

Chapter 1 Prologue

It is mid-2005 assessment week in southern Malawi primary schools. In a government primary school the 60-year-old Mr H. regrets that he will be unable to allow me to observe him teaching as he will be orally assessing each of his 198 Standard 1 pupils in reading and mathematics, individually.

In 1993 the newly elected democratic government of Malawi declared that primary education fees would be abolished. This resulted in a dramatic increase in attendance in lower Standards, but an equally dramatic lowering of quality; Malawian education is still recovering from this self-imposed tsunami.



How does a poor rural African nation go about improving the mathematics education of its children and youth? Understanding this challenge leads us to consider both practice and the efforts of official policy to improve it. This thesis provides a detailed descriptive and analytical account of the conditions of primary education in Malawi, an examination of policy efforts to address these conditions and how policy and practice interact in the face of classroom practice. In order to give focus to the classroom observation and analysis of curriculum and assessment, I have concentrated on the teaching of mathematics.

1.1 The research problem: interaction of policy and practice in education

For this thesis I have chosen to define policy as the official decisions, statements, documents etc. relating to how schools are to operate. These include:

- staffing, management, placement and payment of teachers
- buildings, teacher housing, resourcing of schools
- professional preparation, development (e.g. INSET) and the behaviour of teachers
- syllabus documents, textbooks and other forms of support
- examinations, assessment and ranking practices
- policies on enrolment of pupils, dropouts, gender balance
- language of instruction, as this is determined by government decree.

What happens in classrooms is the essence of practice. However the social and economic context in which this occurs is also a part of practice. Part of this context is teachers' knowledge and attitudes, and even their understanding of policy. So begins the story of a complex set of interactions.

My professional expertise is greatest in the area of mathematics education, so I chose to focus my research in that area. However so many other factors impact on teachers and pupils that the mathematics education is a small part of a much wider study; issues of language of instruction, gender, assessment and ranking, relevance, pedagogy, teacher knowledge (and many others) all influence to whom and the way in which mathematics is taught and what is actually learned.

I describe the conditions and outcomes of mathematics education in Malawian primary schools. Malawi faces formidable constraints to progress in education; these will become clearer in later chapters. I examine the policies aiming to improve Malawian primary education, and how they arise from official perceptions of practice. I explore the two-way interaction: how policies try to change practice, and how practice reacts to policies – the implementation of those policies.

The policy/practice dilemma was frequently expressed by Malawian educators in these questions:

What is going wrong? Why are Malawian education policies not being implemented properly?

Research question:

How do policy and practice interact in Malawian primary education, in the case of mathematics teaching?

In asking this question I wanted to learn how educational policy may be better used to improve the learning of relevant mathematics and contribute to the development of a nation.

1.2 The relevance of this research

In Malawi

The findings from this research should have particular relevance and interest to Malawian policy makers. I have acknowledged the conditions in the education system and the mismatch between policy and practice. Teachers, pupils, parents and the community seem to be keen to see significant changes, as do the policy makers. However the planning of solutions is in the hands of the policy makers. Making those solutions work in schools will involve teachers and many others.

In Africa

The variables analysed in this research include gender, language of instruction, class size, dropout rates, effects of poverty, relevance of courses to national goals, assessment (including the effects of a selection examination), teacher education, purpose of primary education, and constraints on policy implementation. This research takes a particular look at mathematics education in rural Malawian primary schools it also looks at the content knowledge and teaching methods of teachers.

The analysis also explores the interaction between policy as presented in Malawi and the practice of education in the primary schools. It offers some suggestions about improving the process of policy-making and implementation. Many of the challenges facing Malawi are similar to those in other African countries, albeit to different extents. The finding from this research should therefore have relevance to mathematics and other education policy and teaching practices in Africa.

In the mathematics education community and wider

I have included a brief analysis of the Malawian curriculum reform process, and a study of teaching very large classes frequently without textbooks. Teachers might like to know how classes of over 100 young children can be managed, and even learn some mathematics; they might also note some of the damaging effects of a selection examination for entry into secondary school.

Advocates of 'Education For All' could learn from the lessons of Malawi, where 'Free Primary Education' has created a bottom-heavy education system, with overcrowding creating difficult conditions and high dropout rates. The role of education in alleviating

poverty is also challenged by this research. Perhaps we should be more concerned with the type and quality of the education that is offered.

1.3 Meet the author

In mid 1972 I was sent by the Australian Government's Commonwealth Aid program to become an adviser to the Education Department of Western Samoa (now just Samoa) to assist in the development of junior secondary school mathematics teachers. My task was to design a suitable mathematics curriculum for village high schools so that lower secondary education could be opened up to all pupils, and not only to a selected few. This curriculum was to be taught by teachers whose own education was only at primary level, plus three years at Teachers' College, and who had taught in primary schools for only a few years. With the assistance of a Samoan committee, I wrote three mathematics textbooks and trained teachers in their use.

At the time I was aware of a tension that existed in the minds of teachers and students due to the fact that the values of education (particularly in mathematics) were in opposition to many of the cultural values that were important to this proud Polynesian society. This was most clear in the capital city of Apia, where conspicuously affluent tourists also portrayed a different style of living, and treated the local culture as entertainment, ignoring its true values. One of the obvious effects of 'western education' was that many young people no longer cared to live in their traditional villages, but moved to the fringes of the town looking for work, or at least escaping from the dominance of elders. On many occasions I spoke with senior Samoans in the Ministry of Education about this, but they spoke only of education 'providing the possibility of choice' for young people.

One of the major goals for all primary pupils and their parents was to pass the selection examinations and get into one of the few secondary schools. From there they hoped to get good results and be selected for one of the few paid jobs in Samoa, or emigrate to New Zealand and find work in Auckland. For those who missed out on secondary school selection (about 90%), the junior high schools were being created. Effectively none of these young people would succeed in the ambition described above; they would stay in Samoa, but still they strove to do otherwise. They needed to be convinced of the reality of their position, and learn to make a success of farming in Samoa. Somehow they needed to become proud of being Samoan, and work towards improving themselves and their country. How could the mathematics education being provided in Samoa be made more Samoan – to better serve the development needs of the nation?

The issues involved in that project – identifying mathematics suitable for all Samoans and not just the elite, the role and impact of mathematics in a traditional non-western culture and society, and the professional development of teachers – are issues that are current worldwide and central to this research.

Further exploration of these issues, such as the role of teachers and education in the economic, political and cultural development of a nation were taken up in my M. Ed. thesis 'Some aspects of the teacher's role in development – a comparative study in the two Samoas' (Lowe, 1982). This involved field research involving 400 teachers in Samoan villages in the two countries of Western Samoa (independent since 1964) and American Samoa (a colony of the USA). The aim of the research was to compare attitudes about the teacher's role in development, searching for factors that might explain the differences. I particularly compared the values of traditional culture with modernisation and the formation of democratic attitudes. Some time after my Masters thesis, I met Willy Mwakapenda, who was in Melbourne to develop a PhD about secondary mathematics education in Malawi (Mwakapenda, 2000). At

the time of writing Willy was at the University of the Witwatersrand in Johannesburg, and one of my supervisors for this research.

In email correspondence with Willy I learned much more about the challenges of mathematics education in Malawi, such as the very large class sizes – sometimes over 100 in a single class. A gradual awareness of the challenges being faced in Malawi, including health (e.g. HIV/AIDS) and frequent droughts, made research and future personal assistance in this country a personal challenge to me.

I am a professional mathematics educator, having taught in secondary classrooms, written many textbooks and innovative support material for teachers. I have also trained primary and secondary teachers in preservice and inservice courses for many years. At the time of writing I am a Professional Officer for the Mathematical Association of Victoria, working extensively in schools.

1.4 Structure of the thesis

The layout of the paragraphs on the following page reflects some aspects of the structure. It starts broadly with a review of literature on education in the Malawian context and mathematics education in majority world, then (in Chapter 4) moves into a description of the variables chosen for study, and in Chapter 5 a brief illustrated story of the data-gathering.

From the specific results of that data-gathering (Chapter 6 including tables and graphs) Chapter 7 provides a detailed analysis in terms of the variables chosen in Chapter 4. Chapter 8 then moves out again to explore broader implications, reflecting the concerns raised in Chapters 2 and 3. See next page.

Chapter 1 (Introduction) defines the research question broadly, including the interactions between policy and practice. It also places mathematics education within a broader context to be studied.

Chapter 2 (Malawi: the context) reviews some of the literature about the context of primary education (including mathematics) in Malawi, and leads to many questions most of which will be addressed later. This is the first of two literature-review chapters.

Chapter 3 (Mathematics, education, policy and poverty) looks at relevant literature from and about majority countries, in the areas of mathematics education and educational policy. This also leads to many questions most of which are addressed in Chapter 8.

Chapter 4 (Methodology) presents and argues for the methodology – a mix of qualitative and quantitative procedures. In this chapter I tease out the eight variables with help from the literature presented earlier, and describe how the interactions between policy and practice will be explored; they are analysed in Chapter 8.

Chapter 5 (Malawi 2005) provides pictures of the situation in 2005 and explains how I went about gathering and interpreting the data.

Chapter 6 (Results) presents the research findings. After describing the samples (schools and teachers) it explores what I discovered in relation to each of the eight variables. In this chapter I start with relevant policy, discuss what the educators had to say about policy and practice, provide the survey results (in table and graph), describe the observed teaching practice, and what teachers had to say about it. It therefore raises questions about how well practice matches policy.

Chapter 7 (Analysis of results) analyses the findings for each of the eight variables, in relation to the policy-practice dichotomy in the Malawian context. This time I have started with a summary of the information from Chapter 6 about practice and re-examine the policy in terms of its response to the evident needs. The questions that arise are posed as broader challenges to be further examined in Chapter 8.

Chapter 8 (Implications for education: constraints, challenges and policy) takes the view that the role of policy in majority world education is to find ways to reduce the many constraints in these countries and meet some of the multiple challenges they present. After summarizing the challenges it explores the constraints on the major players in the education system: learners, teachers, curriculum writers, teacher educators, and the policy makers. It then picks up the policy section from Chapter 3 and explores what might be done, and what impacts might take place. A final section summarises what has been learned in relation to mathematics curriculum in a majority world country like Malawi.

Chapter 9 (Epilogue) offers a critique and suggests areas for further research.

There is an extensive set of Appendices, with the potential to be of interest to teacher educators (in-service and pre-service) and to mathematics educators.