



Geoff Prince*

Teacher training

The Australian Institute for Teaching and School Leadership (AITSL) has released a discussion paper entitled *National system for the accreditation of pre-service teacher education programs*, available from the AITSL website aitsl.edu.au. This is clearly an important document and one would expect to find in it clear rules destined to replace State-based rules which govern, for example, the amount of tertiary mathematics required to undertake post graduate preparation as a secondary school mathematics teacher. This reader was disappointed to find confusion rather than clarity.

I won't analyse the document, which most of you won't have read. Instead let me suggest the sort of outcomes for school mathematics that the mathematical sciences higher education and research community might like to see in AITSL's final document. Remember that we are dealing with new graduates entering the school teaching profession and not the retraining of existing teachers currently teaching out of field or the training of other mature professionals as teachers.

Let's start with secondary teaching and the common model of a three-year undergraduate degree followed by a one-year postgraduate teaching diploma. The gateway to mathematics classroom teaching is usually a mathematics-specific education subject in the diploma year, the minimum prerequisite for which, in Victoria, for example, is tertiary mathematics and statistics studies comprising one-quarter of first year and one-quarter of second year. Many secondary mathematics teachers don't even satisfy this miserably weak condition. Here's what I think it should be replaced with: for future teachers of Years 11 and 12 mathematics, a major (50% at third year) in mathematics with at least one-quarter of a year of statistics. For other secondary mathematics teachers, adopt the strongest current State requirement. Now imagine the impact on undergraduate mathematics major numbers in the next five years if this standard was accepted and Australian governments worked hard on recruitment. Then imagine the improvement over 10 years in Year 12 enrolments in intermediate and advanced mathematics subjects as our young graduates worked their magic in schools. I think that many in the tertiary sector have underestimated the impact on their departments of the decline of school mathematics teaching. In my third and fourth year at Monash in the mid-1970s, classes were awash with intending teachers with a third of our honours students, me included, going on to a Dip. Ed. Even after the demise of

* Australian Mathematical Sciences Institute, 111 Barry Street, c/- The University of Melbourne, VIC 3010. E-mail: director@amsi.org.au

the studentship schemes in the 1980s about a third of our large third-year classes (50 maths EFTSU) at La Trobe were destined for teaching.

The teaching of mathematics in Australian primary schools is widely demonised. There are two issues: mathematics discipline content in the pre-service programs for intending teachers and the mathematics entry requirements into those programs. On the latter issue the AITSL document is progressive and proposes a 70th percentile score in Year 12 mathematics where program entry is from Year 12. However, this apparently necessary condition is immediately contradicted in the document with a clause that says that students admitted without this requirement must attain it prior to graduation! (And this is not the only ‘out’ of this type in the document!) On the matter of mathematics content in the programs, the document is vague: ‘tertiary study in the English and Mathematics disciplines is required’. This is clearly a long way short of what was in the minds of the authors of the recent Group of Eight review:

... encourage dialogue between Faculties of Education and Mathematics Departments with a view to introducing a component in the primary training program giving mathematical confidence and resources to future teachers. This would be taught by the Mathematics Department or School.

[Review of Education in Mathematics, Data Science and Quantitative Disciplines. Report to the Group of Eight Universities, Gavin Brown, December 2009]

There are high standards set in this area in some of Australia’s universities and AITSL should be seeking their adoption.

Many of the current rules in the teacher qualification arena have been in place for more than 40 years. The new national standards will be critical and if we don’t get them right we may be stuck with them for a very long time!

If you feel strongly about these matters contact me at director@amsi.org.au. AMSI is determined to bring the discipline’s position to AITSL’s attention through the consultation process and by direct negotiation.

Review of AMSI

The AMSI Review has come and gone and, on behalf of the AMSI board and management, I would like to thank Ron Sandland, Arvind Gupta, Celia Hoyles and Gaven Martin for the time and intensive effort they put into their work. I also thank the mathematical sciences community for their submissions and the time they made available for interviews with the panel. Simi Henderson deserves special thanks for her stewardship of the review. The report is expected mid to late November.

AMSI Summer School

The 2011 AMSI Summer School will be held at the University of Adelaide from Monday 10 January to Friday 4 February. See our ad elsewhere in this issue and

look out for the posters in your department. Details at www.maths.adelaide.edu.au/amsi2011/.

AMSI Member Bulletin

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I was a Monash undergraduate and took out a La Trobe PhD in 1981 in geometric mechanics and Lie groups. This was followed by a postdoc at the Institute for Advanced Study in Dublin. I've enjoyed teaching at RMIT, UNE and La Trobe. My research interests lie mainly in differential equations, differential geometry and the calculus of variations. I'm a proud Fellow of the Society, currently a Council and Steering Committee Member. I became AMSI director in September 2009.