Improving Quality Education and Children's Learning Outcomes

and Effective Practices in the Eastern and Southern Africa Region

Report for UNICEF ESARO

EXECUTIVE SUMMARY

ACER
Australian Council *for* Educational Research

unicef

Tim Friedman, Ursula Schwantner, Jeaniene Spink, Naoko Tabata and Charlotte Waters
Australian Council for Educational Research (ACER)
2016
Commissioned by UNICEF Eastern and Southern Africa Regional Office (ESARO), Basic Education and Gender Equality (BEGE) Section.

Cover photo: Francõise d'Elbee ©UNICEF Kenya/2009/d'Elbee

Acronyms and abbreviations

3ie	International Initiative for Impact Evaluation
ACER	Australian Council for Educational Research
ANA	Annual National Assessment
ASALs	Arid and semi-arid lands
ASLI	Africa Student Learning Index
BEGE	Basic Education and Gender Equality
CBA	Competency-based approach
CO	Country Office
CONFEMEN	Conference of Ministers of Education of French-speaking Countries
DAC	Development Assistance Committee
DfID	Department for International Development (UK)
ECD	Early childhood development
EDF	Education Development Fund
EDI	Education for All Development Index
EFA	Education for All
EFA GMR	Education for All Global Monitoring Report
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
ELMI	Early Literacy and Maths Initiative
EMIS	Education Management Information System
ESA	Eastern and Southern Africa
ESAR	Eastern and Southern Africa region
ESSP	Education Sector Strategic Plan
ETF	Education Transition Fund
GPE	Global Partnership for Education
GPI	Gender Parity Index
IEA	International Association for the Evaluation of Educational Achievement
IEP	Integrated Education Programme
IfE	Innovation for Education
IIEP	International Institute for Educational Planning
IRT	Item response theory
LARS	Learning Achievement in Rwandan Schools
LLO	Limited learning outcomes
LNAEP	Lesotho National Assessment of Educational Progress
MICS	Multiple indicator cluster surveys
MLA	Monitoring learning achievement

MoESAC	Ministry of Education, Sport, Arts and Culture of Zimbabwe
MTPDS	Malawi Teacher Professional Development Support
NALA	National Assessment of Learner Achievement
NAPE	National Assessment of Progress in Education
NASMLA	National Assessment System for Monitoring Learning Achievement
NER	Net enrolment rate
NLA	National Learning Assessment
NSAT	National Standardized Achievement Test
OECD	Organisation for Economic Co-operation and Development
OVC	Orphans and vulnerable children
PASEC	Programme for the Analysis of the Education Systems of CONFEMEN Countries
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PRIMR	Primary Math and Reading Initiative
RCT	Randomised control trial
READ	Russia Education Aid for Development
REB	Rwanda Education Board
RTI	Research Triangle Institute
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SBA	School-based assessment
SSME	Snapshot of School Management Effectiveness
TAC	Teacher Advisory Centre
TIMSS	Trends in International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNICEF ESARO	UNICEF Eastern and Southern Africa Regional Office
USAID	United States Agency for International Development
ZELA	Zimbabwe Early Learning Assessment
ZIMSEC	Zimbabwe School Examinations Council

Foreword from the Eastern and Southern Africa Regional Director

Over the past few decades the world's attention has been focussed on attaining Millennium Development Goal 2 – universal access to primary education. During this period, governments and the international community have been investing on school infrastructure, training teachers, and learning materials. For UNICEF globally and across Eastern and Southern Africa, the challenge of our time is now how to sustain the momentum in access and to reinforce quality learning outcomes. There is, today, an urgent global realisation that beyond getting children in the classroom, it is imperative that they learn.

The new Sustainable Development Goal (SDG) 4, presents huge opportunities to meet this challenge through a strategic shift towards equitable quality education for all. This shift is essential. Emerging evidence shows that large numbers of children are in school, but are not learning. In 2012, the Africa Barometer report by the Centre for Universal Education at Brookings estimated that of the 97 million who enter school on time in Sub-Saharan Africa, 37 million will not learn basic skills. Thirty seven million: that is one-third of all children who go to school will reach their adolescent years unable to read, write, and/or perform basic numeracy tasks.

The analysis from *Improving quality education and children's learning outcomes and effective practices in the Eastern and Southern Africa region* has similar conclusions. It reveals that as many as 40 per cent of children in school do not reach the expected basic learning benchmarks in numeracy and literacy. The new report also confirms that children from families with lower socio-economic status and whose home language is different from the language of instruction are less likely to learn.

The findings – that many children are in school, but not learning – represent a huge waste of human and financial resources. Fundamentally, the promise of education and the transformative opportunity of schooling for children, families and communities is not being fulfilled.

UNICEF believes that confronting this learning crisis, through high impact solutions, is the priority for the education community. Encouragingly, the report highlights that many countries in East and Southern Africa are promoting quality through improving learning monitoring by national, regional and international learning assessments, and through developing targeted programmes that improve teaching and learning.

Given this learning crisis, acceleration of these trends is essential. UNICEF will push for an increased system-wide emphasis on outcomes as opposed to inputs; improved assessments to gauge children's learning progress; and building knowledge of the pedagogic practices that can improve learning.

There is so much potential. While highlighting challenges, this report also shows elements of national progress. UNICEF encourages countries to accelerate these developments. We are cognisant of the many challenges facing education in the region – 1 in 5 children not attending school; a demographic boom in the region that will see 70 million additional children by 2030; and continued overstretched public finances. In such critical circumstances, the winning combination of access, quality learning, and affordability is ever more crucial.

It is in this context that the report provides us with a critical baseline on quality education in every country in the region. The report assesses the learning outcomes being reached in the region, the learning assessment tools countries are deploying to generate evidence on learning, and the interventions countries are implementing to improve teaching and learning.

With this report, UNICEF and our many partners will be better equipped to support improvements in quality education for children.

Leila Gharagozloo-Pakkala
Regional Director
Eastern and Southern Africa
United Nations Children's Fund


Means of transport
train
aeroplane
bicycle
ship
bus
car
Handwriting
up up up up
uncle uncle uncle
visitor visitor visitor visitor
voice voice voice voice

Executive summary

Introduction

The Eastern and Southern Africa (ESA) region is progressing well towards achieving important Education for All (EFA) goals, particularly with regard to increasing student enrolment in the primary years (UNESCO, 2014). Despite this achievement, there is still considerable work to be done to improve the quality of education. Primary school students in low-income sub-Saharan African countries have, on average, learned less than half of what is expected of them (Majgaard and Mingat, 2012, p.6). The gap between the learning achievements in developed economies and the learning achievements in Eastern and Southern Africa is estimated to be at least four grades (GPE, 2012, p.116).

In order to understand the major impediments to student learning in the region, the United Nations Children's Fund (UNICEF) contracted the Australian Council for Educational Research (ACER) to take stock of and compare existing student assessments in the region, focusing on students in primary education. The terms of the contract called for ACER to study the existing assessment systems and methodologies in the region, and document how the assessment data are derived and used to inform education policy in the region. We were also asked to identify factors and practices that could help improve learning outcomes in literacy and numeracy in primary education, specifically for disadvantaged children with limited learning outcomes (LLOs).

Our study consists of three research components. The first provides an overview and comparative analysis of the existing assessments of student learning outcomes in literacy and numeracy in primary education in the region. The second considers the characteristics of children experiencing LLOs in the domains of literacy and numeracy, including trends in achievement over time. The third looks at effective country-level practices in the ESA region that could improve learning outcomes in the literacy and numeracy of disadvantaged children in primary education. Our report concludes with a macro theory of change drawing on the evidence we gathered for this report.

Comparative analysis of existing assessments in the ESA region

Our study covered 23 countries and identified 58 existing assessment systems that evaluate student learning outcomes in literacy and numeracy in primary education. Of these, EGRA and EGMA are the most prevalent programmes (36 per cent) followed by regional (29 per cent), national (28 per cent) and international (7 per cent) assessments. Most of these assessments target lower-primary students (grade 2 or 3) and most commonly focus on literacy and numeracy assessments. While these commonly use mean scores for the cognitive results or frequency analysis for the contextual data, item response theory (IRT) methods, which can scale data and meaningfully compare results across grades, contexts and time, is less prevalent. Contextual data linked to the cognitive results is available for many, but not all of the assessments, making it difficult to draw policy-related findings from the results. Not captured in our stock-taking was whether, and to what extent, student assessment data is linked to Education Management Information System (EMIS) data on a systems level. Access to the data is a challenge, and our study found that while the results of 71 per cent of the assessments were published, we were unable to obtain the original datasets for the remainder.

Students experiencing LLOs and trends over time

The objective of the study was to investigate the characteristics of children experiencing LLOs and trends in their performance over time. In 32 out of the 58 assessments, competency-level benchmarks are defined. However, each of the assessments (PASEC, UWEZO, TIMSS and prePIRLS) used different metrics for literacy and numeracy. Therefore, there is no shared benchmark among them that could be used to construct a common definition of 'limited learning outcomes.' Instead, we employed the benchmarks each assessment used to gauge literacy and numeracy. Given the differences in these metrics across data sets, countries and year level, the percentage of students identified with LLOs is wide ranging, from 18 per cent to 40 per cent in numeracy, and 18 per cent to 50 per cent for literacy.

In international and regional assessments for the ESA region, average test scores for literacy and numeracy are generally low, with a considerable percentage of students failing to have acquired basic skills in reading and mathematics. In Lesotho, for example, by Grade 6 only 48 per cent of students have achieved basic reading skills. In Zambia and Malawi, only 27 per cent of students achieved this level. In mathematics, the proportion of primary students with basic skills is considerably lower, with fewer than 50 per cent of students in Grade 6 achieving the minimum level in two-thirds of the countries (UNESCO, 2014, p.35).

Consistent with other studies conducted in the region, individual and family characteristics of students, such as gender, age, language spoken at home, socio-economic factors, preschool attendance, activities prior to attending school, engagement and out-of-school tuition, were all found to be associated with the likelihood that a student would experience LLOs in literacy or numeracy. In addition, the type of school, the location of the school and the resourcing available to the school that the student attends also contributes to the likelihood that the student would be experiencing LLOs.

Our study showed that, in general, males are more likely to experience LLOs in literacy than females. In Botswana, for example, males are almost three times more likely than females to experience LLOs. While on the whole girls outperformed boys in reading literacy, rural boys outperformed rural girls on almost all tasks, but in urban schools the opposite was the case (RTI, 2010, p.37). However, in mathematics, on the whole, boys outperformed girls.

The age of the student relative to the school entry grade is an equally important factor. While the relations between age and performance are complex and may be determined by different socio-economic and demographic factors, Hungi et al (2014) found that in developed countries older students generally outperform their younger colleagues, while in developing countries, especially in Africa, younger students perform better than older students. Our study supported this insight. Across the region, we found that students who were relatively younger than the median class age tended to be less likely to be experiencing LLOs. For instance, Grade 6 students in Botswana who were 12 years or less were almost three times less likely to be experiencing LLOs in mathematics than students 12 years of age or older.

The language spoken at home also has a strong impact on learning outcomes. In countries where the official language is not the most common language spoken at home, there are strong links between language and marginalisation in education. Evidence from PASEC and SACMEQ show a strong link between home language and the language of instruction in determining test scores (Fehrler and Michaelowa, 2009, UNESCO 2010, p. 154; Garrouste, 2011). While low language skills are commonly viewed as a critical factor in literacy assessments, evidence from Namibia using SACMEQ results suggests that they also make a significant contribution to low performance levels in mathematics (Garrouste, 2011, p. 231).

Furthermore, the socio-economic status of students is a strong predictor of achievement. Our study found that students from lower socio-economic backgrounds were more likely to experience LLOs across all countries examined in both literacy and numeracy. We found this to be the case across all countries, despite the different measures used to assess socio-economic status. Among other factors, household possessions, including the availability of reading materials and books in the home, and levels of parental education, were also found to be associated with LLOs. Furthermore, the amount of time that students spent working was negatively associated with achievement data (ACER and ZIMSEC, 2015).

Students who had limited exposure to a learning environment in the home were disadvantaged in performance at school. A profound impact on learning outcomes was evident in homes where students were involved in reading and storytelling, were not required to work outside of the home, started school early and were provided with adequate support in school by their teachers to build foundational literacy skills, and attended schools that had relevant and engaging reading and learning materials in buildings with clean water and sanitation.

Our study also considered student performance trends over time. While much of Eastern and Southern Africa has experienced a marked improvement in student enrolment, student performance has changed little over time. Indeed, on the whole, student performance has stagnated or worsened. It must be noted, however, that given the limited comparable data available for our study, drawing any general conclusions for the whole ESA region is problematic. Instead, conclusions based on improvement or decline in student abilities should only be considered at the national level.

Effective country-level practices

As part of our study, a number of strategies were identified that contributed to the success of country-level practices in the ESA region. We found that while there is a considerable body of literature for the ESA region on practices that increase quantitative aspects of education quality, such as access, enrolment and retention rates, we found few reports on programmes to improve student learning outcomes.

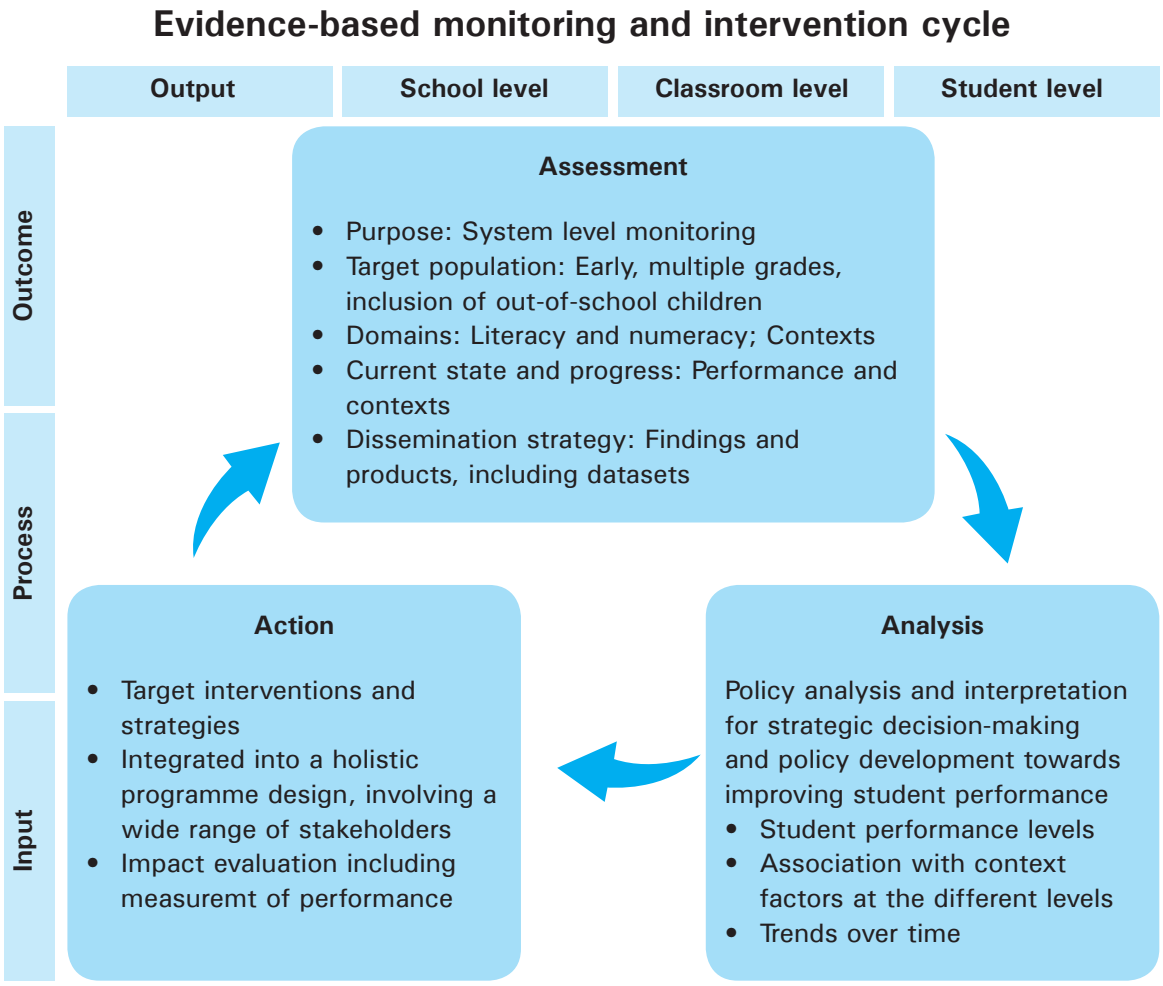
Altogether, we identified 10 programmes in 7 out of the 21 countries identified as having had an impact on student learning in early grade literacy/numeracy. These comprised of teacher training on reading/mathematics instruction; provision of teaching-learning materials; production of reading materials in the local language; and community- and home-based reading activities which were linked to effective ECD programmes. Additionally, programmes that aimed at a whole-school improvement strategy were shown to have a significant impact on learning outcomes.

Broadly, these successful programmes use a three-pronged approach comprised of assessments, teacher training and community support for children's reading. They provide a combination of well-targeted instructional interventions, regular professional development of teachers through school-level training and coaching, with regular system-level follow up and support, matched with sufficient relevant and quality classroom materials, and more literacy and numeracy instructional time. Students having a reading buddy to support their learning to read had a positive effect on learning outcomes in a number of locations. Overall, our study found that key strategies for improving learning outcomes of disadvantaged children share two common features: a holistic and coherent approach and consistent and continuous support over time.

A macro theory of change

Based on the evidence collected for our study, we developed a macro theory of change aiming at monitoring and improving literacy and numeracy performance of children in primary education in the region. The theory combines the main findings of each stage of the study and highlights the '3As' approach for long-term and sustainable change in student performance: assessment, analysis and action. Critical to this framework is the dissemination of the assessment results in order to initiate action by governments, communities, parents and development partners (see Figure 1).

Figure 1. A macro theory of change. An evidence-based monitoring and intervention cycle as premise for change: assessment, analysis, action



Conclusions

Our study analysed existing student assessments, data resulting from some of these assessments and effective country-level programmes in the ESA region.

We found that programmes targeted toward early learning in disadvantaged communities made the biggest impact. The level of exposure students have to a learning environment, either through home or school, in their early years and the presence of holistic, system-level educational programmes that support quality early learning programmes in disadvantaged communities made a significant contribution to improved student performance.

While many researchers have studied the factors that contribute to student school attendance, fewer have explored what helps improve student learning. In financially constrained environments, resources should be targeted at understanding the gaps in the system with regard to student performance and supporting effective interventions.

In order to do this, policymakers must consider how learning assessment programmes that provide quality comparable data across population subsets, between grades and over time, can be integrated from the outset into education reform agendas.


EXERCISE BOOK
48 PAGES

ACER
Australian Council for Educational Research

unicef