Working Group 11

Comparative Studies in Mathematics Education

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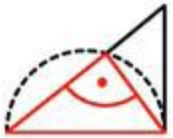
Summary of the group's activities

Twelve papers focused on different topics and various comparative contexts, arranged in five broad themes

Presentations all provoked discussions of methodological relevance to comparative education research in general and mathematics education research in particular

The relatively small number of papers meant, despite limiting presentations to ten minutes, that we were able to sustain suitably deep and inclusive discussion throughout.

In the following, only presenters' names are given, although most papers were multiply authored.



Comparing curricula: goals and methodologies

A cross-national standards analysis: quadratic equations and functions

Melike Yigit, Purdue University

Modelling in French and Spanish syllabus of secondary education

Richard Cabassut, IUFM, Strasbourg University

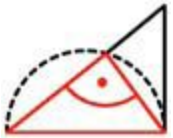
Analyzing mathematics curriculum materials in Sweden and Finland: developing an analytical tool

Tuula Koljonen, Mälardalen University

Issues arising

Comparing curricula raises the general issue of whether it is appropriate to use frameworks developed in one system for analysing data from another. For example, a framework exploiting verbs as placeholders for mathematical activity will not work with documents in which nouns are used.

When comparing official documents, particularly curricula, it is important to acknowledge that they may vary in length, not least because different cultures present such matters in varying ways and with different levels of specificity reflecting cultural communicative norms.



Characterising and comparing classroom instruction from three vantage points: 'neutral' observer, teacher practice and learners' experience

The development of foundational number sense in England and Hungary: a case study comparison

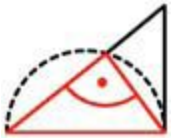
Paul Andrews, University of Cambridge

School-based mathematics teacher education in Sweden and Finland: characterising mentor-prospective teacher discourse

Malin Knutsson, Örebro University

Comparing mathematical work at lower and secondary school from the students' perspective

Niclas Larson, Linköping University

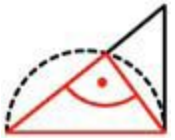


Issues emerging

The role of the researcher as a cultural insider: How is this managed when examining data from both culturally familiar and unfamiliar cultures?

Being aware of the power relations between participants during data collection

Acknowledging culturally and micro-culturally constructed interpersonal relationships.



Modes of constructing data, developing analytical categories and pursuing validity in comparative studies

The validity-comparability compromise in crosscultural studies in mathematics education

David Clarke, ICCR, University of Melbourne

The problem of detecting genuine phenomena amid a sea of noisy data

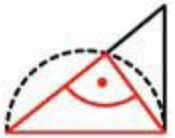
Christine Knipping, University of Bremen

Issue emerging

Dilemmas in comparative studies. For example, what are the advantages or disadvantages of exploiting too inclusive or too distinctive categories?

Data and phenomena. What qualify as data? In cross cultural research the criteria for what constitute data must hold legitimately across settings. At what point do data emerge in the research process? Is this an issue of greater complexity in comparative study?

Typically, all research analyses comprise comparison. Data and phenomena codetermine each other.



Strategies and goals of comparing learners' emotional and affective experiences

Comparing the structures of 3rd graders' mathematics-related affect in Finland and Chile

Laura Tuohilampi, University of Helsinki

Boredom in mathematics classrooms from Germany, Hong Kong and the United States

Eva Jablonka, King's College, London

Issues emerging

Dialectics between practice and emotions arising from this practice; what constructs what?

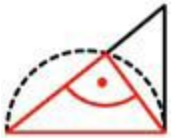
To what extent are emotions social constructs?

Does trying to explain students' emotions as deriving from their cultural context represent a form of cultural essentialism.

The contrast would see them deriving from the micro-culture.

Labelling emotional experiences constructs what we call the emotion.

Predefined labels for emotions in questionnaires might trigger a response that one thinks one has experienced it in the labelled way.



Modes and principles of using quantitative methods in comparative studies

Mathematics teachers' beliefs in Estonia, Latvia and Finland

Marku Hannula, University of Helsinki

Re-examining the language supports for children's mathematical understanding: A comparative study between French and Vietnamese languages

Hien Thi Thu Nguyen, University of Pedagogy HoChiMinh City

Issues emerging

Imported instruments that fail to be reliable in new contexts represent an important result. One way to overcome this problem may be to include open items to allow the voice in the new context to be heard.

The concepts we exploit may have different salience or vocabulary in different cultures. For example, effective or efficient teaching is an acknowledgement of local discourse.

The relationship between qualitative and quantitative approaches to data gathering and analysis in comparative studies. How does one mode inform the other? How do they fit our objectives?

What is the impact of cultural proximity (Finland and Sweden) or distance (Belgium and Viet Nam) on research design and expected outcomes?

Sensitivity to cultural minorities. Are the cultural groups under scrutiny clearly defined?