MERGA 2012: Where We've Been, Where We Are, and Where We're Going

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Why have an organisation like MERGA? This question will be addressed from past, present and future perspectives (1976, 2012, and 2025). One focus of the paper will be the need to improve mathematics curricula, and to improve the teaching and learning of mathematics, at all levels. I shall argue that we have not done enough to make sure that MERGA has delivered, is still delivering, and will continue to deliver the goods on such basic curriculum/teaching/learning issues. Part of the difficulty is that we researchers have not reached agreement on what we mean by "improvement". That is as much a political issue as anything else, of course, but the MERGA community needs to do more to make sure that the responsibility for defining what improvement means, and how it is assessed, is not in the wrong hands. A second focus of the paper will be some reflections on what the "A" in MERGA might represent. This Conference is being held in Singapore, and the challenge is for a wider vision of MERGA's role in Asia to be formulated and implemented.

This paper will present an analysis of the history of influence in international mathematics education from a non-European, non-North American perspective, and especially from Asian and Australasian perspectives. The focus will be on events and developments from the beginning of the twentieth century to the present time (2012). In the short space available I will attempt to re-interpret events, in a manner not unlike what Nerida Ellerton and I recently did in our book *Rewriting the History of School Mathematics in the United States 1607–1861* (Ellerton & Clements, 2012).

Although this paper is likely to generate heat, especially from some European and North American scholars, it is meant to be constructive rather than destructive. The paper draws special attention to developments which have taken place around the world over the past 50 years which have placed the international mathematics education community in its best position ever to establish much more equitable ways of operating.

Where We’ve Been (I): International Mathematics Education in a Colonialist Environment

The International Mathematics Education World in 1914

In 1914, when the world was on the brink of a Great War, colonialism in Africa had reached its zenith. There had been an unseemly “scramble for Africa”, and virtually the entire continent was “held” by one European nation or another (see Table 1, which is based on information in Weir, 2009, p. 99). The map of the continent of Africa in 1914 was remarkable for the fact that only two nations—Liberia and Abyssinia—could really claim independence, the latter having gained its independence from Italy only in 1913.

It would be inappropriate in this paper to interpret the situation so far as colonial activity was concerned in Eastern Asia in 1914. It suffices to say that the period was

In J. Dindyal, L. P. Cheng & S. F. Ng (Eds.), Mathematics education: Expanding horizons (Proceedings of the 35th annual conference of the Mathematics Education Research Group of Australasia). Singapore: MERGA.

also characterised by a scramble for new markets and territories and has been dubbed the "New Imperialism" (see, e.g., Cribb, 1993; Porter, 1996).

Table 1
European Colonisation of Africa Around 1914

"Controlling" European Power	African Colonies
Great Britain	Basutoland, Bechuanaland, British Somaliland, British East Africa, Egypt, Gold Coast, Gambia, Nigeria, Northern Port Guinea, Rhodesia, Nyasaland, Sierra Leone, Southern Rhodesia, Sudan, Swaziland, Uganda, Union of South Africa
France	Algeria, French Equatorial Africa, French Somaliland, French West Africa, Guinea, Ivory Coast, Morocco, Senegal, Togo, Tunisia, Upper Volta
Belgium	Belgian Congo
Portugal	Angola, Mozambique
Germany	Cameroon, German East Africa, German South-West Africa
Spain	Rio de Oro, Spanish Morocco, Spanish Sahara
Italy	Eritrea, Italian Somaliland, Libya

Australia's achievement of federation notwithstanding, around 1900 there was a conscious move from European nations to assert formal colonial control of large overseas territories. Established European powers in Asia—like the United Kingdom, France, and the Netherlands—succeeded in placing under their influence huge numbers of people in South East Asia, the Middle East, and the Indian Subcontinent. Around the same time the Japanese and German empires, Tsarist Russia; and the United States also began to emerge as new imperial powers in East Asia and in the Pacific Rim.

Relevance to mathematics education? But what might the above have to do with mathematics education and, in particular, what is the relevance for mathematics educators in Asia, in Australia, and in New Zealand in 2012? The answer is that the colonial masters had the responsibility of defining and controlling school education, including school mathematics, in the colonies that they administered. This control generated a colonialist mentality which dominated world thinking about mathematics education for much of the twentieth century.

The analysis presented here will indicate that in 1914 those seeking to internationalise mathematics education operated from a mindset which saw male mathematicians in Western Europe and the United States as the experts in both mathematics and the teaching and learning of mathematics. A small group of European and North American mathematicians took it upon themselves to coordinate a move to develop improved approaches to the teaching and learning of mathematics. These mathematicians believed that their strong mathematical backgrounds and their own educational experiences in top-class schools and universities qualified them to take on this responsibility (Curbera, 2009; Singh & Ellerton, 2012).

That kind of thinking in education was a direct extension of European and North American attitudes towards international relations. The Canadian philosopher, John Watson (1919), in *The State in Peace and War*, supported the need for "enlightened" imperialism. According to Watson, well-qualified outsiders believed that they had a legitimate authority to take over and run the affairs of under-developed, troubled, countries provided that they exercised their authority in a way that would benefit the developing nations. Thus, for Watson, the concept of empire was not inherently morally offensive, but rather something that could uplift peoples and nations in need (Sullivan, 1983).

Moves towards the internationalisation of mathematics education. Early in the twentieth century there was not much agreement within and between nations, on the purposes of school mathematics. Some of the more polarised points of view were reflected in debates about desirable curricula and teaching methods that occurred in Europe and the United States, and also in far-flung parts of the world—like Victoria, Australia (Clements, 1975). In England, John Perry, a London professor of applied mathematics with experience working in Japan, was advocating a form of school mathematics, which came to be known as "Perryism". That approach emphasised the use of laboratory methods in mathematics classes, the widespread adoption of the concept of function, and the coordination of school mathematics with the physical sciences, especially physics. In 1902, Perryism was strongly supported by the Chicago-based Eliakim Hastings Moore, then President of the American Mathematical Society, who took steps to introduce the approach into Chicago schools (see Clements, Keitel, Bishop, Kilpatrick & Leung, 2012).

But Perry's and Moore's radical, mathematical-modelling approach to school mathematics was condemned by Professor David Eugene Smith, of Teachers College, Columbia University in New York. Smith, a mathematics educator with close links to the mathematics community, was an author of North America's best-selling school mathematics textbook series, and therefore had much to lose if Perryism was taken up on a large scale (Clements et al., 2012). His statements in opposition to Perry's and Moore's ideas pitted the mid-Western form of Perryism against what he claimed were the views of mathematics teachers on the East Coast of the United States. Smith's language was direct and conservative to the point of being reactionary.

When summarizing the attitudes to Perryism of teachers in Eastern United States, Smith (1905) could not have adopted a more conservative stance when he wrote:

1. Any effort to introduce physical experiments into the classes in mathematics has no support whatever from either the teachers of mathematics or those of physics. …
2. Any effort to seek the applications of mathematics chiefly in physics or in science generally, has not met with favor, and is not likely to find advocates. The consensus of opinion is that the number of applications of algebra to physics, for example, is exceedingly small, those to business being considerably larger, even though these are not numerous. …
3. The attempt to have algebra and geometry appear to the pupil as having any considerable application to science or to business aside from a few special propositions will not be made. (p. 207)

Smith (1905) went on to say that teachers in the eastern states (of the United States) not only wanted their students "to love mathematics for its own sake" (p. 208), but also to be well prepared for rigid system of public examinations. According to Smith, teachers in the Eastern states would disagree strongly with the proposition that "no equation should be given without a genuine application, that no problem be assigned without a genuine application, that no problem should be assigned without a physical context, that no topic shall be considered save as it bears upon life" (p. 208). He added that teachers in the eastern states wanted to develop "pure mathematics" laboratories in which pupil activity took place in the mind rather than with physical apparatus (Clements et al., 2012).

The above ideas expressed by Smith were important in the early history of international cooperation in mathematics education because, with Felix Klein, a leading German mathematician, Smith would become the major force behind early moves to establish an international community of mathematics educators. It was Smith and Klein who had the greatest influence on the formation and early work of the International Commission on Mathematical Instruction (ICMI)—a structure created in 1908 to internationalise mathematics education (Donoghue, 2008; Furinghetti, 2008).

Singh and Ellerton (2012) argue, in their chapter in the *Third International Handbook of Mathematics Education*, that the ICMI structure created in 1908 for the purpose of internationalising mathematics education was, from the outset, decidedly Eurocentric, with a strong bias towards European and North American mathematicians, and with little input from women or school teachers. ICMI was created at a meeting of the International Congress of Mathematicians (ICM) held in Zurich in 1908, and although the conference organisers had hoped to gather in Zurich "mathematicians from all countries on earth" (Curbera, 2009, p. 9), the 208 who actually attended (204 males, 4 females) came from just 16 nations, 15 of which were European. The non-European nation was the United States of America, which had seven conference attendees. Much power was given to a handful of people who were on a central committee which decided that ICMI's decisions would need to be ratified by 36 voting delegates: three each from Austria, France, Germany, Great Britain, Hungary, Italy, Russia, Switzerland, and the United States of America, and one each from Belgium, Denmark, Greece, The Netherlands, Norway, Portugal, Romania, Spain, and Sweden. Thus, 33 of 36 delegates (i.e., persons with voting rights at ICMI meetings) were to be from European nations, and the other three were to be from the United States (Schubring, 2008).

What is striking is how the early governance structure of ICMI was dominated by European mathematicians and educators, and subject to the control of ICM. It is easy to understand how this happened, of course, but that does not hide the fact that although ICMI identified eight "associated countries" (Australia, Brazil, Bulgaria, Canada, Cape Colony, Japan, Mexico, and Serbia), the voting nations for ICMI had a total population of about 480 million, or only about 30 percent of the world's population. Voting considerations aside, the following nations were among those not represented at ICMI meetings: China, India, Indonesia, Iran, Korea, Nigeria, The Philippines, Thailand, and Vietnam—nations that accounted for more than half the world's population.

Singh and Ellerton (2012) did not mince words when discussing the matter:

> From the outset, ICMI was not representative of the worldwide body of mathematics teachers. Despite the best intentions, the central committee and its voting members were largely white, European, and male, and mathematics teachers in schools were not represented. Although ICMI intended that its vision would be *international*, its structure belied that vision. The principal form of collaboration in ICMI operations was little more than a sharing of information between its members. It was not truly global in its outreach, and its restricted mission arose out of an unfortunate internal belief that only certain mathematically advanced people in certain

> mathematically advanced nations possessed sufficient knowledge and wisdom about mathematics and mathematics education to be worthy of being admitted to ICMI's "inner circle". This belief would permeate ICMI for more than 50 years. (p. 810)

When Singh and Ellerton (2012) studied the mathematics curricula, examination and teaching methods produced for ICMI-member nations and associates, they were struck by a report on the teaching of mathematics in Japan (Fujisawa, 1912).

Whereas the other national reports (mostly from European nations) were, from, from Singh and Ellerton's perspective, mostly tedious summaries of recent curricular and examination changes (see, for example, Young, Osgood, Smith, & Taylor, 1915), the Japanese report concentrated on pedagogical matters. It offered rich commentary on methods for teaching difficult topics in mathematics (e.g., fractions, ratio, elementary algebra)—comments which continue to have freshness and relevance even a century after they were written. These reports came from school teachers, mathematicians, school and college administrators, and government officials from all over Japan. The English version of the final Japanese report comprised 15 chapters, prepared by 17 educators and mathematicians, and occupied 238 pages. Within Japan, this was truly a collaborative effort, and was an achievement made all the more remarkable by the fact that the Japanese respondents were given very little time to prepare the report and have it translated into French and English (Fukisawa, 1912).

According to Singh and Ellerton (2012), there was much to be learned from the Japanese report, but the general method of collaboration adopted by ICMI meant that the important ideas in the Japanese report were not discussed outside of Japan. The issue of whether the West had much to learn from the East was not to be taken very seriously in a largely Eurocentric organization like ICMI, which seemed to be convinced that the best mathematicians, and therefore, probably, the best teaching of mathematics, were to be found mainly within Europe or North America. ICMI was officially part of ICM, and during its early existence, in the first half of the twentieth century, it remained firmly under the wing of mathematicians (Furinghetti, 2008).

Fast Forward More than 50 Years: New Mathematics, Royaumont, and a Revival of an Exclusive Club

The Soviet Union's successful launching in 1957 of the satellite *Sputnik* brought a strong reaction from Western European and American governments. During the period 1957 through 1959 the U.S. government worked with the Organisation for European Economic Cooperation (OEEC) to organize an international conference, which would be held in Royaumont, France, in 1959, for the purpose of developing new thinking in mathematics and mathematical education (Furinghetti, Matos & Menghini, 2012; Moon, 1986). Attendance at this conference was by invitation, with each participating country being asked to send three delegates: a mathematician, a mathematics educator, and a secondary school teacher. In fact, most of those who attended the Royaumont Conference were university-based mathematicians or mathematics educators, with the leadership coming from mathematicians.

The Royaumont conference was attended by representatives from 18 countries, 16 of which were European, the other 2 being Canada and the United States (Singh & Ellerton, 2012). From an international mathematics education perspective, the structure and attendance closely resembled that of the first ICMI conferences held before World War 1. African, Asian and Australasian nations were not invited to send delegates who would make presentations to the conference. Singh and Ellerton (2012) saw this episode as evidence of a revival of the old-boy, mathematics-dominated, European/North American club which had controlled the only moderately-successful earlier attempts at international collaboration in mathematics education.

Most of the Stimulus for Change Came from "Outside"

But a change in thinking would gradually emerge during the second half of the twentieth century. And, significantly, the first stimulus for change would come from outside the worlds of mathematics and mathematics education. That source was a group of psychometricians—not including any well-known mathematicians or mathematics educators—who in 1958 met at a UNESCO office in Germany to discuss problems of school and student evaluation. These scholars decided to gather international data on school students' knowledge of key mathematical concepts, their attitudes towards mathematics, and the extent of their participation in mathematics. They decided to risk asking participating nations to pay for the costs of the studies. In 1967, this group became formally known as the International Association for the Evaluation of Educational Achievement (hereafter IEA) (Postlethwaite, 1967).

From the outset the IEA studies relied on careful design and rigorous statistical analysis. Pencil-and-paper tests were developed that corresponded to curricula adopted in participating nations. The delicate issue of translating tests so that, as far as possible, equivalent tests in different languages would be produced, was also faced, although on that matter Ellerton and Clements (2002) have argued that solutions reached were inadequate. Participating nations had to agree to meet strict stratified random sampling requirements. Not surprisingly, often mathematicians and mathematics educators complained that they had not been adequately consulted in what were, clearly, international mathematics education research studies (Keitel & Kilpatrick, 1999).

Data for IEA's First International Mathematics Study (FIMS) were collected in the early 1960s. FIMS targeted 13-year-old students and pre-university students, and participating nations were Australia, Belgium, England, Finland, France, Germany (FRG), Israel, Japan, the Netherlands, Scotland, Sweden, and the United States. When the results were released, in the mid 1960s, it was found that, relatively speaking, Japanese students performed extremely well, and those from Australia and Israel performed at least as well as, if not better than, European students (Husén, 1967). Immediately the world was faced with the compelling question: was the teaching and learning of school mathematics better in Japan than in Europe and North America?

Governments of participating nations were satisfied with the IEA's work on FIMS, and were content to leave future IEA studies into international achievement in school mathematics—and specifically the Second International Mathematics Study (SIMS), and the Third International Mathematics and Science Study (TIMSS)—largely in the hands of IEA psychometricians and psychologists. Admittedly, these "outsiders" were assisted by carefully-chosen curriculum and content authorities, including some well-regarded mathematics education researchers (Postlethwaite, 1993).

SIMS data were gathered between 1977 and 1981. Participating nations were Belgium, Canada, England and Wales, Finland, France, Hong Kong, Hungary, Israel, Japan, Luxembourg, Netherlands, New Zealand, Nigeria, Scotland, Swaziland, Sweden, Thailand, and the United States. Analyses of SIMS data showed that at the

13-year-old level, students from Japan and Hong Kong achieved the highest means (Robitaille & Garden, 1989; Travers & Westbury, 1989). The concern raised by FIMS was now magnified almost to the extent of paranoia, and Western mathematicians, educators, parents and governments began to demand that something be done to improve the situation in their countries (Clements, 2003).

Data for TIMSS were gathered in the early 1990s from half a million students in more than 15,000 schools in 45 participating nations. Students were mainly at three levels, Grade 4, Grade 8, and end-of-secondary school. Supposedly equivalent tests were developed in more than 30 different languages, and strict sampling procedures were followed within most of the participating nations. In addition, a TIMSS video study, focusing on eighth-grade mathematics classes in Germany, Japan and the United States, was conducted (Hiebert, Stigler, & Manaster, 1999). TIMSS analyses indicated that at both the fourth- and eighth-grade levels, the four best-performing nations were the four participating Confucian-heritage nations: Singapore, Korea, Japan, and Hong Kong. The mean for U.S. fourth-grade students was slightly above the international average, and the mean for students from England and Wales was slightly below the mean. At the eighth-grade level, the means for U.S. students and for students from England and Wales were below the international mean. The lowest national mean scores were from South Africa.

TIMSS results, together with results from other international comparative studies, especially the PISA (Programme for International Student Assessment) studies conducted, since 2000, by the Organisation for Economic Co-operation and Development (OECD) (see Neubrand, 2005), confirmed that students in Confucian-heritage nations such as Singapore, Hong Kong, Japan and Korea, tended to perform better than students from North America and most European nations (an exception, perhaps, being Finland) (Stacey, 2010). Western European politicians and educators struggled to cope with the situation. For example, in 2002, Edelgard Bulmahn, then German Federal Minister for Education and Research, in reacting to Germany's below-average placement on the PISA international league table, exploded:

> The findings of the OECD Programme for International Student Assessment are alarming. A country with the economic and political significance of Germany belongs at the top of the league and cannot be satisfied with an education system performing at the OECD average level—never mind below it.
>
> But PISA should not mislead us into starting discussions about reforming our education system from scratch again. In fact, many of the shortcomings PISA brought to light were not new. Earlier studies had already drawn attention to the weaknesses of our educational system and prompted me to set a new educational reform process in motion. (Bulmahn, 2004, p. 1)

By the time the Mathematics Education Research Group of Australia (MERGA) held its first annual conference, in 1977, there had already been three International Congresses of Mathematics Education (ICMEs), conducted through ICMI. But these first three ICMEs had all been held in Europe (Lyon, France, in 1969, Exeter, UK, in 1972, and Karlsruhe, Germany, in 1976). The fourth ICME would be held in San Francisco, California, in 1980. The first annual conference of the International Group for the Psychology of Mathematics Education (PME1) was held in the Netherlands in 1977, and the next four annual PME conferences were held in Germany (1978), the United Kingdom (1979), the United States (1980), and France (1981). The fact that scholars from all nations were invited and welcomed at these conferences could not hide the lingering Eurocentric and North American biases.

All this would change—the last four annual PME conferences have been held in Mexico (2008), Greece (2009), Brazil (2010), and Turkey (2011), and the next one is about to be held in Taiwan (2012). A life-member, and former president of MERGA, Gilah Leder of Australia, was awarded the Felix Klein Award for 2009 by ICMI; a former editor of the *Mathematics Education Research Journal,* Bill Barton, of New Zealand, served as president of ICMI between 2008 and 2012; Lyn English, an Australian member of MERGA, was the founding editor (and continues as editor) of the American-based journal *Mathematical Thinking and Learning* (Singh & Ellerton, 2012).

Much more could be said, but one thing is clear—the old assumptions that characterised thinking about relative excellence in school mathematics during the first 60 years of the twentieth century are, in the thinking of most of today's mathematics educators, dead and buried. Today, only the brave would contradict an assertion that the world has much to learn from Eastern Asia about mathematics curriculum management, and about the teaching and learning of mathematics (Leung, Graf, & Lopez-Real, 2006).

Where We've Been (II): 1976, and Reflections on Developments after the Founding of MERGA in 1977

As Clements (2007) and Mousley (2009) have pointed out that, the seeds of an idea for the establishment of an Australian national group in mathematics education research were sown in Melbourne, by John Foyster and me, in 1976. The Mathematics Education Research Group of Australia (MERGA) was formally established after the first MERGA annual conference held at Monash University in 1977. Judy Mousley (2009) and I have claimed that MERGA was the world's first national mathematics education research group to be formally created, and that claim has been repeated by Hodgson, Rogers, Lerman and Lim-Teo (2012). In the early 1980s the group changed its name to the Mathematics Education Research Group of Australasia, and from the early 1990s New Zealand mathematics educators became active participants in MERGA. At its 2011 annual meeting, the ICMI Executive Committee officially approved the affiliation of MERGA to ICMI as a multinational organisation involved in mathematics education (Hodgson et al., 2012).

This is not the place to summarize the unusual set of events marking the creation of MERGA in 1977. It is important, though, to see the establishment of MERGA in the context of the history of the internationalisation of mathematics education. In 1974 when I accepted an appointment as Lecturer in Mathematics Education at Monash University—I had been a secondary mathematics teachers for 10 years before that—those responsible for mathematics teacher education programs in Australia were isolated. I knew personally, only one tertiary-level mathematics educator—George Booker—outside of the state of Victoria (although I had met a few others at a biennial meeting of the Australian Association of Mathematics Teachers). I was only barely aware that several Australian scholars (e.g., Roly Mortlock of Western Australia, Graham Jones of Queensland, and Merv Dunkley and John Conroy of New South Wales) had gained doctorates in mathematics education (I think all of them from the United States). At Monash University, I used printed reference lists passed on to me by Roly Mortlock, and wondered about the possibility of establishing a national mathematics education research association, with annual conferences and a journal.

In 1975, the international world of mathematics education was hardly known to me. I had never attended an overseas conference, and I looked to the United Kingdom and to North America for my inspiration. Although I had heard of scholars like Zoltan Dienes, Geoffrey Matthews, George Polya, Alan Bishop and Richard Skemp, Dienes was the only one whose ideas affected my teaching at Monash in a big way. Yet, interestingly, walking around the Monash corridors with me at that time was a group of young scholars interested in becoming fully-qualified mathematics education researchers. Among this group were the following—I list the names in alphabetical order—Barbara Clarke, David Clarke, Doug Clarke, Phil Clarkson, Gilah Leder, Charles Lovitt, Anne Newman, and Dianne Siemon. These were all young and extremely impressive. At the time, I sensed that an organisation like MERGA was sorely needed if we were to have any chance of unlocking the massive potential which existed at Monash. We needed an organisation that brought together mathematics education scholars—admittedly a poorly defined group at that time—from all across the nation, on a regular basis. And so, in 1977, at the first annual MERGA conference, a national association for mathematics education researchers was born.

One problem was that nobody outside of Australia knew or cared much about mathematics curricula and the teaching and learning of mathematics in Australia. When, in 1977, Hans Freudenthal looked around for someone to write a statement on school mathematics in Australia for publication in *Educational Studies in Mathematics,* the person he chose was Professor Larry Blakers, a Western Australian mathematician (Blakers, 1978). As far as I know, the fledgling mathematics education research community in Australia was not consulted on who should represent Australia. Blakers undoubtedly had an interest in school mathematics, but the fact that he was chosen, by a European scholar, to represent Australian mathematics education, despite the fact that his *main* scholarly interests and experience were in mathematics and not mathematics education, suggested that the type of thinking that had characterized international mathematics education between 1900 and 1970 was still alive and well. Blakers' (1978) article was competent, but had a top-down tone.

As a result of the creation of MERGA, members of the previously isolated and scattered group of would-be Australian mathematics education researchers was able to come together and, for the first time, feel as one. Despite some opposition to the idea, a majority decided to have an annual conference, and spoke of creating a natural and empathetic outlet for publishing summaries of their work. By the early 1980s it had become standard practice for promising young Australian mathematics education researchers to complete their graduate degrees in Australia, and not, as previously, in the United Kingdom or the United States. Every four years MERGA published summaries of mathematics education research completed by Australian mathematics education researchers. When New Zealand became an integral part of MERGA in the early 1990s, the work of the Group was enriched, and soon the transformation to a vibrant internationally-oriented research community was complete. Every year, at annual meetings of the International Group for the Psychology of Mathematics Education, MERGA was extremely well represented in the list of those presenting papers. The fifth ICME conference was held in Australia in 1984 and, in that same year, PME also had its annual conference in Australia.

The horizons of many MERGA members were beyond Australia and New Zealand. Over the past 30 years there has always been a leaven of mathematics education researchers in Australia and New Zealand who have made conscious efforts to become aware of, identify with, and contribute to literature associated with mathematics curricula, mathematics teaching and learning, and mathematics education research in Southeast Asian nations. The cover of Nerida Ellerton's and my *Mathematics Education Research: Past, Present and Future,* published by UNESCO in 1996, showed an image of the earth in the form of a globe, with a spotlight shining on the Southeast Asian region (Ellerton & Clements, 1996). In our Preface to that book we indicated that there were more references in the book to reports on research carried out in the Asia-Pacific region than to research carried out in the United States of America. It was argued that the writings of Piaget and Vygotsky, and the Continental *didactique* research may not have much relevance "to the nations in the Asia-Pacific region where linguistic and cultural patterns are typically very different from those in Europe" (p. vii). The book included passages like:

> After all, it was on the basis of Piagetian stage theory that researchers in the period 1950–1980 carried out and reported investigations which purported to show that many children in Asia-Pacific nations—such as students in Papua New Guinea Community Schools, and Aboriginal Australian children—thought in "prelogical" ways and were three or four years "behind" Western children from the perspective of cognitive development. Such conclusions can now be seen as degrading and highly value-laden. (p. vii)

> The assumption that it is reasonable to accept a form of mathematics education that results in a large proportion of school children learning to feel incompetent and helpless so far as "Western" Mathematics is concerned should be rejected. Alternative forms of mathematics education by which greater value should be accorded to the cultural and linguistic backgrounds of learners should be explored. (p. 178)

> The present international mathematics education research community needs to move proactively so that full and equal participation is possible for mathematics educators in countries which are currently under-represented in the community. (p. 188)

It is hardly surprising that although Ellerton and Clements's (1996) book has been, and still is, widely used in universities in the Middle East (e.g., in Iran), it has not won much recognition in Continental Europe or North America.

That said, it should be acknowledged that over the past 40 years, ICMI has made many moves towards achieving equal and equitable participation in the international mathematics education research community. For example, six years ago a 596-page, 40-chapter book entitled *Mathematics Education in Different Cultural Traditions—A Comparative Study of East Asia and the West* was published as an outcome of the 13th ICMI Study Conference, which had been held in Hong Kong in 2002 (Leung, Graf, & Lopez-Real, 2006). This volume had authors from every continent, and offered important commentary on historical, cultural and contextual background factors. The authors' well-argued contributions provided important input on issues like whether the West had much to learn from the high performance of Confucian-background students in international comparative studies.

It would be naïve, however, not to recognise that during the period 1977 to 2012 Western European nations (especially France, Germany, Italy, Spain and the Netherlands), and the United States have maintained very influential power blocs within the international mathematics education research community. *JRME* and *ESM* have remained the dominant journals, and from my perspective it is desirable that that situation changes. Although we would all want *JRME* and *ESM* to continue to be important journals, we need high-class, international, refereed mathematics education research journals coming out of Asia, Africa, the Middle East, and South America.

Slowly but surely *MERJ* has achieved a solid international recognition, and we are now ready for the next step. Analyses of attendance figures at the annual PME conferences over a period of 35 years would reveal that, overall, the numbers of scholars attending from Australia or New Zealand, or from Israel, are higher than from any other single nation except the United States (a fact which has not been reflected in the choice of keynote speakers). If one looks carefully at the national affiliations of authors in the three Kluwer/Springer *International Handbooks of Mathematics Education*, then one finds that Australian and New Zealand authors have been more numerous than authors from any other nation except the United States of America, and the number of authors from Eastern Asia has steadily grown (Singh & Ellerton, 2012).

Where Are We Now? New Scenarios and Opportunities, 2012

The paranoia that swept across Europe and North America resulting from the strong performance of Confucian-heritage nations on FIMS, SIMS and TIMSS, and on PISA, has created an opportunity for mathematics educators in Asia, Australia, New Zealand (and indeed many other countries) to work to achieve greater equity and participation in the increasingly important international world of mathematics education research. From that perspective, it is timely that MERGA is now seen as a well-respected international organization (Hodgson et al., 2012), with a high-quality refereed research journal, the *Mathematics Education Research Journal* (*MERJ*), published by Springer,

However, there is still a way to go. The two top international mathematics education research journals are the North American-based *Journal for Research in Mathematics Education* (*JRME*) and the European-based *Educational Studies in Mathematics Education* (*ESM*). Other highly regarded international mathematics education research journals include MERGA's own *Mathematics Education Research Journal* (*MERJ*), the Canadian-based *For the Learning of Mathematics* (*FLM*), the US-based *Mathematical Thinking and Learning* (*MTL*), *School Science and Mathematics* (SSM), the *Journal of Mathematical Behavior* (*JMB*), the German-based *ZDM,* and the French-based *Recherches en Didactique des Mathématiques.* There are others—I hope that I will be forgiven for my sins of omission.

The trouble is, as Hodgson et al.'s (2012) review makes clear, *MERJ* is still being viewed in Europe and North America as being a regional journal rather than an international journal. One only has to look at the workplaces of the authors of *MERJ* articles over the past 10 years to recognise that such a view is unfair, but nevertheless the perception remains. Hodgson et al. (2012) have written:

> *MERJ* is clearly among highly regarded research journals in mathematics education. However, its ambition to address the total Australasian context is still partly problematic, in particular with respect to the origins of its editorial board members, reviewers, and authors. (p. 866)

Notice the emphasis in this statement on *MERJ* addressing "the total Australasian context." Robyn Jorgenson, the current *MERJ* editor, has taken steps to ensure that *MERJ* is seen as being genuinely international. From my perspective, it is important that MERGA seeks to do all that is necessary to make *MERJ* as influential, from an international research perspective, as *JRME* and *ESM*. That leads me to my next set of points, which will be the most controversial, and most difficult to achieve, of the points I make in this paper.

Where We're Going? The Mathematics Education Research Group of AustralASIA

It seems to me that the mathematics education research community in Southern and Eastern Asia, and in Australia and New Zealand would benefit greatly from a new merger, by which MERGA (a name which I consciously created to indicate a merging of previously separated bodies that had like interests) would formally come to represent Southern and Eastern Asia, Australia, New Zealand and the surrounding Pacific islands. It occurred to me that that a solid preparation for such a move would be, formally, to decide that MERGA is to be an acronym for "AustralASIA" and not "Australasia".

This Conference is the first MERGA annual Conference to be held outside of Australia and New Zealand. I commend the present MERGA committee for its wisdom and courage to make such a move. I also commend the Singapore mathematics education research community for contributing to what could become a watershed event in the history of the international mathematics education community. If my proposal were to be listened to, I would imagine the MERGA annual conferences being located, each year, at a different Southern or Eastern Asian venue, or in Australia, New Zealand, or a surrounding Pacific island. The MERGA committee would reflect the new, extended emphasis, with elected members being based in any of India, Pakistan, Sri Lanka, Myanmar, Indonesia, Thailand, Malaysia, Singapore, Vietnam, the Philippines, China, Japan, Korea, ..., Australia, New Zealand, Fiji, etc.

When I was President of MERGA (1987–1993), we developed a policy whereby MERGA's annual conferences would take place in the full range of states and regions in Australia and New Zealand. We reasoned that, in time, such a policy would expand the Group's membership by making mathematics education researchers *across* Australia and New Zealand feel that they "owned" MERGA. The acronym *MERJ* for the journal (which, as President, I recommended to the 1988 annual meeting of MERGA) was also meant to suggest a process of "merging", of offering "collaborative ownership". I did not completely win a battle within the MERGA committee that raged for a while on desirable emphases for *MERJ* at that time, because, from the outset, I was opposed to the idea that *MERJ* should have a special focus on Australian and New Zealand interests and issues. I wanted *MERJ* not only to be fully international, *but also to be seen as* fully international. The decision to compromise my vision at that time may have been wise—I'm not sure about that—but what we have now are comments by Hodgson et al. (2012), quoted above, that, in my view, unfairly, but understandably, detract from the hard-won internationalism of our lead journal.

If my idea were to be accepted by a majority of current MERGA members then there would need to be some constitutional changes, for MERGA is an incorporated entity (thanks to the excellent work to achieve that status by Gilah Leder and Mike Mitchelmore in the mid-1990s). However, I think that if my proposal for the "A" in MERGA to stand for AustralASIA were to be accepted, then such constitutional changes could be kept to a minimum.

2025: A Vision

If the proposal that I have outlined above were to be accepted so that from the 2013 annual meeting of MERGA onwards, say, MERGA would "belong" to a much wider base of international mathematics education scholars, then I foresee the following being in place by 2025, at the latest:

1. The nations that would be part of MERGA would form one of three major power blocs in international mathematics education research—the other two being North America and Western Europe.
2. *MERJ* would become the natural journal for submission of research carried out by scholars from the expanded set of MERGA nations. It would quickly (within a few years) achieve the same status as *JRME* and *ESM*, and in time would achieve a higher status than either of those two journals. After all, the nations associated with the new Group would have about one-half of the world's total population.
3. Just as, during the period 1976–2012, when MERGA became a family uniting scholars from all Australian states and from New Zealand, the new MERGA would become a family of scholars—only this time the family would unite scholars from a much wider-ranging group of nations. These scholars would get to know each other well, and respect each other—just as current MERGA members based in Australia and New Zealand currently know and respect each other.
4. Collaborative international research projects involving mathematics education researchers from the various MERGA member nations would be facilitated. Quite simply, there would be much more opportunity for MERGA researchers to include in their investigations a wider-than-ever-before range of cultural, religious, socio-economic, political and linguistic variables.

The above four benefits would quickly arise from the establishment of the new MERGA. The new MERGA committee members could meet (via Skype) on a regular basis, and debate proposals such as:

1. Should we establish annual (or biennial) MERGA research awards for excellence in research in MERGA nations? Such an award might be called the "Ben Nebres Award".
2. Should we work with the Southeast-Asian Ministers of Education Organization to develop its mathematics education centres (e.g., RECSAM, in Penang, Malaysia), so that they become centres of research and professional development excellence, with MERGA-member nations providing high-level research appointments to the centres. Note that Singh and Ellerton (2012) recently argued that RECSAM, in Malaysia (which is almost 50 years old) is unique, in the sense that that there is nothing like it in other parts of the world.
3. What should MERGA do to ensure that high quality, culturally appropriate, mathematics education opportunities are available to all persons in all its member nations?
4. What should MERGA do to ensure that the potential benefits of the findings of high-quality mathematics education research are being realised in educational institutions at all levels, and in technologically-appropriate distance-education settings, throughout MERGA member nations.

Closing Comments

We, who form the MERGA community, should be proud of our achievements over the past 35 years. There are, and have been, some great people, and great mathematics education researchers who have helped give MERGA the influence and reputation it has today. I know that although I have been away from my homeland for 14 years, I will always be proud of MERGA.

Most professional adults at the age of 35 have reached a level of maturity that allows them to ask themselves what they should now do to maximise the benefits of all that they've achieved thus far. I believe that MERGA members should be asking the same kind of question now with respect to the future of MERGA. The door of opportunity is open, but we need to be brave enough to walk through that door into a wider world.

Of course, the radical agenda that I have placed before us in this paper will also require the agreement of other scholars, in other nations before it can be operationalised. It would be entirely proper for Asian nations to reject the vision that I've put forward. Let us hope that we can all look to the future, and seek to establish a way of working together that will draw mathematics education researchers in this part of the world together in realistic, fulfilling ways.

Thank you, Singapore, for providing this venue for this highly significant, perhaps groundbreaking, event.

I wish to close this paper with the following lengthy quotation from my editor's introduction to the *Third International Handbook of Mathematics Education* (Clements et al., 2012):

> Mathematics is one of the few areas in an individual's life in which she or he is required to spend between three and five hours per week (and, in addition, more hours on homework or with a tutor), for between 10 and 12 years (at least) studying a curriculum defined by others. What a waste of everyone's time, energy, and money, if students do not learn school mathematics as well as they possibly can, so that they develop an interest in the subject and an appreciation of its power to help them deal efficiently with important everyday problems. Furthermore, I believe that success with the subject is likely to be associated with greater satisfaction in later life (because successful students are more likely to take up vocations of their choice, or gain entry to a wider range of courses in higher education institutions). From a national perspective, the benefit of having a mathematically-competent citizenry is, it is often asserted, likely to result in strong economic performance (or, at least, stronger than would be the case if most citizens were not mathematically competent). Thus, it is important that research be conducted which will take into account students' attitudes towards mathematics, as well as their mathematical problem-solving and problem-posing performances.
>
> But if mathematics education research is important, then how well are we doing in fostering the highest possible quality of mathematics learning as a result of our mathematics education research? Let's not put our heads in the sand on this matter. There is certainly a lot of room for improvement! The nation which has the most qualified mathematics education researchers is probably the United States of America—yet, many indicators (including results on international comparative studies) suggest that many U.S. students fail to learn mathematics well. How could that be the case, considering the amount of research that has been conducted, and published, within the United States, over so many years?
>
> It is well known that many students, in most nations (perhaps all nations), experience difficulty in understanding fractions, the four operations with integers, and elementary algebra. We need to face the reality that many learners experience much difficulty in mathematising situations for which mathematical approaches to problem solving would be informative and efficient. Why has there not been a marked improvement, given the large amount of mathematics education research conducted around the world, and over a very long period of time, with respect to such fundamentally important curriculum matters? Should our standard curricula, and teaching approaches, be problematised and reconceptualised? (p. 6)

I'll stop there, for I've probably said too much already. It's over to you. Thank you for the honor you have all paid me for asking me to give this address.

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