



Briefing note 1: March 2023

Status of pupil learning outcomes in junior and senior secondary schools two years on from school closures in Sierra Leone

1 About the learning and school safety study 2022 (LASS II)

The UK aid funded Leh Wi Lan programme has been supporting the Ministry of Basic and Senior Secondary Education (MBSSE) in Sierra Leone with robust data to track trends in pupil learning performance by conducting annual assessments of secondary grade learning since 2017.¹

Sierra Leone already faced a learning crisis before the COVID-19 pandemic. The immediate impacts of school closures on pupil learning were captured in the 'Back to School' study (2020), which found that although Sierra Leone appeared to have avoided major learning loss, learning inequalities had likely increased with gains for certain groups of pupils (boys, pupils from wealthier families and those from certain provinces) while the already disadvantaged fell further behind. Last year, the Learning and School Safety (LASS) 2021 study used quantitative and qualitative evidence to offer insights on the longer-term impacts of COVID-19 school closures and catch-up strategies for learning recovery. Results showed that a year after the shock, there were some green shoots of improvement in learning with fewer pupils falling behind grade-level expectations in English at JSS level, and in Maths at SSS level, despite overall learning levels being low. The LASS 2021 study also found that learning disparities related to gender and wealth had stabilised over the past 12 months and did not increase further.

One year on, the LASS II (2022) study uses quantitative evidence² to track trends in pupil learning, safety and violence reporting systems across secondary schools in Sierra Leone two years after the COVID-19 induced school disruptions. This briefing note presents the evidence on pupil learning achievement by addressing four key questions:³



Key research questions

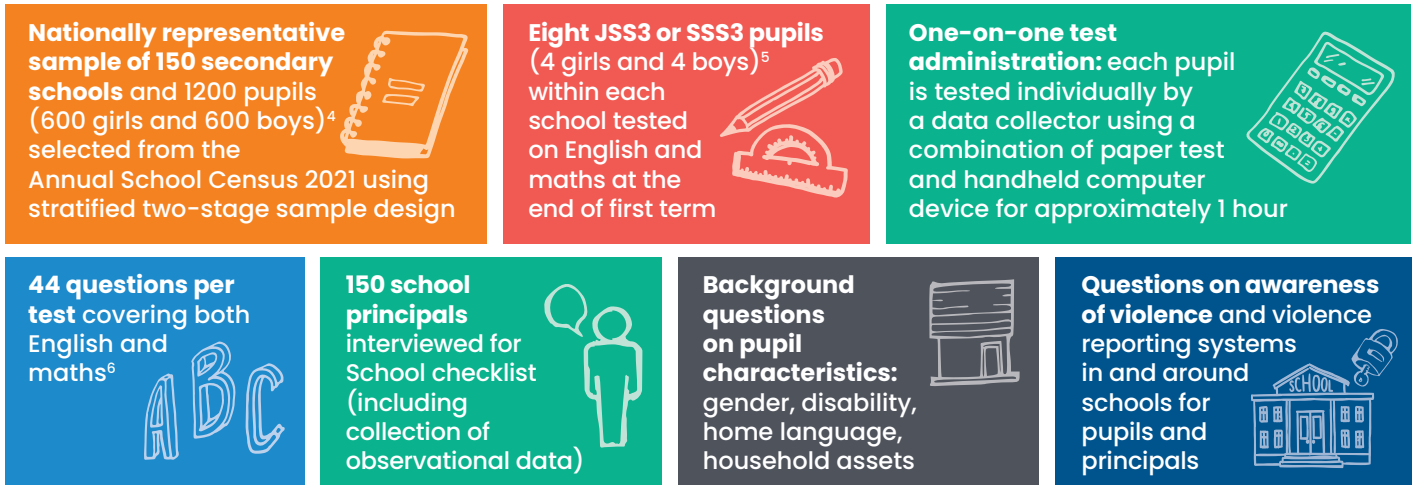
- 1 What are the trends in learning for JSS3 and SSS3 pupils over the last 12 months?
- 2 What are the English and Maths skills typically demonstrated by JSS3 and SSS3 pupils at the end of first term? Are these skills in line with what the national curriculum expects pupils to have achieved in these grades?
- 3 What topics or skills do pupils find more challenging? Are there any insights to support remediation efforts?
- 4 How large are the learning gaps by gender, wealth, disability and other pupil background characteristics in 2022? How have learning disparities changed compared with 12 months ago?

1 Interested readers can access previous years' (2017-2021) secondary grade learning assessment reports in Sierra Leone on <https://mbsse.gov.sl/leh-wi-lan/>

2 The LASS (2021) study on the other hand, as mentioned, was a mixed-method study, providing both quantitative and qualitative evidence. The sample size was also larger (250 schools) to allow regional level estimations.

3 The school safety and violence reporting results are discussed in LASS 2022 Briefing Note (2) Status of school safety and violence reporting systems in and around junior and senior secondary schools in Sierra Leone.

Details of the LASS II (2022) study design are shown below.

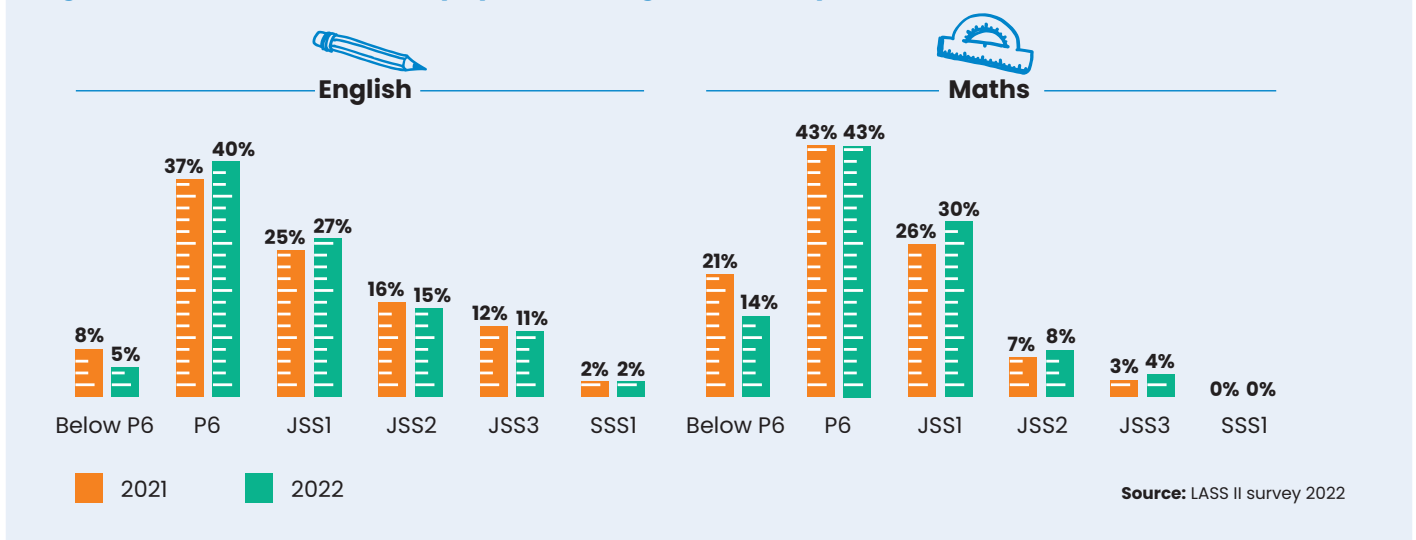


Note to readers: All improvements or changes reported in this note are statistically significant at 90% confidence level (or higher).⁷

2 Has learning performance for JSS3 and SSS3 pupils changed over the last 12 months?

Learning levels in Sierra Leone's secondary schools have largely remained stable since 2021,⁸ with some signs of improvement in Maths performance among low achieving JSS pupils. Overall, as in previous years, the majority of JSS and SSS pupils are performing at levels below grade-level expectations in both subjects.⁹ The narrative below discusses JSS level performance first, before detailing trends in SSS learning performance in both English and Maths over the last 12 months.

Figure 1: Distribution of JSS3 pupils across grade-level performance bands



⁴ 590 girls and 584 boys in the achieved sample

⁵ JSS3 and SSS3 are examination grades for BECE and WASSCE respectively. In single sex schools, all eight pupils were boys or girls.

⁶ The tests used were designed for Sierra Leone in 2017 and aim to provide information complementary to Sierra Leone's extensive examination system. They focus on learning outcomes linked to the curriculum rather than on curriculum content coverage per se. Since 2020, two of the originally developed five test booklets have been used, and assigned randomly to pupils instead of routing via a filter form.

⁷ Statistically significant at the 90% level means that there is more than 90% confidence that the observed difference represents a real change or difference, rather than differences due to chance factors.

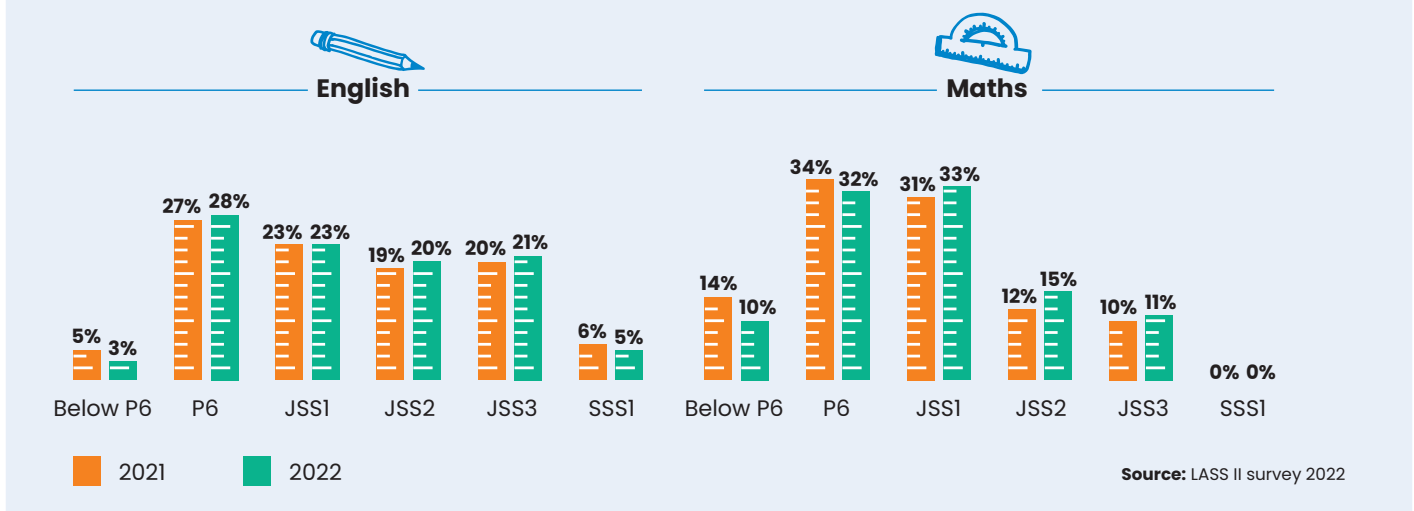
⁸ The LASS 2022 data collection took place at the end of the first term of the 2022-23 academic year. The overall timeline was three weeks later than in LASS 2021 data collection, which may have marginally affected comparability of test results.

⁹ Six grade-level performance bands (i.e. below P6, P6, JSS1, JSS2, JSS3 and SSS1) have been defined in relation to the national curriculum. This alignment of the learning assessment questions with curriculum expectations was carried out in 2018 by a panel of MBSSE experts with technical assistance from the Leh Wi Lan programme.

At the JSS level, pupils learning performance in 2022 is similar to what it was in 2021, with a modest improvement in average Maths scores (which increased by 5%). This improvement in Maths was largely driven by a reduction of 7 percentage points in the share of pupils performing at the lowest grade-level performance band (below P6, see [Figure 1](#))¹⁰ compared to last year. However, no change has been observed at the higher end of the performance scale in Maths. Similarly, for English, there has been no significant change in any measure of learning for JSS3 pupils between 2021 and 2022. The trends in JSS learning performance are somewhat different to what was observed last year in the LASS 2021 study, where there was a small improvement in English and no change in Maths results at the JSS level.

Overall, nearly half of JSS3 pupils continue to perform at primary level (P6 or below) in both Maths and English. For instance, 57% of JSS3 pupils are performing in the lowest two performance bands for Maths, whereas for English the number is slightly lower, but still sizeable at 45%. At the other (top) end of the scale, 4% of JSS3 pupils perform at JSS3 level or above in Maths whereas slightly more pupils (13%) perform at this level in English.

Figure 2: Distribution of SSS3 pupils across grade-level performance bands



At the SSS level, learning performance of SSS3 pupils is again very similar to last year in both Maths and English. As seen in [Figure 2](#), no change was observed in the proportion of SSS3 girls and boys performing at the lowest grade levels (P6 or below), nor in the highest performance bands (JSS3 and above) for both subjects between 2021 and 2022. Overall the distribution across grade-level performance bands for SSS3 pupils is almost identical to last year, and as such there has also been no improvement in average English or Maths scores of SSS3 pupils over the period.















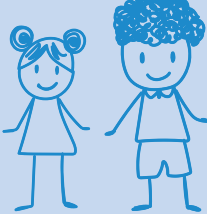



Relatively fewer SSS pupils perform at primary level (P6 or below) compared to their JSS counterparts, however only a small proportion (5%) of SSS3 pupils demonstrate any SSS level competencies. About 42% of SSS3 pupils perform at primary level (P6 or below) in Maths, and 31% perform at primary level in English. When compared to the JSS results above, this suggests that there is some learning gain for pupils as they move through secondary school. However, only a very small proportion of SSS3 pupils (5%) can demonstrate any level of SSS (in this case SSS1) skills in English, and no SSS3 pupils demonstrate senior secondary level competency in Maths, suggesting significant gaps with learning expectations.

¹⁰ This is different from the Leh Wi Lan logframe indicator which looks at the proportion of pupils performing in the lowest two grade-level bands combined (P6 or below), which showed no significant change over 2021-2022.

3 What topics or skills do pupils find more challenging? Are there any insights to support remediation efforts?

Figure 3 provides a description of the skills and competencies demonstrated by a 'typical pupil' in JSS3 and SSS3 in Maths and English. Typical pupil here refers to the performance level in which the **mean (average)** test score in our sample lies.

Figure 3: What can a typical pupil in JSS3 and SSS3 do?

 <p>Maths</p>	 <p>A typical pupil in JSS3 performs at P6 grade-level and can:</p>	 Complete simple arithmetic tasks successfully
		 Extract values shown in a barplot and visualise changes shown graphically
		 Recall and apply learned procedures for addition and subtraction of numbers set out in column form
		 Calculate an increase of 15 per cent in a price
		 Recall basic shapes and apply to real objects
 <p>A typical pupil in SSS3 performs at JSS1 grade-level and can:</p>	<p>All of the above and:</p>  Recall and apply learned procedures for procedures such as finding the highest common factor (HCF) of 2-digit numbers	
	 Extract numerical information from text and barplots to make simple comparisons	
	 Apply conventions of place value	
	 Represent information in a text as a simple number sentence	
	 Name some common objects and understand a simple English sentence	
 <p>English</p>	 <p>A typical pupil in both JSS3 and SSS3 performs at JSS1 grade-level and can:</p>	 Locate and extract explicitly stated information and infer meaning from simple short continuous and non-continuous texts
		 Locate and extract immediate and overall meaning and information from 1-6 sentences of continuous or short non-continuous texts
		 Understand the immediate impact on meaning of quantifier words (e.g. some, most, all, only)

Skills and topics pupils find challenging

Additional analysis conducted in the LASS 2022 suggests that pupils find some topics and skills particularly difficult, and there are different types of errors amongst high and low performing pupils. In addition to the overall distribution against grade-level performance bands discussed above, the LASS 2022 study also looked at what topics both high and low performing pupils find difficult, and the types of mistakes they make.

Pupils tend to struggle more with tasks involving critical thinking (such as analysis and interpretation), compared to simple computation or reading tasks. For example, analysis of Maths scores in 2022 suggests that pupils had more difficulties in questions that included word problems, working with percentages, fractions and decimals, and reading information from graphs and charts. Similarly in English, pupils found items based on reading comprehension, interpretation and application of reasoning to prose passages, and reading information from posters more challenging.

Analysis of incorrect responses to items also revealed some differences between low achieving and high achieving pupils¹¹ in terms of the common mistakes that they made. Further details are provided in **Box 1** and **Box 2**.

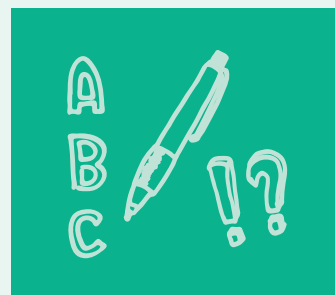
Box 1: Further insights into the type of mistakes made by low- and high achieving pupils in Maths

- Both high achieving and low achieving pupils struggled with Maths items involving the addition of **fractions**. While high-achieving pupils showed a tendency to know the correct rule or procedure but to apply it incorrectly; low-achieving pupils were more likely to apply a wrong rule altogether. In general, this showed that while pupils may be able to recall a rule and apply it, they have a limited conceptual understanding of fractions.
- Low achieving pupils also struggled with **interpreting information from figures and charts** such as bar plots.
- High achieving pupils seemed to have difficulties in recognising **decimals**, for example they misread 0.6 as 6. However, low achieving pupils did not show any systematic patterns in response to decimals.



Box 2: Further insights into the type of mistakes made by low- and high achieving pupils in English

- There is some evidence that **Krio may be influencing pupils' understanding of English**, particularly amongst low achieving pupils. For example, in one English item, low achieving pupils picked an incorrect response where they seemed to confuse English and Krio sounds.
- Low achieving pupils have difficulties with **word recognition**. They have a tendency to select a response that is the first match to a word in the passage regardless of whether or not this is a plausible or correct response. On the other hand, high achieving pupils are more likely to select an incorrect response that is at least plausible.
- High achieving pupils appeared to show a tendency to **incorrectly use reflexive pronouns** (for example using 'yourself', 'myself' and so on rather than 'you', 'me' and so on), while low achieving pupils typically pick the first option or a random choice.
- Low achieving pupils also have difficulties making sense of **pictures with words**, and in correctly identifying **parts of speech** (for example, they show a tendency to identify any word written with a capital letter as a noun).



¹¹ Low achieving pupils refer to pupils in the bottom 25% of the test score distribution, while high achieving pupils are those in the top 25%.

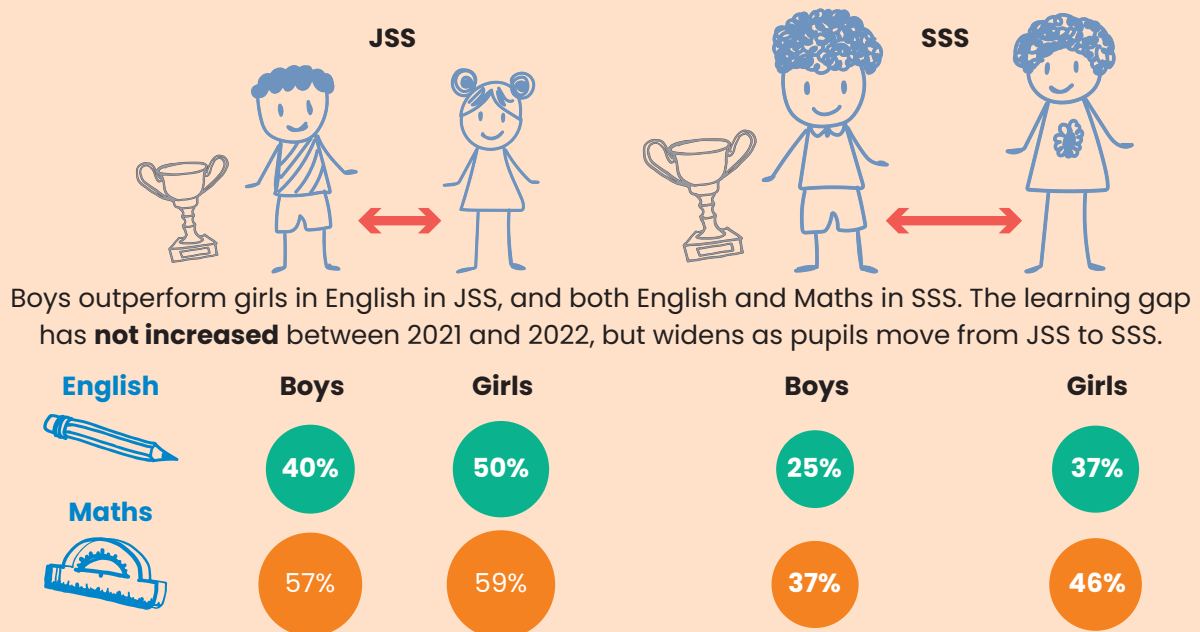
4 How have disparities in learning achievement by gender and other pupil characteristics changed in the last 12 months?



1 Gender: Boys continue to outperform girls, with the achievement gap more prevalent amongst older pupils

The learning achievement gap between girls and boys in JSS and SSS has remained stable with no change observed between 2021 and 2022. At JSS level, boys tend to outperform girls in English with an average mean score which is 5% higher than girls. This difference is primarily driven by a gap at the lower end of the performance scale. That is, a relatively smaller proportion of boys perform at the lower grade-level performance bands of P6 or below in English compared to girls (see Figure 4). No statistically significant gender gap in achievement was seen amongst JSS boys and girls in Maths.¹²

Figure 4: Proportion of pupils performing at primary level (P6 and below) by gender (2022)



Notes: Numbers that are bold represent a statistically significant difference. Smaller proportion indicates better performance.

Source: LASS II survey 2022

As with previous years, the gender gap in achievement is found to be wider and more prevalent at SSS level, that is, older girls are further behind boys than younger girls. For instance, at JSS3, the proportion of girls performing at primary level in Maths is only slightly higher than boys, but girls drop behind and by the time they reach SSS3, this gap widens to 9 percentage points. SSS3 boys also continue to outperform girls in English on all key measures of learning achievement.¹³ There has been no change in the SSS gender gap between 2021 and 2022, which is similar to findings last year.

The LASS 2022 study did not collect explanatory qualitative data, but other survey indicators may suggest potential drivers of the continuing gender gap in learning. For instance, this may be linked to the underrepresentation of females in the teaching force (11% of teachers and principals are female). Likewise, as discussed in the complementary note on LASS 2022 school safety results, some of the indicators of risks of violence against pupils are higher for girls. For example, girls are more likely to agree that female pupils face sexual harassment from school staff (21% compared to 8% of boys who report male pupils face sexual abuse from school staff). Likewise, 25% of pupils and 23% of principals agree that pregnant and parenting girls are more likely to be harassed in school than other pupils.

¹² Note that due to a smaller sample size in LASS 2022, the ability to detect statistically significant differences is lower compared to LASS 2021.

¹³ These are 1) mean scaled scores, 2) proportion of pupils performing at P6 or below, and 3) proportion of pupils performing at JSS3 or above.

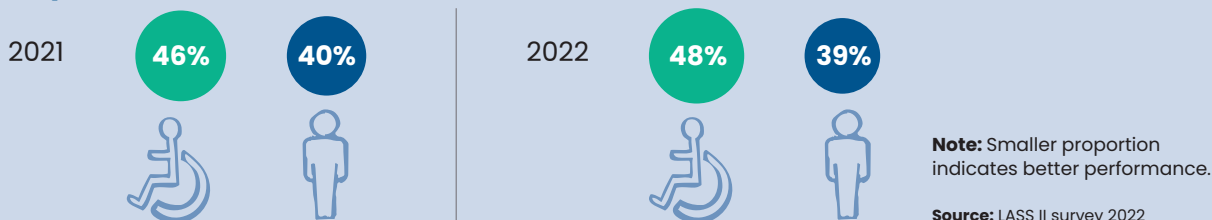


2 Disability: Pupils who self-report having some sort of disability continue to have weaker learning performance in English

As with the previous year, the LASS 2022 study asked pupils to self-report about any functional difficulties (disabilities) they may have using the Washington Group classification of impairments as a conceptual framework.¹⁴ 24% of pupils self-reported at least some type of disability, with the most common being cognitive difficulties¹⁵ (12%), followed by sight (7%) and walking (6%). The same pattern was seen last year with 32% of pupils reporting some type of disability overall, of which 15% reported cognitive difficulties, 11% sight and 10% difficulty walking.¹⁶

Pupils with a disability¹⁷ have lower achievement in English than those without a disability. This is driven by the differences amongst low achievers. As seen in [Figure 5](#), the proportion of pupils with disability who are performing at primary levels in English is much higher than those without disability in both 2022 and 2021. For example, this year 48% of pupils with disability are at grade level P6 or below compared to 39% of other pupils. The achievement gap has not changed since last year. There are no differences in Maths achievement by disability status of pupils. It is possible that cognitive disability i.e. difficulty remembering and concentrating is more strongly associated with language skills than Maths).

Figure 5: Proportion of pupils performing at primary level (P6 and below) in English by disability status



Qualitative evidence from last year's LASS 2021 study showed that pupils with disabilities were more likely to be deprived of learning opportunities due to physical barriers such as getting to school and moving around school premises, as well as shortages of assistive devices like glasses and braille textbooks. Furthermore, pupils with disability were also likely to face harassment and bullying from peers in some cases. This year's survey confirmed the latter with nearly 30% of pupils and 12% of principals agreeing that pupils with disabilities are more likely to face harassment in school.



3 Wealth: Pupils from relatively better off households continue to outperform poorer pupils

Pupils that are in top fifth of the sample in terms of household wealth,¹⁸ or relatively 'richest' in the sample, continue to outperform pupils from poorer households on all measures of learning achievement. As shown in [Figure 6](#) for example, in both English and Maths, pupils from the poorest households are much more likely to be found in the lowest performance bands (P6 and below) compared to the richest pupils (53% vs 31% for English and 63% vs 41% for Maths). At the other end of the achievement scale the trend is reversed with the richest pupils far most likely to fall in the highest performance bands. This is similar to 2021, and the achievement gap between the richest and poorest pupils between has remained stable between 2021 and 2022.

¹⁴ The typology provided by the Washington Group questions is geared to identify 'functional difficulties' that affect the full and effective participation of a pupil in learning (including any invisible disabilities). These cover six core functional domains: seeing, hearing, walking, cognition (remembering/concentration), self-care, and communication.

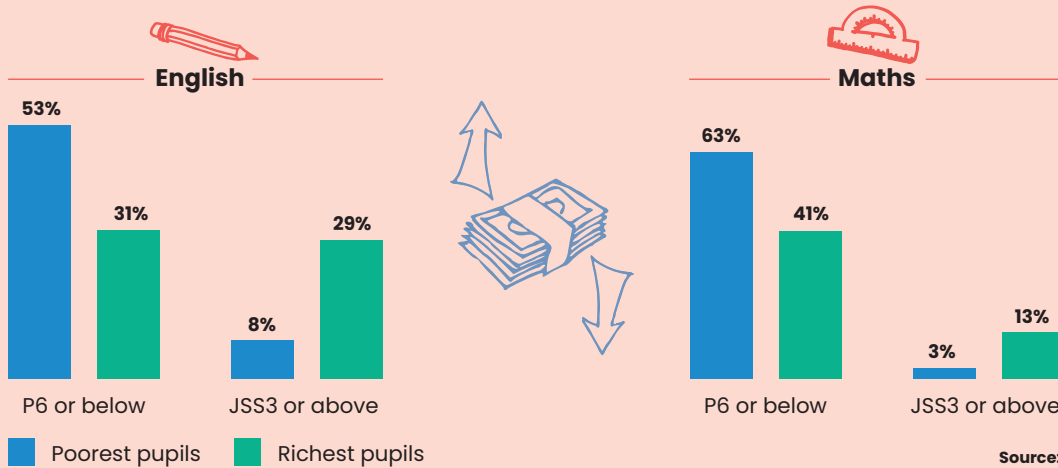
¹⁵ Pupil has difficulty remembering or concentrating.

¹⁶ MBSSE's Annual School Census (2021) data shows much lower prevalence of disability than the LASS studies. The percentage of JSS3/SSS3 pupils with learning impairments, visual impairments, hearing impairment, speech impairment, are each less than 0.5%.

¹⁷ All types grouped together due to sample size.

¹⁸ The LASS study looks at learning achievement by wealth quintile with 'richest' and 'poorest' referring to pupils from the top 20% and bottom 20% based on the assets owned by their households.

Figure 6: Distribution of pupils across grade-level performance bands by wealth status (2022)



Learning achievement gaps between pupils from different socioeconomic backgrounds may be driven by a number of reasons. Qualitative evidence in the LASS 2021 study showed that pupils from poorer households had less time and resources to study, but potentially more motivation. Furthermore, poorer pupils were more likely to engage in activities to support their households either via domestic chores or income generating activities. This cut into the study time of these pupils, and often left them too tired to study once they were done with their other tasks. Pupils from the poorest households were also found to be significantly less likely to have someone to help them at home to study (45%) compared to the richest pupils (72%).

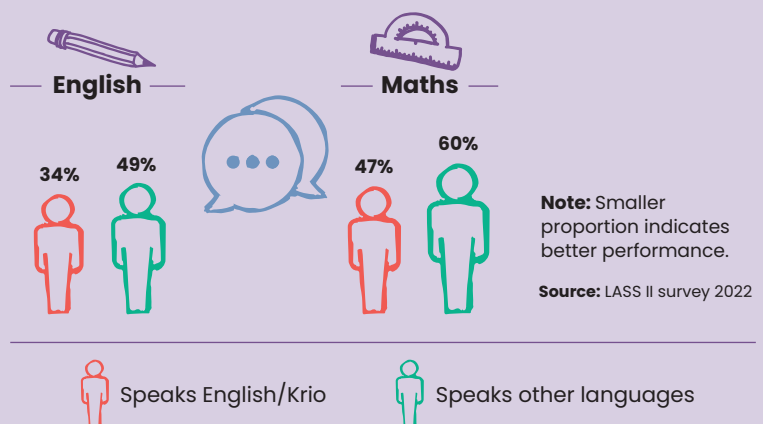


4 Language: Pupils tend to perform better if their home language matches the language of instruction in school¹⁹

Like last year, pupils that speak either English or Krio at home²⁰ continue to have better learning outcomes compared to pupils that do not speak English or Krio as their main home language. The English/Krio group had higher average scores, a smaller proportion was likely to show primary level skills (P6 and below), and conversely a higher proportion was likely to perform at level JSS3 and above (Figure 7).

The language gap persists in both English and Maths, although the difference in average scores is slightly higher in English (8%) compared to Maths (7%). The association between home language and average scores remains even after controlling for other pupil background characteristics such as wealth, school location and gender, suggesting that there are specific language-related barriers that exist for pupils who do not speak English or Krio. This is consistent with last year's findings, and there has been no change in the achievement gaps by home language between 2021 and 2022.

Figure 7: Proportion of pupils performing at primary level (P6 or below) by home language of pupil (2022)



19 Sierra Leone's national curriculum and official language of instruction in school is English. Previous research in Leh Wi Lan on positive deviance shows Krio is often used as the lingua franca so we grouped pupils English/Krio speakers and other language speakers.

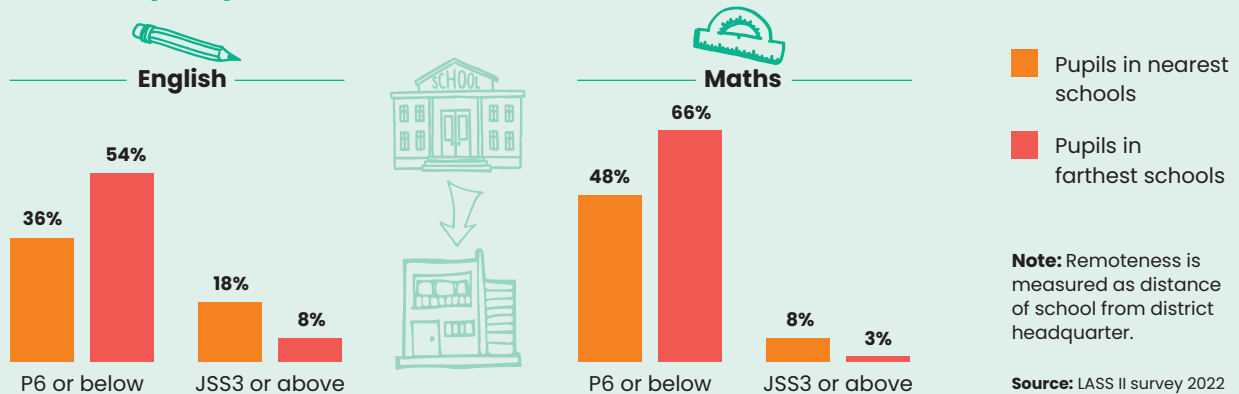
20 55% of sampled reported that they spoke either English or Krio at home. In LASS 2021, this was similar at 54%.



5 Location: Pupils from more remote²¹ schools tend to have weaker learning performance

When it comes to school location, pupils who are in schools that are farthest away from the district headquarter tend to have lower average Maths scores (7% lower) and English scores (9% lower) compared to those that are nearest, and perform at lower levels (see [Figure 8](#)). The achievement gap in terms of school remoteness has remained stable compared to 2021.

Figure 8: Distribution of pupils across grade-level performance bands by school remoteness (2022)



The association between school location and learning outcomes remains even after controlling for other pupil background indicators such as wealth, gender, and home language. Some of this association may be due to school-level factors such as more remote schools having lower access to qualified teachers, and poorer infrastructure. It is also possible that the home environment of pupils in more remote, rural schools is significantly different from pupils living in more urban centres. However, the LASS 2022 study did not collect information on these other indicators to confirm what is driving these locational differences in learning.

5 Concluding remarks

Main takeaways

The findings from this year's LASS study builds on the results from the 2021 LASS study,²² and shows that the overall picture of learning levels of JSS3 and SSS3 pupils in Sierra Leone has not changed much in the last 12 months. A sizable share of secondary pupils are still achieving at primary level, especially in maths.

However, the stable pupil learning results seen this year are a positive reaffirmation that modest gains in learning since 2020 have not dissipated. The Back to School study in 2020 showed that Sierra Leone appeared to have avoided any major learning loss in the aftermath of the COVID-19 pandemic (although learning inequalities rose). This was followed by a modest improvement in English at JSS3 and Maths at SSS3 in the LASS 2021 study last year. This year's findings show that learning levels have largely remained stable since 2021, with some signs of improvement in Maths among low achieving JSS pupils.

Overall learning levels continue to remain far below grade-level expectations, and pupils struggle with conceptual understanding and application of critical thinking skills such as analysis and interpretation. Low- and high achieving pupils have different types of difficulties. Analysis of incorrect responses show that pupils are challenged by questions that require critical thinking such as analysis and interpretation. Pupils have limited conceptual understanding of fractions, decimals and percentages in Maths. In English, pupils have difficulty with interpreting and applying reasoning to prose passages.

²¹ Remoteness is measured in terms of distance from the nearest district headquarter. Schools that are farthest are in the top 25% while schools that are nearest are in the bottom 25% in terms of distance.


²² Findings from the LASS 2021 study can be accessed here: [LASS-Study_BN1_Pupil-Learning_WEB_2.pdf \(mbsse.gov.sl\)](#)


Main takeaways (continued)


Learning inequalities between different groups of pupils continues to persist, but have not widened further in the last 12 months. Differences in learning outcomes between pupils based on gender, wealth, language, school location and disability status have neither worsened nor improved compared to 2021. The LASS 2021 study noted a stabilisation in learning disparities based on gender and wealth, which had worsened in the immediate aftermath of the COVID-19 pandemic. This year's results reaffirm this steady state. However, there are no signs of further progress towards bridging existing learning inequalities.


Future direction

The MBSSE is currently in process of rolling out a new secondary curriculum for JSS and SSS. The introduction to new curriculum framework document explains its focus as *'learning that goes beyond rote, or remembering and reproducing... emphasize on learning outcomes that concern understanding, interpreting, creating, applying knowledge, critical thinking, and other 21st century skills'*.²³ The findings of the LASS studies provide trend data and evidence towards these objectives to support MBSSE and its partners in their learning reform journey in Sierra Leone. These are emphasised in the suggestions for future direction below:

 **Reinforce efforts to address the learning needs of many secondary school pupils who are falling behind grade-level expectations, with a particular focus on improving functional skills.** The new national JSS and SSS curriculums are designed to improve critical thinking with an aim to provide everyday functional skills in addition to specialist knowledge. This may address some of the challenges identified above. In addition, teachers need to be trained to address current learning gaps (such as pupils' conceptual understanding) and provide differentiated learning support to pupils with varied levels of skill and understanding. Policy attention is also required to improve foundational learning at primary level to ensure that future cohorts of pupils enter secondary school with a solid foundation of knowledge and skills required to succeed at secondary.

 **Future assessment data should continue to identify and track specific skills pupils are struggling with so that the results can be used for remediation strategies.** While this year's LASS study provides preliminary insights into the areas and topics that pupils are struggling with, it will be important to ensure that this work is carried forward by the National Assessment Services Unit (NASU) and other relevant bodies involved in national assessments in the future. At a day to day level, strengthening formative classroom assessment practices could help teachers identify and track areas for improvement.

 **There is scope to design interventions and policy around language of instruction in schools and support both pupils' and teachers' proficiency in English,** given evidence of the continued positive association between pupil's home language and learning outcomes in the LASS studies.

 **It is also important to develop and carry through actions on priority areas identified in Radical Inclusion baseline (2022) to reduce learning inequalities related to gender, disability status, and wealth.** Evidence of continuing learning inequalities show that the objectives of the Radical Inclusion policy are pertinent. The baseline study has already helped identify priority areas where support is needed for the most marginalised and includes some short-term actions to immediately address barriers for some groups. It will be crucial to ensure that specific action points in relation to reducing learning inequalities related to gender, wealth, and disability status are developed and carried through.

23 Curriculum Framework, Senior Secondary Curriculum Development Project (MBSSE, December 2021).

About the project and contact details

Leh Wi Lan/Sierra Leone Secondary Education Improvement Programme (SSEIP) is a UK aid funded programme aimed at supporting the Ministry of Basic and Senior Secondary Education (MBSSE) to improve learning outcomes for boys and girls at secondary level, and increase the enrolment, retention and well-being of girls in school. After successful completion of the first five years of the programme (2016-2021), a two-year extension phase took place and is now at an end. This briefing note was produced under Leh Wi Lan to improve data and evidence for sector monitoring, and builds on experience from previous annual Secondary Grade Learning Assessments. Any views and opinions expressed do not necessarily reflect those of the UK Foreign, Commonwealth & Development Office, MBSSE, Mott MacDonald or Oxford Policy Management. For more details please contact: **Diana Ofori-Owusu** at **+232 76803741** or access our Knowledge Platform at: <https://mbsseknowledgeplatform.gov.sl>



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