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Abstract: In this paper, we develop and use a model of social justice, based upon the feminist works of Iris Young and Nancy Fraser, to analyse and discuss information gained from a large-scale study of opinions of mathematics educators and international contacts in eight countries (Australia, Brazil, Colombia, Korea, Mexico, The Philippines, and Vietnam). Data was collected via focus groups conducted in the participating countries and via interviews with educators involved in international, collaborative research projects.

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Issues in Social justice in International Collaborations: Views of Educators from around the World

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Abstract

In this paper, we develop and use a model of social justice, based upon the feminist works of Iris Young and Nancy Fraser, to analyse and discuss information gained from a large-scale study of opinions of mathematics educators and international contacts in eight countries (Australia, Brazil, Colombia, Korea, Mexico, The Philippines, and Vietnam). Data was collected via focus groups conducted in the participating countries and via interviews with educators involved in international, collaborative research projects.

Introduction:

The mathematics education community has shown considerable awareness of the international status of its discipline. Robitaille and Travers (1992) argued mathematics education is perhaps the most international subject of higher education. Two areas where questions have been raised about the effects of the processes of globalisation of mathematics education are curriculum development and types of research conducted. A striking feature of the different curriculum documents and textbooks in mathematics education around the world is their similarity rather than variety (Oldham, 1989 cited in Clements & Ellerton, 1996). Similarly, in the area of research in mathematics education, Bishop (1992) argued although research in mathematics education is a relatively recent phenomenon in many countries, these similarities have led to difficulties in identifying *a* national perspective of mathematics education research in any country.

Elsewhere (Atweh, Clarkson, 2001) we argued there is a great unease expressed by many English-speaking researchers about the dominance of Anglo-European thinking about mathematics education for countries around the world. However, often these concerns do not match some voices from developing countries calling for increased collaboration between developed and developing nations. Some have gone as far as calling for a "global minimum curriculum below which no continent should be allowed to drift, however under-developed" (p. 407). Atweh, Clarkson and Nebres (2003) argued that while the idea of a "global curriculum" is an anathema to many mathematics educators, voices from developing countries cannot, and should not be dismissed. The authors called for increase global collaboration among different educators around the world.

In this paper, we will consider social justice issues in dealing with international contacts and collaborations in mathematics education. First, we will consider a model for discussing social justice. Second, we will use this model to represent results of focus groups and interviews with leading mathematics educators in eight countries around the world.

Model of Social Justice

Like the concept of globalisation, social justice is a contested area of discourse in western thinking (Rizvi, 1998). Rizvi argues social justice "is embedded in discourses that are historically constituted and that are sites of conflicting and divergent political endeavours" (p. 47). In this section, we will consider one construction of social justice as discussed by feminist theorists Iris Marion Young and Nancy Fraser.

Young (1990) argues principles of social justice are not theorems. Rather, they are claims of some people about others. They are not based in abstract general principles that can be applied to specific practices and situations in localities and societies. According to Young, "they are [arguments] addressed to others and await their response, in a situated political dialogue" (p. 5).

One of Young's main critiques of traditional conceptions of social justice is that they are based on "having" rather than "doing". Grounding social justice in individual solutions that allow little room for the consideration of multiple social groups is inadequate. Furthermore, extending such models, developed on the distribution of material goods to other goods such as self-respect, honour opportunity, and power, is problematic. To understand the struggles for social justice by a variety

of groups, such as women, African Americans, and gay and lesbian people, feminist theorists posited a discourse of social justice based on the principle of *recognition*. Nancy Fraser (1995) expounds:

> *Demands for "recognition of difference" fuel struggles of groups mobilised under the banners of nationality, ethnicity, 'race', gender and sexuality. … And cultural recognition relaces socioeconomic redistribution as the remedy of social injustice and the goal of political struggle. (p. 68)*

Fraser argues social justice today requires *both* redistribution and recognition measures. Further, Fraser discusses two types of "remedies" to deal with injustice that cut across the redistribution-recognition divide. A*ffirmaitve* remedies are "aimed at correcting inequitable outcomes of social arrangements without disturbing the underlying framework that generates them" (p. 82), while *transformative* remedies are "aimed at correcting inequitable outcomes precisely by restructuring the underlying generative framework" (p. 82).

In our research, we adapt the model presented by Fraser to discuss different types of international collaboration in mathematics education and the corresponding social justice issues characteristic of each type.

	Affirmation	**Transformation**
Redistribution	***International Aid*** Sharing information and resources between countries; classifying cultures in terms of access to knowledge. Can generate misrecognition	***Development*** Restructuring of relations of production of knowledge. Blurs group identification. Can help remedy some forms of misrecognition.
Recognition	***Multiculturalism*** Acknowledging differences, such as cross cultural research. Supports group identification.	***Critical Collaboration*** Deep restructuring of relations of recognition. Blurs group differentiation

Methodology:

There are two sources of data used in this paper[1]. The first is derived from one-to-two hour focus group discussions (Morgan, 1997) among mathematics educators from Australia, Brazil, Colombia, Korea Mexico, The Philippines, and Vietnam. Group size ranged from four to ten individuals. Mathematics educators were chosen for their leadership and respected status in their respective countries. Educators possessing substantive international experiences were especially targeted to participate in the discussion. Prior to the focus groups, the participants received a short summary consisting of a variety of definitions for the terms "internationalisation" and "globalisation", along with a list of sample issues they may want to address. The focus groups were conducted in different languages to ensure

[1] This study was part of a larger two year ARC project on internationalisation and globalisation in mathematics education.

maximum participation. The second source of data is from interviews with educators involved in international collaborative research projects.

Data Analysis:

In this section, we use the data gained from the focus groups and interviews to discuss how each of the four components of our model - international aid, development, multiculturalism and critical collaboration – facilitates the understanding of international social justice issues facing mathematics education.

1. International Aid

In the period immediately following WWII, many of the so-called victorious countries were given mandate over other nations to assist with their development of independence and modernisation. Specific examples included large scale aid programs to less developed countries for the building of infrastructure and curriculum development. Likewise, the second half of the twentieth century witnessed a great increase in the number of international organisations and conferences, and a corresponding proliferation of international journals and publications. Arguably, the increased use of the Internet has further facilitated wide dissemination of ideas, at unprecedented levels. Undoubtedly, such changes have helped many educators make contacts and develop programs. However, along with this "progress" come many issues concerning social justice accompanying the sharing of knowledge-based goods.

First, these forms of knowledge transmission often lack reciprocity among the players. Many educators have described this as a form of colonialisation of mathematics education from the North to the South and from West to East. In describing how different Southeast Asian countries' curriculum and school structures are, Ben Nebres, a leading mathematics educator in Southeast Asia, noted they reflect the chequered colonial history of the different countries: "The mathematics education curricula and the education systems in many cases were transplants from the colonial countries (Atweh, Clarkson, & Nebres, 2003).

One concern social justice researchers have is that these newer forms of knowledge transmission among countries may lead to similar colonialisation of research and theories of education. Developed countries enjoy relatively high levels of resources and expertise to develop theories and practices in curriculum, staff development and pedagogy. Their knowledge develops in relatively affluent context. Through their contacts they pass along knowledge to developing nations, which is, at times adopted with only cosmetic alteration to fit the local context. For example, an educator from The Philippines discussed how international contacts determine the type of research that is conducted in their country where "the research staff [being] very much influenced by what they see in [overseas] journals, and sometimes [concentrate their research] rather than on something that will improve [the local conditions, they concentrate on] on trivial topics" (Philippines focus group). Another educator from Philippines lamented, "I think like in any globalisation, many of us are torn between engaging in these global activities and at the same time trying to preserve whatever Filipino culture we can identify ourselves" (Philippines focus group).

This uncritical adoption of research questions and methodologies from developed to developing countries is exasperated by the lack of funds possessed by many of the developing countries to conduct their own research. The Colombian

educators were well aware of their country's richness in human resources for finding solutions for solving their own problems. Yet, that potential is not reached because of the limited financial resources Columbia has to support local research. This gives rise to a situation where "what we have done is to consume without assessing what has been produced in schools from other countries" (Colombia focus group).

A second problem with traditional models of international knowledge transmission and sharing relates to inequality in levels of participation. Many educators participating from less affluent cultures express a feeling of isolation from the international community. At times isolation reflects the lack of resources to attend international gatherings. One Colombian educator concluded "without the resources we cannot be part of a more international world (Colombia interview). Another reason explaining the isolation developing countries feel is language. The majority of international conferences, as well as some regional conferences, conduct their proceedings in English. This significantly reduces the number of people who can participate in, let alone contribute, to such events. One educator from Brazil talks about a rather traumatic experience in an international congress when she tryied to explain everything about her project in a second language. This led her to describe the overall atmosphere of the gathering as "arrogant" (Brazil focus group).

2. Development

Activities that can be classified as "development" include international postgraduate students in developed countries and aid programs that contribute to the professional development of educators. Arguably, such activities may contribute towards the long-term empowerment of professionals within less developed countries. In this context, we argue that while development of expertise is a socially just endeavour, the lack of recognition of and respect for difference implies that such programs result in the reproduction of current practice and thinking on a global scale.

Many of the doctoral holders from the participating countries, in particular developing nations, obtained their qualifications from overseas countries. Increasingly, more and more countries are developing their own PhD programs. For example in the 1990s, a few academics from Colombia were successful in obtaining scholarships to undertake doctoral programs at overseas universities. In the mid-Nineties, as a result of collaboration between five private and public universities in the capital Bogotá and some regional cities, a national doctoral program in science and mathematics education was commenced (Cardenas Interview). Candidates in the program have to demonstrate a mastery of at least one language other than Spanish. There is an attempt to encourage contribution to international conferences and publications.

Undoubtedly, doctoral students studying abroad bring back to their countries theories and methodologies from their host countries. For example, in Korea, about half of the educators working in mathematics education at universities have obtained their qualifications from the United States. According to one participant, "that's why the Standards affect us so much because we used to that curriculum and we studied there and we come back and whenever we talk about curriculum. …. So we are teaching and researching in Korea but our minds are over there … because we got all our basic ideas from the States" (Korean focus group).

Similarly, there is the problem of brain drain from developing nations to developed nations. The educators from the Philippines talked about hundreds of qualified and experienced teachers leaving for jobs overseas, going in particular the

United States. Naturally, there is a social cost for the individual and their families leaving a family orientated country. However there is also a significant cost to the country for replacing these teachers. Nevertheless, the overseas offers they receive are very tempting for people who "even with their PhD degree are taking home something like $200 per month" (Philippines focus group).

3. Multiculturalism

We define multiculturalism as those interactions which are based on recognising differences in the contribution various cultures make to the development of educational thought and practice. Potentially, all international contacts can contribute to a greater awareness between the participants. This may lead to self examination of practices, assumptions and values and further to the creation of ways for dealing with educational problems. However, international interactions based on distribution, such as those discussed in the above two categories, often result in the participants being divided into those who help (persons from developed countries) and those who need help (persons from developing countries). In other words, even when collaborative reciprocity is strived for, it is often hard to achieve in practice.

Within the past three decades, mathematics education has witnessed a great increase in cross cultural comparative studies on curriculum and student achievement. These studies have received considerable attention, not only within the field, but also outside. International collaboration, more than any area of research, has been widely covered by media and featured in public debates about education. The potential benefits, and problems, with international testing have been addressed elsewhere (Atweh, Clarkson, & Nebres, 2003; Clarke, 2003). What the various discussants in the focus groups contribute is the identification of several social justice issues faced by educators in their countries directly resulting from the international testing of achievement.

An outcome of international testing, and accompanying media frenzy, was the introduction by many countries of testing based upon educational reforms. A leading educator from Brazil talked about "a testing epidemic" hitting the country. Focus on test results has the potential to give not only an inaccurate, but moreover damaging, impression about what constitutes mathematics. This is the "perverse" side of a globalisation-based utilitarian understanding of mathematics that serves the interests of big business and global competition. It leads to the uncritical adoption of curricula focus from one culture to another. Brazil cites the example of the number of school districts in the United States adopted Singapore texts and curricula, due to belief that they have created the huge success on the international tests, to make the point (Brazil focus group). Furthermore, unproblematic adaptation of curriculum does not take into account the context of the educational systems in the various countries. For example, the Philippines students participating in these studies are one year behind many of their counterparts around the world because of starting age of formal schooling (Philippines focus group).

Another educator from the Philippines questioned the utility of international tests on significant changes to education systems in many developing nations. The participants noted one tangible benefit of international testing is that they challenge teachers and educators to look at their testing practices, comparing them to instances where the government provided training for teachers in test development techniques that assess higher order skills. However, considering the reality of Philippines classrooms, where many classes contain up to sixty students, and one textbook for

every six students, the mass hysteria about testing results is “not going to make a big dent in your performance next time unless you tackle the basic problem of the maths [teaching resources]” (Philippines focus group).

4. Critical Collaboration

Like multiculturalism, critical collaboration aims to give recognition and respect to the knowledges different cultural groups and countries provide. However, in this category of our mode, effort is made to challenge the structures that give rise to inequality in status, as well as the knowledge shared, among nations. Critically collaborative activities are necessarily based on participation from educators in different countries as all work to develop local knowledge and simultaneously contribute to collective international knowledge. We illustrate the possibility of such collaboration with one international research project that occurred among a group of international researchers in mathematics education.

The idea for this project started with a discussion between two academics from Germany and Australia about the limitations of data analysis from the TIMSS video study. They decided to collect similar data from four of the countries - Japan, United States, Germany and Australia. Funds were made available from a variety of sources in the different countries. By word of mouth, and/or personal contacts, more countries were added, including Hong Kong, Sweden, and South Africa. At another international conference, participants from the Philippines expressed interest and were added to the group. The team conducted its affairs in a democratic manner, holding an annual decision making meeting that coincided with an international conference. In addition, occasional meetings were held to discuss research findings and analysis. The data was analysed at different levels. First, a project wide analysis was done according to the agreed aims of the project. Second, several subgroups, comprised of countries having specific interests, were created. For example, Hong Kong and Sweden are interested in theories of variation and Germany and South Africa on social justice. Lastly, individual countries had the opportunity to perform analysis on the data from a single site.

Some apprehension on the part of developing countries was expressed. Specifically, some worried that developed countries might “appropriate” their data by completing analyses more efficiently due to better resources. To accommodate this concern, the group developed rather stringent mechanisms of gate keeping the data from the different countries. For example, another country’s data can only be used with the permission of the group leader from that country who reads any publication resulting from the analysis to assure the data is not misinterpreted and will not negatively impact that country.

Several positive outcomes result from this critical collaborative research project. Funds and equipment are shared between more developed countries and less developed countries. The project has been a professional learning experience to all participants. More experienced researchers have gained access to a wide range of data, and have had their views about classrooms teaching and learning, as well as their research methods and processes, challenged. Finally, less experienced researchers with limited access to resources have gained access to international forums and training in research and publishing. Still, despite the many benefits, working in a multi-national and multi-cultural research team such as this undoubtedly creates some sources of tension. However, as the groups became aware of cultural sensitivities and

annoyances, and different means and norms of communications, they developed effective strategies, often on a case-by-case basis.

Concluding Remarks:

Collaboration is a concept that needs problematisation (Hargreaves, 1994). First, collaboration between mathematics educators from around the world is particularly problematic when it occurs between players with different needs and differing access to resources (Merga conference). Hence, participants in global collaboration should be aware of the differing economic interests of the different countries in the race for globalization and international markets. While developing countries may aspire to maintain and improve their standing in the race, developing countries are struggling even to reach the starting line! Second, questions of voice and power should always be kept upfront. Collaboration should be constructed to empower individual countries to be self-reliant, rather than to increase their dependency on ideas from more developed nations. Exchanges that are simply based on "helping" developed countries (“to become like us”) are often based on paternal colonial assumptions and do not contribute to genuine collaboration. Third, collaborations should be based on mutual respect and trust in the ability of the different partners to contribute different types of learning to the collaborative enterprise

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