

PME NEWSLETTER

March/April 2010

PME as an International Community

PME Message from President Fou-Lai Lin



YES! Yes! PME is an International Community!

According to an online dictionary, what constitutes an international organization is an institution drawing membership from at least three states, having activities in several states, and whose members are held together by a formal agreement.

PME as a scientific organization draws members from around one-third of all the countries around the world. It also supports academics from under-represented or economically weak countries in attending the annual conference. Normally, delegates will not be appointed to review Research Reports submitted by participants from the same nation to avoid conflict in interest.

Our executive board International Committee consists of 17 delegates (including the President), with a maximum of three delegates representing the same nation. Very often, we are do-

PME Message from the Editors

Greetings and welcome to our first Newsletter of 2010. We apologize for the delay in getting this next Newsletter out to you, but well.... you know how life is as an academic ... chasing the deadlines!!!

In this issue we explore the nature of PME as an international community. We feature invited responses from PME members Dr. Zahra Gooya of Iran and Dr. Marcelo Borba of Brazil to three questions: How is PME an international community? What more might PME do to address and meet the needs of its international community? and What challenges does this pose for PME? Borba embraces the inclusive PME community as international while Gooya challenges each of us to consider how we make PME “a truly international community rather than a national community with an international audience.” We wonder if it is possible to make the dialogue of PME genuinely reciprocal where the exchange of ideas with countries unlike our own is met with respect. In this issue Alan Bishop, Australia, provides a critical response to submissions from the November 2009 Newsletter on the PME 34 conference theme “Mathematics in Different Settings.” We also initiate an open dialogue on the format of the conference proceedings (to be paper or not?) with opinion pieces by Dr. Heidi Krzywacki, Finland and Dr. Richard Barwell, Canada.

For our next issue (May/June 2010) we will feature PME conference highlights and AGM news. Please, send your contributions directly to the editors. Hope you enjoy this Newsletter!

Cristina Frade, <frade.cristina@gmail.com> Zhonghe Wu, <zwu@nu.edu> & Cynthia Nicol <cynthia.nicol@ubc.ca> – Editors of PME Newsletter

ing well by keeping the number down to two delegates representing the same nation.

The most important activity for PME is that there is an annual conference which rotates around the world. Each year we come together at our annual Group conference to make new contacts, renew international connections and exchange research in mathematics education.

Participating in PME conferences provides opportunities to further our own individual research endeavors, develop research networks and contribute to the knowledge field. Our individual efforts strengthen the PME community, and these same efforts require us to attend to our responsibilities to the organization as a whole. We benefit personally by attending and participating in the conference, while the community benefits from our contributions. A healthy community in turn strengthens the personal support it provides.



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PME an Inclusive International Community

invited submission by Marcelo Borba, Brazil



I have attend PME since 1989. Of course I have not participated in all the conferences since then, but since 2003 and I have not missed one single conference. It is easy to notice in these 21 years that PME has incorporated a much broader range of partici-

pants that it used to. Just to give you an idea, until 1989, very few Brazilians would attend PME. In 1989 a few more attended PME in Paris and there was born the idea of organizing the first PME conference in Brazil, which took place in Recife in 1995. Now we are a large community at a PME and we are about to organize our second conference, a privilege very few countries have had so far.

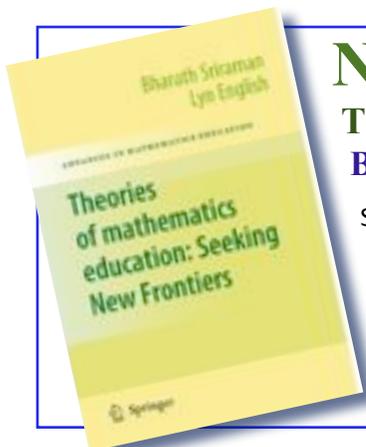
This example shows how PME has become a more inclusive group. It is also easy to see that other countries that have not been as present are now present quite often. South Africa, Iran, Turkey and Greece are examples of countries that are represented quite often in PME conferences.

The challenge for PME is how to become more international by encouraging participants to attend from more countries without losing the small size of the PME conference. Many other conferences in Mathematics Education and in other areas do have more countries represented. However, once you attended these other conferences you

have the feeling that you could not meet anyone because the conference had something like 10,000 participants in contrast with our 400 to 500 participants at PME.

So other conferences might have more countries represented, but they are not as international! It is a wonderful example of how “less” can be “more”. PME, with its “cozy” atmosphere and annual meeting has allowed participants to create networks during the conferences that continue after the conference.

A yearly conference organized in different geographical places has allowed more countries to be represented at PME while at the same time keeping the conference size under control since not everyone can attend all conferences far from their home country. Many special issues of journals, book chapters and books have their origin in meetings after or before presentations! One other challenge, that I believe we will need to be addressed and could start to have positive results has to do with the presence of other Latin American countries other than Mexico and Brazil. Argentina has had a timid presence at PME conferences in the last 10 years, but otherwise no other Latin American countries have regularly been represented at PME conferences. We hope that our next conference, to take place in Belo Horizonte will be the door for participants from other countries to start attending PME conferences. Let’s hope that we have many participants from Argentina, Chile, Ecuador, Colombia, Venezuela, Dominican Republic, Cuba, It would help to make PME more international!



New Book! Just Released!

Theories of Mathematics Education: Seeking New Frontiers
Bharath Sriraman and Lyn English (2010)

Stemming from work at, and following PME 2005, Melbourne, this is the newest book in the series *Advances in Mathematics Education*. Contributions from over 50 authors (with about 70% as PME members) examine theories and new developments in math education including complexity theory, neurosciences, modeling, critical theory, feminist theory, social justice theory and networking theories.

Published by Springer ISBN: 978-3-642-00741-5. <http://www.springer.com>

PME an International Community? **Not Yet!**

invited submission by Zahra Gooya, Iran

How is PME an international community?

I'd like to take this question in two different ways! First, **how is** PME an international community and second, **how I'd like to see** PME as an international community.

PME is an International Community based on its constitution, its established history and its stated goals among them "to promote international contact and exchange of scientific information in the field of mathematics education". Relying on this history and these goals, PME has been trying hard to act as an international community and its history includes many successful events and lots of gains.

One gain I have appreciated over the years is how local organizers and ICs have accepted my proposal to review my assigned scientific contributions without paying the deposit fee and instead paying the full registration fee in person at the conference site.

With the organizers' cooperation –both locally and internationally- I was able to participate at most PME conferences in this way, up to the 31st that was held in Seoul. For PME 31, more people from Iran were willing to participate since the conference was in Asia and the travel costs and expenses were lower. The Visas needed to attend the conference were also much easier to obtain compared to many other host countries. However, the PME 31 conference did not accept our request to pay the fees at the conference site and since many others did not have access to credit cards, they were almost denied the opportunity to participate at the conference. After PME 31, this trend continued.

However at the present, how I'd like to see PME as an international community is slightly more ambitious and more demanding! And here is my perspective:

My membership with PME dates back to 1992- PME 16 in New Hampshire- the year I was preparing for my PhD graduation. It was extremely important for me to be able to



participate at that conference and become part of this interesting international community. I remember that I got a \$500 travel grant from my university. I didn't have any difficulty getting a visa, because by that time, it was easy to get a US visa from Canada. I also had a credit card to do my payments and that was all I needed to be there!

After I obtained my PhD, I returned back to my country and I was motivated to continue attending the PME conferences every year! And this was the beginning of my difficulties. I expand on only a few of them:

Getting a visa has always been a major challenge for many people living in countries with all sorts of limitations. In specific, visa and political situations in the world are intertwined.

To give a concrete example, Mani Rezaie my PhD student, obtained a grant from the Skemp Found to participate at PME 32 and contribute to its scientific programs. He spent more than two months in Tehran collecting the required documents for the Mexican Embassy. He spent lots of money preparing the documents and paying the visa fee. In the end he didn't get the visa!

PME needs to consider two important points: 1) Transferring any foreign currency from certain countries to others requires months of hard work with no definite results; and 2) for most people, in specific, graduate students and new faculty members, there is no chance of using credit cards to pay the deposit fees and registration fees in advance because there are financial embargoes or other kinds of limitations in many countries of the world.

I therefore, expect to see PME as an International Community pay more attention to these impediments, and to strive even more to fulfill the first goal of PME that is "to promote international contact and exchange of scientific information in the field of mathematics education".

I have learned a lot by being a member of this community, and I am confident that I have made my own share of contributions to the community. I wish for PME to remain an International Community that many of us wished to be part of; a community that provides different opportunities for people from all areas of mathematics educa-

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PME an International Community? continued ...

tion; a truly international community not a national community with an international audience; a community that celebrates the diversity even more and to broaden its scope and appreciate the inclusion of all in more practical ways.

What more might PME do to address and meet the needs of its international community?

In answering this question, I would like to refer you to the comments made above. Then, based on my previous experiences, I would like to suggest the following:

- Sometimes, the political situations around the world, have direct effect on visa processes. I have previously had experiences were embassies simply issued travel visas to participants, based on invitation letters from the organizing committees of the conferences;
- PME might consider negotiation with international organizations such as UNESCO, UNDP, United Nations, World Bank and such to get financial support for newcomers including young faculties and graduate students;
- Tightening the budget and lowering the expenses by reconsidering the conference program and events. For instance, the cost of the reception, dinner, printed proceedings, conference bag and such, could be calculated separately and become optional for participants;
- Helping countries in all regions of the world with limited resources and lower expenses host the PME conferences, this includes countries that are still able to organize reasonable international conferences with the help and support from the greater community. This helps PME conferences to travel around the world and every year, provide fantastic opportunities for all members to see the kind of diversity that they may not have imagined before!

What challenges might this pose for PME?

I believe that taking any of the aforementioned suggestions into consideration will pose a challenge to this diverse and not yet a truly international community!

To take these challenges more seriously, I propose to raise the question at the next AGM and ask people to reflect on this serious issue, and invite them to bring their sugges-

tions on the table. If more members of the community feel that we need to enhance our standards and raise our expectations in a logical and feasible way, we could be assured that the PME goals will be reached, its scope will be broaden and this legacy will remain forever if and only if we will be able to establish more trust and deeper understanding of each others' problems and enthusiasm for being part of the PME; which means:

I wish for PME to be a truly international community not a national community with an international audience

PME is an international community with members from all around the world, with diverse problems, interests and perspectives about all aspects of mathematics education; members that are able to learn from each other and to help themselves to understand

the fascinating mathematics education of the people from different culture and different background.

ICMI 2009 Awards Outstanding Achievement in Mathematics Education Research



**Gilah Leder, Australia -
Felix Klein Award**

Dr. Leder is an Adjunct Professor at Monash University, and the first female and Australian to win this award. With this award Gilah's is honored for her life-time contributions to mathematics education research.



**Yves Chevallard, France -
Hans Freudenthal Award.**

Dr. Chevallard, is a Professor at IUFM d'Aix-Marseille, France. He is recognized with this ICMI award for his influential research over the past 30 years that includes the theory for analyzing human activities in relation to mathematics.

Awards will be presented at ICME-12 2012 Seoul, South Korea. <http://www.mathunion.org/icmi/home/>

Mathematics in Different Settings

a personal view of PME 34

Alan Bishop, Australia

For over 20 years the PME research community has been both interested in, and challenged by, the idea of mathematical practices occurring in informal and non-formal educational contexts. Much has been revealed by research since then, but more challenges exist, partly revealed by that research and partly pressured by the increasing educational desires to see more learners empowered by mathematical understandings. Despite the progress made through research, there is little sign that the educational disempowerment of a majority of young people in the world has been overcome.

Over the last 20 years, the explanations of mathematical underachievement have tended to move away from the purely cognitive domain. That domain has been found wanting in terms of both explanations and implications for changing practices. Generally researchers have been searching for more paradigms focussing on social and cultural aspects and issues. However despite some promising approaches we should not lose of the fact that research with a social focus still needs to engage and account for individual learners and their situation. Furthermore, at PME 34, I am pleased to see that the focus will be on ideas and research which can inform mathematics education in practice.

My main research interest in these last 20 year or more has been on and around the idea of mathematics as a form of cultural knowledge, together with its implications for for-

mal mathematics education. In the first phase of this research my interest was with the idea of ethnomathematics, and with the implications of this idea for the mathematics curriculum. This curriculum has more or less been standardised internationally, so much so that, unlike other school subjects, what appears in the mathematics curriculum in one country's schools appears almost identically in



every other country's curriculum. I think that more research needs to address the issue of how the mathematics curriculum can be made more

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A Concrete Approach to the Architecture of Mathematics: Collected papers of Zoltan P. Dienes

Michael Thomas (Ed.) (2010)



Contains the latest work of Zoltan Dienes, and what Dienes considers "important, even exciting for living this short life of ours!" Dienes writes in the book's introduction "I hope you will find some excitement, some beauty and perhaps even some mathematics in what follows. Good hunting!"

The book will be of interest to practicing teachers, teacher candidates, students of mathematics and mathematics educators. Until June 30th 2010 introductory discounted prices of \$20 (US + postage) available for schools, libraries, educators.

<http://www.math.auckland.ac.nz/~thomas/Dienesbook.htm>

**New Book!
Just Released!**

Allan Bishop continued

culturally responsive to the general population, in order to encourage more participation at the higher levels of mathematics, particularly among cultural minority groups.

A second area of study concerns disadvantaged learners. When we consider the learner's situation in the cultural approaches developed in the last 20 years, the most promising ideas in my view are 'cultural conflict' and 'transitions'. If it is the case that every school learner faces a cultural conflict between 'home' or 'outside school' mathematics culture on the one hand, and the school mathematics culture on the other hand, then we need more research on how learners handle that conflict.

For example, one such idea is that of transitions. From the perspective of educational practice, one question is: how do learners handle the transitions that they must make between the two cultures? From a pedagogical practice viewpoint it would be particularly interesting to know more about learners who succeed with these transitions and those who fail.

Thirdly, shifting the research focus onto the teacher rather than on the learners, we can see that in the last 20 years there has been an increasing interest in research on the affective side of teachers' practices, with for example em-

phases on teachers' attitudes and beliefs. From the cultural perspective one new construct has come to the fore, that of values. It was a surprisingly ignored construct until a few years ago, as the original cultural focus for research was on the cognitive and mathematical aspects.

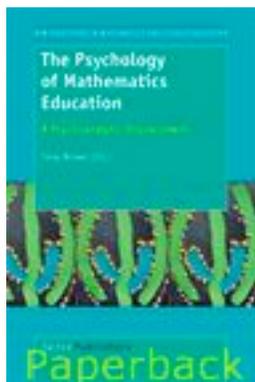
But values are not wholly cognitive – they have strong affective and emotive components also, which are apparent with both teachers and learners. Thus with the increased interest in culturally relevant research constructs, it is hard to see how values could be ignored, since shared values are a significant part of any culture

But what about our current research approaches? Are they adequate for dealing with cultural issues in mathematics education? Research methods developed in one culture

may not be relevant in another, and research into cultural issues raises many questions about the cultural perspective of the researchers themselves. I look forward to a stimulating conference, and particularly to the discussions on mathematics and culture, and its relation to mathematics education.

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The Psychology of Mathematics Education: A Psychoanalytic Displacement



Tony Brown (Ed.) (2010)

Through its eleven chapters this book provides accounts of how children, teachers, researchers and mathematical learning can be understood differently, towards emphasising how they are each consequential to the many ways in which the world can be created and described. Includes chapters by Tony Brown, Tamara Bibby, Roberto Baldino and Tania Cabral, Margaret Walshaw, Elizabeth de Freitas, Kathleen Nolan, Tony Cotton, David Wilson, Dick Tahta, and Chris Breen.

Published by Sense ISBN: ISBN 978-90-8790-556-9, <https://www.sensepublishers.com/>

New Book! Just Released!

Opinion

For or against paper proceedings at PME conferences?

Heidi Krzywacki, Finland

I am against printing PME proceedings automatically to all participants. This means that I would like to see the PME



proceedings published as it has been until now, but individuals could choose whether they want to have a hard copy or not.

In practice, the proceedings still need to be edited as print-out publication, and all participants would have it electronically. However, only those who want to have the printed volumes will have them.

There are two reasons why I would like to avoid having the printed proceedings: (1) the amount of pages in the print-out PME volumes attends to be huge making them neither useful at the conference venue nor desired additional baggage when traveling home, and (2) since we have convenient technological applications available nowadays, there is no need for having the proceedings on paper. And of course, there

are some ecological and financial reasons as well.

In this way, those who want to have their print-outs can have them at the conference venue or alternatively they can order the proceedings to be mailed at home directly, but those who want to avoid print-outs and maybe print only some pages will be able to do that and furthermore, they can avoid the costs that increase the conference fee.

However, the whole idea of this PME proceedings print-on-demand is based on further development regarding the conference website and availability of the conference publications electronically.

In addition to an electronic version on CD-rom, I would like to see the programme on the website (maybe secured with login and password) with direct links to the papers. It would be so much easier to have the overall view of the programme and for example, to plan your conference activity beforehand. Searching for something particular would also be easier electronically.

Heidi can be reached at University of Helsinki, Finland
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Richard Barwell, Canada

What are the PME Proceedings for? Part of the special culture of PME is the possibility of reading papers *before* attending the presentation (or even during the presentation). And as a presenter, I don't feel obliged to reproduce the paper in full – I can involve participants in working on samples of the data or extend the ideas in new directions. I am not convinced that CDs or online publications will be as effective in this respect. Many papers for other conferences are published online before the conference, but I don't think many people read them.

Will print-on-demand be equitable? While print-on-demand is an attractive compromise, it means that those with the means will have the option to buy, while those without the means will make do with the CD. Similarly, online access is good for those working in places with high-speed broadband...but that is not everyone. And a move to wifi-proceedings during the conference favours those who have laptops and may make it harder for institutions in less affluent countries to host the conference.

Do we have to stick to the current A5 multi-volume format? Do we really need to include pages for working sessions, discussion groups, short orals and posters? If

not, a whole volume could be eliminated. Would a new layout be more practical?

Actually, Markku Hannula's suggestion (see PME wiki) of distributing e-book readers to participants is quite ingenious, since it would allow us easily to read papers during the conference, would be equitable assuming everyone gets one, and is a change in format.

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Do you have an opinion?

If so please let us know.

Contact the PME Newsletter Editors:

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Or post a response to the PME wiki at
<http://pme-communication.wikispaces.com>

Belo Horizonte, Brazil, host of PME 34

submitted by PME 34 conference chair Marcia Maria Fusaro Pinto, Brazil

Belo Horizonte is the capital of an inland Brazilian State, Minas Gerais, which is not far from the two best known Brazilian cities - Rio de Janeiro and São Paulo. We are proud to say that in Minas Gerais we had the first organized independence movement, during the Brazilian colonial interlude.

Belo Horizonte is a late nineteenth century city, planned to be the capital of the State. We may see part of the State capital project when visiting the historical complex of Liberty Square, which in fact synthesizes the diverse architectural styles that characterize different epochs of the city's history.

The first neo-classical buildings dating from late XIX century were built as government offices.

Later, during the 1940s, the art deco style influenced the covering in black of the Palace of Christ the King. In the 1950s and 1960s, Niemeyer incorporated into the complex the modern Niemeyer Building and the Public Library. And a pos-modernist project undertaken during the 1980s resulted in a construction popularly known as "Junk Queen" (Rainha da Sucata)

The modern architecture in the city is a landmark in Brazilian architecture. and influenced the entire country. From 1940 to 1943, the city major Juscelino Kubitschek built an artificial lake in the city, the Pampulha Lake. Considered by its builders as the seed of Brasilia - the new Brazilian capital planned from the scratch as the ideal baricentre of Brazil - the modern architectonic complex in this site was projected by Oscar Niemeyer.

The entire architectural complex consists of the Saint Francis Church, the Art Museum (initially conceived of as a Casino), the Ball House and Yacht Tennis Club.

Every Sunday we have a popular fair which covers part of the principal avenue in the city centre- Avenida Afonso Pena.

There you will also find all sort of handcrafts, in different materials, paintings and typical food from some parts of the country which in fact we do not recommend. And also, as in any place

with too many people around, we must be careful with our belongings.

Some of our artists are internationally known, such as the rock group Sepultura, the dance group Corpo, and the street theater Galpão. Anonymous handcrafts coming from the entire State bring their works to Belo Horizonte to sell them in shops, in the Central Market, or in open air fairs.

There, amongst the colored variety of flowers, fruits, vegetables, and a variety of spices and herbs, including those medicinal ones, you will find from religious and exoteric articles to traditional food and drinks, and hand made crafts. In spite of the constant criticism, there still an animal fair in one of its sections.



Belo Horizonte provides a different natural beauty from the well known one of Rio de Janeiro.

It is built on the mountains and still within propitious short distance from forests and water falls, in the National and State Parks such as those of Serra do Cipó and Serra do Rola Moça.

Belo Horizonte is also close to our old colonial capital, an early eighteenth century town named Ouro Preto, which is a masterpiece of architecture and art declared World Heritage Site by UNESCO.

There we experience the city as if strolling a movie set, the city complex itself the most impressive feature. Its hilly and stone paved streets, houses painted in pastel colors and the 13 baroque churches evoke the Brazilian gold rush, when that region was one of the most important mineral suppliers in the world.

You can find all information about our lovely city and surrounding areas visiting its official website www.belotur.com.br



Serra do Cipó



Ouro Preto, the old colonial capital of Belo Horizonte, is a declared World Heritage Site by UNESCO