

NEWSLETTER

Volume 7

Number 1

November 1990

The NEWSLETTER is a publication of the Canadian Mathematics Education Study Group/Groupe canadien d'étude en didactique des mathématiques.

CMESG is a group of mathematicians and mathematics educators who meet annually to discuss mathematics education issues at all levels of learning. The aims of the Study Group are:

- 1) to study the theories and practices of the teaching of mathematics
- 2) to promote research in mathematics education
- 3) to exchange ideas and information about all aspects of mathematics education in Canada
- 4) to disseminate the results of its work.

GCEDM est composé de mathématiciens et de didacticiens des mathématiques qui se réunissent une fois par année pour étudier diverses questions relatives à l'enseignement des mathématiques à tous les niveaux. Les objectifs du Groupe d'Étude sont les suivants:

- 1) faire l'étude de diverses théories et pratiques de l'enseignement des mathématiques
- 2) promouvoir la recherche en enseignement des mathématiques
- 3) assurer des échanges d'idées et d'information sur tous les aspects de l'enseignement des mathématiques au Canada
- 4) assurer la diffusion des résultats de ses travaux.

CMESG 91/GCEDM 91

-will be held at the **University of New Brunswick** in Fredericton from May 23 to May 27. The local organizer is:

- aura lieu à l'Université du Nouveau Brunswick à Fredericton du 23 au 27 mai. L'organisateur local sera:

Charles Verhille
Curriculum & Instruction Division
University of New Brunswick
Bag Service 45333
Fredericton, N.B.
E3B 6E3

INVITED SPEAKERS/CONFÉRENCIERS INVITÉS

Colette Laborde (France) will talk on "Approches théoriques et méthodologiques des recherches françaises en didactique des mathématiques"

James Kaput (USA) will talk on "Mathematics and Technology--Multiple Visions of Multiple Futures"

GROUPES DE TRAVAIL/WORKING GROUPS

- A. Fractal Geometry in the Curriculum.
P. Harrison (Scarborough)
- B. Socio-Cultural Aspects of Mathematics.
U. D'Ambrosio (Brazil), M. Hoffman (NYC)
- C. Technology and Understanding Mathematics.
J. Hillel (Concordia)
- D. Constructivism: Implications for Teacher Education in Mathematics. C. Maher (Rutgers), C. Gaulin (Laval)

PME's Recent Meeting in Mexico

The fourteenth annual conference of the International Group for the Psychology of Mathematics Education was held this past summer in Oaxtepec, Mexico, from July 15-20, 1990. Because the conference was held in North America this year, the annual meeting of the North American chapter of PME was integrated into the International meeting.

In addition to exciting cultural and social events that included mariachi bands, chamber music in an old historic convent, and a visit to silver mines and labyrinthine mountain caves, the main focus of the meeting--its scientific program--was equally interesting: plenary lectures by Nicholas Balacheff, Robert B. Davis, Eugenio Filloy, and Valerie Walkerdine; a symposium on PME research that involved Alan Bishop, Claude Gaulin, Kathi Hart, and Gilah Leder; research reporting sessions; discussion and working groups; and a poster session.

Several Canadians attended the meeting. The program included reports on the research of Jacques C. Bergeron ("The kindergartners' knowledge of numerals"); Maurice Garçon, Carolyn Kieran, and André Boileau ("Introducing algebra: A functional approach in a computer environment"); Nicolas Herscovics and Nicole Nantais ("Children's pre-concept of multiplication: Logico-physical abstraction"). As well, Gila Hanna was responsible for forming a discussion group on "Theoretical and Practical Aspects of Proof".

Next year's meeting will take place in Assisi, Italy. Participants should plan to arrive on Saturday, June 29, 1991, for a 9am start on June 30. The meeting will conclude at the end of the day on Thursday, July 4. Pre-registration forms are expected to be sent out during the month of November. Further information can be obtained from the organizer: Paolo Boero, Univ. Genova, Via L.B. Alberti 4, Genova 16132, Italy.

The North American chapter of PME has just sent out the first announcement of its 1991 meeting, to be held from October 16-19, 1991 at Virginia Polytechnic Institute in Blacksburg, Virginia. For details, please write to Cathy Brown, 303 Memorial Hall, Virginia Tech, Blacksburg, VA 24061-0313, USA.

Carolyn Kieran, Université de Québec à Montréal

News about ICME-7

7th International Congress on Mathematical Education, U. de Laval, Québec, Aug. 16-23, 1992

-More than 2000 replies to the First Announcement have already been received from all parts of the world. To get copies of the announcement please write to: ICME-7 Congress, Université Laval, Québec, Qc G1K 7P4

Phone: (418) 656 7592 FAX: (418) 656 2000 Email: ICME-7@LAVALYM1.BITNET

-An informational newsletter "Info-92" is being published concerning the organization and the program of ICME-7. The first issue appeared in October and the second one is due in early December. To receive copies please write to the address above.

The current Executive Committee of ICME-7 includes: John Egsdard (Orillia), representative of the Liaison Committee; Claude Gaulin (Quebec City), Chair of the Local Organizing Committee; Bernard Hodgson (Quebec City), Chair of the National Committee; Eric Muller (St Catharines); David Robitaille (Vancouver), Chair of the Executive Committee; Rémi Vaillancourt (Ottawa), Chair of the Fundraising Committee; David Wheeler (Montreal/Vancouver), Chair of the International Program Committee.

- A permanent secretariat to ICME-7 has been in operation since last summer at Laval University with two full-time people.

- M. Jean-Claude Methot, academic vice-rector at Laval University, is writing to all vice-rectors of Canadian universities in November in order to solicit the support of their institutions for ICME-7. It will be suggested that Canadian universities should encourage faculty and graduate students to attend, and should consider extending invitations to potential participants, especially those from say, developing or Eastern European countries who are likely to find the trip to ICME-7 impossibly expensive, to visit their institutions to conduct seminars or take part in research on their way to or from ICME-7.

CMESG members from Canadian universities are urged to contact their academic vice-rector in December or early 1991 and make sure that ICME-7 will be well publicized in their institution.

Claude Gaulin, Université Laval

The CMESG/GCEDM Monograph

Those who were able to attend the last meeting of CMESG/GCEDM in Vancouver already know that we have decided to develop and publish a monograph on Current Research in the Teaching and Learning of Mathematics in Canada, to be distributed at the Seventh International Congress on Mathematical Education (ICME-7) in Quebec City, August 1992.

The overall plan of the monograph is as follows:

Chapter 1. This chapter outlines the aims and activities of the Canadian Mathematics Education Study Group since its inception in 1977, situates its goals with respect to existing mathematics education groups in Canada, and states why it is sponsoring this monograph dealing with research -- thus, providing a lead-in for the subsequent chapters.

Chapter 2. This chapter forms the bulk of the monograph. It is a summary of the mathematics education research that is currently being carried out in Canada. For each province, there will be three sections (if applicable): (a) research carried out by full-time university faculty; (b) research carried out by college faculty (this includes CEGEPs in Quebec); (c) research carried out by other groups or organizations in the province, such as provincial associations, school boards, the education ministry, and so on.

In section (a), which treats each university in alphabetical order, the following information is provided:

i) A listing of masters and doctoral -level degrees that are available for those who wish to conduct research in mathematics education.

ii) An alphabetized listing of full-time university faculty who are currently involved in research on the teaching and learning of mathematics. This listing includes 1) a brief description (maximum 150 words) of each person's current and recent past research interests (going back no further than 5 years), and 2) reference to a maximum of 5 publications (or productions) that reflect these research interests. To aid with cross-referencing, these research interests and publications are indexed with a set of codes to be taken from a suggested list.

iii) For each individual in ii), a description of the masters and doctoral level research that this individual is in the process of directing or has

directed since Sept. 1, 1985. This description includes --for each student-- the name of the student, the name of the degree that is in progress or was granted (and year it was granted), the title of the thesis, a brief summary--maximum of 75 words--of the doctoral research (no summary for masters research), and the name of the co-director of the student (if applicable).

The mathematics education research that is being carried out by individuals in CEGEPs and colleges, which do not grant upper-level degrees, is similarly described in section (b)--with the exception of part iii); followed by a discussion of the research being carried out by non-university and non-college groups and organizations in section (c).

Chapter 3. While the previous chapter discusses research on a province-by-province basis, this chapter cross-references the information provided in Chapter 2 according to research themes. For example, the theme, algebra, will include i) an alphabetized listing of all those individuals currently involved in conducting and/or directing research on the teaching and learning of algebra, as well as ii) an alphabetized listing of all the publications (and productions and resources) referenced in Chapter 2 that deal with algebraic concepts.

Chapter 4. This chapter includes the information needed to communicate with those individuals and groups or organizations whose work is described in Chapter 2 and who can be contacted for further information.

The Editorial Panel, on behalf of the Executive of CMESG/GCEDM, has already asked an individual from each province to act as coordinator for that province. These coordinators are in the process of contacting one key person of their choice at i) each university, ii) college, and iii) each of the various groups and organizations that do some research in mathematics education in that province. The provincial coordinator will then ask these key individuals to be responsible for collecting the information needed for the monograph. To simplify this data collection process, prepared 2-page bilingual questionnaires have been given to the coordinators which they, in turn, will ask their key colleagues to disseminate and collect.

(cont.)

(The CMESG/GCEDM Monograph continued...)

We have urged the provincial coordinators to stress to their key colleagues the importance of trying to reach everyone in their institution or group/organization who is involved in mathematics education research—including individuals in other departments or sections of the organization. As well, neither the coordinators nor key contacts will act as filters because we want to include in the monograph everyone who believes that he/she is currently active in mathematics education research.

We do hope that everyone who is approached to help out with this monograph will be in a position to accept. Both time and effort are needed to create this resource, one that has been badly needed in Canada for years. It will prove a valuable source of information for those working in the field of mathematics education in whatever capacity. As well, this monograph will, hopefully, serve as a vehicle for attracting both students for upper-level degrees and visiting researchers from other countries. Let's all contribute to making the CMESG/GCEDM monograph truly representative of the good work that is being carried out in Canada.

Carolyn Kieran

[On behalf of the Editorial Panel of the monograph (Linda Brandau, Sandy Dawson, Carolyn Kieran-editor, and Tom Kieran) and the CMESG/GCEDM Executive]

NEWS FROM/OF THE MEMBERS:

David Wheeler retired in June from Concordia University and was granted the honor of Professor Emeritus by the university at its Spring convocation.

In September he moved to White Rock, British Columbia, where he will continue his work as Chair of the International Programme Committee of ICME-7 as well as editor of FLM (For the learning of mathematics).

Both Simon Fraser University and the University of British Columbia have welcomed David to the Vancouver area as adjunct professor.

His new home address is:

206-1273 Merklin Street

White Rock, B.C.

Canada V4B 4B8

Telephone: (604) 536-7205

Email: USERWHLR@UBCMTSO

Tom Kieran, the president of CMESG/GCEDM, is making fine progress after having a by-pass operation in early October. On behalf of all the membership, we wish Tom a full recovery and we look forward to seeing him back his usual energetic and stimulating self at the Fredrickton meeting.

CMESG UNPAID MEMBERSHIP/FRAIS D'ADHESION GCEDM

Many people who did not attend the 1990 meeting have not paid membership dues for 1990. Please use the tear away section and send a cheque for \$15 to Lars Jansson. Remember that membership entitles you to the proceedings of the Simon Fraser Meeting./Plusieurs personnes qui n'ont pas assisté à la réunion en 90 n'ont pas versé leurs frais d'adhésion pour l'année 1990. Veuillez utiliser la section détachable et envoyer un chèque pour un montant de 15\$ à Lars Jansson. Les membres recevront les actes de la réunion à l'Université Simon Fraser.

(Envoyez à/Send to: Lars Jansson, CMESG Secretary
Treasurer, Faculty of Education, University of
Manitoba, Winnipeg, Manitoba R3T2N2)

NAME/NOM:

ADDRESS/ADRESSE

Enclosed is my cheque for \$15 for 1990 membership/Vous trouvez ci-joint un chèque de 15\$(frais d'adhésion).

OTHER MEETINGS IN 91:

Canadian Society of Studies in Education,
June 2 - June 5, Kingston.

**Canadian Mathematical Society/Société
Mathématique du Canada,** May 31-June 1,
Sherbrooke.

American Educational Research Association,
April 3 - 7, Chicago.

**National Council of Teachers of
Mathematics, Research Pre-session,** April 15
(evening) & 16, New Orleans.

**National Council of Teachers of
Mathematics,** April 17 - 20, New Orleans.

**International Group for the Psychology of
Mathematics Education, PME-15,** June 30
(morning) to July 4 (afternoon), Assisi, Italy.

**Interamerican Conference on Mathematics
Education, CIAEM-8,** August 3 - 7, Coral Gables,
Florida.

Contributions to the Newsletter?

Please submit contributions to/Veuillez envoyer vos
contributions à:

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