

# **Policy and practice in rural primary education in Malawi: the case of mathematics teaching**

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# Policy and practice in rural primary education in Malawi: the case of mathematics teaching

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### Notice 1

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## List of acronyms

ADEA	Association for the Development of Education in Africa
COBET	Complementary Basic Education in Tanzania
COPE	Complementary Opportunities for Primary Education
DANIDA	Danish International Development Agency
EFA	Education For All
EMIS	Education Management Information System
FAWE	Forum of African Women Educationalists
FAWEMA	Malawi branch of FAWE
FEMSA	Female Education in Mathematics and Science in Africa
GABLE	Girls' Attainment in Basic Literacy & Education (USAID project)
GDP	Gross Domestic Product
HDI	Human Development Index
ICMI	International Congress on Mathematics Instruction
ICT	Information & Communication Technologies
INSET	Inservice education for teachers
LoLT	Language of learning and teaching
MIE	Malawi Institute of Education
MTC	Mathematico-Technological Culture
MoEST	Ministry of Education, Science and Technology (Malawi)
NGO	Non-Government Organisation
OECD	Organisation for Economic Cooperation and Development
OSISA	Open Society Initiative for Southern Africa
PME	Philosophy of Mathematical Education
PRA	Participatory Rural Appraisal
REFLECT	REgenerated Freirean Literacy through Empowering Community Techniques
SIMSS	Second International Mathematics and Science Study
SMT	Science, mathematics and technology
SPESSA	Statistical profile of education in Sub-Saharan Africa
STVE	Scientific, technical and vocational education
TIMSS	Third International Mathematics and Science Study
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development

# Map of Malawi

Research took place close to Zomba in the far south-east.



# **Policy and practice in rural primary education in Malawi: the case of mathematics teaching**

## **Abstract in brief**

The research explores the practice of mathematics teaching in Malawian primary schools – such as its relevance, teacher's mathematical knowledge, assessment practices and teaching styles in massive classes – as well as the context in which it takes place – including languages used, attitudes towards gender, ideas of the purpose of education, massive class sizes but high dropout rates. It also draws together the policy documentation related to all these issues, such as government policies, the official curriculum and textbooks, and explores the extents to which policy influences practice, and practice determines policy. It concludes with a simple model suggesting that policy, properly conceived and implemented, might help overcome some of the constraints that presently overwhelm the system.

## **More extensive summary**

Malawi, formerly the British colony Nyasaland, is the ninth poorest country in the world at the start of the new millennium. It has serious health and food supply problems. It is also the country with the highest population density in Africa. In 1993 primary school fees were removed by the government, and the school population almost doubled overnight. There was an immediate crisis in the education system: shortages of teachers, classrooms, furniture and resources for teaching.

In 2005 class sizes averaged over 100, but fell from almost full attendance in Standard 1 to about 50% in Standard 5 and 15% in Standard 8. The external selection examination in Standard 8 (held in English) further limited those who were able to attend the few secondary schools.

In this situation the essentially foreign language of mathematics has battled against the lack of understanding of teachers formerly taught by rote, a syllabus written in 1990, before the population explosion, and above all, a pressing desire of all to get as many as possible through into secondary school.

There are tensions of purpose within the system: the pressing need to alleviate poverty (the official goal of the education system) and the desire of all parents for their children to succeed in an essentially academic program, because they see that as their only hope of getting out of the poverty trap.

All this is clear from the literature. In this thesis I have set out to describe what actually does happen in Malawian primary schools. I have focussed on in the teaching of mathematics in particular as this has never before been documented. I have also sought to document what the government was doing by way of policies in an attempt to address this situation. Further I have attempted to link these policies – the extent to which they have been implemented and whether or not they have helped – to the observed practices.

The data has been collected using a mix of quantitative and qualitative methods. I used a survey instrument to learn the opinions of 83 teachers, all those from 10 convenient primary schools. This asked them, in turn, what they did in certain situations, what they would like to be able to do, and what they think the government wanted them to do. Because this was not a random sample, the conclusions are not generalisable statistically.

I selected six teachers from this survey for observation and interview. I observed three lessons over three days and interviewed them on the fourth day. In addition I gathered copies of government policies relating to primary schooling, curriculum documents, government produced textbooks and examinations. I also interviewed over 30 carefully selected education specialists from the Ministry of Education (in Zomba and Lilongwe) and the Malawi Institute of Education in Domasi.

The survey and observations were described using eight variables:

Gender

Purpose of primary education

Meeting the needs of all pupils

Language of instruction

Purpose and relevance of mathematics education

Content knowledge of mathematics

Assessment

Teaching style

These formed the focus of the descriptions of practice, of policy and of the descriptions of match (and mismatch) between the two.

In the Implications chapter I have suggested that the role of policy (and its implementation) could aim at reducing the constraints on people that make achieving good practice seemingly impossible. For example I found that teachers were very willing to teach the real life uses of mathematics, but were constrained by the expectations of them relating to the selection examination.

It seems that most of the policies determined by the Ministry of Education fail because of their lack of implementation, and one reason for this seems to be the overwhelming constraints on all participants in the educational process: learners, teachers, curriculum writers, teacher educators and policy makers themselves. I have made suggestions based on my analysis that might lead to gradual and sustained improvement, and could avoid the frequent mistake of thinking that all results achieved in small projects can immediately be spread to the whole system: 'taken to scale'.

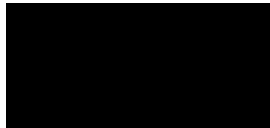
The end of chapter 8 includes some implications deriving from the research that might be specifically useful to the mathematics education community, particularly in Sub-Saharan Africa.

# **Policy and practice in rural primary education in Malawi: the case of mathematics teaching**

## **Declaration**

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other institution. To the best of my knowledge the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signed

A solid black rectangular box used to redact the signature of the author.

Ian Lowe

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