Measuring and Monitoring the Quality of Education

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What are we trying to measure?

A good quality education encompasses:

- **Cognitive development:** reading, writing, numeracy
- **Creative and emotional** development and the promotion of attitudes and values necessary for effective life in the community

A good quality education carries personal and social benefits:

- better **health**, lower **fertility**, lower exposure to **HIV/AIDS**
- higher **personal income**
- stronger national **growth**

International learning assessments

PIRLS – reading literacy, 9-yr olds, 5 ldcs

TIMSS – maths/science, 9/13-yr olds, 9 ldcs

PISA – reading/math/sci, 15 yr-olds, OECD+

SACMEQ – reading/maths, grade 6, 14 SSA

UNESCO LLECE – lit/math, 16 LACs

PASEC – lit/maths, 6 Francophone SSA

110 countries in at least one study: 46 ldcs, but only at most 16 in any one assessment

Measuring Quantity is Insufficient

Study	Country	Cohort	% that has ever enrolled (ages 6-14)	% that survived to grade 5	% that achieved minimum mastery	NER in primary for the period before the test
SACMEQ	Malawi	100	91	31	7	69
(1995)	Mauritius	100	99	98	52	99
Grade 6 Reading test	Namibia	100	97	74	19	84
	U. R.Tanzania	100	87	70	18	54
PIRLS (2001)	Colombia	100	98	60	27	87
Grade 4 Reading test	Morocco	100	99	77	59	81
PASEC	Burkina Faso	100	35	25	21	28
(mid 1990s)	Cameroon	100	88	45	33	73
Grade 5 French test	Côte d'Ivoire	100	65	45	38	49
	Guinea	100	48	32	21	36
	Madagascar	100	78	31	20	63
	Senegal	100	48	42	25	51
	Togo	100	82	49	40	66

Quantitative versus qualitative indicators of participation in primary schooling

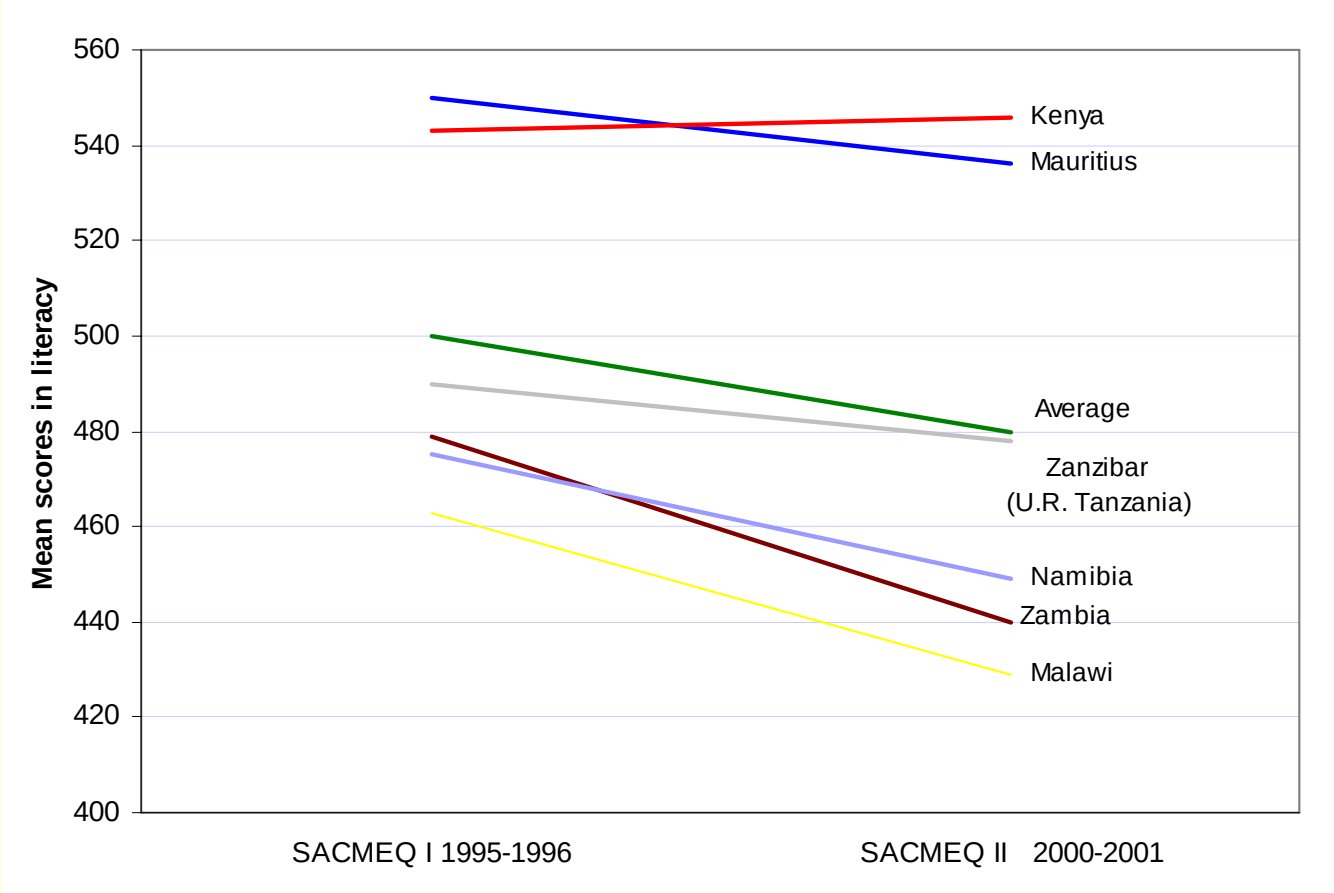
Quality diagnosis: achievement tests

International assessments point to weak performance

- Southern Africa: in **4** countries less than 10% and in **3** others around one-third or less of tested grade 6 students reach a ‘desirable level’ in reading
- Francophone Africa: in **6** countries, between 14% and 43% of grade 5 pupils have low achievement in French or mathematics
- OECD countries: between 2% and 10% of 15-year-olds have serious deficiencies in literacy skills, whereas in middle and low-income countries, between 20% and 50% do so

Literacy scores

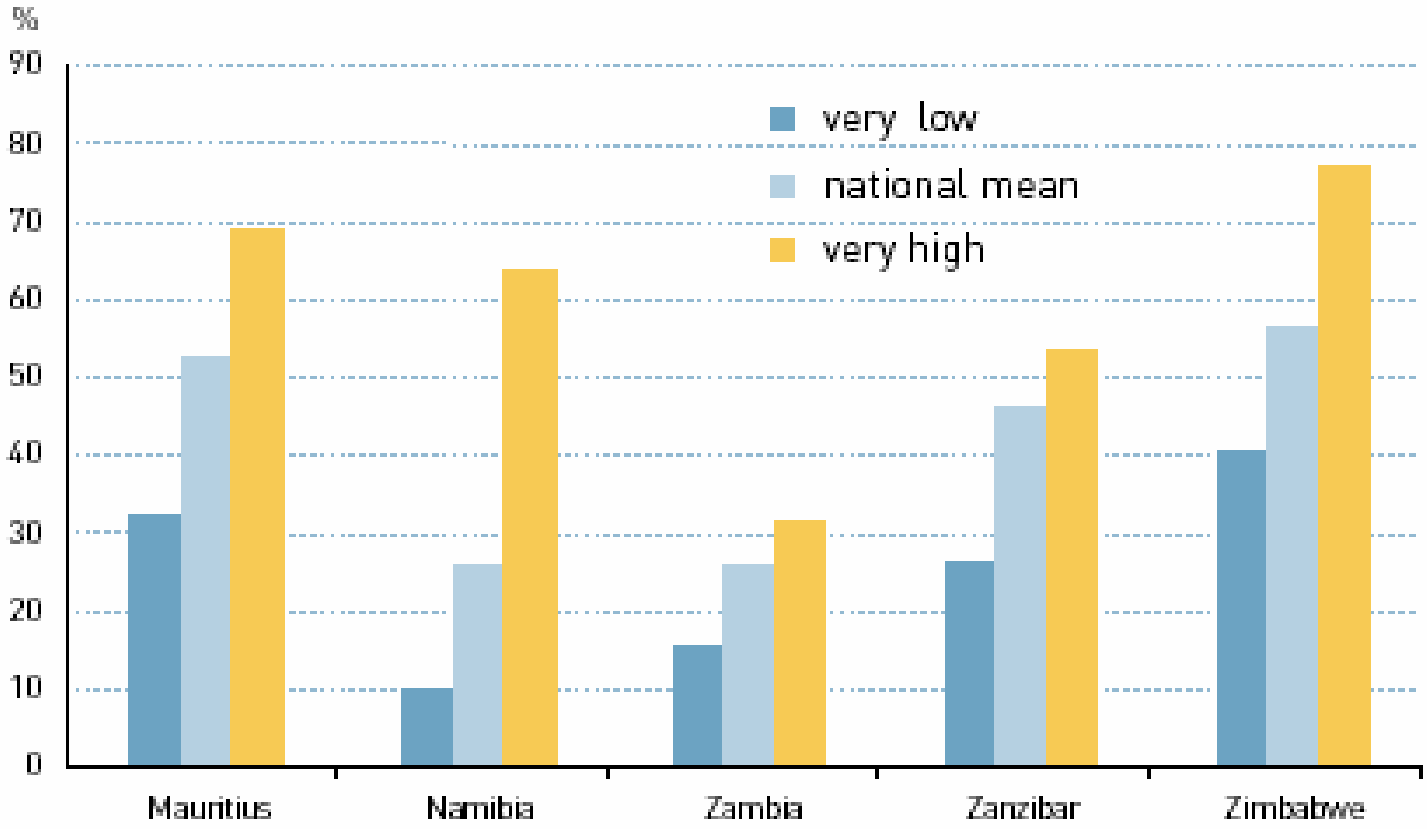
Changes between Sacmeq 1 and 2



National Learning Assessments

- Subject oriented
- Assess achievement relative to intended curriculum
- Country studies doubled to 111, 1995-2006
- Over 90% focus on maths or language
- Results for 16 countries (mainly L.Am) mainly indicate improvement

Percentage of pupils meeting minimum reading mastery levels,by highest and lowest wealth asset score (1995/96)



National resources: finance and quality

In low income countries, increasing spending has a positive impact on learners' cognitive achievement

- **6% of GNP** recommended on education spending not reached in majority of countries
- **Education spending** higher in rich countries (5.1% of GNP) than in systems where access and quality remain a top challenge (under 4% in Africa and East Asia/Pacific)
- **Spending increases** in East Asia and Pacific and Latin American and Caribbean in late 1990s, but -24% in Philippines; -8% in Indonesia

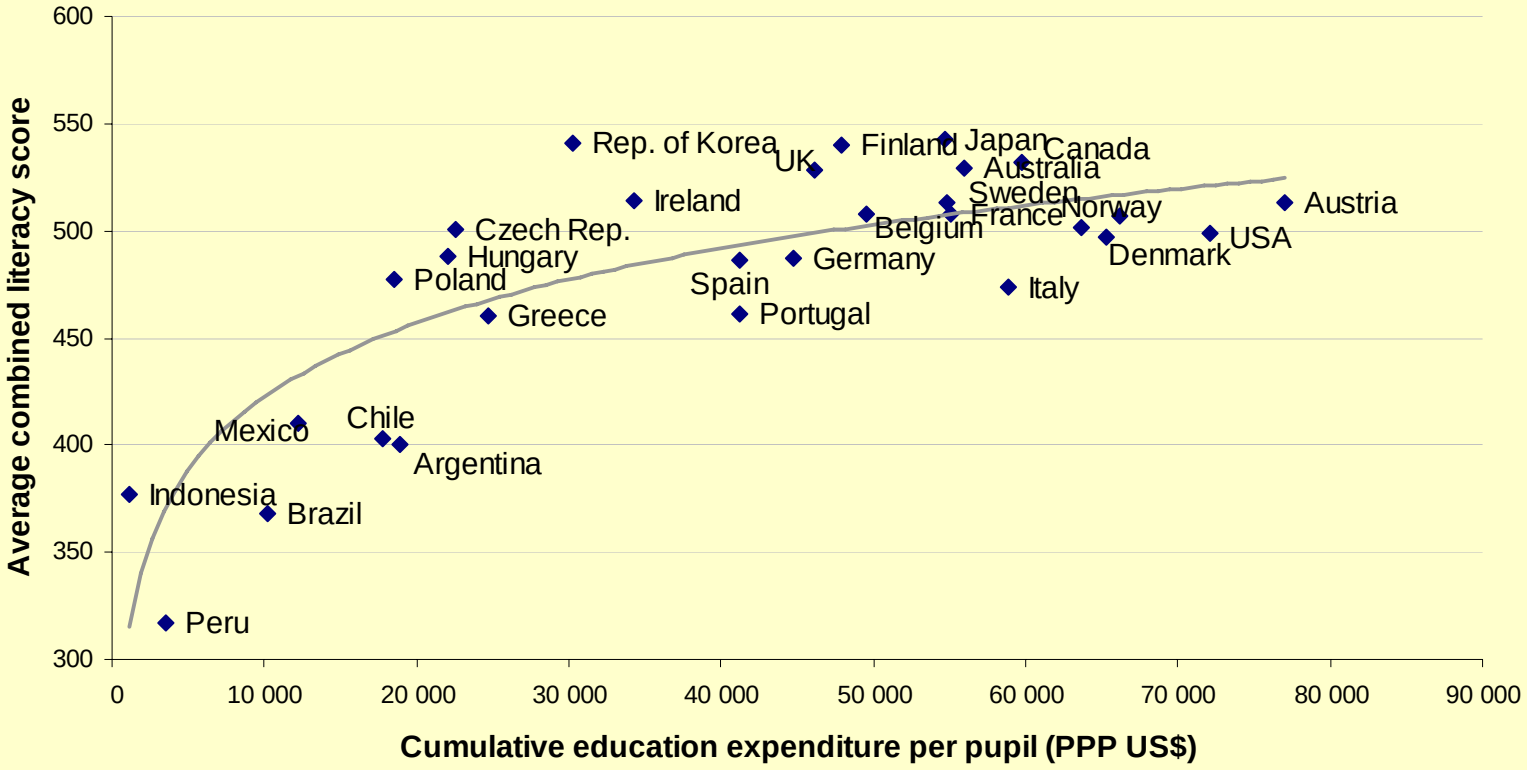
A Paradox:

Test scores and changes in per pupil expenditures in OECD

Country	Change in mathematics and science score, 1970-94	Increase in real spending per pupil, 1970-94	Increase in real GDP per capita, 1970-94	Staff compensation as % of current expenditure on primary education, 1995
Australia	-2.3	269.8	46.4	79
New Zealand	-9.7	222.5	24.3	n.a.
France	-6.6	211.6	60.7	79
Italy	1.3	125.7	74.6	89
Germany	-4.8	108.1	66.8	76
Japan	-1.9	103.3	100.7	87
United Kingdom	-8.2	76.7	58.3	70
Belgium	-4.7	64.7	68	86
Netherlands	1.7	36.3	52.9	78
United States	0	33.1	70.5	80
Sweden	4.3	28.5	35.1	56

National resources: finance and quality

Students in countries that invest more in education tend to have better literacy skills. In high-income states, the impact of additional resources is less clear



Proxies for quality

A wide range of evidence indicates that additional resources improve education quality, particularly where they are scarce

Studies show that more resources for:

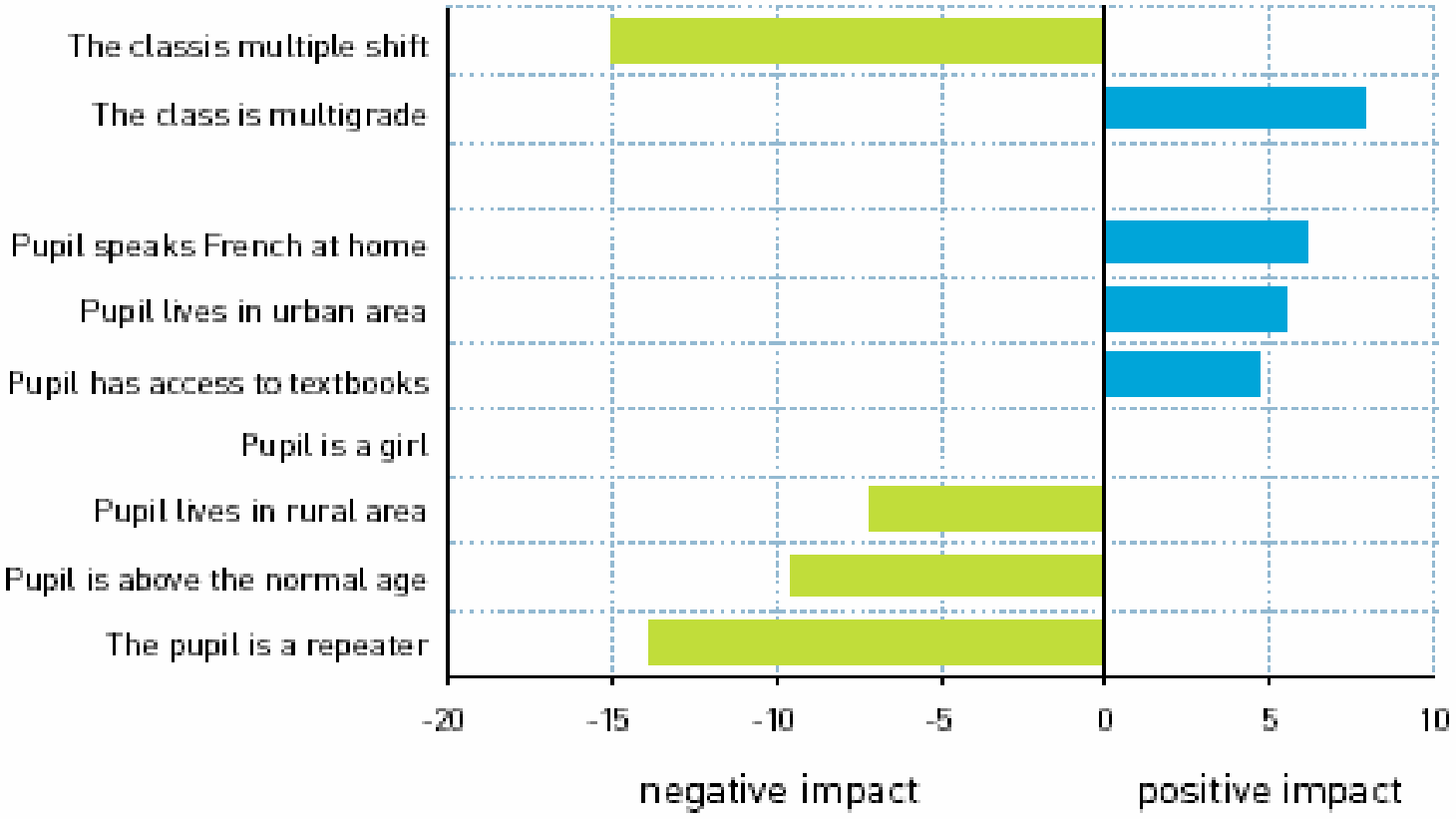
- low pupil-teacher ratios
- more and better textbooks
- time spent learning in school or at home
- teacher qualifications and experience

matter for quality

Other essentials that make the difference

- Curriculum: relevant, balanced with carefully defined aims
- Instructional time: few countries reach recommended 850-1,000 hours/year
- Learning materials: strong impact on learning but small percentage of education spending goes to textbooks
- Language: Successful models start in mother tongue and make gradual transition to second or foreign language
- School environment: safety, health, sanitation for girls and boys, access for disabled

Impact of school organization and pupil characteristics achievement scores in five Francophone African countries (mid-1990s)



How resources are used is important for quality

Research on the characteristics of effective schools highlights the importance of the following factors:

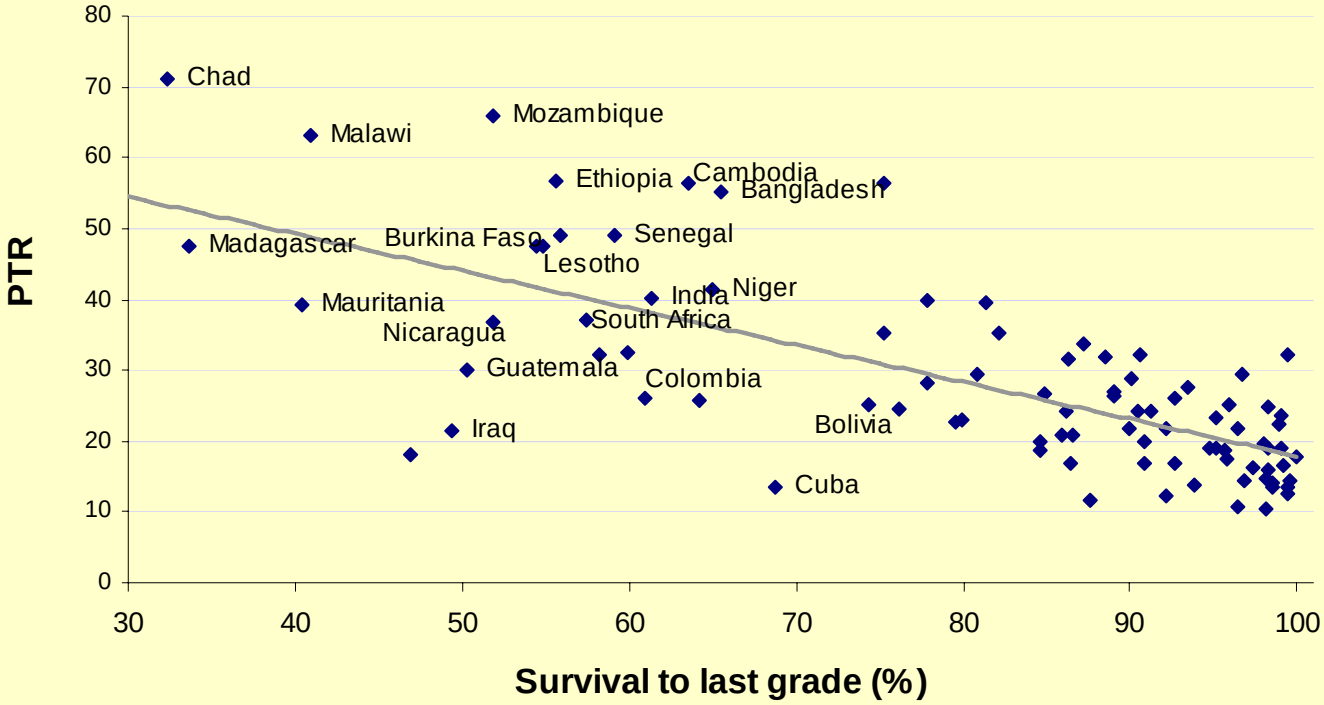
- strong leadership
- emphasis on learning basic skills
- orderly and secure school environment
- high expectations of pupil attainment
- frequent assessment of progress

Quality proxies short-list

- P/T ratio – but skewness undermines mean value
- Repetition rate – but aut. prom policy
- % trained teachers – but definitions vary
- Expenditure variables – but incomplete data
- Learning outcomes – but cohort and curriculum problems and incomplete data
- Survival to grade 5 – best in short run?

Survival in school and PTR

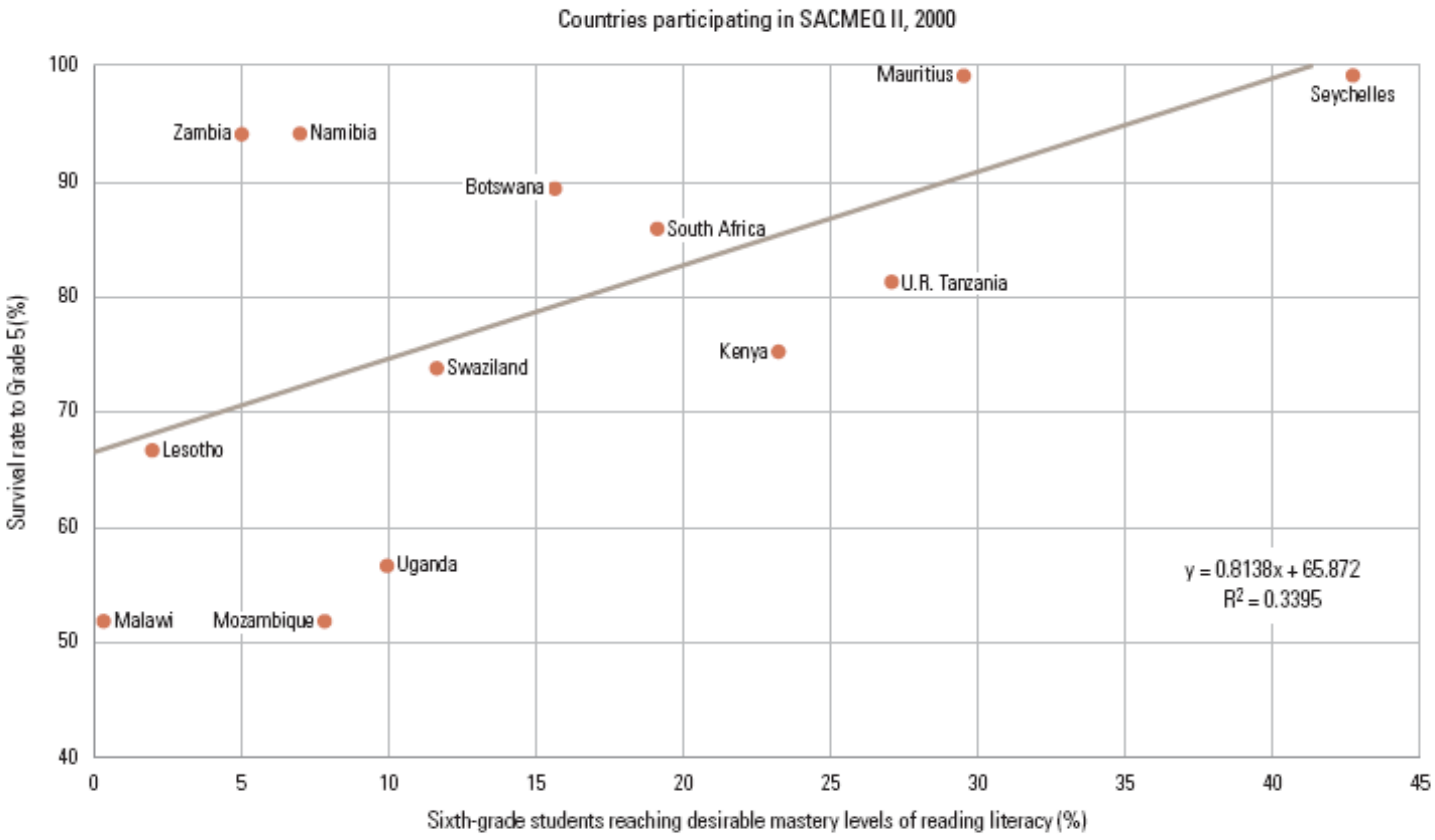
Only one-third of students reach last grade of primary education where pupil/teacher ratios are high



Primary education: pupil/teacher ratios and survival to the last grade, 2001

Survival rate and learning outcomes

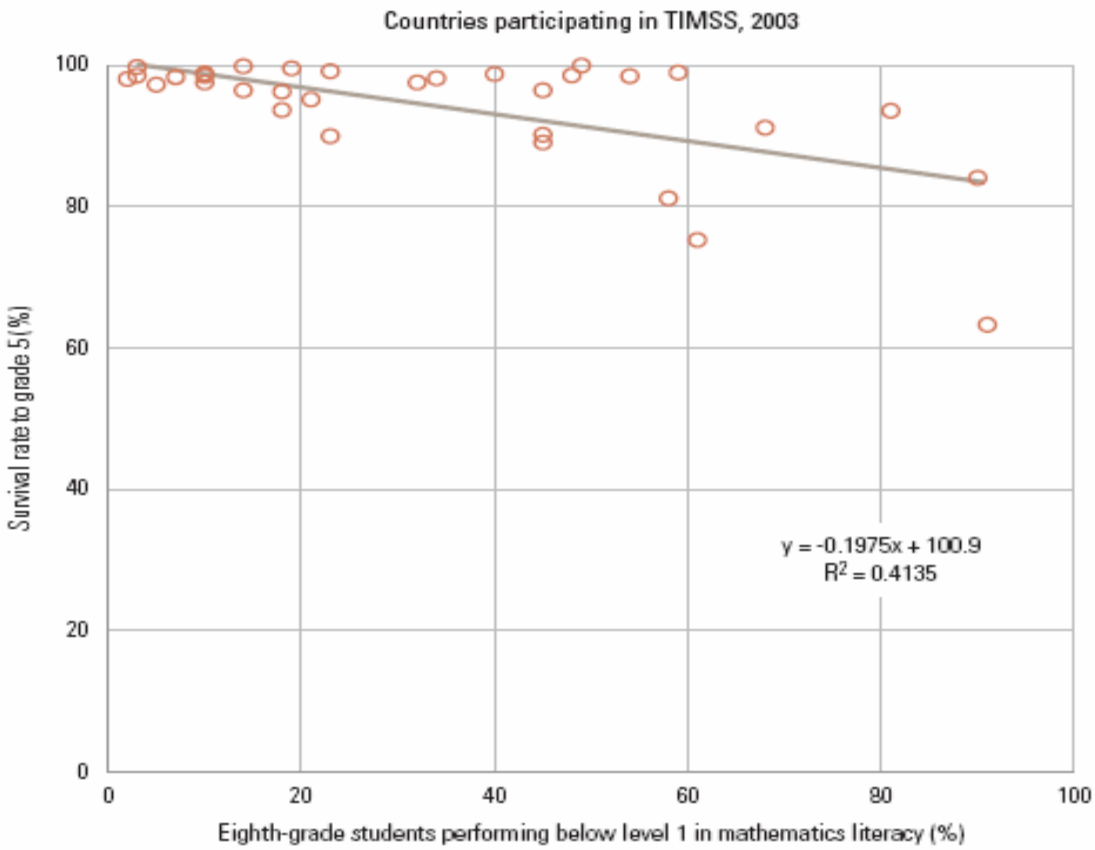
Figure 1: Survival rate to grade 5 and learning outcomes at primary level, 2000



Sources: UIS calculation based on SACMEQ II database; UIS database for data on survival rate to grade 5.

Survival rate and learning outcomes at lower secondary level

Figure 2: Survival rate to grade 5 and learning outcomes at lower secondary level, 2003



Sources: Mullis et al. (2004); UIS database for data on survival rate to grade 5.

End

Thank you