AARHUS Workshop

Monday, 06 December 2010
Last Updated Saturday, 16 April 2011

Science Studies And Science Education:How Science Works – And How To Teach It

The International Workshop is organised by European Society For The History of Science, Department of Science Studies, Aarhus University, Center for Science Education, Aarhus University.

23-25 June, 2011 Aarhus University, Åarhus, DenmarkAarhus University Website Registration (Danish and English languages) Download "Preliminary program April 2011" [13 Apr. 2011] Download "Program and Abstracts" [16 April 2011]

ABSTRACTS

The length of an abstract should be between one and two A4-pages (2500 to 5000 keystrokes including “space”). The format should be .doc or .docx or .rtf or .pdf To submit an abstract, please mail the file as an attachment to keld.nielsen@ivs.au.dk

PAPERS
For you information, the style guideline of Science and Education is included here. Please note that in the special issue there will not be space for all papers presented at the workshop. A selection of papers will be chosen by the editorial board and will subsequently be submitted to the standard refereeing process of Science and Education. [04 Feb. 2011] SCIENCE STUDIES AND SCIENCE EDUCATION: HOW SCIENCE WORKS – AND HOW TO TEACH IT International Workshop on Science Teaching and History&Philosophy of Science 23-25 June 2011, Aarhus University, Århus, Denmark Download "Preliminary program April 2011" [13 Apr. 2011] Download "Program and Abstracts" [16 April 2011]

Important Dates

Important dates Deadline for registration 15th February 2011 Deadline for submission of abstracts 15th February 2011 Deadline for confirmation of participation
(the number of participants is limited to 60) 1st March 2011 Deadline for confirmation of accepted papers 15th April 2011 Deadline for publication of abstracts on the web
15th May 2011

Program outline

The program is organized with the intention of structuring and enhancing discussions and dialogue.
Each of the three themes will finish with a guided 30 min. summary and discussion. On Saturday morning, 3 workshops are organized by 3 moderators.
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Preliminary program

THURSDAY 23.6

11.00-12.30 Registration. Coffee and tea

12.30-13.30 : Lunch THEME 1: CLASSROOM NARRATIVES, THEMES AND CASES

13.30-14.30 Richard A. Duschl: Naturalizing the Nature of Science - Melding Mechanisms, Models, and Minds

14.30-15.30 Diana M. Farías: What do science textbooks have to say about how science works?

Estell Blanquet: Is it science we teach in French primary schools? Elementary criteria of scientificity for teachers

Kristian H. Nielsen: Science as communication: From lab talk through papers and peer reviews

16.00-17.00 Esther M. van Dijk: Portraying Real Science in Science Communication

Henrik K. Sørensen: Making philosophy of science relevant for science students

Raffaele Pisano: The machines “en général” in Lazare Carnot’s mechanics and in Sadi Carnot’s thermodynamics

17.00-17.30 Theme 1: Summary and final discussion

FRIDAY 24.6 THEME 2 - STUDENT DEVELOPMENT AND STUDENT INTEREST

08.30-09.30 Michael R. Matthews: From Science Teaching to History and Philosophy of Science: An Autobiographical Tale with Possible Lessons for the HPS&ST Endeavour

09.30-10.30 N. Kalyfommatou et al: Elaboration of two Different Teaching Designs for Promoting Epistemological Understandings

Martin Niss: Using the history of the kinetic theory of gases to teach the nature of models and modeling

C. S. Reiners and A. Schumacher: Designing authentic learning environments in chemistry lessons – paving the way in preservice teacher education

11.00-12.00 Ismo T. Koponen: The Role of Causal Schemes in Concept Differentiation in Physics: A Case of Current and Voltage Revisited

Ilaria Gauidiello et al: Main and side effects of programming robots for diagrams compiling as cognitive tools for education

Helge Kragh: Evidence-based Reasoning in the History of Science and the Teaching of Science

12.00-12.30 Theme 2: Summary and final discussion

12.30-13.30 Lunch

THEME 3 - WHAT KIND OF KNOWLEDGE DO TEACHERS NEED TO TEACH HOW SCIENCE WORKS

13.30-14.30 Fouad Abd-El-Khalick: Teaching with and about nature of science: Teacher knowledge domains and reflective nature of science instruction

14.30-15.30 Lars B. Krogh and Hanne M. Andersen: How come that teachers knowing about NOS don’t necessarily teach it?

Christine. S. Reiners and Jürgen Bruns: Reflection on Nature of Science (NOS). Aspects by Teaching Scientific Inquiry. An explicit and reflective activity-based Approach to Enhance Prospective Teachers' Understanding of NOS

Ángel Vázquez: Teachers’ conceptions on nature of science: strengths, weaknesses and influence of teaching practice

16.00-17.00 Veli-Matti Vesterinnen and Maija Aksela: Design and Development of Research-informed Course on Nature of Science for Pre-service Chemistry Teachers

Abigail Lustig: Approaches to science teaching derived from UTeach Natural Sciences (University of Texas at Austin): Overview and case study

Tinne H. Kjeldsen: The significance of different scientific practices and cultures for the function and status of mathematical modeling in other sciences: History as a provider of authentic cases

17.00-17.30 Theme 3: Summary and final discussion

19.30- Dinner SATURDAY 25.6 THEMATIC WORKSHOPS AND FINAL DISCUSSION

08.30-10.30 Three parallel workshops themes 1, 2, and 3

11.00-12.00 Plenum: Reports from workshops

12.00-13.00 Final discussion and summary

13.00- Lunch

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INTRODUCTION TO WORKSHOP

Students must know how science works

There is widespread agreement that modern science teaching must impart students with more than just “core” content matter knowledge. Students at post elementary levels must acquire an understanding of how science operates and how science influences - and is influenced by – human, cultural, technological, and societal factors. They must not only learn science, they must also learn about science - how science works.

Difficult to teach

At the same time, there is evidence that teachers consistently find it difficult to teach historical, sociological, and philosophical knowledge about science in ways that their students find meaningful and motivating. This is in spite of the large amount of knowledge about science that has been accumulated through historical, philosophical, and other studies of the natural sciences.

Engaging and meaningful science teaching

In this workshop we want to draw together a group of historians and/or philosophers of science with an interest in science teaching on the one hand, and science education researchers with an interest in the nature of science and how to teach it, on the other. We will also look at what challenges teachers encounter when teaching meta-knowledge of science as part of science teaching, and how the nature of such challenges may be related to insights from science studies?

Dialogue between science studies and science education

We think that intensive and creative dialogue between the two traditions of scholarship is needed to develop new narratives and new approaches that may enable teachers to give secondary and upper secondary school students realistic and modern ideas about what science is and what science can do.

MAIN THEMES OF THE WORKSHOP

New narratives, themes, and cases.
The students’ attention.

The teachers’ needs.

KEY NOTE SPEAKERS

Fouad Abd El Khalick, College of Education, University of Illinois, USA

Richard A. Duschl, College of Education, Penn State University, USA

Helge Kragh, Department of Science Studies, Aarhus University, DK

Professors, Researchers, Ph.D. and MA Students, Teachers are welcome.

PROGRAM COMMITTEE

Helge Kragh, Aarhus University

Ismo T. Koponen, University of Helsinki

Raffaele Pisano, University of Roma La Sapienza

Jens Dolin, University of Copenhagen

Michael Caspersen, Aarhus University

Lars B. Krogh, Aarhus University

Keld Nielsen, Aarhus University

ORGANIZING COMMITTEE

Helge Kragh, Aarhus University

Raffaele Pisano, University of Roma La Sapienza

Ilaria Gaudiello, Université de Paris 8

Lars B. Krogh, Aarhus University

Keld Nielsen, Aarhus University

PRESENTATIONS

The official language of the Conference will be English. The speakers should present their contribution in 20 minutes, discussion included. Suggested contributions for the workshop will be reviewed by the Program Committee and have to be accepted.

PUBLICATIONS

A selection of the accepted papers will be published in a special issue of “Science & Education” and would expected to be revised prior to submission, then reviewed in the normal manner of the journal. Editors may have to select among them.

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ORGANIZATIONS INVOLVED

ESHS – European Society For The History of Science

IVS – Department of Science Studies,

Aarhus University

CSE – Center for Science Education,

Aarhus University

VENUE OF THE WORKSHOP

Department of Science Studies, Aarhus University, Building 1110, C.F. Møllers Allé 8, DK-8000 Århus, Denmark

DEADLINES Registration: 15 February 2011
Submission of abstracts: 15 February 2011
Confirmation of participation: 01 March 2011
Accepted full papers: 31 April 2011
Abstracts will be available on this website: 15 May 2011

PAYMENT
You will not be asked to pay the conference fee until your participation has been confirmed

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WORKSHOP FEES

From 15th February: 250 Eur

After 15th March: 325 Eur

ACCOMMODATION AND TRAVEL

http://cse.au.dk/index.php?id=24372

OFFICIAL SPONSOR

The Danish Council for Independent Research Humanities

CONTACTS

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MAIN WEB INFO AND REGISTRATION

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http://www.eshs.org

http://www.historyofscience.it

“SCIENCE & EDUCATION”

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