

Editorial

Moral Dilemmas for Mathematics Education Researchers

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Who decides what research is to be carried out by mathematics educators?

"The answer is obvious," was the response I received from one academic. "In most Australian universities, it is the researchers themselves who decide what research to undertake."

But is this the case? And if it is, are researchers making wise decisions for the future of mathematics education?

I believe that the question does not have a simple answer. I also believe that few mathematics educators have ever thought much about the question, let alone the implications of their conscious or unconscious responses to it. It needs to be recognised, however, that responses to the question are likely to influence, in fundamental ways, the whole future of mathematics education. For what is undertaken in today's research should lay the foundations for tomorrow's decisions.

Let me ask another question. What aspects of the teaching and learning of mathematics (and indeed teaching and learning for all Key Learning Areas) have dominated the thinking and funding decisions of influential sections of State Ministries of Education over the past one to two years? The answer to this question is simpler—for at least the last 18 months, Ministries have been preoccupied with the development, modification, trialling and implementation of Student Outcome Statements (SOS).

Where is the research supporting the use of SOS? Where are the detailed, carefully planned and independent research studies which have been used to underpin decisions made by education systems about whether or not SOS should form the basis of mathematics curriculum and evaluation? Why does it appear that most mathematics educators have chosen not to undertake research in this area? Possible reasons for this could be that:

- it would be difficult to get permission from the relevant education systems to enable independent research to be carried out;
- this is an area where researchers who do not find the "right" conclusions are likely to be "punished" when future funding decisions are being made;
- it would be difficult to get either internal or external funding to support independent research;
- researchers feel that they have their own particular areas of expertise and are reluctant to broaden their interests;
- even if research is carried out in this area it is likely to be ignored because Ministries will do what they want to do anyway, regardless of the findings of studies carried out by academics.

Whatever the reasons, there is a clear gap between the activities and focus of Education Ministries on the one hand, and the research being undertaken by mathematics educators on the other (see, for example, Ellerton, 1994).

The provision of education for children should be based on a partnership between teachers, parents and children—as well as government and system personnel, and tertiary educationists. True partnerships are formed because of common goals or shared interests—but it would seem that tensions can distort such partnerships, and that genuine collaboration is difficult to achieve.

Should mathematics educators, for example, accept the fact that decisions on the implementation of Student Outcome Statements are being made on the basis of data gathered from a small number of schools which volunteered to be part of a trialling process, and which received additional support to enable them to participate in the trial?

Where is the research to underpin decisions about gender and equity issues in relation to the possible use of Student Outcome Statements? If indeed it is decided across a number of States and Territories that students will be deemed to be at a particular Level when they can demonstrate achievement of particular outcomes, then, I suggest, there are fundamental questions relating to gender and equity which need to be addressed urgently. On the basis of existing mathematics education research data, it is clear that outcome statements which have been defined from a predominantly Eurocentric, male orientation will impose a certain set of values and expectations on all students, some of whom will be black, female and non-European. Much of the mathematics education research literature informing gender and equity issues is effectively being ignored.

In an Editorial such as this I cannot pretend to provide answers to questions such as those I am raising here. But, for too long, mathematics education researchers have been burying their heads in the sand. Their potential to mount carefully designed and independent research studies is being ignored; conclusions already reached on the basis of carefully obtained data are being pushed to one side.

Another concern is this: what if senior coordinators in a State Ministry of Education office decide that a particular piece of research, or a trial, is to be undertaken, and they advertise for tenders to initiate this research? And what if you, a mathematics education researcher, decide to submit a tender to undertake this research? The research questions have been defined, the schools at which the research is to be undertaken have been defined, and you will not own the right to publish the research in your own name, but must produce a detailed report for the Ministry by a tightly defined deadline.

How can research undertaken under contract in this way be classified as “independent”? To put the matter even more bluntly, are mathematics educators in danger of compromising the notion of independent enquiry by allowing themselves to be “bought”? Bates (1994) has commented about the dilemma in which government agencies find themselves: research needs to be undertaken to help justify particular directions (whether already chosen or about to be chosen), and a choice needs to be made between tenderers, or a decision made about how widely to publicise particular tender opportunities (even if these are routinely advertised in the press). As Bates (1994) has written:

... it seems to be increasingly the case that much government-sponsored research is allocated to "friendly" research consultants without advertisement, publicity or tender. Indeed, in some cases the development of policy and research into the results of policy are allocated to a single agency, if not to the same group of people. The integrity, let alone the validity of such a process, is clearly open to question, and it is disappointing to see some universities participating in such inappropriate arrangements. (p. 1)

The message is clear—data which support a particular direction or project would be preferred by the agents controlling the funding to data which raise awkward questions about the approaches being used or contemplated. Again, I ask the question: How genuinely independent is the research currently being sponsored by education systems around Australia?

I have previously been silent in my Editorial comments on issues such as these because I believed that my concerns have been well aired and because I did not want to use Editorial space on any matter in which my motives might be misinterpreted. However, I feel that there is an urgent need to draw the attention of mathematics education researchers to what I believe are fundamental research issues.

I encourage all readers, therefore, to reflect on 3 questions:

1. Have you thought carefully about your areas of research focus and their relevance to decisions which will be made in relation to the education of tomorrow's children?
2. Have you carefully considered all of the possible avenues for the dissemination of the results and conclusions of your research? Will your audience include other mathematics education researchers, teachers, parents, and education bureaucrats?
3. Has your research integrity been compromised in any way because of the terms of contracts you have signed? How can such compromises be avoided?

Sometimes it helps to be prompted to lift our heads from beneath the sand. It is often easier to remain blinkered (in a research sense) than it is to face the reality of the world of education. Our comfort zone does not always match what we know to be needed.

Think of it this way. There is a sense in which we, the mathematics education researchers of today, have the mathematical futures of children poised in our hands. We can allow our research priorities to be dictated by funding agencies and political considerations even though this could mean our research may do little more than ratify the status quo. Such compromises made to achieve funding or recognition can, in fact, keep researchers away from doing the very investigations that are needed to clarify our thinking in the realm of mathematics education and thereby improve the teaching and learning of mathematics. The choice is ours.

References

- Bates, R. (1994). Message from the President. *Australian Association for Education Research Newsletter, No 11 (November)*, 1–2.
- Ellerton, N. F. (1994). The need to establish a research base. *Mathematics Education Research Journal, 6(2)*, 97–100.