



International Study Group on the Relations Between  
the HISTORY and PEDAGOGY of MATHEMATICS  
An Affiliate of the International Commission on  
Mathematical Instruction

**7<sup>th</sup> EUROPEAN SUMMER UNIVERSITY  
ON THE HISTORY AND EPISTEMOLOGY IN MATHEMATICS EDUCATION**

**ESU-7**

**14-18 July 2014,  
Aarhus University, Campus Emdrup in Copenhagen, Denmark**

**SECOND ANNOUNCEMENT**

The initiative of organizing a *Summer University* on the *History and Epistemology in Mathematics Education* belongs to the French Mathematics Education community, in the early 1980's. From those meetings emerged the organization of a SU on a European scale, as the *European Summer University (ESU) on the History and Epistemology in Mathematics Education*, starting in 1993. Since then, ESU was successfully organized in 1996, 1999, 2004, 2007 and 2010 in different places in Europe: Montpellier (France), Braga (Portugal), Louvain-la-Neuve and Leuven (Belgium), Uppsala (Sweden), Prague (Czech Republic), Vienna (Austria). By now, it has been established into one of the main international activities of the HPM Group, which – from 2010 onwards – will be organized every four years, so that every two years there will take place at least one major international meeting of the Group; namely, ESU and the HPM Satellite Meeting of ICME.

**1. Aim and focus of the ESU**

The ESU mainly aims

- to provide a school for working on a historical, epistemological and cultural approach to mathematics and its teaching, with emphasis on actual implementation,
- to give the opportunity to mathematics teachers, educators and researchers to share their teaching ideas and classroom experiences related to a historical perspective in teaching,
- to motivate further collaboration along these lines, among teachers of mathematics and researchers on history and education of mathematics in Europe and beyond, attempting to reveal the following aspects of mathematics:
  - Mathematics as a human intellectual enterprise with a long history, a vivid present and an as yet unforeseen future;
  - Although the “polished” products of mathematics form the part of mathematical knowledge that is communicated, criticized (in order to be finally accepted or rejected) and serve as the basis for new work, the process of “doing mathematics”, producing mathematical knowledge, is equally important, especially from a didactical point of view;

- Mathematical knowledge is determined, not only by the circumstances in which it becomes a deductively structured theory, but also by the procedure that originally led, or may lead to it and which is indispensable for its understanding. Therefore, learning mathematics includes the understanding of implicit motivations, the sense-making actions and the reflective processes, which are aimed at the construction of meaning; hence, teaching mathematics should include the opportunity given to students to “do mathematics”;
- This perception of mathematics should not only be the core of the teaching of mathematics, but also the image of mathematics communicated to the outside world.

In this connection, putting emphasis on historical and epistemological issues constitutes a possible natural way for exposing mathematics in the making that may lead to a better understanding of specific parts of mathematics and to a deeper awareness of what mathematics as a whole really is. This is important for mathematics education, helping to realize that:

- Mathematics is the result of contributions from many different cultures;
- Mathematics has been in constant dialogue with other sciences, arts and technics;
- Mathematics has been a constant force of scientific, technical, artistic and social development;
- The philosophy of mathematics has evolved through the centuries;
- The teaching of mathematics has developed through the ages;

and in this way, to improve the learning of mathematics and stimulate students’ interest in mathematics.

This helps to improve mathematics education at all levels, and at the same time also realize that although mathematics is central to our modern society and although a mathematically literate citizenry is essential to a country’s vitality, historical and epistemological issues of mathematics is also worth studying. The harmony of mathematics with other intellectual and cultural pursuits also makes the subject interesting, meaningful and worthwhile. In this wider context, history and epistemology of mathematics have a yet more important role to play in providing a fuller education of the community.

This is most important, and especially today where many countries are concerned about the level of mathematics which their students are learning, and about the students’ decreasing interest in mathematics at a time when the need for both technical skills and a wider education is rising.

## **2. Main themes of ESU-7**

The ESU is more a collection of intensive courses than a conference for researchers. More specifically, it is a place where teachers and researchers meet and work together. It is also a place where beginners, more experienced researchers and teachers present their teaching experience to the benefit of the participants and get a constructive feedback from them. It refers to all levels of education – from primary school, to tertiary education – including in-service teachers’ training. The focus is preferably on work and conclusions based on actual classroom experiments and/or produced teaching & learning materials. The programme and activities of ESU-7 are structured around the following *main themes*:

1. Tools of history and epistemology, theoretical and/or conceptual frameworks for integrating history in mathematics education;
2. Classroom experiments & teaching materials, considered from either the cognitive or/and affective points of view; surveys of curricula and textbooks;
3. Original sources in the classroom, and their educational effects;
4. History and epistemology as tools for an interdisciplinary approach in the teaching and learning of mathematics and the sciences;
5. Cultures and mathematics;

6. Topics in the history of mathematics education;
7. History of mathematics in the Nordic countries.

In several of these themes emphasis is put on work and conclusions based on actual classroom experiments and/or produced teaching & learning materials, but insightful theoretical ideas and/or historical analysis with visible didactical implications are welcome.

### 3. Activities during ESU 7

All activities should refer to the ESU-7 *main themes*. Its scientific program will be structured along these themes, consisting of a few *plenary lectures & panels*. A major part of the program consists of *workshops*. The program will contain also parallel sessions of *oral presentations, short communications* around *posters* for participants, who want to speak about their own experience or research.

- Normally there will be at most one *plenary lecture* per theme. The plenary lectures are conceived as introductory lectures for the workshops.
- In the *panels* the participants will work together, well in advance, so that, during the panel session, there is a real discussion among them and/or with the panel coordinator. The themes of the two *panels* for ESU7 will be:
  - History and philosophy of mathematics, technics and technology in mathematics education
  - The question of evaluation and assessment of experiences with introducing history of mathematics in the classroom
- *Workshops* consist in studying a specific subject and having a follow-up discussion. The role of the workshop organizer is to prepare, present and distribute the historical/epistemological or pedagogical/didactical material, which motivates and orients the exchange of ideas and the discussion among the participants. Participants read and work on the basis of this material (e.g. original historical texts, didactical material, students' worksheets etc). There are many workshops in parallel, which vary in duration (2 hours for workshops on didactical/pedagogical material; 3 hours for workshops on historical/epistemological material). To the extent possible, workshops may elaborate on the ideas presented in the plenary lectures.
- *Oral presentations* will normally be allocated a 30-minute time slot; 25 minutes for presentation and 5 minutes for discussion. It is an activity in the spirit of a conventional research conference.
- There will be special sessions for *short oral communications* around *poster presentations*. *Exhibitions* of books and other didactical material will also be possible.

### 4. Target population

The major part of the participants is expected to be (elementary or secondary) schoolteachers, who may wish to gain new ideas on how they can integrate the history of mathematics into their teaching. However, there will be also university teachers and students, interested in the integration of the history and epistemology of mathematics into mathematics education, as well as, historians of mathematics, who may give a limited number of lectures and workshops to inform others about recent developments in their domain, and mathematicians with an interest in the relation between mathematics, its history and epistemology, and its role at present and in the past.

### 5. Time and place

The 7<sup>th</sup> ESU will take place from Monday 14 to Friday 18 July 2014 at **Aarhus University, Campus Emdrup, Denmark**. *The campus is located in Copenhagen, only 10 minutes from the city centre and 25 minutes from the international airport.*

From the airport, take the metro to Nørreport station and change to the S-train, line A, which will take you to Emdrup station. The Campus is located directly next to the station. See Google map at conference website, where other maps for important directions will also be available.

The address of the conference site: Department of Education, Aarhus University, Campus Emdrup, Tuborgvej 164, 2400 København NV.

## 6. Official Languages

The official languages of ESU-7 are: English, Danish and French.

More specifically:

- All *plenary talks* and *panel discussions* will be in *English*.
- It is preferable to organize *Workshops* in English. Nevertheless, workshop organizers who intend to organize their workshop in another language are encouraged to prepare copies in English of the material to be distributed to the participants (e.g. transparencies, worksheets etc). This will certainly increase participation, as well as, facilitate communication among participants.
- *Oral presentations* can be delivered in any of the official languages. However, for presentations not in English, presenters will be asked to use **two sets of transparencies**; one set in the language they are going to give their presentation and **one set in English**.

## 7. Submission of proposals – extended deadlines

**31. December, 2013:** abstracts of proposals for **workshops** and **oral presentations**.

**30. April, 2014:** abstracts for **posters**.

*Notification of acceptance of presentation will happen within a month after these deadlines.*

Important: Please, use the **application form** on the website and send it in electronic form to:

Evelyne Barbin, Chair of the ESU7: [evelyne.barbin@wanadoo.fr](mailto:evelyne.barbin@wanadoo.fr)

Tinne Hoff Kjeldsen, Co-chair: [tinne.kjeldsen@ind.ku.dk](mailto:tinne.kjeldsen@ind.ku.dk)

Uffe Thomas Jankvist, Co-chair: [utj@dpu.dk](mailto:utj@dpu.dk)

The members of the *Scientific Program Committee* (SPC) will review the submitted abstracts. At this stage, acceptance of a proposal means that the proposed activity will be included in the ESU-7 Scientific Programme. However, this does not imply that a full text based on this activity will automatically be included in the ESU-7 Proceedings, which are going to be published after the ESU. Full texts will be further reviewed by members of the SPC, using the usual international standards. For more details, see *Proceedings*, §10 below.

## 8. The (international) Scientific Program Committee (SPC)

Evelyne Barbin, University of Nantes (France) (Chair)

Tinne Hoff Kjeldsen, University of Copenhagen (Denmark) (Co-chair)

Uffe Thomas Jankvist, Aarhus University, (Denmark) (Co-chair)

George Booker, Griffith University (Australia)

Renaud Chorlay, IREM, Université Paris 7 (France)

Kathy Clark, Florida State University (USA)

Ubiratan d'Ambrosio, Campinas University, Sao Paolo, (Brazil)

Abdellah El Idrissi, Ecole Normale Supérieure, Marrakech (Morocco)

Florence Fasanelli, American Association for the Advancement of Science, USA

Gail FitzSimons, University of Melbourne (Australia)

Fulvia Furinghetti, University of Genoa (Italy)  
Wann-Sheng Horng, National Taiwan Normal University (Taiwan)  
Sunwook Hwang, Soongsil University, Seoul (Korea)  
Masami Isoda, University of Tsukuba (Japan)  
Niels Jahnke, Universität Duisburg-Essen (Germany)  
Sten Kaisjer, University of Uppsala (Sweden)  
Victor Katz, University of the District of Columbia, Washington, DC (USA)  
Manfred Kronfellner, Vienna University of Technology (Austria),  
Ewa Lakoma, Military University of Technology, Warsaw (Poland)  
Snezana Lawrence, Bath Spa University (UK)  
Maria Rosa Massa-Esteve, University Politecnica of Catalunya (Spain)  
David Pengelley, New Mexico State University (USA)  
Luis Puig, University of Valencia (Spain)  
Luis Radford, Université Laurentienne Sudbury, Ontario (Canada)  
Tatiana Roque, Universidade Federal do Rio de Janeiro (Brasil)  
Gert Schubring, University of Bielefeld (Germany)  
Man-Keung Siu, University of Hong Kong (China)  
Bjorn Smestad, Oslo University College, Norway  
Robert Stein, California State University (USA)  
Constantinos Tzanakis, University of Crete (Greece),  
Jan van Maanen, Freudenthal Institute, University of Utrecht (The Netherlands),  
Chris Weeks, Downeycroft, Virginstow Beaworthy (UK)  
Geisy Winicki-Landman, California State Polytechnic University (USA)

#### **The Local Organizing Committee (LOC)**

Uffe Thomas Jankvist, Aarhus University (Chair)  
Tinne Hoff Kjeldsen, University of Copenhagen  
Morten Misfeldt, Aalborg University.  
Lena Lindenskov, Aarhus University  
Pernille Ussing-Nielsen, Aarhus University

#### **9. The website**

Making known the ESU in various countries (in Europe and beyond) is a major task to be realized by the SPC. To this end, the website is a very efficient tool. Online registration, etc. will be operating soon at the website:

<http://conferences.au.dk/ESU-7/>

#### **10. Proceedings**

Publishing the Proceedings of the ESU is also a major task. In fact, Proceedings of the previous ESU have become standard references in this area (cf. the Appendix).

The Proceedings will be published **after** ESU-7, so that authors are given the opportunity to enrich their text as a result of the feedback they will gain during this European Summer University.

Each submitted full text, for a workshop or an oral presentation presented during ESU-7, will be reviewed by one or two members of the SPC at the usual international standards.

Short orals and/or posters will be allowed a 1 page abstract in the proceedings.

It should be stressed that accept for presentation does **not** imply accept for publication in the proceedings. Accept for publication in proceedings depends on the review process of the full papers or abstracts!

More details on the deadline for submitting full texts, their size, the format guidelines and the expected date by which the proceedings will be available and sent to all registered participants, will be announced in due course from the ESU-7 and HPM websites

<http://www.clab.edc.uoc.gr/hpm/>

## **11. Programme**

### ***Plenary Sessions***

*Theme 1:* Evelyne Barbin, University of Nantes (France)

The implicit epistemology of mathematics history and education: thirty years after Hans Freudenthal.

*Themes 2 & 3:* Adriano Dematte, University of Genoa (Italy)

History in the classroom: educational opportunities and open questions.

*Theme 4:* Cécile de Hosson, University Paris 7 (France)

Promoting an interdisciplinary teaching through the use of elements of Greek and Chinese early cosmologies.

*Theme 5:* Kristin Bjarnadottir, University of Iceland (Iceland)

Calendars and currency – embedded in culture, nature, society and language.

*Theme 6 :* Gert Schubring , University of Bielefeld (RFA) and UFRJ (Brazil)

New approaches and results in the history of teaching and learning mathematics.

*Theme 7 :* Bjarne Toft, University of Southern Denmark (Denmark)

Julius Petersen and James Joseph Sylvester – the emergence of graph theory.

### ***Panels***

*Panel 1:* History and philosophy of mathematics, technics and technology in mathematics education (organizer: Morten Misfeld, Aalborg University, Denmark).

*Panel 2:* The question of evaluation and assessment of experiences with introducing history of mathematics in the classroom (organizer: Leo Rogers, Oxford University, GB).

### *Provisional Time Schedule*

	Monday 14	Tuesday 15	Wednesday 16	Thursday 17	Friday 18
9:00-10:00	PL	PL	PL	PL	PL
10:00-10:30	BREAK	BREAK	BREAK	PL	BREAK
10:30-12:30	WS-2	WS-2	P	BREAK	WS-2
				P	
12:30-13:30	LUNCH	LUNCH	LUNCH, EXCURSION AND DINNER	LUNCH	LUNCH
13:30-16:30	WS-3	WS-3		WS-3	WS-2
					CLOSURE
16:30-17:30	OP	OP and SOP		OP	
17:30-19:00	POSTERS AND WINE RECEPTION	HAPPY HOUR		HAPPY HOUR	

*Caption:*

Plenary lectures: PL

Panel: P

15mn. Short oral presentation of posters: SOP

30 min. Oral presentations: OP

2-hour workshops: WS-2

3-hour workshops: WS-3

*Remark:* It is expected that there will be at most 6 sessions of OP and/or WS running in parallel.

## **12. Registration**

Participants should register online via the ESU-7 website

<http://conferences.au.dk/ESU-7/>

### *Conference fees*

**Early registration (before Feb 28, 2014):** 225 EUR (175 EUR for students and school teachers)

**Late registration (before May 31, 2014):** 275 EUR (225 EUR for students and school teachers)

Online registration will be closed on May 31, 2014.

The registration fee will cover five lunches, one excursion plus dinner, and proceedings after the conference. Payment will eventually be possible through the website.

## **13. Accommodation**

Accommodation can be booked through CABINN Scandinavia Hotel, where you will find a variety of options. You may enter their website through the conference website. A booking number for special prices for ESU-7 participants will soon be available at the conference website.

#### **14. Social Program**

- On *Monday* we will combine the poster presentation with a wine reception, where we can all walk around and talk to poster presenters (and others) in a friendly atmosphere while having a snack and a glass of wine.
- On *Tuesday and Thursday* we will end the days with “happy hours” where snacks and drinks are available, and where participants will have the opportunity to talk to each other, have informal meetings, etc.
- On *Wednesday* we have excursion day. We will leave the conference site before noon and go on a boat trip through the channels of Copenhagen. We will arrange for lunch on the way. The boat trip will end at Freetown Christiania, where we will spend some time walking around before we go to a restaurant for the conference dinner
- (On *Thursday* night there will a dinner meeting for the HPM Advisory Board, where locations for ESU-8 will be discussed.)

#### **11. For further information – contact**

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