CIEAEM – News

Janvier 2015 n°4

Editorial

Je souhaite à chacun d'entre vous une excellente année 2015, riche de réussites, de projets tant professionnels que personnels dans un monde apaisé et tolérant dans lequel la raison l'emporterait. Dans ce bulletin, vous trouverez les informations témoignant de la vitalité de la CIEAEM tant du point de vue des conférences que des publications autour des travaux réalisés pendant ces temps de rencontre. Je souhaite bien sûr la réussite de tous ces projets qui sont le témoignage des collaborations scientifiques des chercheurs, professeurs, formateurs qui font la richesse de la CIEAEM

I wish you a very happy year 2015, full of new professional and personnal projects in a peaceful world in which reason would prevail. In this Newsletter, you'll find information showing the vitality of the CIEAEM from the perspective of our meetings, as well as forthcoming publications arising from the work done during these meetings. I wish, of course, success for all these projects which are the result of scientific collaboration between researchers, teachers and teacher trainers — all of whom contribute to the richness of CIEAEM.

Gilles Aldon
Secretary of the commission

Vie de la Commission / Life of the Commission

Proceedings of CIEAEM 66 will be published at least in February 2015

Les Actes de CIEAEM 66 seront publiés au plus tard en février 2015.

Educational Paths to Mathematics

A C.I.E.A.E.M. Sourcebook

Gellert, U., Gimenez Rodriguez, J., Hahn, C., Kafoussi, S. (Eds.)

Due May, 10, 2015.

This book offers fresh insight and understanding of the many ways in which children, youth and adults may find their paths into mathematics. The chapters of the volume offer and analyse promising new ways into mathematics. The focus is on spaces and modalities of learning, dialogue and inquiry, embodiment and aesthetic experience, information and communication technology and on the use of mathematics in public communication. The chapters present new mathematical activities and conceptions enriching the repertoire of mathematics education practices. Critical commentaries discuss the innovative potential of the new approaches to the teaching and learning of mathematics. As a consequence, the commentaries point to requirements and open issues in the field of research in mathematics education.

The volume is remarkably international. Teachers and researchers from 14 countries authored 21 chapters and 7 commentaries. The reader is invited to reflect on the particular effect of presenting avenues to mathematics contrived in diverse national settings in which the praxis of mathematics education might look different compared to what happens in the reader's place.

Link

Entretien avec des membres de la commission / Interview of Commission members

Presentation of the Quality class

The Quality Class is a 10 day exchange program for teacher-students. During the quality class young people from different countries, different cultures, and holding different opinions about mathematics education meet. Part of the program is participation in the CIEAEM-conference. Since [insert year: 1994 the organizer has been Lambrecht Spijkerboer, from The Netherlands.

Quality class participants of the last conference in Lyon

The participating teacher-students aim to be teachers for pupils of 12 – 18 years. They are interested in the didactics of mathematics education. The participants discover and develop knowledge about teaching mathematics, and become aware of what education research can bring them in connection with their personal experiences. For this reason it is important that they have some prior classroom experience as teacher. Each participating country forms a team of 2 – 4 teacher-students. Before arriving at the conference, they develop a workshop for a morning or afternoon session (3 hours). The topic of the workshop is a free choice. The tutor during the preparation of this part is the professor/lecturer at their teacher training college.

Four days in advance of the international conference the participants of the quality class meet together. After an icebreaker we exchange our prepared workshops and discuss all day (and night!) long different approaches, different cultures, different beliefs, ideas, problems, solutions, and so on. During the conference program, there will be some extra sessions for quality class members only:

- A Reflection session: after about 50% of the conference; to give an opportunity to exchange experiences together, to raise questions to discuss, and to make proposals for special sessions.
- A Special session: One of the conference members will be asked to give a special session for quality class members. Because the contributions of researchers are sometimes quite theoretical, this special session is an opportunity to meet more fully the expectations of the teacher-students.
- An Evaluation session: at the end of the quality class, there is a meeting for evaluation. Not only on a personal basis, but through a group exchange as well, there will be possibilities to learn from this process. For this reason it is important that all participants be available for the full period of quality class.

Every year a new group is formed; participants experience (often for the first time) participation in an international event, and sometimes change their mind in ways that affect the rest of their life. That makes this event so unbelievably challenging, so that the organization of the 20th Quality Class for next year has already started.

Lambrecht Spijkerboer
(L.Spijkerboer@aps.nl)

Prochaine conférence / Next conference

University of Vallee d'Aosta, Italy

The second annoucement is available on the website:
http://www.cieaem.org/?q=node/75
La deuxième annonce de la conférence CIEAEM 67 est disponible sur le site web : http://www.cieaem.org/?q=node/76

Le Thème de la conférence CIEAEM 67 : *Enseignement et apprentissage des mathématiques : ressources et obstacles*
La conférence aura lieu à l' Università della Valle d'Aosta-Université de la Vallée d'Aoste

L'enseignement et l'apprentissage des mathématiques sont un système complexe, allant de l'épistémologie de la discipline à la psychologie cognitive, aux environnements sociaux-culturels, à des éléments affectifs et aux systèmes technologiques.
Au cœur du système se trouve l'idée selon laquelle donner du sens aux mathématiques est un prérequis à la construction de la connaissance.
Tous les facteurs contribuant à ce but peuvent à la fois fournir des ressources et/ou des obstacles pour le développement de la connaissance mathématique.
En ce sens, l'expertise professionnelle du professeur a une importance majeure car il a la responsabilité de l'enjeu entre les aspects relatifs aux contenus de la discipline, mais également des facteurs qui interagissent dans le processus liant l'enseignement à l'apprentissage.
Le thème sera développé dans les quatre sous-points suivants :

Sous-thème 1. Contenu mathématique et développement du curriculum
Le sous-thème 1 de la conférence CIEAEM67 se concentre sur les enjeux liés aux aspects épistémologiques de l'enseignement des mathématiques et se situe dans une dialectique obstacle/ressource.

Sous-thème 2. La formation des enseignants
Le sous-thème 2 dans CIEAEM67 vise à repenser la complexité de la formation des enseignants en termes de ressources ainsi que les éléments qui font obstacle à l'enseignement et l'apprentissage des mathématiques.

Sous-thème 3. Pratiques en classe et autres espaces d'apprentissage
Le sous-thème 3 de la conférence CIEAEM67 se concentre sur ce qui concerne les pratiques dans la classe en considérant à la fois les différentes exigences cognitives des élèves (en particulier les difficultés et les troubles d'apprentissage) et les espaces, formels et non formels (musés, programmes d'apprentissage à distance, jeu , etc.), où peut se réaliser l'‘apprentissage.

Sous-thème 4. Les questions culturelles, politiques et sociales
Le sous-thème 4 dans CIEAEM67 vise à comprendre comment les conditions culturelles, politiques et sociales peuvent devenir des ressources pour les apprenants. Ceci oblige analyser comment le curriculum, les stratégies d'enseignement et scénarios d'apprentissage pourraient être plus finement réglés pour les arrière-plans et avant-plans de groupes d'élèves.

Elisabetta Robotti,
pour le comité scientifique

CIEAEM 67

Teaching and learning mathematics is a complex system, involving a plurality of factors and components, ranging from the epistemology of the discipline to cognitive psychology, socio-cultural environments, affective elements, and technological devices. At the very core of the system, making sense in doing mathematics is widely considered as a basic requisite for constructing knowledge. In this regard, it is worth analyzing mutual relationships between real objects and mathematical constructions, the role of thinking processes and languages (often related to embodied experiences), and the influence of beliefs and emotions. All factors can be double-faced, i.e., they can provide resources and/or obstacles for the development of mathematical knowledge. In this regard, the professional expertise of the teacher is of crucial importance: in fact the teacher is responsible for being up to date not only about the content aspects of the discipline, but also about those factors that interact (and interfere) with the teaching-learning processes. It is necessary for the mathematics teacher to be aware of these issues, both in designing classroom activities and in managing them with the students.]

The four subthemes (and related questions) we propose in the following are to be considered as a means to promote investigation and facilitate discussion. All the subthemes are closely interrelated: their distinction is purely functional to assist the organization of the working groups during the conference.

Subtheme 1. Mathematical content and curriculum development

The relationship between mathematics as a discipline and the mathematical content to be taught reminds us of the dialectic between theory and practice

Subtheme 2. Teacher education

This subtheme aims at rethinking the complexity of teacher education in terms of resources and obstacles for teaching and learning mathematics.

Subtheme 3. Classroom practices and other learning spaces

Processes such as developing curiosity, critical thinking, reasoning, and motivation to learn, as well as developing modes of verification, refutation, and deduction should all be leveraged both in the classroom and also in non-formal learning spaces.

Subtheme 4. Cultural, political, and social issues

Cultural, political, and social contexts can be considered as obstacles and/or as resources for students' success in mathematics. On the one hand, we can consider these as obstacles for students' access to, and their achievement in, mathematics education. On the other hand, cultural, political, and social conditions can be regarded as resources.The crucial point is if, and if so, how, not-yet-valued experiences and activities of underprivileged students can be used as resources for the teaching and learning of mathematics.

Elisabetta Robotti

for the scientific committee