relationship is a constant back-and-forth movement between coercion and freedom, between the refusal and the desire to learn. In this paper, we are searching for, in Education and Medical Care, an ethics of autonomy which would be a middle way between paternalism and radical minimalism.

GAËLLE LEFER, PHILIPPE GUIMARD & AGNES FLORIN

Academic hopes and fears development from 3rd to 5th grade

The hopes and fears of children can be conceptualized as "hopes-for selves" and on "fears selves", both as subsets of the "possible selves" (PS) concept. The PS is defined as an individual's cognitive representations of the self in the future. The aim of this longitudinal study is to examine children's development of the possible selves, and mainly the academic PS, which has not been studied to date. A first version of the self-report Possible Selves Questionnaire has been developed and has been administered to 124 students. Participants were followed during a three year period (from 8 to 10 years old). Results shows the academic possible selves increase with age, where this also is the case for the “hopes-for selves” and “fears selves”. In conclusion, the development of children's academic possible selves' is discussed, and particularly while in an academic transition.

ERIC SAILLOT

Pragmatic characterization of pupils' enrolment based on the analysis of five school teachers' speech acts

This text presents a descriptive and comprehensive research, based on professional didactic (Pastré, Mayen, Vergnaud, 2006, Vinatier, 2009) and analysis of the speeches-in-interaction (Kerbrat-Orecchioni, 2005), especially teachers' speech acts (Austin, 1970 ; Kerbrat-Orecchioni, 2008). This type of speech acts can be observed in several school situations. However, from 2008 to 2013, French school-teachers have experienced a new professional mission called « aide personnalisée » in order to help pupils in difficulties. This research aims at analyzing teacher's discourse in order to describe and characterize the three main steps of pupils’ enrolment and the five factors of this professional decisive process for teachers.

MARIE VERGNON

Robert Owen, James Buchanan and the New Lanark Infant School

The history of infant education puts a lot of emphasis on the New Lanark Infant School and its founder, the Scottish reformer Robert Owen. Although Owen is commonly credited with the authorship of this school, one of his former teachers, named James Buchanan, contends with him for the original idea. What is the share of each of those two men in the creation of this original structure? Was Buchanan more than the first teacher of the Infant School? It is mostly through
Owen’s writings that we know this educational experience. Those texts constitute our memory of the genesis of the Infant School and provide us with a few pieces of information about the pedagogy that was used there. May other resources enable us to shed light on the respective roles of the first protagonists of the Infant School and to clarify the way this institution worked? This research aims at giving some answers to those questions shrouding the origin of one of the first collective infant education structures.