MATEMATIKA PASIFIKA [1]

Elizabeth Todd

The language of instruction in schools varies from country to country, but in most of the Pacific Island countries in the USP region, Mathematics is generally taught in the vernacular in the first years of primary school, and in English (or French) in the secondary school, with vernacular persisting more in rural areas. This distribution has attracted public debate, with many feeling that English is vital for development. Mathematics, however, is a subject many pupils find difficult, and these difficulties are compounded by having to learn in a second or third language. When English is the medium of instruction the process of learning Mathematics can seem little more than having to learn technical English words. There can be so many new words to learn that children find it hard to see past the new language they are grappling with in order to learn Mathematics.

When I have spoken with people around the region about this problem, I find a great variety of responses. Some fear that any move towards teaching in the vernacular will disadvantage their children, and ultimately their country. Others see the advantage of teaching Mathematics partially in the vernacular, but claim that an adequate mathematical vocabulary does not, and cannot, exist in their language. Others are happy to teach Mathematics in the vernacular in the primary years, but borrow English words for technical precision.

Members of the Maori community in New Zealand have been working for several years, involving educators and linguists, to build up new words in Te Reo Maori for use in the Maths classroom. Where no existing word could be found they discussed the meaning of the mathematical term in English and tried to devise a new Maori word based on existing Maori vocabulary. For example, when no word for angle was available, they considered all the words for different kinds of bend. For square and triangle, they put other Maori words together, so "tapafa" translates as "square" (literally: four sides). They avoided using transliterations of English words. This is seen as important in order to prevent languages which are in danger of dying from further dilution and to assist in the processes by which they remain "living" languages, capable of adapting to new vocabulary needs. The process of coining new words can be complex and lengthy, involving consultation with older people well versed in the language, and the teasing out of traditional roots of words. However, in this way the knowledge of the language is increased, traditional roots are preserved, and the language moves forward as new words are created.

A UNESCO Conference held last year, entitled Matematika Pasifika, aimed to bring together delegates from a number of Pacific Island countries with members of the Maori community to consider the linguistic and cultural issues in Mathematics teaching. The aim of the project was to ensure that Mathematics was accessible through the range of Pacific Island and Maori languages and held that these languages should be recognised as potentially competent to express the ideas of Mathematics. A major task of the conference was to build up a database of words used in Mathematics lessons in some of the Pacific Island languages. The languages being considered at this stage were New Zealand Maori, Cook Island Maori, Fijian, Hawiian, Niuean, Tahitian, Tokelauan, Tongan and Samoan.

Following the conference, it was hoped that delegates would be able to consult with other teachers on the islands in order to trial units of work in indigenous languages. It was anticipated that from the data base of words a proto-Polynesian word list

could be developed. If funding is successful, a follow-up regional conference will be held at USP in 1993, organised by the Institute of Education.

REFERENCE

1. Matematika Pasifika, funded by UNESCO, was hosted by the *Centre for Science and Mathematics Education Research* at the University of Waikato, from 17 - 24th November 1991.