Facing Forward: Schooling for Learning in Africa

Regional Study on the Quality of Basic Education
Brookings Institute, Washington D.C.
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Purpose and scope of the study

Scope
• All sub-Saharan African countries have committed to Sustainable Development Goal 4
• Prioritize basic education of quality (grades 1-9)

Focus
• Science: “What works”
• Service delivery: “How to implement”
• Countries can learn from each other
• Should develop the culture of continuous improvements

Audience
• Ministries of Finance; Ministries of Education
• Development partners
What can we learn from this study?

1. Compares countries by education progress and learning
2. Four focus areas: student progression, teachers, budgets, capacity gaps
3. What are the implications for the region?
Real GDP per capita and Primary-School Enrollment in Sub-Saharan Africa, 1960–2014

US$ at 2010 prices

1st Oil Price Shock

Jomtien

GDP pc at 1974 level

Millions of students

Total Enrollment In Primary
Four Country Groups: Geographical spread

Country Groupings
- Established
- Emerged
- Emerging
- Delayed

Countries

| Primary GER | Lower Secondary GER |
|-------------|---------------------|
| 110         | 87                  |
| 117         | 55                  |
| 108         | 55                  |
| 81          | 42                  |
Four groups of countries based on progress in primary education

Group 1: Established
- South Africa
- Zimbabwe
- Mauritius
- Ghana
- Botswana
- Kenya
- Lesotho
- Cabo Verde
- Namibia
- São Tomé and Príncipe
- Swaziland
- Gabon

Group 2: Emerged
- Congo, Rep.
- Ghana
- Botswana
- Kenya
- Namibia
- São Tomé and Príncipe
- Swaziland
- Gabon

Group 3: Emerging
- South Africa
- Zimbabwe
- Mauritius
- Ghana
- Botswana
- Kenya
- Lesotho
- Cabo Verde
- Namibia
- São Tomé and Príncipe
- Swaziland
- Gabon

Group 4: Delayed
- Congo, Rep.
- Ghana
- Botswana
- Kenya
- Namibia
- São Tomé and Príncipe
- Swaziland
- Gabon

Percentage Out of school children
Gross Enrollment Ratio 2013
GER at 100%
Progress towards Lower secondary education (GER)
Learning assessments: Sources of data and country coverage
Few students reach **minimum proficiency levels** in reading or math

**Countries in Group 1 and Burundi perform better**

(each dot represents an international or regional assessment in Reading, Math, and Science from early grade to lower secondary, and adult literacy)
At the end of 4th grade, fewer than 30 percent of children can read a paragraph (except Tanzanian children in Kiswahili)

| Country                | Group 1 | Group 2 | Group 3 | Group 4 |
|------------------------|---------|---------|---------|---------|
| Kenya                  | 80%     | 70%     | 60%     | 50%     |
| Tanzania (2014)        | 60%     | 50%     | 40%     | 30%     |
| Togo                   | 40%     | 30%     | 20%     | 10%     |
| Uganda                 | 30%     | 20%     | 10%     | 0%      |
| Mozambique             | 20%     | 10%     | 0%      | 0%      |
| Nigeria                | 10%     | 0%      | 0%      | 0%      |
| Senegal                | 0%      | 0%      | 0%      | 0%      |

- Pupil can read a letter (%)
- Pupil can read a word (%)
- Pupil can read a sentence (%)
- Pupil can read paragraph (%)
Some groups of children do systematically worse

- Poor children
- Rural children
- Children who do not speak language of instruction
- Gender effect varies by country

Teachers, classroom and school resources make a difference

- Structured pedagogy (tightly linked curriculum, teacher training, instructional materials, assessment)
- Teacher content knowledge
- Instructional time
- Infrastructure, classroom and school pedagogical resources

Equity is a major issue but teachers and schools can affect learning
Language used at home and school: Wide gaps in learning in grade 2

PASEC Grade 2: Average scores and score gap between students instructed in the home language and in another language.
Some interventions boost learning in SSA and other low- and middle-income countries

- Structured pedagogy
- Extra time
- School feeding
- Teacher hiring
- Multi-level
- Public-private partnerships
- Merit scholarship
- Community-based monitoring
- Cash transfers
- Tracking
- Construction of new schools
- Teacher incentives
- Materials to schools
- School-based management
- School based health-malaria

[Chart showing the impact of various interventions in SSA countries and all countries]
Four areas of focus in the study

1. Student progression from early grades to end of lower secondary, with learning
2. Teacher management and support
3. Using the budget to improve quality
4. Closing the capacity gap
1. Student progression with learning

Student progression: early grades through basic education

- Unblock early grade “traffic jam”
- More lower secondary schools
- Target poor, female, rural students
Early Grade “Traffic Jam” : Three Factors

Student Flow
- Children enter at different ages
- Attend irregularly
- Repeat years
- Learn little

Poor Learning Environment in Early Grades
- Large classes (>80)
- Different ages
- Classes held outside
- Few learning materials
- Teachers need training to teach reading, numeracy

Language Policy
- Children don’t understand Language of Instruction
- Teachers are not familiar with language

CHILDREN STUCK IN EARLY GRADES
Survival rates through grade 9

Survival rates for various countries are shown in the graph. The countries include Burkina (46), CIV (76), DRC (83), Ethiopia (57), Ghana (90), Malawi (16), Mozambique (49), Nigeria (83), Senegal (82), Rwanda (38), and Uganda (31). The graph indicates the percentage of students surviving through each grade.
Expand access to lower secondary, address demand constraints

- **Plan for increase**: Will double in 10 years
- **Standard school facility package**
- **Choice between boarding schools versus day schools**:
  - Boarding schools are expensive and not effective
  - Address inequality in resources for day schools
- **Use ICT**, especially to address shortages of math/science teachers, materials, labs
- **Eliminate exams between primary and lower secondary**
- **Remove fees, barriers for girls, nomadic children, etc.**
2. Teachers: Improve management and support

- Improve teacher management and support
- Improve knowledge and practice
- Strengthen school leadership
- Deploy correctly/ensure presence
- Minimum learning conditions in schools
- Accountability and incentives
Teacher recruitment
- Teaching attracts the more educated
- But pre-service preparation is inadequate
- And teacher knowledge remains modest

Teacher deployment
- Allocations vary widely across schools
- Control of allocations and transfers is weak
- Curriculum specialization worsens problems

Teacher absenteeism
- Teachers are absent from school and from the classroom ("orphaned" classrooms)
- Problems stem from issues with leave policy and weak school level management

Teaching and learning in the classroom
- Teachers lack ongoing support to improve teaching
- Material and other conditions are unconducive

"Leakages" in Teacher Management at Multiple Points
### SDI surveys 2012–2016, grade 4

Teacher knowledge lags in the more advanced tasks

| Language (average score) | Grammar task | Composition task |
|--------------------------|--------------|-----------------|
| **Group 1**              |              |                 |
| Kenya                    | 63           | 92              | 49              |
| **Group 2**              |              |                 |
| Uganda                   | 54           | 89              | 37              |
| Togo                     | 50           | 74              | 26              |
| Tanzania                 | 42           | 73              | 22              |
| **Group 3**              |              |                 |
| Mozambique               | 34           | 83              | 10              |
| Nigeria                  | 49           | 64              | 24              |

| % correct on mathematics | Math (average core) | Adding double digit numbers | Subtracting double digits | Comparing fractions |
|--------------------------|---------------------|-----------------------------|---------------------------|---------------------|
| **Group 1**              |                     |                             |                           |                     |
| Kenya                    | 77                  | 98                          | 86                        | 40                  |
| Uganda                   | 58                  | 96                          | 79                        | 21                  |
| **Group 2**              |                     |                             |                           |                     |
| Togo                     | 33                  | 79                          | 65                        | 13                  |
| Tanzania                 | 65                  | 97                          | 86                        | 50                  |
| **Group 3**              |                     |                             |                           |                     |
| Mozambique               | 33                  | 87                          | 65                        | 17                  |
| Nigeria                  | 42                  | 89                          | 70                        | 16                  |
Large shares of teachers are absent—not just from school but especially from class

|     | School | Class  |
|-----|--------|--------|
| 1   | Kenya  | 0.15   | 0.43   |
| 2   | Tanzania | 0.15 | 0.47   |
| 3   | Togo    | 0.21   | 0.36   |
|     | Uganda  | 0.24   | 0.53   |
|     | Ethiopia | 0.05 | 0.22   |
|     | Madagascar | 0.35 | 0.42   |
|     | Mozambique | 0.35 | 0.43   |
|     | Nigeria  | 0.14   | 0.29   |
|     | Senegal  | 0.18   | 0.29   |

Source: Service Delivery Indicators Surveys of primary schools, 2013-14, based on enumerators’ school visit reports
3. Use the budget to improve quality

- Spend incremental resources on learning
- Reduce disparities in standards of provision
- Improve the efficiency of public spending
- Project multi-year resource requirements
More resources, better utilization

**Additional Resources are Required**
- $208 per student in primary
- Enrollments in lower secondary will double in 10 years

**What You Spend On Is Important**
- 95% on teachers salaries
- 5% on everything else
- Huge disparities

**Improve Budget Planning, Spending, and Execution**
- Inability to spend on non-salary items
- Weak procurement; financial management processes

**Needs to Come From Domestic Revenues**

**Move to 80% Salaries, 20% on Books, Training, Etc.**

**Minimum Standards**

**Budget Capacity is Critical**

More resources, better utilization
Predictability of Direct Budget Support by country grouping

Group 1
- Kenya (2012)
- Mauritius (2011)
- South Africa (2014)
- Botswana (2013)
- Ghana (2013)
- Lesotho (2012)
- Seychelles (2011)
- Cabo Verde (2016)

Group 2
- Comoros (2016)
- Togo (2016)
- Uganda (2012)
- Rwanda (2010)
- Tanzania (2013)

Group 3
- Benin (2014)
- Guinea-Bissau (2014)
- Mauritania (2014)
- Sierra Leone (2010)
- Zambia (2013)
- Burundi (2012)
- Mozambique (2015)

Group 4
- Burkina Faso (2014)
- Central African Republic (2010)
- Liberia (2016)
- Niger (2017)
- Senegal (2011)
- Mali (2016)
Knowledge of “what to do” and increased financial resources are not enough. The challenge is implementation and specific capacities are required.
Bridging the implementation gap – connecting to schools/teachers

Ministry of Finance

Ministry of Education

Technical Institutions

Policy Planning Data Capacity

Unions Parents Elected Officials

Coordination Negotiation Capacities

Accountability Incentives

Technical Capacity

Decentralized/Deconcentrated Units

Schools
## “Market Failure” in Capacity Building

### Demand
- Longer term capacity needs fail to be expressed
  - Ministry of Finance unwilling to borrow
- Short electoral cycles
- Longer term capacity building required for:
  - Specialized technical skills
  - Soft areas - negotiation, coordination
- Needs “learning by doing”

### Supply
- Usually from donors
- Short term/project based
- Related to planning rather than implementation
- Or focused on implementation of project
  - Training of few staff
  - Equipment, etc.
- International technical assistance
Looking ahead: key challenges

**Diverging Economic Performance**
- Economic growth across the region is highly heterogeneous
- Some countries have more diversified economic structures

**Larger cohorts of school-age children**
- A vast population growth is expected: most African countries are at the “pre-demographic dividend” stage, with total fertility rates (TFRs) of 4 or more.

**Managing Expansion with Quality**
- Need to expand while sustaining past learning improvements and absorbing students from disadvantage social backgrounds.
Thank You

Suggested citation:

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Annexes – Data Sources
| Data Sources: Chapter 1, Country Groupings and Challenges |
|---------------------------------------------------------|
| **UIS.Stat database (UNESCO)**                           |
| Country groupings, GERs, Enrollment (48 countries)       |
| ISCED Mappings of Length Cycles (48 countries)           |
| **Pole de Dakar (IIEP)**                                |
| Country groupings, Enrollment, GERs, Enrollment (48 countries) |
| **Household Surveys (WB)**                              |
| Out of School Rates (34 countries)                       |
| **WDI (WB)**                                             |
| GDP, Growth of GDP (40 countries)                        |
| Gini Index (40 countries)                               |
| Poverty Headcount (40 countries)                         |
| **WPP 2015 (UN DESA)**                                  |
| Population Projections (48 countries)                    |
| **Ethnologue (SIL)**                                    |
| Linguistic Diversity Index 2015 (47 countries)           |
| **ACLED, Armed Conflict Location and Event Data, version 6** |
| Number of conflicts (48 countries)                       |
| 7 countries                                             |
| 9 countries                                             |
| Assessment          | Grades /Ages | Countries                       | Subjects | Minimum Threshold          | Examples of Minimum Proficiency                                                                 |
|---------------------|--------------|---------------------------------|----------|----------------------------|-------------------------------------------------------------------------------------------------|
| PISA+               | Age 15       | Mauritius                       | Reading  | *Level 2 and above*       | Reading: Locates and recognizes main idea in text, interprets and integrates parts of text.       |
|                     |              |                                 | Math     |                            | Math: Solves problems using whole numbers.                                                        |
|                     |              |                                 | Science  |                            | Science: Makes literal interpretations of the results of scientific inquiry.                     |
| TIMSS               | 8            | Botswana, Ghana, South Africa   | Math     | *Low International Benchmark and above* | Math: Some knowledge of whole numbers and decimals.                                               |
|                     |              |                                 | Science  |                            | Science: Some basic knowledge of biology, chemistry, physics, and earth science. Interprets simple pictorial diagrams and applies basic knowledge to practical situations. |
| PASEC               | 2, 6         | 10 Francophone countries        | Reading  | *Level 3*                  | Reading (grade 6): Combines, extracts and locates implicit information.                          |
|                     |              |                                 | Math     | *Level 2*                  | Math (grade 6): Answers brief arithmetic, measurement and geometry questions.                   |
| SACMEQ              | 6            | 16 education systems            | Reading  | *Level 4*                  | Reading: Reads on or reads back in order to link and interpret information located in various part of the text. |
|                     |              |                                 | Math     | *Level 4*                  | Math: Translates verbal or graphic information into simple arithmetic operations. Uses multiple different arithmetic operations on whole numbers, fractions and/or decimals. |
| SDI                 | 4            | 7 countries                     | Reading  | --                         | Reading: Reads a sentence aloud                                                                  |
|                     |              |                                 | Math     |                            | Math: Solves a math story                                                                       |
| EGRA                | 2, 3         | 9 countries                     | Reading  | --                         | Oral reading: any score above zero                                                                |
Data Sources: Chapter 3, Student Progression

UIS.Stat database (UNESCO)
- Bulge Analysis (all countries): current, 103 countries trend, 84 countries
- Enrollment by grade
  - GERs in grade 1,
  - GIR in grade 1
  - GER in Pre-School
  (Population projections by age, UN DESA)

Household Surveys (WB)
- Over-age enrollment in grade 1
- Repetition rates by grade 1
- GERs by area, wealth
- Distance to School
- Gender Parity by area
- Survival Rates grades 1-9
- Drop-out reasons
- (34 countries)

Other sources
- Language Policies and Implementation:
  EGRA reports, UNICEF, UNESCO (27 countries)
- National Examinations: UIS, WB, ESP documents, national documents, WES, Nuffic (43 countries)
- Class size, SDI (Malawi)
- Internet and Mobile Users (Regional Averages)
- ICT use: UIS Communication and Information database, InfoDeb, WB, MoE (26 countries)
## Data Sources: Chapter 4, Teachers

| Source                                                                 | Data Points                                                                                       |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| **UIS.Stat database (UNESCO)**                                        | # of teachers, Total (P=38, S=32 countries) Non-permanent (P=29 countries)                      |
| **Household / Labor Surveys (WB)**                                    | Class Size (25 countries), Textbooks per pupil (32 countries) Toilets, potable water and electricity in primary schools (33 countries) |
| **EMIS data**                                                         | Teachers and comparator groups: educational attainment, wages, hours of work, second job, hourly and annual pay (13-16 countries) Teacher deployment (Ghana, Cote d’Ivoire) Randomness in teacher allocation (P=28 countries, S=8 countries) |
| **SDI (WB)**                                                          | Teacher absenteeism (9 countries) Teacher Pedagogy Knowledge, Teaching Practices (6-7 countries) |
| **PASEC (2014) and SACMEQ (2007)**                                    | Teacher knowledge (Only SACMEQ 2007, 11 countries) Pre-Service Teacher Training (25 countries) Prof. Development (15 countries) In-service Training (10 countries) Essential conditions (23-25 countries) |
| **Other sources**                                                     | STEP (Ghana and Kenya) TIMSS and TED-S (Botswana)                                                 |
Data Sources: Chapter 5, Budget and Finance

- UIS.Stat database (UNESCO)
  - Total government expenditure (TGE) (39 countries)
  - Government education expenditure (GEE) (33 countries)
  - Share of public spending by level of education (26 countries, 6-year primary cycles)

- UNESCO’s Global Monitoring Reports (GMRs)
  - Household spending on education (18 countries)

- OECD-DAC and various GMRs
  - Donor aid for education (42 countries)

- Public Expenditure and Financial Accountability (PEFA, 2011 Framework)
  - Assessment of budgetary processes (38 countries in the 2010-2016 period)

- Education Sector Plans
  - Plans appraised for the Global Partnership for Education (GPE) (20 countries)

- WB PERs
  - Various issues covered in this chapter (10 countries, across several years)
Data Sources: Chapter 6, Capacity Gap

**UIS.Stat database (UNESCO)**

- Selected indicators in three domains: enrollment, teachers and spending
- Coverage: at least one year in 2000-04, 2005-09, and 2010-15 periods
- Number of countries with valid data increases over time

**World Bank Internal Survey**

- Data collected through questionnaires addressed to Bank staff working in different Sub-Saharan African countries.
- Information available on 26 countries
Data Sources: Chapter 8, Coda

**Enrollment Projections**
- Prepared for Ethiopia, Ghana, Kenya, and Senegal
- Inputs:
  - Population Projections: WPP 2012
  - Patterns of Student Flows: Household Surveys
  - Student Teacher Ratios (STRs): UIS.Stat database (UNESCO)

**WPP 2017 (UN DESA)**
- Total Fertility Rates, TFR (46 countries)

**World Bank**
- Robustness of economic performance, 1995–2016 (45 countries)