

Assessments for Minimum Proficiency Levels a and b (AMPL-ab)



KENYA
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Acknowledgments

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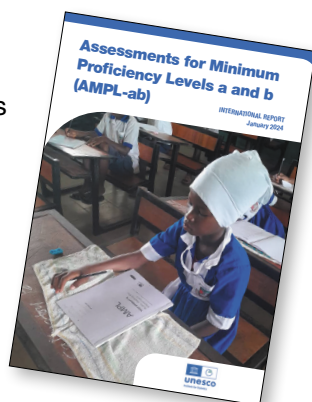
Background

As part of Sustainable Development Goal (SDG) 4, Indicator 4.1.1 aims to measure the “proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex.” To meet this goal, UIS has coordinated efforts to establish common reading and mathematics scales for all three points of Indicator 4.1.1, building on existing cross-national and national assessments. As a result of these efforts, two important points of consensus have been reached: the definition of the Minimum Proficiency Level (MPL) and the Global Proficiency Framework (GPF).

The overarching objective of the AMPLab project is to measure and analyze the performance of students at the end of lower and upper primary using an assessment that aligns with the GPF. This will:

- enable the collection of more informative data about where students are performing in terms of the MPLs at the end of lower and upper primary in reading and mathematics,
- produce baseline measures to set targets and compare learning gains/losses over time
- facilitate reporting on SDG 4.1.1
- aid the tracking of learning progress over time
- complement tools that had been already developed in 2021 in the Monitoring the Impacts on Learning Outcomes (MILO) study.

The results of this study can be found in the International Report (UIS, 2023). This document provides a summary of the results for Kenya.



Introduction

In Kenya AMPL-a and AMPL-b were administered to a representative sample of Grade 6 students. The details of Kenya’s sample and response rate can be seen in **Table 1**.

TABLE 1: Sample of Kenya Grade 6 population

SCHOOL POPULATION	SCHOOL SAMPLE	SCHOOL RESPONSE RATE (%)	STUDENT POPULATION	STUDENT SAMPLE	STUDENT RESPONSE RATE (%)	OVERALL RESPONSE RATE (%)
36,334	250	100	1,383,991	5,566	96	96

Response rates refer to weighted data of sampled and substitute schools.

PERFORMANCE DISTRIBUTION CHARTS

For each country, the distribution of students’ mathematics and reading performance is displayed in a ‘performance distribution chart’.

The 2 dashed vertical lines in these charts indicate the approximate locations of the MPLa and MPLb benchmarks – providing information about the approximate proportion of students achieving above MPLa and below MPLb (ie., between MPLs).

The vertical axis of these plots indicates the ‘density’ of student proficiency. The entire shaded area is equal to a total probability of 1. The shaded area sectioned by the MPL vertical lines gives the proportion of the students above and below each benchmark.

Assessment results – The Kenya

In Kenya, 36.9% students in Grade 6 reached or exceeded MPLb for mathematics, and just over a quarter of students reached or exceeded MPLb for reading, as seen in [Table 2](#). 89% of students in Grade 6 achieved MPLa in mathematics and over three quarters of students did so for reading.

There was no statistically significant difference between girls and boys reaching MLPb in mathematics and reading. However, the differences are statistically significant at MPLa, where more girls than boys reached MPLa in mathematics (2.1 percentage points) and reading (6.7 percentage points).

TABLE 2: Proportion of Grade 6 students in Kenya reaching or exceeding MPLa and MPLb in mathematics and reading

DOMAIN	PERCENT REACHING OR EXCEEDING MPLA (LOWER PRIMARY)	PERCENT REACHING OR EXCEEDING MPLB (END OF PRIMARY)
Mathematics	88.6	36.9
Reading	78.4	25.5

Only figures shaded in purple are relevant for reporting against the associated SDG.

A fuller picture of student proficiency in Kenya can be provided by breaking down these figures according to proportion of students below MPLa, between MPLa and MPL' and above MPLb. This is illustrated in [Figure 1](#) and [Figure 2](#). In Kenya, more than half of students in mathematics (51.6%) and reading (52.9%) achieved between MPLa and MPLb. 11.4% of students performed below MPLa in mathematics. Almost twice as many students (21.6%) performed below MPLa in reading.

The same figures also illustrate the breadth of mathematics and reading performance amongst Grade 6 students in Kenya. There is a similar distribution in reading and mathematics, with most students clustering around the middle of the distribution. However, with mathematics, there appears to be a normal distribution of student performance, whereas with reading, the distribution is positively skewed, whereby there is a broader distribution of students performing above the mean, than below the mean.

FIGURE 1: Mathematics performance distribution, Kenya, Grade 6

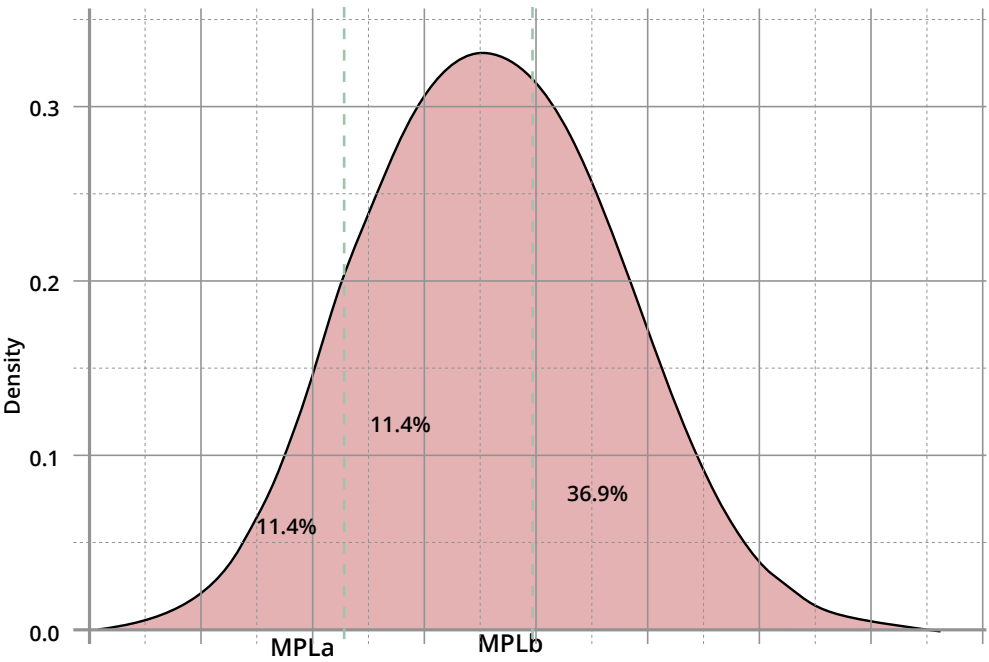
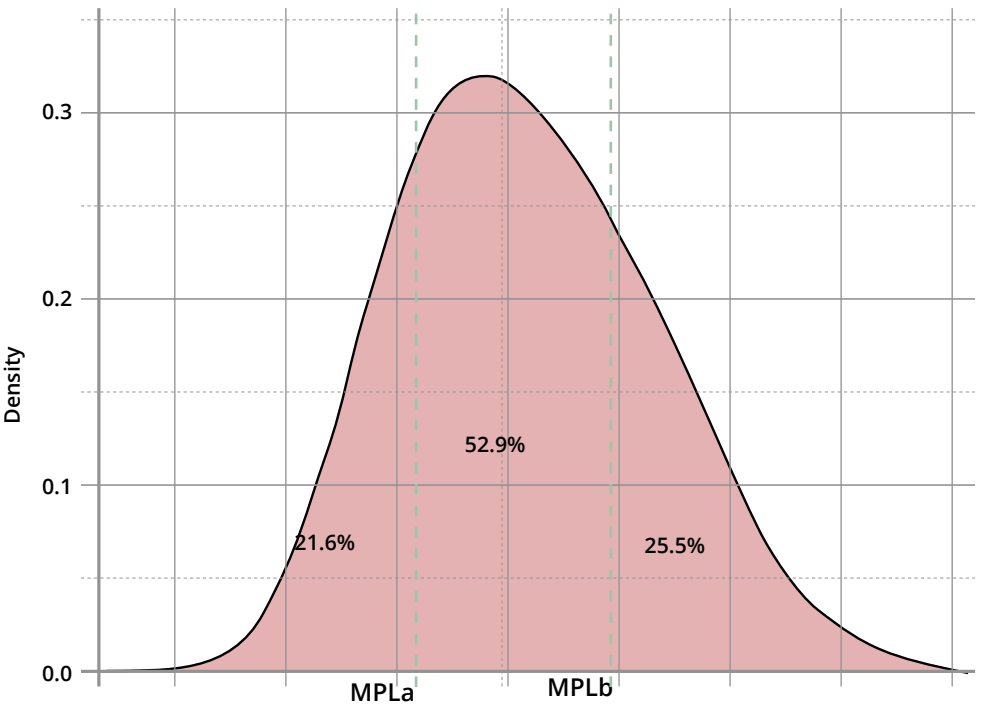


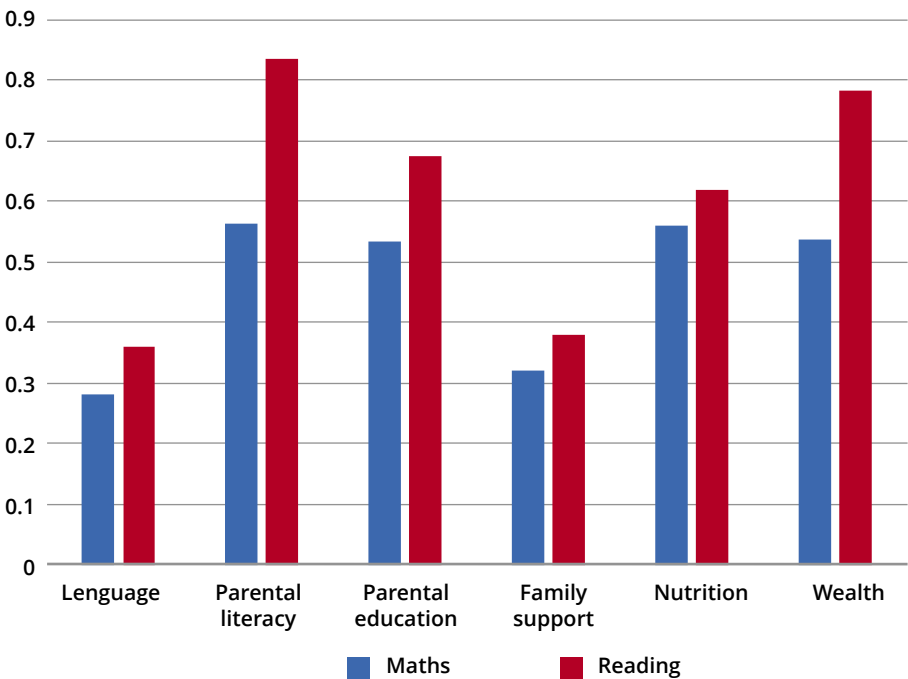
FIGURE 2: Reading performance distribution, Kenya, Grade 6



Contextualising the results – Kenya

The AMPL-ab results for Kenya can be better understood by recognising the contexts associated with student learning. Effect sizes are used to indicate the strength of a relationship between a contextual indicator and performance. **Figure 3** shows that ‘parental literacy’, ‘wealth’, ‘parental education’ and ‘nutrition’ all had strong effects on reading proficiency, and moderate effects on mathematics proficiency. ‘Family support’ and English being spoken at home as the main language had moderate effects on both reading and mathematics proficiency in Kenya.

FIGURE 3: Effect sizes of select contextual factors on mathematics and reading outcomes - Kenya



* Language: Students who spoke the assessment language (i.e. English) at home, compared to those who did not speak the assessment language at home.

Comparing Kenya’s results for MPLb between 2023 and 2021

Since Kenya participated in AMPL-b 2021 UIS MILO (UIS, 2022a), the AMPL-b results can be compared between with results from 2021. The AMPL-b 2023 results were consistent with the AMPL-b 2021 results from the MILO study in that a higher proportion of students in Grade 7 in 2021 met MPLb than in Grade 6 in 2023 (see Table 3). While this result is consistent with the expectation that proficiency increases as students progress through the education system, the magnitude of difference between the 2 populations over a period of 2 years is noticeable.

TABLE 29: Comparing sample and MPLb results for Kenya between 2023 and 2021

COUNTRY & YEAR	GRADE	AGE MEAN YEARS (SD)	PERCENT OF STUDENTS WITH FEW BOOKS AT HOME*	PERCENT MEETING OR EXCEEDING MPLB MATHEMATICS	PERCENT MEETING OR EXCEEDING MPLB READING
Kenya (2023)	6	12.6 (1.4)	61%	36.9	25.5
Kenya (2021)	7	14.6 (1.3)	39%	74.1	46.7

*10 books or fewer. This is an important economic, cultural, and social background indicator.

There are 4 likely explanations for the difference in the proportion of students meeting MPLb in 2023 and 2021. First, there is a two-year age difference between the 2 cohorts, as seen in Table 3. A reason for the age difference is that in 2021, the school year was extended for 6 months to make up for the COVID-19 school closures that occurred in 2020. Accordingly, the 2020 school year went from January 2020 to July 2021. As a result, the Grade 7 students who were tested in mid-2021 as part of the UIS MILO study, would have typically been in Grade 8, if COVID had not occurred. This has resulted in Grade 7 students assessed in mid-2021 to

be on average 2 years older than Grade 6 students assessed in mid-2023. Hence, even though AMPL 2021 and 2023 in Kenya are both measuring students towards the end of primary school, those who undertook the AMPL in 2021, had an additional year of schooling and were 2 years older. This is a substantial difference between the populations, and it would be expected that it would be associated with a significant difference in proficiency results.

Second, a population bias in the economic, cultural, and social background of students may have contributed to the difference in proficiency results. As seen in Table 3, far fewer students in 2021 (39%) had fewer than 10 books at home than in 2023 (61%). The result of such a population bias would likely be reflected in a lower proportion of students meeting MPLb.

A likely explanation for the difference in the populations might be that when MILO was undertaken in 2021, a higher percentage of disadvantaged children may not have returned to school, hence they would not have been included in the MILO sample. However, by 2023, most children had returned to school (Cameron et al., 2022). Thus, the AMPL 2023 results would include a greater number of children from disadvantaged backgrounds, who on average have lower academic proficiency (Liu et al., 2022; Selvitopu & Kaya, 2023). Even without COVID-19, fewer disadvantaged children may stay at school until Grade 7. Thus, more disadvantaged children may have been included in the 2023 results at Grade 6.

Third, it appears that the full effects of the COVID-19 school closures are still materialising. In 2020, schools in Kenya were fully closed for 28 weeks, and partially closed for a further 9 weeks (UIS, 2022b), which disrupted education and potentially caused long lasting impacts on learning (Cameron et al., 2022). This is a longer period of school closure than in many other countries in Africa. Longer school closures are associated with greater learning loss, with children from disadvantaged backgrounds effected the most (Patrinos et al., n.d.). The MILO study showed that Kenya experienced some statistically significant learning loss, when comparing results from before the pandemic in 2019 to during the pandemic in 2021. Specifically, there was a decrease of 9.3 percentage points of boys meeting MPLb in mathematics (UIS, 2022a). There is also evidence from Kenya that children in lower grades were affected by school closures more than children in higher grades (Zaman, 2021). Hence, the young children whose foundational education was disrupted in early primary school, were the ones who undertook AMPL in 2023 at the end of primary school. Whereas most of those students who were assessed as part of MILO in 2021, benefitted from uninterrupted schooling until their seventh year of school. The assumption that the full effects of the COVID-19 school

closures are still materialising would also be consistent with evidence from OECD/PISA 2022, that showed an unprecedented decline in mean performance across OECD countries (OECD, 2023).

Fourth, students in the 2023 study were assessed in a context of recent reforms to the Kenyan education system that have included structural changes. In 2017, primary school was reduced from 8 years to 6 years. These changes were introduced incrementally; students who commenced school prior to 2017, continued with the previous structure. The students who undertook the AMPL in 2023 were the second cohort who commenced school under the new structure. The students who undertook AMPL-b in 2021 as part of the MILO study were in Grade 7; at the time this was the penultimate grade of primary school.¹

For students who undertook AMPL in 2023, any benefits of the reforms probably had not yet eventuated, whilst at the same time they experienced one less year of schooling. It is possible that it might take some time to adjust to the changes to the education system. For example, teachers need time to adjust to teaching the appropriate curriculum for a given grade. These 2023 results are measuring student proficiency in a system undergoing transition, which could have effected outcomes.

All four explanations may likely have contributed to the differences in the percentage of students achieving MPLb in Kenya between 2021 and 2023, nor can other factors be excluded. Ongoing monitoring of student proficiency is therefore essential to establish the future trend.

1. MILO was administered in the penultimate rather than the ultimate Grade of primary school, chiefly so that the results could be compared to the most recent national assessment, which was undertaken in Grade 7.

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