



# EdQual

A Research Programme Consortium on  
Implementing Education Quality in Low Income Countries



# Modelling School Effectiveness and Education Quality in the Southern African Context

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# The SACMEQ learner sample and their context

## Critiquing secondary data source paramount to understanding finding implications

- Who is in the school sample in each country in 2000?
- Understanding country demographics
  - ❑ Urban/rural population densities
  - ❑ Dimensions of poverty and need, wealth inequalities, human development index
- Understanding educational context
  - ❑ Net enrolment rates and survival to Grade 6
  - ❑ The education system in place and the language of instruction

# SACMEQ II data source synopsis

Over 41,600 Grade 6 pupils surveyed in 2305 schools across 14 countries in 2000 (Malawi and Mauritius 2002 and 2001)

Information collected on:

- Pupil and teacher socio-economic backgrounds
- School resources-physical and human
- Some attitudinal information on
  - teacher's approach to teaching and learning in class
  - headteacher assessment on indiscipline
- Type and regularity of ministerial inspections

# Overall Quantitative Approach

<b>Low Income/Large Population</b>  Uganda, Malawi, Kenya, Mozambique, Zambia, Tanzania  HDI<0.53	<b>Low Income/Small Population</b>  Zanzibar  HDI=0.43
<b>Middle Income/Large Population</b>  South Africa  HDI=0.71	<b>Middle Income/Small Population</b>  Lower MI: Botswana, Lesotho, Namibia, Swaziland 0.58<HDI<0.66 Upper MI: Mauritius, Seychelles

- Groups more homogeneous in terms of human development index (HDI), GDP per capita, population size, Gini coefficients in 2000, % of population living on \$1 and \$2 per day
- Country context matters-not got same profile of Grade 6 learner
- Means the advice and policy recommendations need to be sensitised to this.

# UNDERSTANDING THE RESEARCH APPROACH

# Research question

What set of background, context and school process factors explain the unaccounted for score variation **between schools** in the SACMEQ six low income large population group?

# What is distinctive about our approach to quality?

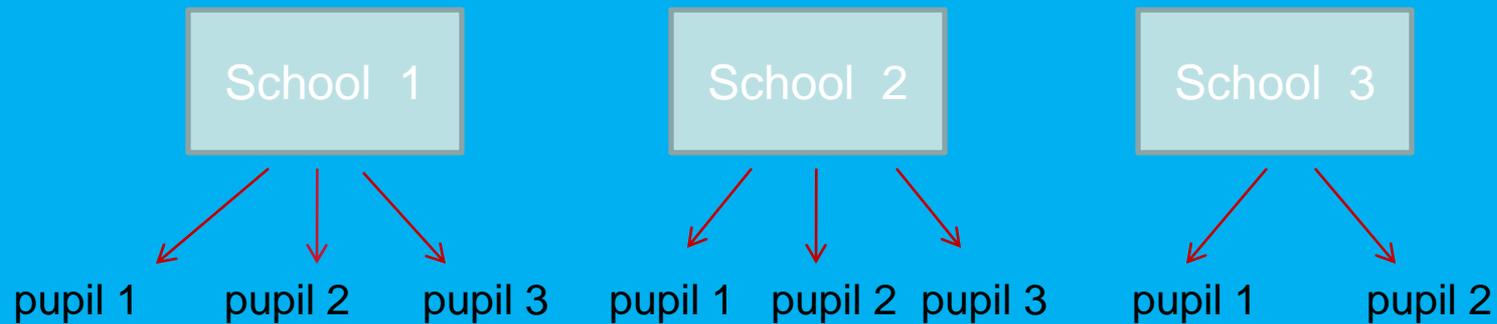
Greater range of variables with particular focus on **inclusiveness** of learner to achieve as a result of the gap between learning in school and an enabling home and community environment supporting learning (and improving retention in the 'system')

Includes unpacking possible retention and quality of learning barriers:

- pupil background factors associated with poverty including nutrition
- what an enabling home learning environment is
- peer learner effects associated with community deprivation

# Overview of Multilevel Modelling

- Allows for pupils nested within schools



- Similarities between pupils because they are experiencing shared conditions of schooling and are likely to be drawn from a particular common community are taken care of in the statistical calculations.

# What does this mean?

- The effect of different *pupil characteristics*, *peer* and *school factors* on reading and mathematics **mean** score can be determined.

**Pupil real score = mean score + factor effect + school mean + error**

- Can see whether school/pupil factors explain **variation** between schools and between pupils in pupil scores.

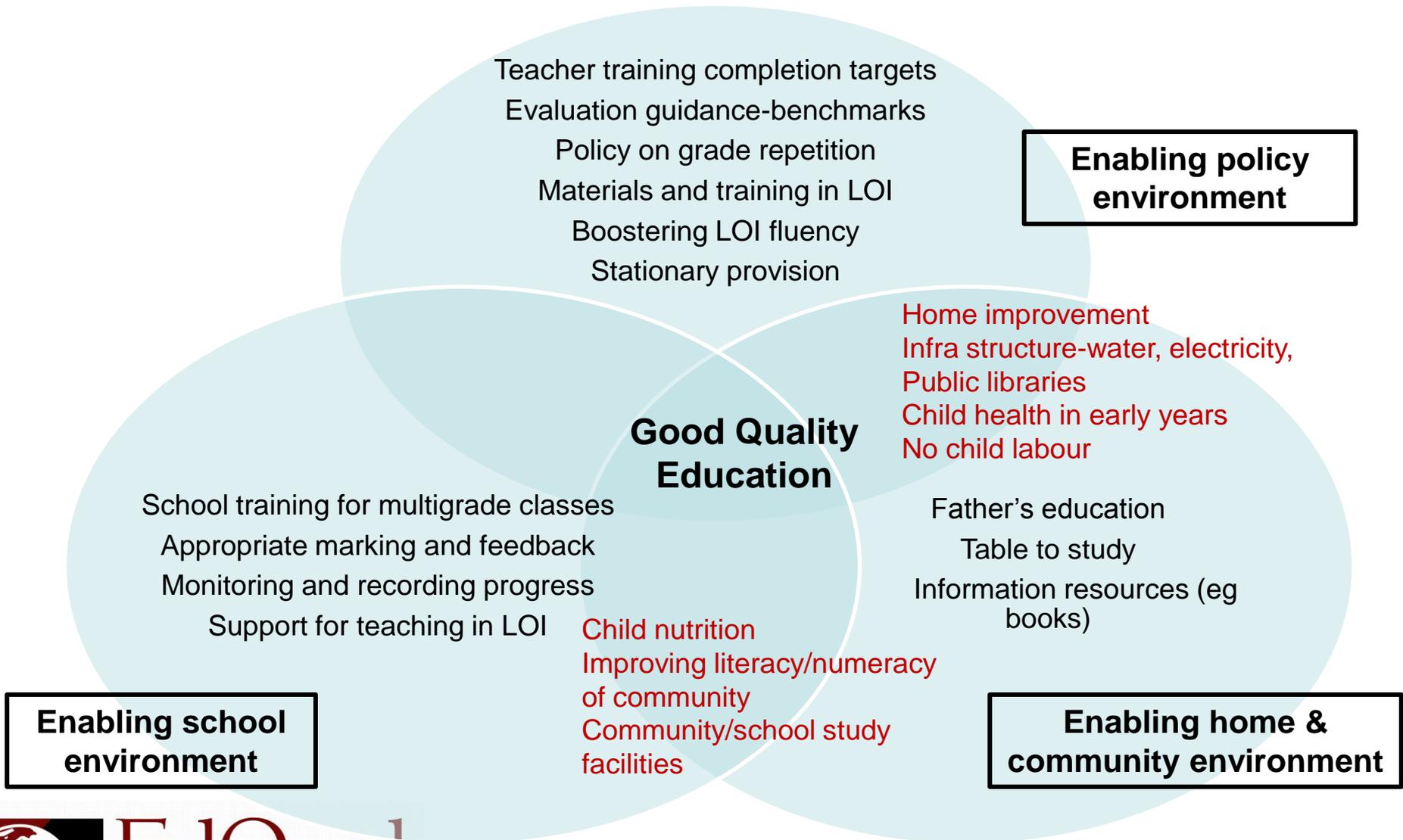
**Variation of pupil scores = variation between schools + variation between pupils**

# Groups of factors assessed

- Pupil background
  - (gender, age, parental education, home resources, basic human needs, grade repetition, language of instruction competence)
- Neighbourhood influences and school context
  - Proportion of year group without books, who have repeated a grade, eat less than 2 meals a day..., location
- School effects
  - Physical resources available
  - Human resources
  - School climate
  - Teacher pedagogy

# LOW INCOME FINDINGS

# Edqual framework



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# Out of school findings

## Individual human needs:

- Having lighting, water access, good quality of home structure, access to information (books) enhance scores.
- Deprivation of one or more basic need depresses scores:  
Not eating 2+ meals per day, living away from home to study.

## Other individual home circumstances:

- Fluency in language of instruction critical.
- A table at home supports learning.
- Parental education-the more educated the father, the greater the positive impact. Maternal education less influential.
- Tanzanian and Kenyan girls fare worse in maths.
- Absence particularly due to working and non payment of fees had a depressing effect on attainment.

# Neighbourhood and contextual effects

## School context

Lower scores attained if :

- (a) Lack of fluency in LOI in school community
- (b) Individual has repeated a grade once or more

Some urban/rural effects-some positive, some negative

Eg.Ugandan city school children did worse in maths

## Neighbourhood effects can be inhibiting

High proportion of children in year receiving under 2 meals per day

Lack of electricity in home amongst school pupil community

- Signifying deprivation in community?

# Impact of school related factors

## Physical Resources

### Lower scores

- Lack of stationary and a desk
- Building in poor repair or temporary classrooms

### Raising scores

- Television or computer in school (small numbers of schools, however)

## Human Resources

- Teachers who had completed training had higher associated scores

## Pedagogy

- Good monitoring and feedback on regular basis enhanced pupil scores

## Indiscipline and organisation

- Higher teacher contact time/workload, lowering of scores
- Poor pupil language and theft amongst learners had negative impact on learner scores
- High levels of teacher absenteeism (headteacher reported) lowered attainment, on average
- Schools led by female headteacher had higher average scores

# Limitations of data source

- Cross sectional sample – no follow up of particular schools and pupils feasible over time, particularly tracking learner progress
- Head/teacher variables on absence, lateness, competence in language of instruction lacking
- Teacher perspectives on indiscipline missing
- Colleagues, Professor Sally Thomas and Massoud Salim will now explore this theme more generally.