**Pôle DICAMEP – Journée d’étude / High Seminar**

(final program, 2024-01-08)

*Coord. F. Ligozat, C. Grivet Bonzon et B. Lenzen*

**Aesthetics and Meaning-Making in Teaching and Learning**

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|  | **Thursday, January 18th.**  **Salle MR170** |
| 17 :00 – 18 :30 | **Open Plenary Lecture**  *Didactics and didactic models in science education*  Prof. Em. Per-Olof Wickman, Stockholm University |

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|  | **Friday, January 19th.**  **Salle M1150** |
| 9:15 | Introduction |
| 9:30 | **Internal Lecture**  *Aesthetics, taste and making meaning when teaching and learning a subject.*  *Prof. Em. Per-Olof Wickman, Stockholm University* |
| 11:00 | *Coffee Break* |
| 11:30 | **Questions to Per-Olof Wickman’s lecture and complements** |
| 12:30 | *Lunch at Cafeteria Uni-Mail* |
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| 14:00 | **Ongoing research**  *From philosophy to didactics.*  *Interdisciplinary research for an aesthetic approach in the music didactics training of future primary school teachers in Geneva.*  *Catherine Grivet-Bonzon* |
| 14:45 | **Ongoing research**  *Teaching aesthetic sports techniques at primary school. What (dis)continuity in scientific, official and teacher training discourses?*  *Benoît Lenzen* |
| 15:30 | *Coffee Break* |
| 15:45 | **Doctoral presentation**  *Teaching and Learning the Chemical Reaction and the Global Warming Through the Carbon Cycle by a Co-Disciplinary Approach*  *Marie Sudriès* |
| 16:30 | Closing |

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| 19:00 | **Diner**  *(La Cantine des commerçants)* |

**Abstracts**

**Open plenary lecture**

Didactics and didactic models in science education

*Per-Olof Wickman, Dept. of Teaching and Learning, Stockholm University*

In my lecture I present didactics as the professional science of teachers and give a methodological account of research in didactics, more specifically of didactic modelling, analysis and design. I review what didactic models are, how they can be produced through didactic modelling and how didactic models can be used for analyzing teaching and learning and for educational designs. I also explain the importance of mangling models with teachers and the importance of documenting exemplars of model use. Examples of didactics models are given throughout in the lecture.

**Internal lecture**

*Aesthetics, taste and making meaning when teaching and learning a subject*

*Per-Olof Wickman, Dept. of Teaching and Learning, Stockholm University*

In my talk I present an approach on how the constitution of interest in a curriculum topic may be empirically studied as it happens in classrooms and how a teacher may support its development. With this aim I introduce two operationalizations, namely aesthetic experience (1) as *aesthetic judgments* and (2) as *taste*. These concepts mainly stem from the investigations of John Dewey, Ludwig Wittgenstein and Pierre Bourdieu. Central to the analysis is the continuity of positive feelings and a sense of beauty when learning to cope with the objects of a school subject (conceptually as well as manually) and with a sense of agency and belonging. Examples are given from teaching at the primary, secondary and tertiary levels of education.

Anderhag, P., Wickman, P.-O., & Hamza, K. M. (2015). Signs of taste for science : A methodology for studying the constitution of interest in the science classroom. *Cultural Studies of Science Education*, 1‑30. <https://doi.org/10.1007/s11422-014-9641-9>

Anderhag, P., Hamza, K. M., & Wickman, P.-O. (2014). What Can a Teacher Do to Support Students’ Interest in Science? A Study of the Constitution of Taste in a Science Classroom. *Research in Science Education*, *45*(5), 749‑784. <https://doi.org/10.1007/s11165-014-9448-4>

Wickman, P.-O. (2012). A Comparison between Practical Epistemology Analysis and Some Schools in French Didactics. *Éducation et didactique*, *6*(2), 145‑159. <https://doi.org/10.4000/educationdidactique.1456>

Wickman, P.-O. (2017). Back to the Drawing Board : Examining the Philosophical Foundations of Educational Research on Aesthetics and Emotions. In A. Bellocchi, C. Quigley, & K. Otrel-Cass (Éds.), *Exploring Emotions, Aesthetics and Wellbeing in Science Education Research* (p. 9‑37). Springer International Publishing. <https://doi.org/10.1007/978-3-319-43353-0_2>

Wickman, P.-O., Prain, V., & Tytler, R. (2021). Aesthetics, affect, and making meaning in science education: An introduction. *International Journal of Science Education*, *0*(0), 1‑18. <https://doi.org/10.1080/09500693.2021.1912434>

**Ongoing research**

Teaching aesthetic sports techniques at primary school. What (dis)continuity in scientific, official and teacher training discourses?

*Benoît Lenzen, Didactics and Epistemology of Physical Education*

In my talk I will present how teaching aesthetic sports techniques is approached according to scientific, official and teacher training discourses. Firstly, I will show that sports that can be described as aesthetic do not constitute a homogenous category in the literature and official texts. Secondly, I will develop the tension that exists between technique as a product and technique as a process, both from the point of view of the historians who study it and from the point of view of the trainers and teachers who teach it. I will relate this tension to the teaching traditions in physical education. Thirdly, I will present the (dis)continuities to be found in official discourse (i.e. *Plan d’études romand*) and teacher training discourse (i.e. interviews with teacher trainers from two programmes) around the issue of teaching aesthetic sports techniques.

Da Costa, L.A. & Lacerda, T.O. (2016). On the aesthetic potential of sports and physical education. Sport, Ethics and Philosophy, 10(4), 444-464. <https://doi.org/10.1080/17511321.2016.1210209>

Robène, L. (2014). L’histoire des techniques et des technologies sportives : une matrice « culturelle » franco-française de l’histoire du sport ? Movement & Sport Sciences, 84, 93-104. <http://dx.doi.org/10.1051/sm/2013108> (French version + English translation by Deepl)

Wright, L. (2003). Aesthetic impliciteness in sport and the role of aesthetic concepts. Journal of the Philosophy of Sport, 30(1), 83-92. <https://doi.org/10.1080/00948705.2003.9714562>

**Ongoing research**

From philosophy to didactics. Interdisciplinary research for an aesthetic approach in the music didactics training of future primary school teachers in Geneva.

*Catherine Grivet-Bonzon, Didactics of Arts and Music*

My paper examines the conditions of a possible articulation between the theoretical frameworks of aesthetic philosophy (Dewey, 1934; Kerlan, 2004, 2009; Kerlan & Lemonchois; 2017 Schaeffer, 2015) and those of didactics of learning (Brousseau, 1998; Chevallard, 1992; Joshua & Félix, 2002) in the professional training of students in music didactics on the condition of passage through *aesthetic experience* carried by the construction of knowledge *to teach*(musical) and *for teaching* (professional gestures). The study is based on the observation and analysis of a year's worth of courses given in two training programs for generalist and specialist music teachers at the University of Geneva, with a particular focus on the concept of the didactic environment (milieu didactique).

Brousseau, G. (1998). *Théorie des situations didactiques*. Grenoble : La Pensée sauvage.

Chevallard, Y. (1991). *La transposition didactique. Du savoir savant au savoir enseigné, Grenoble*. La Pensée Sauvage (2e édition revue et augmentée, en coll. avec Marie-Alberte Joshua, 1re édition 1985).

Chevallard Y. (1995). La fonction professorale : esquisse d’un modèle didactique. In *Actes de la VIIIe. École d’été de didactique des mathématiques*, Noirfalise R. et Perrin-Glorian M-J. (dir.), IREM de Clermont-Ferrand, p. 83-122.

Dewey, J. (1934). *Art as Experience*. Capricorn Books.

Joshua, S. (1996). Le concept de transposition didactique n’est-il propre qu’au mathématiques ?, in Raisky, C. et Caillot, M. (dir), *Au-delà des didactiques, le didactique. Débats autour de concepts fédérateurs* (pp. 61-73). Bruxelles : De Boeck, .

Kerlan, A. (2004). *L’art pour éduquer ? La tentation esthétique*. Québec, Canada : Presses de l’université Laval.

Kerlan, A. (2009). L’art et l’esthétique comme « reprise » face à la culture divisée. Dans S. Cantin et M. Deschênes (dir.), *Nos vérités sont-elles pertinentes ? L’œuvre de Fernand Dumont en perspective* (p. 169-179). Québec, Canada : Presses de l’université Laval.

Kerlan, A.; Lemonchois, M. (2017). La formation comme expérience. *Recherche et formation, 86*, 93-113.

Schaeffer, J-M.(2015). *L'expérience esthétique*. Paris : Gallimard.

Schaeffer, J-M .(2020). Entendre et écouter. Compétences procédurales et connaissance explicite dans l’écoute musicale. Hearing and listening: Procedural skills and explicit knowledge in musical listening , in Emmanuel Pedler Jacques Cheyronnaud (dir.), *Théories ordinaires* (p. 25-42). Éditions de l’École des hautes études en sciences sociales <https://books.openedition.org/editionsehess/20841?lang=fr>

**Doctoral research**

Teaching and Learning the Chemical Reaction and the Global Warming  
Through the Carbon Cycle by a Co-Disciplinary Approach

*Marie Sudriès, Comparative Didactics and Chemistry Didactics (University of Geneva and University of Montpellier, Fr)*

My PhD project explores the potential of the carbon cycle for teaching complex issues (Morin, 1990) - as environmental problems - through chemistry lessons at the lower secondary school. According to Mohan et al. (2009) and Zangori et al. (2017), the carbon cycle seems to be a good entry into the Anthropocene’s complexity. From our perspective, the integration of the carbon cycle in a chemistry teaching could create the conditions for a co-disciplinary approach (Chevallard, 2004 ; Otero et al., 2016). This approach seems to be a way to connect complex issues (the Anthropocene) and scientific concepts taught in different school subjects (chemistry, biology, geology, etc.). Thus, the following research questions are pursued: is the implementation of a co-disciplinarity approach possible in order to connect the chemical transformation and the global warming by using the carbon cycle? Which indications of this co-disciplinarity could be found in the teaching practices?

Chevallard, Y. (2004). *Vers une didactique de la codisciplinarité. Notes sur une nouvelle épistémologie scolaire.* Yves Chevallard. http://yves.chevallard.free.fr/spip/spip/IMG/pdf/Vers\_une\_didactique\_de\_la\_codisciplinarite.pdf

Mohan, L., Chen, J. and Anderson, C. W. (2009). Developing a multi-year learning progression for carbon cycling in socio-ecological systems. *Journal of Research in Science Teaching*, *26*(6), 675‑698.

Morin, E. (1990). *Introduction à la pensée complexe*. ESF éditeur.

Otero, M. R., Gazzola, M. P., Llanos, V. C. et Arlego, M. (2016). Co-disciplinary Physics and Mathematics Research and Study Course (RSC) within three study groups: teachers-in-training, secondary school students and researchers. *Review of Science, Mathematics and ICT Education*, *10*(2), 55‑78. https://doi.org/10.26220/rev.2315

Zangori, L., Peel, A., Kinslow, A., Friedrichsen, P. and Sadler, T. (2017). Student Development of Model-Based Reasoning About Carbon Cycling and Climate Change in Socio-Scientific Issues Unit. *Journal of Research in Science Teaching*, *54*(10), 1249‑1273.