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THE LEARNING GAP SERIES – THREE

A widening gap: Impacts of the COVID-19 pandemic on Indonesia's most marginalised students

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October 2022

Suggested Citation: Pascoe, F., Sukoco, G.A., Arsendy, S., Octavia, L., Purba, R., Sprunt, B., Bryant., C. 2022. A widening gap: Impacts of the COVID-19 Pandemic on Indonesia's Most Marginalised Students. Jakarta: INOVASI

Acknowledgements: The Learning Gap research project was a collaboration between INOVASI, the MoECRT PSKP unit, and the Australian Council for Educational Research (ACER). The project was co-designed, and INOVASI oversaw the project's implementation. ACER and INOVASI undertook the analysis and authored the report about study, which relates to students' learning during the school closure period due to COVID-19. INOVASI developed a separate analysis of learning and participation loss from a subgroup of the schools in the project for which the program had pre-COVID-19 baseline data.

A small team in INOVASI, including GEDSI specialists, undertook the analysis for this report in collaboration with other INOVASI team members and the MoECRT PSKP unit.

The team acknowledges and thanks the students, teachers, principals, and parents who generously participated as respondents to this study, so that others could benefit from the data analysis. The authors also would like to acknowledge and thank DFAT of the Australian government for providing support and funding.

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The governments of Australia and Indonesia are partnering through the Innovation for Indonesia's School Children (INOVASI) program.

INOVASI is an Australia–Indonesia Government Partnership – Managed by Palladium.

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October 2022

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Abbreviations and Acronyms

ACER	Australian Council for Educational Research
BOS	*Bantuan Operasional Sekolah* (School Operational Assistance Funds)
DFAT	Department of Foreign Affairs and Trade
GEDSI	Gender equality, disability, and social inclusion
GPF	Global Proficiency Framework
ICT	Information and Communication Technology
INOVASI	Innovation for Indonesia's School Children
MoECRT	Ministry of Education, Culture, Research and Technology
MoRA	Ministry of Religious Affairs
MPL	Minimum Proficiency Level
OECD	Organisation for Economic Co-operation and Development
PAUD	*Pendidikan Anak Usia Dini* (Early Childhood Education and Development)
PISA	The Programme for International Student Assessment
PSKP	*Pusat Standar dan Kebijakan Pendidkan* (Centre of Education Policy and Standards)
RPJMN	*Rencana Pembangunan Jangka Menengah Nasiona*l (Indonesia's National Medium-Term Development Plan)
SD	*Sekolah Dasar* (Elementary School)
SDGs	Sustainable Development Goals
SES	Socioeconomic Status
TaRL	Teaching at the Right Level

Executive Summary

In 2020, INOVASI undertook a Learning Gap Study (LGS), published in 2022, to understand the status of students' actual learning and the potential impact of the COVID-19 pandemic on early-grade students in Indonesia. The study, entitled *The Learning Gaps Series – One, Beyond Letters and Numbers: The COVID-19 Pandemic and Foundational Literacy and Numeracy in Indonesia* intended to inform curricular, assessment, and pedagogical recalibration as students returned to school following lengthy school closures, and to identify priorities for teachers' professional development in teaching at the right level so that students could learn essential competencies they may have missed.

A total of 18,370 early-grade students (with equal gender proportions) participated in the study from across 612 randomly selected schools. The study included a representative sample of students from the 11 INOVASI districts, in the provinces of East Java, North Kalimantan, West Nusa Tenggara, and East Nusa Tenggara. To provide coverage and balance across aspects of Indonesia's education system, an additional eight non-INOVASI partner districts were added from the provinces of Jambi, Southeast Sulawesi, South Kalimantan, and North Maluku.[1]

This report, entitled *Learning Gap Series – Three on Dimensions of Gender, Disability, and Social Inclusion,* takes a deeper dive into the study's data on learning gap and learning loss. The data were analysed from the perspective of the students' identity – whether they were female or male, a child with disability, from a rural and remote or urban school, and their mother tongue (main language used to interact with family) was Bahasa Indonesia or a local language. The report examines intersectionality of various student identities (gender, disability, and socioeconomic status) to gauge the extent to which identity, family, and background factors and school support.

Findings from this report show that rural and remote locations (where schools face less access to resources and professional support and teachers have lower levels of qualification) amplify the disadvantages some students face based on their identity (such as disadvantage due to disability, gender, or a mother tongue other than Bahasa Indonesia). Rural and remote locations—and their language implications where Bahasa Indonesia is not a student's mother tongue—may also account for the low level of schooling of their parents and the associated effect of inability to assist their children. Rural and remote locations and low socioeconomic status (SES) are also often correlated, limiting families' capacity to afford devices and connectivity to support learning or even to prioritise it, as is suggested by the heavier labour load on rural and remote children during school closures, compared with the load on urban children. These findings illustrate the influence of rurality and remoteness over so many of the most salient findings in this study:

- More rural and remote students (31% in Grade 2 and 26% in Grade 3) perform at level 1 of literacy and numeracy (the lowest level, which does not meet the minimum proficiency level for those grade) compared to urban students (15% and 14%).
- The greatest intersection of learning disadvantages in literacy was for male students in rural areas with disability; 91% of these students did not meet the minimum proficiency level compared to urban boys with disability (82%).

[1] Spink, et al. (2022)

- After disability, the next greatest intersection of disadvantage was for rural and remote male students whose mother tongue was a local language. 81% of these students did not meet the minimum proficiency level, and 71% of rural and remote girls whose mother tongue was a local language did not achieve the minimum proficiency levels in literacy.
- Rural and remote students had less access to internet connection and devices to support their learning compared to urban students.
- 56% of rural and remote teachers felt less confident to conduct distance learning compared to only 37% of the urban teachers.
- About 63% of parents whose mother tongue was a local language had only a junior high school degree or lower. In comparison, about 58% of the parents of students whose mother tongue was Bahasa Indonesia had a senior high school degree or higher.
- Urban parents were more involved in their children's studies (76.9%) compared to rural and remote parents (68.8%), with no difference between student gender.
- 16% of students whose mother tongue was a local language reported that they never received learning support from their parents, compared to only 8.7% of students whose mother tongue was Bahasa Indonesia.[2]

The first recommendation made by this report is for The Ministry of Education, Culture, Research and Technology (MoECRT) to strengthen the implementation of existing reform policies associated with *Merdeka Belajar* for areas where location, low SES, and home language that is not Bahasa Indonesia compound learning disadvantage. The *Merdeka Belajar* (freedom to learn) reform that supports equity can help address the multiple forms of disadvantages that affect student learning outcomes, especially in rural and remote areas. Suggested actions for consideration include the following:

- establish a database of the schools in such communities to target affirmative support and monitoring performance;
- develop a comprehensive language transition policy for preschool (*Pendidikan Anak Usia Dini, or* PAUD) and early years in discussion with affected provinces outlining systematic support for adopting and maintaining the practice at scale;
- expand the access of rural and remote schools to resources for teaching, learning, and teachers' professional development, including digital resources and connectivity;
- develop and support a mini *Kelompok Kerja Guru* (Teachers Working Group, or KKG) in remote schools through local district funds;
- increase reading materials to improve children's literacy in remote areas; and
- increase the role of the subdistrict and village government in education, including through community-based programs.

The second recommendation is for local governments to directly target boys' literacy difficulties and girls' COVID-19-related numeracy learning loss in learning recovery programs. The national government can encourage districts, schools, and madrasahs to implement the *Kurikulum Khusus* (Emergency Curriculum) to prioritise diagnostic

[2] The LGS, and this paper, define a student's mother tongue as the main language that the student uses to interact with their families. In the LGS, 57.5% of the sampled students spoke a local language as their mother tongue, while 42.5% used Bahasa Indonesia as their mother tongue, with no significant difference by gender.

assessments and to follow up Teaching at the Right Level (TaRL). This study highlights that gender attributes can lead to different educational disadvantages for boys and for girls, with a compounding effect for those in rural and remote areas. The proportion of male students (27%) at level 1 literacy was greater than the proportion of female students (19%). There is a clear need for specific attention to effective teaching for boys. Although female students outperformed male students in literacy and numeracy, they experienced a significantly greater learning loss during school closures, particularly in numeracy. The loss was equivalent to 7 months' study for female students (compared to 4 months' study for male students).

Finally, educational reforms in Indonesia create opportunities for significant expansion of disability-inclusive education that respond to the findings in this study related to disadvantage for students with disability. The Emancipated Curriculum (*Kurikulum Merdeka*) is a disability-friendly curriculum, enabling teachers to undertake formative assessments and provide teaching at the right level; the National Schools Report (*Rapor Pendidikan*) encourages schools to self-reflect and assess themselves against indicators of disability inclusivity; new regulations pave the way for schools to provide reasonable accommodations for students with disabilities and to access specialist and assistant teaching staff; and the *Merdeka Mengajar* learning platform allows teachers to access inclusive education training and resources to support differentiated lesson planning and adapted materials for students with disabilities. Progress has also continued in integrating an improved disability identification mechanism, The Student Learning Profile (*Profil Belajar Siswa,* or PBS), into the education-management information systems in both MoECRT and The Ministry of Religious Affairs (MoRA).

However, these systems will result in successful educational outcomes for children with disabilities only if provincial and district education offices support these reforms. Therefore, the final recommendation in this study is for provincial and district education offices to support central level reforms for expanding disability-inclusive education. This recommendation proposes action on several fronts, including to strengthen partnerships between provincial and district education offices and schools and a range of government, non-government, and community-based organisations; to enable Teaching at the Right Level (TaRL) for students with disabilities by developing and disseminating guidance; to expand teacher training in inclusive education and ensuring schools are aware of regulations and resources to enable additional supports as required for students with disabilities; to ensure additional efforts are made to overcome disadvantages for children with disabilities in rural areas; and to expand training for the Provincial and District Education Offices to include supervisors to enable effective monitoring and support for schools to strengthen disability-inclusive education.

1. Introduction

1.1. About the Learning Gap Study

INOVASI undertook a Learning Gap Study (LGS) in 2020 to understand the status of students' learning and the potential impact of the COVID-19 pandemic on early-grade students in Indonesia. The study intended to inform curricular, assessment, and pedagogical recalibration as students returned to school following lengthy school closures, and to identify priorities for teacher professional development in teaching at the right level so students could learn essential competencies they may have missed.

As part of the study, a test of student literacy and numeracy levels was administered to Grade 1, 2, and 3 students. Teachers, principals, and parents of the sampled students were also surveyed to provide contextual data on factors relevant to students' experience of learning during school closures and their association with the test performance. The LGS benchmarked student assessment against national and global points of reference that enabled reporting of gaps in learning achievements against expected curriculum or global standards. Background factors, including those related to the student, family, school, and community, were also analysed to determine possible effects on student learning.

The first report in the INOVASI Learning Gap Series (The Learning Gap Series 1 – Beyond Letters and Numbers: The COVID-19 Pandemic and Foundational Literacy and Numeracy in Indonesia) highlighted areas for further analysis, including the effect of variables related to equity and disadvantage on student learning outcomes. This supplementary report provides the key findings from the further analysis that was undertaken by INOVASI in the second half of 2022.

1.2. About this Report

This third report in the Learning Gap Series complements the first LGS report by taking a deeper dive into the data on learning gap and learning loss from the perspective of the students' identity[3] – whether they were female, male, a child with disability, from a rural and remote or urban school[4], and whether their mother tongue (main language used to interact with family) was Bahasa Indonesia or a local language. This report examines intersectionality of various student identities to gauge the extent to which multiple identities, and certain contexts in the home or school, affect learning outcomes.

[3] Student identity in this study includes gender, disability, their mother tongue language and whether they attend an urban or rural and remote school. As identities can shape the various experiences of students in the classroom it is important to understand these to develop inclusive learning environments for all students (https://ctl.stanford.edu/student-identities).

[4] School location is categorised into urban or rural and remote areas based on the Village Development Index (*Indeks Desa Membangun*) Data published by the Ministry of Villages, Disadvantaged Regions, and Transmigration. The index provides five categorisations based on the social, economic, and ecological resilience of a geographic area as being either: (1) autonomous/developed, (2) advanced, (3) developing, (4) underdeveloped, or (5) very underdeveloped. Urban areas are covered in the first three categories, and the rural and remote areas are covered the last two categories.

The gender equality, disability, and social inclusion (GEDSI) analysis in this report provides important insights into the learning of disadvantaged students during the COVID-19 pandemic. It is hoped this evidence will support the development and implementation of policies, practices, and systems which achieve equitable educational outcomes for all early-grade children in Indonesia after the pandemic.

This report is structured into two main sections. First, we explore the LGS data in relation to the home and school learning environments for students during the pandemic, based on their identity and the intersection of their various identities. The subsequent section looks at the data for LGS learning outcomes data based on student identity and, where possible, the intersection of various identities. It considers both literacy and numeracy learning outcomes for Grades 1, 2, and 3 students as well as learning loss for students in Grades 1 and 2 during the pandemic periods of school closure. Where relevant, this report draws on existing literature in Indonesia and elsewhere to triangulate and make sense of our findings. Given the extent of the disaggregated analysis, we annex additional data tables.

This report includes selected examples of promising practice in addressing some of the issues highlighted by the LGS data. Some of these practices are supported by INOVASI and some are from other initiatives. It is hoped these examples inform efforts to scale up practices to reduce the learning gap.

1.3. Scope of the Analysis

The LGS assessed learning proficiencies in literacy and numeracy, covering 18,370 Grade 1–3 students, with a balanced sample of girls and boys, in 19 districts across eight provinces representing western and eastern parts of Indonesia (see Figure 1 for sample details). The data were collected in mid-2021 after 12 months of school closures. Due to the overrepresentation in the sample of provinces in which INOVASI programs operate, the generalisation of results to all Indonesian schools needs to be done carefully.

We disaggregated the data in this report by gender, disability, school location (urban or rural and remote) and students' mother tongue where possible. For some of the analysis, the small sample numbers did not allow meaningful disaggregation. For example, there was sufficient sample size to compare learning gap based on students' disability. Where the sample size was sufficient, the intersectionality of disadvantage with respect to learning gap was explored (for example, considering gender differences in urban and rural and remote locations). However, because data on learning loss over the pandemic were only available from schools in districts directly supported by INOVASI, the sample was not large enough to enable disability disaggregation of learning loss.

In the LGS, disability was measured based on functional difficulties in eight domains, with the response categories including 'no difficulty', 'some difficulty', 'lot of difficulty', and 'cannot do at all'.[5] Domains were then categorised as physical (including vision, hearing, gross and fine

[5] In the LGS, student disability status was assessed through parent responses using adjusted Washington Group Child Functioning Module questions (UNICEF, 2017). Students who experienced 'some difficulty', 'a lot of difficulty', and/or 'cannot do at all' in one or more functional domains were categorised as students with disabilities. Some child-functioning module domains that were not included are self-care, behaviour, accepting change, and making friends.

motor, and speech domains) and non-physical (including cognitive, behavioural, and attention domains). For the in-depth analysis in this report, disability was classified as children who reported having a 'lot of difficulty' or 'cannot do at all' in any domain; or 'some difficulty' in both physical and non-physical domains; or had 'some difficulty' in at least two or more physical domains (for instance, hearing and speaking, or walking and hearing). On this basis, 1,056 of the sampled students (6%) were coded as having disabilities, which is in line with expected percentage of children with disabilities in school[6]. The proportion of students with disability did not differ significantly by gender, location, or grade level. All efforts were made during data collection to provide appropriate reasonable accommodations for students with disabilities[7].

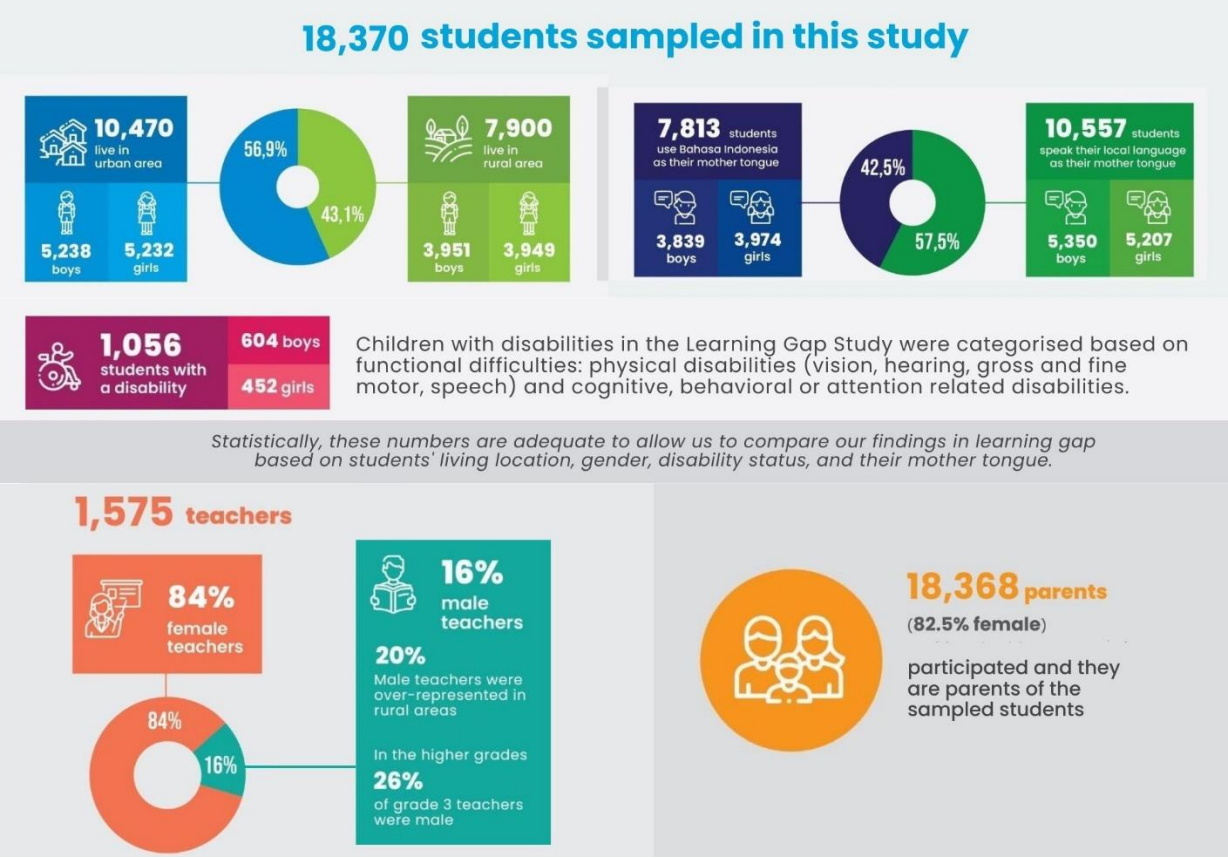

Figure 1: Sample of the INOVASI learning gap study

[6] The most recent estimate of global prevalence of disability in children is 10% (UNICEF, 2021a). Given the estimated 30% of children with disabilities in Indonesia who are not in school, according to the Bureau of Statistics (UNICEF, 2020a), the 6% of the sample in this analysis is a reasonable estimate.

[7] During data collection, as students with disabilities were identified, relevant accommodations were applied: enumerators established whether the school had a special assistant teacher (Guru Pembimbing Khusus) and, if so, the test was undertaken with guidance from the special assistant teacher; students with mild to moderate difficulties seeing were given the test booklet to hold and view up close using their usual assistive device; the sample had no totally blind students; for hard of hearing students, enumerators increased voice volume, and students were given the test booklet to read the instructions as well as hearing the enumerators' voice; no totally deaf students were identified in the sample; students with difficulty speaking had the test conducted at home with the help of parents; for students with difficulties moving, teacher assistance was provided and/or enumerators provided assistance in writing test responses.

2. Factors Affecting Students' Distance-Learning Experience

The LGS found that there are important student, family, and school factors that affect learning. This section explores how home and school factors affect students' learning, disaggregated by student gender, disability, mother tongue status, and residing in an urban or rural and remote school.

First, we examine the student's home learning and family environment. This includes a student's access to technology and learning resources, the support they received in the home, and additional chores or responsibilities they took on due to COVID-19. Then we consider the school learning environment, including teachers' capacity, access to resources, and ability to adapt to teaching online and remotely.

2.1. Home Learning and the Family Environment

The LGS found certain family factors that were strongly and positively associated with better learning outcomes. These are mothers' fluency in Bahasa Indonesia, mothers' education level (secondary education or higher), higher household expenditure, households with internet connectivity and computers used for learning activities, living in a developed area (most strongly correlated with literacy outcomes), and a child feeling supported at home in their studies. This section explores home and family factors and reviews the data by child identity (gender, disability, rural and remote or urban, and mother tongue).

2.1.1. Access to Technology and Learning Resources

The LGS found no overall difference by gender in access to learning devices. About 60% of students (both female and male) had internet access; however, less than 35% of students had access to online learning during the pandemic. This may be due to not having devices in the home, less confidence using online devices, or teachers not providing assignments. Types of online learning included study with teachers using online methods, self-study utilising websites and applications, and playing math-learning video games[8]. The lack of gender effect in our data may appear to contradict existing literature on the gendered digital divide (that men have greater access to digital devices compared to women). A UNICEF study found that girls and women in Indonesia have less access to digital devices, especially in rural and remote areas, which limits their opportunities to engage in online learning (UNICEF, 2020b).

Rural and remote students had less access to an internet connection, laptops/computers, smartphones, and tablets to support distance learning compared to urban students. This access did not vary by gender in rural and remote areas. Rural and remote students had fewer essential resources (textbooks and reading books) compared to urban students (see Figure 2). According to UNESCO & UNICEF (2021), the digital divide and lack of resources affected the academic progress of rural and remote students more than that

[8] This figure is almost the same with the BPS data, which showed that approximately 33% of students in Indonesia above 5 years old used the internet for learning purposes (Annur, 2021).

of urban students during the pandemic. Limited access to technology may have also limited the nature and frequency of interaction with teachers where they were primarily communicating via WhatsApp, phone calls, or SMS (UNICEF, 2021b).

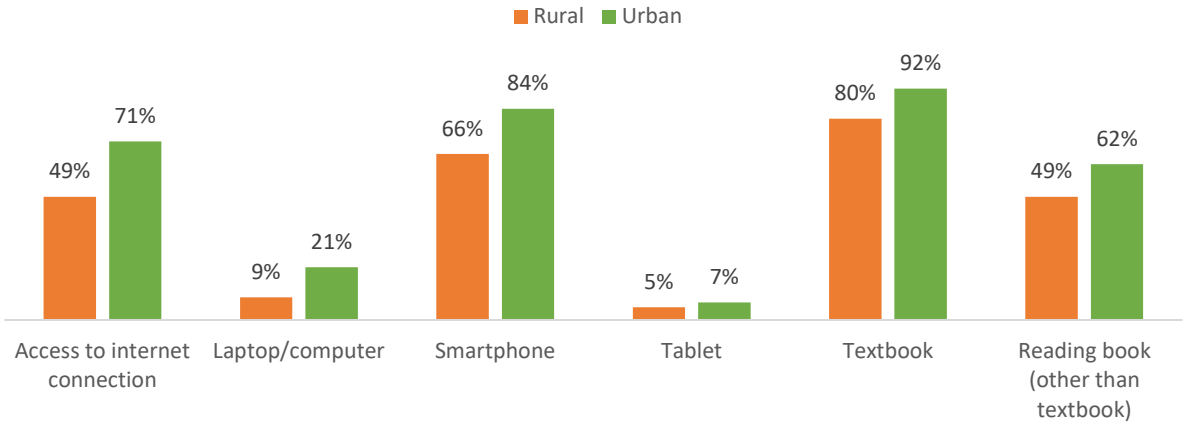

Figure 2: Students' access to resources to support learning from home (by student location)

Students with disability had less access to online devices and technologies during the pandemic compared to students without disability. Figure 3 illustrates the discrepancy between students with and without disability in access to internet connection, smartphones, and laptop/desktop computers. The impact of social distancing and changing learning formats was more significant for children with disability. Some students with disability rely on assistive devices and adapted learning materials in the classroom. As noted by UNICEF (2020), during pandemic-related school closures these students required continuity of support to enable learning which met their specific needs.

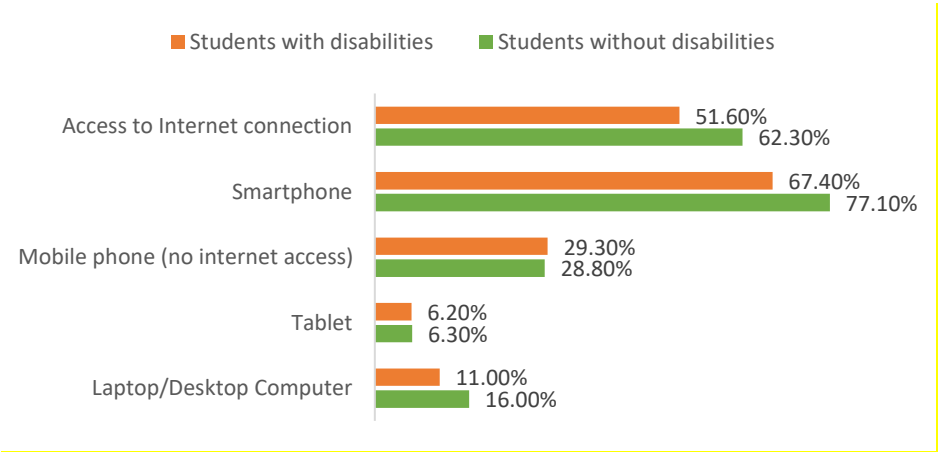

Figure 3: Students' access to device/technology (by student disability status)

2.1.2. Additional Responsibilities in the Home

Female students undertook more additional domestic chores during the pandemic compared to male students. Sixty-three percent of female students, compared to 46% of male students, reported having to do additional domestic chores during the pandemic (chores beyond their usual tasks and helping care for other family members). These included additional cleaning, washing, and cooking (see Figure 4). Although there was no significant difference between boys and girls in their hours of study per day, it is possible that the additional household chores that girls undertook affected their ability to fully engage and concentrate on their tasks (for example, if they were tired from the additional housework).

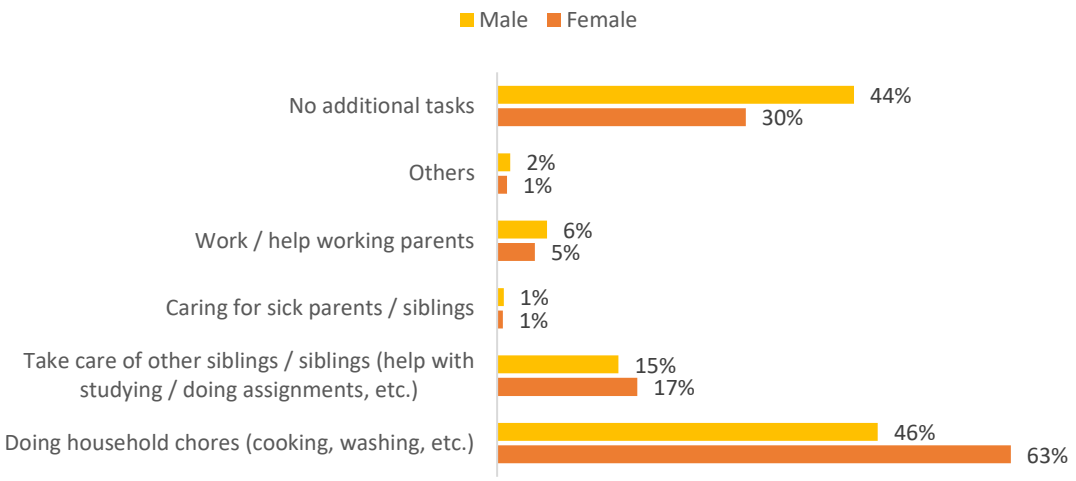

Figure 4: Non-school additional tasks performed by students (by student gender)

Rural and remote students undertook more additional domestic chores during the pandemic than urban students. Sixty percent of rural and remote students and only 50% of urban students reported having to do additional household chores such as cleaning, washing, or cooking. More rural and remote girls (75%) took on additional chores than urban girls (66%). See Figure 5 below. This additional burden likely puts students in rural and remote areas, particularly girls, at greater disadvantage when they had less time to finish school tasks or were more tired from additional housework. With the rise of poverty due to the pandemic[9], it is likely that poor families, particularly poor families in rural and remote areas, required their children to help out more in the home. Further, the LGS data showed that students from socioeconomically disadvantaged households were more common in rural and remote than urban areas.

[9] Indonesia's poverty rate rose from 9.2% in September 2019 to 10.14% in March 2021 (https://smeru.or.id/en/article/indonesia%E2%80%99s-poverty-situation-during-covid-19-pandemic)

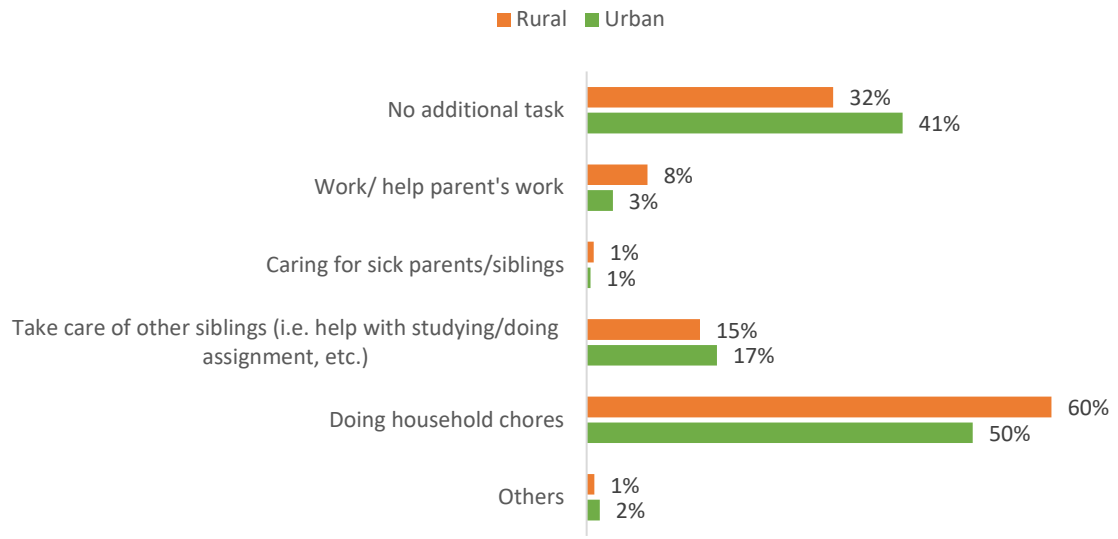

Figure 5: Non-school additional tasks performed by students (by student location)

2.1.3. Parent Involvement in Home Learning

Nearly three-quarters of students reported that their parents or guardians 'often' or 'always' helped them with study during the pandemic. However, parents' support or involvement in students' education varied by location. Over three-quarters (76.9%) of urban students stated that their parents or guardian 'often/always' helped them to study at home, which is higher than in rural and remote areas, where only 68.8% of students reported the same (see Annex 3, Figure 3). There was little difference in parents' involvement based on student gender. Mothers were the family member most likely to help students with study; this was higher in urban (65.8%) than in rural and remote areas (54.3%) (see Annex 3, Figure 4). That rural and remote parents provided less support to their children's study compared to that of urban parents may be partially explained by their lower level of educational attainment. Of the rural and remote parents, about 11.7% had never been to school (and about 34.2% had a senior high school degree or higher), compared to 4.8% of urban parents who had never been to school (and 54.8% who had a senior high school degree or higher) (see Annex 3, Figure 5).

More students with disability did not receive help from parents with their studies (14.8%) compared to students without disability (12.8%), but the difference was small (see Annex 3, Figure 3). Sahu, et al. (2018) claimed that, aside from the challenge of allocating time to assist their children's learning at home (in addition to caregiving, domestic tasks, and occupations), many parents of children with disabilities did not know how to support their children in the learning process.

There was a gap between parental support from parents of children whose mother tongue was a local language compared to children whose mother tongue was Bahasa Indonesia. As shown in Figure 6, 16% of students with a local mother tongue reported never receiving any help from their parents or guardians when they study at home, compared to only 8.7% of children whose mother tongue was Bahasa Indonesia. Additionally, 79% of students whose mother tongue was Bahasa Indonesia noted that their parents or guardians 'often/always' helped their study at home during the pandemic, compared to only 69% of students whose mother tongue was a local language.

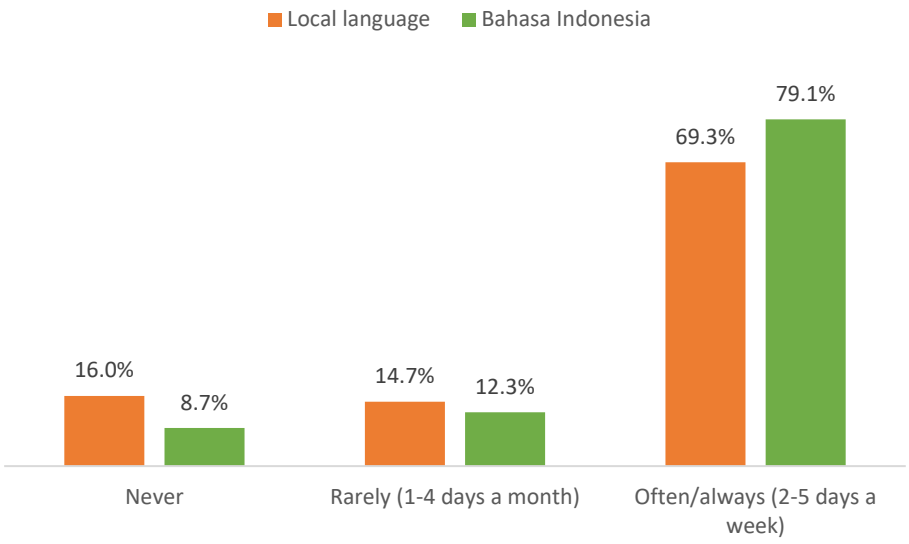

Figure 6: Parents' support in study at home (by students' mother tongue)

Although the students whose mother tongue was a local language received support from their parents, the support may have been less effective because learning materials are in Bahasa Indonesia. Fewer parents (about 84%) whose mother tongue was a local language were able to read and write Bahasa Indonesia, compared to 94% of parents whose mother tongue was Bahasa Indonesia. Only 82.4% of rural and remote mothers were able to read in Indonesian compared to 92.4% of the urban mothers. The ability of parents to support their children's education, particularly during a pandemic, was likely to be impacted by their own ability to read and write in Bahasa Indonesia. There was no significant difference between the ability of mothers and fathers to read Bahasa Indonesia (82.4% of mothers and 83.4% of fathers).

In summary, our data show that male and female students in rural and remote areas, students whose mother tongue was a local language, and students with a disability were more disadvantaged in the support they received at home during the COVID-19 compared to students in urban areas, students whose mother tongue was Bahasa Indonesia, and students without a disability. Further, girls, especially girls in rural and remote areas, were disadvantaged compared to boys due to the additional domestic chores they took on during the pandemic while learning from home.

2.2. School Support and Learning in the Classroom

The LGS found that dominant school factors contributing to positive learning outcomes included teachers' internet and computer access and a four-year teaching qualification. This section examines other factors that might have influenced learning related to the child's identity, including student gender, disability status, mother tongue, and where they live. We also examine data related to teacher perceptions about their female students compared to male students.

2.2.1. Teacher Access to Smartphones, Internet, and Vehicles

A high proportion of teachers (94.6%) had access to a smartphone, with little difference by gender or location. Not surprisingly, access to the internet was lower in rural and remote areas (79.9%) than in urban areas (95.2%). Teacher access to smart phones and the internet was important during school closures to enable teachers to access teaching and learning materials and to communicate with their school and students. Rural and remote teachers had less access to vehicles (82.9%) for delivering offline learning activities than urban teachers (87.1%). Within urban areas, female teachers had greater access to smartphones and the internet than male teachers, but less access to a vehicle. Within rural and remote areas, female teachers had similar access to smartphones and the internet as male teachers, but less access to a vehicle (see Annex 3, Figure 6).

2.2.2. Teachers Perceived Self-Efficacy in Supporting Distance Learning

When asked during the pandemic, about 90% of teachers felt they had the ability to design and use learning materials and formative assessments in delivering distance learning, with female teachers (92%) reportedly more confident compared to their male counterparts (89%). This included developing lesson plans (RPP), designing and delivering materials via distance learning, and designing and administering formative assessments (see Annex 3, Figure 7).

However, disaggregating by location, we found that rural and remote teachers were less confident in conducting distance learning compared to urban teachers. Fifty-six percent of rural and remote teachers felt their ability to use technology was either limited or very limited, compared to only 37% of urban teachers (see Annex 3, Figure 7). This is likely to have contributed to greater disadvantage for rural and remote children, especially considering that more rural and remote parents were not able to fully support their child's learning due to their work/ income generation activities. Responding to this capacity gap during COVID-19, the government ensured that *Bantuan Operasional Sekolah* (School Operational Assistance Funds, or BOS) was flexible enough to accommodate costs that schools might incur to support remote learning, including support for teachers. See Box 1.

Box 1: Adapting BOS to support learning needs during COVID-19

To respond to the learning needs of children in remote regions during the pandemic, the central government adjusted BOS formula to enable schools to mitigate the impacts of school closure, particularly in disadvantaged and remote areas. Schools in zones classified as either greatly impacted by COVID-19 or geographically remote received additional BOS funds to support costs related to remote learning. INOVASI's LGS study found that schools in Gamkonora, Bima District, had used BOS to provide incentives for teachers to visit gathering points during COVID-19 to support students. In West Sumba, BOS was used to photocopy learning materials and distribute these to students.

Only 34.8% of teachers reported that during the pandemic they had talked to students' parents or guardians about strategies to improve student learning outcomes; more female teachers (36.2%) than male teachers (27.1%) did this. In rural and remote areas, female teachers were more confident in 'designing materials for distance learning' and 'designing formative assessment', while male teachers were more confident in 'using learning materials for distance learning' and 'using distance learning applications'. Box 2 provides an example from Bulungan District, North Kalimantan, where teachers initiated a learning community to improve communication and increase support for their implementation of the curriculum in remote areas.

Box 2: Creating learning communities of Support for principals and teachers in remote regions during COVID-19

Teachers in remote areas face the greatest challenges in accessing learning resources and support. This disadvantage was amplified during COVID-19 when schools closed. To address this, regional facilitators together with the Independent Curriculum Technical Team for Learning Recovery (*Tim Teknis Kurikulum Merdeka untuk Pemulihan Pembelajaran*) in Bulungan District, North Kalimantan, initiated a learning community to support teachers and principals. This community is called "Bumi Tenguyun" which means the Land of Working Together. In these meetings, the Bumi Tenguyun hold meetings with the head of the Education Office and head of Curriculum Assessment to discuss and report updates on how they are implementing the new curriculum, *Kurikulum Merdeka* (Emancipated Curriculum). These meetings provide principals and teachers with the opportunity to discuss with local education officials their implementing the new curriculum and their capacity needs. This community also facilitates learning-focused community activities. This initiative has been formalised by the head of the Education Office in a local decree (*Surat Keputusan*, or SK).

2.2.3. Teacher support for distance learning for students with disability

However, teachers were not able to adapt their teaching (and expectations) to the needs of children with disabilities learning from home as easily as they were for those children without a disability. Almost half of the students with disabilities (45.6%) felt that the assignments given during the pandemic were too burdensome, compared to only 32.6% of students without disabilities (see Figure 7)[10]. Despite the additional supports required by children with disabilities and their parents to enable distance learning, parents of students with disabilities reported that they had received less support from schools than parents of students without disability. Parents of non-disabled students were more satisfied with the school's provision of clear guidance, learning materials, and training for parents. On the contrary, more parents of students with disabilities perceived those supports as insufficient and/or absent (see Annex 3, Figure 9).

[10] These findings are consistent with a Norway study which showed that students, on average, had somewhat positive perceptions of the quality of online learning during the pandemic. However, students with disabilities had more negative views about the overall quality of their education during this period and were more critical about how much they learned (Cameron et al., 2022).

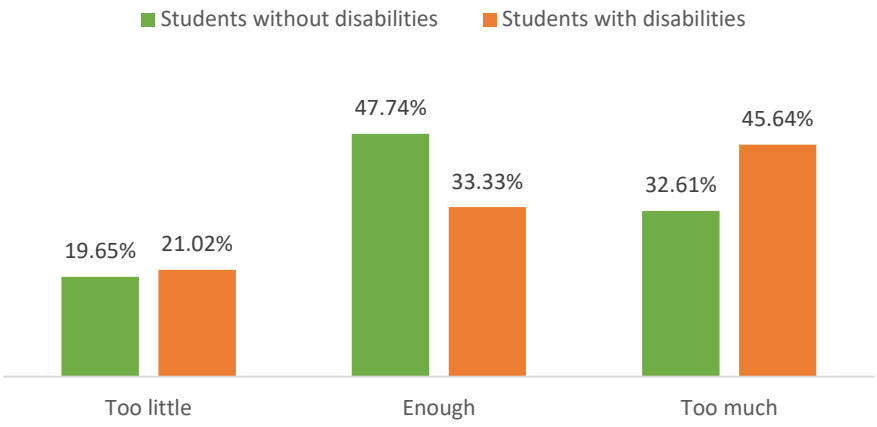

Figure 7: Perception of school assignments during the pandemic (by student disability status)

We found that 27% of students with disability studied online at home with teacher support compared to 34% of students without disability (see Annex 3, Figure 10). A survey among 226 special education teachers in Indonesia found that the barriers to distance learning included teachers' difficulties in adapting material to online learning (Supratiwi et al., 2021), difficulties in monitoring and evaluating student progress, and the lack of direction and coordination from schools[11].

Prior to the onset of COVID-19 in Indonesia, children with disabilities already faced considerable barriers to participation in education and learning, including teachers' incapacity to identify disability, lack of inclusive education training, limited access to specialist teachers/teacher aides, inaccessible school infrastructure and learning materials, low expectations from community and family, and stigma and discrimination, resulting in children with disabilities being enrolled but feeling excluded (Afkar et al., 2020; Sprunt, 2020).

The COVID-19 pandemic, with the ensuing school closures and distance learning, intensified these educational barriers for children with disabilities, which, as noted by UNESCO & UNICEF (2021) are twice as likely to have risk factors for dropping out than their counterparts without disabilities. Two key challenges include students with disabilities being able to maintain skills and knowledge previously acquired at school, and difficulties parents have in understanding and responding to the learning needs of their children with disabilities when learning from home (Pribadi, 2021). Box 3 illustrates a promising practice to build and strengthen teachers' capacity in supporting students with specific learning difficulties, aiming to contribute to narrowing the achievement gap between students with and without disabilities.

[11] A study conducted in schools in Norway also found that many students with disabilities encountered difficulties with online instruction, and therefore the decision was made to move them back to school where they were taught individually or in small groups either on a full- or part-time basis (Cameron et al., 2022).

Box 3: Narrowing the gap for students with learning difficulties, particularly dyslexia

The Association of Dyslexia in Indonesia (ADI) delivers teacher training on child development and on how to identify, and support the learning of students with dyslexia. During the pandemic, the training went online, involving participants from 51 cities across Indonesia.

The training involves two parts. The first covers children's developmental milestones, gross motor development, fine motor skills, language, social interaction, cognition, and personal skills in carrying out daily activities. The second covers the identification of general learning difficulties and specific learning difficulties of the child, differentiating between delayed development and intellectual disability. The training includes learning strategies for students with dyslexia and good practices for parenting children with dyslexia.

Participating teachers are taught how to develop an Individual Education Plan (IEP) that includes their teaching strategies and support for students with dyslexia. The program familiarises them with using the computer-based "Indonesian Early Identification Tools for Dyslexia" program, developed by ADI. As a result, teachers have reported an increased understanding about dyslexia and other related learning difficulties and child development. They have also reported feeling better equipped to develop lesson plans for children with specific learning difficulties, particularly dyslexia.

2.2.4. Teacher certification in rural and remote areas

The LGS data indicate that teachers in rural and remote area had lower levels of education and teacher certification compared to their counterparts in urban areas. This may likely be linked to the quality of teaching in rural and remote areas compared to urban areas. Studies in Indonesia found that this difference in the quality of teachers in urban and rural and remote significantly contributed to the urban and rural and remote gap in student learning outcomes (Purba, 2022; Sukoco et al., 2020). In our data nearly one-fifth (19.6%) of teachers in rural and remote areas did not have a bachelor's degree (S1), which is significantly higher than those in urban areas, where only 7.8% of teachers did not have this degree. Furthermore, some 70.5% teachers in rural and remote areas did not have a teacher's certification, compared to those in urban areas (61.7%). The LGS found that schools with teachers who had completed a four-year degree and who had access to technology (a computer and internet access) also tended to be associated with better student learning outcomes.

Box 4. Teaching at the Right Level to reduce gender gap in learning

Teaching at the right level (TaRL) is a key strategy for improving learning outcomes for boys and girls, based on an awareness of individual students' competence and specific learning needs. In classes where children are all taught as if they are on the same level, children (often boys) who need additional time on particular foundational skills are often left to fall further and further behind as the class moves forward.

At state elementary school SDN Payola Umbu, Southwest Sumba, TaRL is considered a solution to assist boys and girls to catch up on learning losses due to the pandemic. Starting with formative assessments to map reading skills, teachers determine whether a child can read letters, syllables, words, or paragraphs (which are divided into two groups of abilities—reading fluently and reading with understanding). The formative assessment instrument, undertaken monthly, was developed collaboratively by local facilitators and INOVASI East Nusa Tenggara.

During the pandemic in this school, group learning was carried out when limited face-to-face learning at school was permitted. All grade 1, 2, and 3 students, grouped into five groups of reading ability based on the results of the formative assessments, studied simultaneously. Each group was guided by one teacher who prepared learning strategies according to the needs of the children in the group. This activity was carried out on special days for three days a week. According to the school principal, the provision of special reading time provided flexibility for teachers to teach creatively and focus more on implementing appropriate strategies to improve reading skills. The special time also enabled teachers to better monitor the development of children's reading skills.

Teachers agreed that this strategy helped build children's reading skills more quickly, especially in the group that was reading letters and syllables, which skill was particularly left behind due to reduced learning hours during the pandemic. After four weeks of group learning, the formative assessments were given again, and the grouping was rearranged according to the new results. This model allowed boys and girls to be taught according to their appropriate level, which was fundamental in developing foundational skills on which subsequent skills could be built.

2.2.5. Language of Instruction

The Presidential Regulation No. 63/2019 Article 23 Paragraph 2, allows the use of local languages in the classroom for learning: '…. *the use of local language is allowed as language of instruction, especially at the primary level to facilitate the learning process*'. However, teachers face several resource and capacity gaps to teaching in the local language. Teaching and learning in primary schools are mostly done in Bahasa Indonesia, including the learning materials such as the textbook, reading books, test items, and other learning materials. This has put children who do not master Bahasa Indonesia at risk, especially those in the early grades. They do not understand what the teachers explain, have difficulties stating questions or opinions, struggle to accomplish tasks or assignments, and are more likely to repeat a grade or drop out (Purba, 2022).

Our LGS data also showed that 84% of the teachers used Bahasa Indonesia as their instructional language (with no difference by teacher gender). However, over half (57.5%) of the students' mother tongue was a local language, with 42.5% being Bahasa Indonesia (see Annex 3, Figure 2). Despite this, INOVASI research has found that teachers lack capacity to adjust their teaching to accommodate multilanguage teaching. They have limited learning resources (such as text or reading books that are in local languages), and many teachers do not fully understand the local language and culture in the regions where they teach. Additionally, there is often a perception from teachers that Bahasa Indonesia, as a national language, should be prioritised in the classroom (Purba, 2022; Sukoco et al., 2020). Communication (in the form of teacher-student or teacher-parent communication) is an essential element to support learning. In this case, the selection of instructional language will be an important aspect to ensure that lessons or other information can be understood clearly by students and parents (ACDP, 2014). Box 5 illustrates a number of ways provinces across Indonesia are attempting to promote and support teaching in local languages and transitioning to Bahasa Indonesia.

Box 5: Local implementation of language transition: examples from the regions

A language transition approach involves teaching children are initially taught in their local language then transitioning to Bahasa Indonesia to gradually build fluency in that language. This approach is supported at the highest level in the Indonesian Constitution and in the Presidential Decree No.63/2019 on the Use of Bahasa Indonesia. It is also treated in several laws, including The Ministry of Education, Culture, Research and Technology Regulation No.16/2022 on Standard Processes for Early Childhood Education, Elementary Education and Secondary. It is also part of the 2020–2024 Strategic Plan (*Rencana Strategis*, or RENSTRA) of The Ministry of Education and Culture, and of Indonesia's National Medium Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional, or* RPJMN) 2020–2024, which references improving education quality and use of mother tongue.

However, there are challenges in implementing this approach. Many subnational governments are not equipped to apply the approach, and teachers lack the skills and learning resources. In some regions there is concern that this approach may stir negative sentiment related to culture and nationalism. Several subnational governments have enacted policies and programs to allow the use of local language for teaching.

Recruiting local language teachers to facilitate language transition: The Papua Provincial Government enacted a regulation on education services for ethnic communities in remote areas that allows, but does not require, schools to use a language transition approach as needed. The regulation requires early-grade teachers to be recruited from areas local to the school, so they speak the local language.

Transitioning from Balinese to Bahasa Indonesia by Grade 4: For decades, schools in Bali have used Bali local language as the main language of instruction in early grades and have transitioned gradually to Bahasa Indonesia so that by Grade 4, the language of instruction is Bahasa Indonesia.

Collaboration with CSOs for language transition: The District Government of East Sumba in East Nusa Tenggara (NTT) has started collaboration with Sulinama, an NGO focused on mother tongue, supported by local government, schools, and parents. The program prepares and supports teachers to deliver language transition and to assess progress. It trains teachers to decode books and levelled readers in the local language, teach literacy methods in the local language, and develop teaching materials in the local language using a variety of media, particularly big books. The teacher working group forum (*Kelompok Kerja Guru*, or KKG) facilitates monthly reflection and ongoing coaching. School principals are also trained to supervise.

In summary, our data showed that teachers in rural and remote areas (79.9%) had less access to the internet compared to teachers in urban areas. Female teachers were reportedly more confident than their male counterparts in delivering education remotely (including to developing lesson plans and delivering materials by distance), and urban teachers were more confident in teaching remotely than rural and remote teachers. This is not surprising given that our data also showed that teachers in rural and remote areas had lower levels of education and teacher certification compared to teachers in urban areas. Teachers struggled to adapt their remote teaching methods and materials to support children with disabilities, and not surprisingly they were delivering less support to students with disabilities compared to the support they provided to students without disabilities. Finally, while Bahasa Indonesia was the main language of instruction (84% of teachers in our sample), the mother tongue of more than half of the students (57.5%) in our sample was a local language. Teachers were supporting students to transition to Bahasa Indonesia without understanding the students' local language.

3. Learning Outcomes Based on a Child's Identity

The LGS showed that 64% of students in Grades 1–3 had not met the Sustainable Development Goals (SDG) minimum proficiency level (MPLs) for early-primary reading, and 80% had not met the MPL for numeracy. The LGS also revealed a significant spread in student proficiencies in literacy and numeracy, associated with a range of disadvantages for a significant proportion of students. This section explores the data on learning outcomes and on how student identities correlated with performance. First, we look at learning outcomes by gender, attendance at an urban or rural and remote school, disability, and mother tongue. We also reviewed learning-loss data by gender. We then examine the intersectionality of a student's multiple identities. Information from Section 2 on the home and school learning environment helps to contextualise these findings.

3.1. Defining Proficiency Levels and Learning Gap

Box 6 below summarises how the learning gap has been calculated and the learning loss defined.

Box 6: Defining learning gap and learning loss

Defining Learning Gap

The INOVASI (2022) *The Learning Gap Series – One, Beyond letters and numbers: the COVID-19 pandemic and the foundational literacy and numeracy in Indonesia* details the literacy and numeracy test measures and benchmarking analysis. Student test results were benchmarked against descriptors of skills for the Global Proficiency Framework (GPF) Minimum Proficiency Levels (MPLs) developed by UNESCO. The MPL outlines minimum proficiency levels that children are expected to obtain at the end of each grade for both literacy and numeracy. The LGS (and this report) defines **learning gap** as the gap between the standards set for students to achieve and the actual student achievement.

Three performance levels were defined for **literacy**:

Level 1: Students fall short of the MPL expected by the end of Grade 2 and 3 reading. Students are performing at pre-primary levels and have not yet formed essential foundational skills to be able to progress through primary school.
Level 2: Students have met some but not all of the required proficiencies.
Level 3: Students have met or exceeded the Sustainable Development Goals (SDGs) MPL. Students are able to read simple text fluently and independently, find explicitly stated information, provide simple interpretations of the key ideas, and give simple personal opinions or judgements about information in the text. (UNESCO, 2019).

Four performance levels were defined for **numeracy**:

Levels 1 and 2: Students do not meet the MPL expected by the end of Grade 2 and 3.
Level 3: Students have met some but not all of the early primary proficiencies.

Level 4: Students have met or exceeded the SDGs standard: students are able to recognise numbers, perform simple operations, and read simple data displays.

Defining Learning Loss

To determine learning loss, INOVASI collected student literacy and numeracy performance data for 3,091 early-grade students (1,703F, 1,688M) in 69 INOVASI pilot schools in seven partner districts in both FY 19/20 and FY 21/22. The difference between the performance score of students at these two points in time records the learning loss. Given the relatively small number of students for whom we have learning loss data, differences in learning loss are able to be disaggregated by gender, but not by disability, location, or student's mother tongue.

3.2. Learning Outcomes for Girls and Boys

In Indonesia, as well as globally, girls in primary and high school tend to outperform their male peers in education. For instance, the learning-adjusted years[12] of school for girls are 8.1 years, compared with 7.8 years for boys, indicating a female advantage in learning in Indonesia (World Bank Group, 2020). The COVID-19 pandemic has created educational disadvantages for both male and female students. Although girls continue to outperform their male peers, our data show that COVID-19's impact on the education of girls has been greater. This section examines learning outcomes for girls and boys, and looks specifically at learning loss during COVID-19 pandemic.

Exploring the LGS data by gender shows that Grade 1–3 girls outperform boys in reading comprehension. This finding is consistent with data from INOVASI Phase I (2016–2020). As shown in Figure 8 the proportion of male students (27%) at level 1 literacy (the lowest level) is greater than the proportion of female students (19%). Students in this level are performing at pre-primary levels and have not yet formed essential foundational skills to be able to progress through primary school.

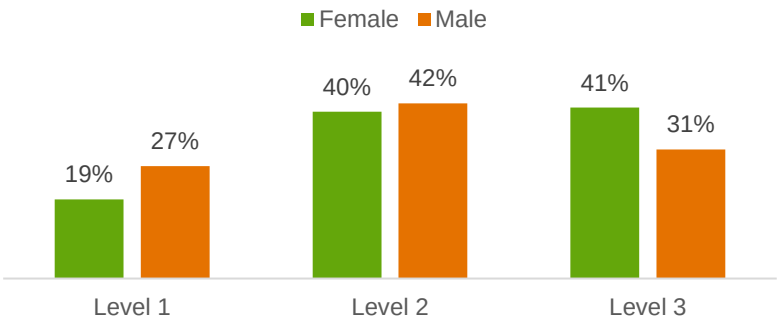

Figure 8: Learning gap in literacy for Grade 1–3 students (by student gender)

[12] Learning adjusted years of schooling (LAYS) accounts for the difference between the number of years a child attends school and the actual years of learning the child has completed according to harmonized test scores (Yarrow et al., 2020)

Girls also outperform boys in numeracy, although while the difference is statistically significant it is relatively small. The results in Figure 9 show that the proportion of male students at level 1 and 2 of numeracy (43%) is only slightly higher than that of female students (41%). Students at this level do not meet the minimum proficiency level expected by the end of Grade 2 and 3 and have not yet formed essential foundational skills to be able to progress through primary school. While boys and girls in Grade 1 have a much more equal ability, by Grade 3 there is a distinct positive effect for girls, who are consistently outperforming boys on average (see Annex 3, Figure 11).

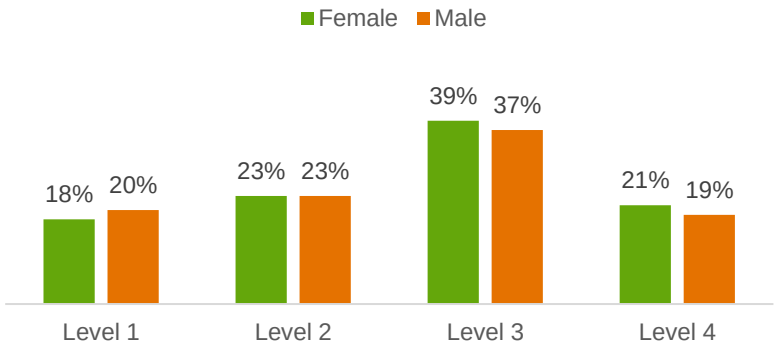

Figure 9: Learning gap in numeracy for Grade 1–3 students (by student gender)

When looking at learning loss during the pandemic, we found significant learning loss in literacy and numeracy; the drop was higher in numeracy. Although girls continued to out-perform boys overall, the learning loss was higher for female students than for male students, both in literacy and to a lesser extent in numeracy. The drop in student scores over the period - in literacy (from 1.17 to 0.70) and numeracy (from 0.78 to 0.34) is shown in Figure 10 below. For literacy, this was equivalent to 6 months study for female students and 4 months study for male students. For numeracy, this was equivalent to 7 months study for female students and 4 months study for male students[13]. A systematic review by Betthäuser et al. (2022) of learning loss for children at both primary and secondary levels may help to explain why students experienced a greater learning loss in numeracy compared to literacy. That study found that parents generally were more able to help children read than to use numbers. Children who read for pleasure may have improved their reading skills. In comparison, the development of numeracy skills was likely to be more dependent on formal instruction in school.

[13] The LGS converted test scores to a standard value (z-score), which allows taking data points drawn from populations with different means and standard deviations and placing them on a common scale at a normal distribution curve.

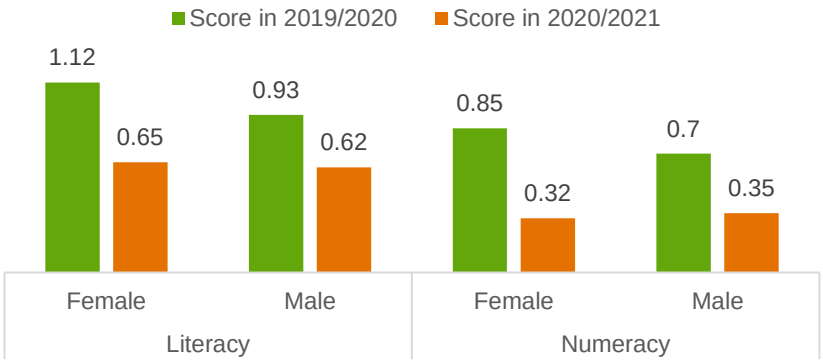

Figure 10: Learning loss for Grade 2–3 students (by student gender)

In explaining why girls experienced a greater learning loss compared to boys, our data (see Section 2) detected that girls undertook more additional chores during COVID-19 compared to boys. This may have affected their ability to learn, particularly to concentrate, given that they reported the same number of hours of learning each day as male students. Our finding of greater learning loss for girls is consistent with many of the studies on learning loss during the pandemic, but not all. Our findings for this primary-school group of students are consistent with those in Wu et al. (2022) that compared international data (PISA and TIMSS) for high school students in countries across Asia, Africa, Europe, and North America. While these types of quantitative analyses may provide useful data for illustrating the extent of the performance gap, it does not help to explain why the gap exists.

Box 7: Building gender responsive schools

The Centre for Gender and Child Protection Studies (PSGPA), at the Muhammadiyah University of Sidoarjo (UMSIDA), partnered with INOVASI to develop and test Gender Responsive School training modules for principals and teachers. The GRS training aims to raise awareness of principals and teachers about gender responsive education and provides practice guidance on how schools can be more gender responsive. The modules combine classroom style lectures with practical exercises for schools to review data, and discuss their current school situation, and then develop a School Work Plan (*Rencana Kerja Sekolah*, or RKS) and Learning Implementation Plan (*Rencana Pelaksanaan Pembelajaran*, or RPP) that includes specific actions to address identified issues related to the gender responsiveness of their school management, facilities and/or teaching practice. Schools involved in the pilot identified, for example, the need for additional separate toilets for girls and boys, for secure and private changerooms for girls, and for programs that encourage boys to join creative extracurricular activities, such as art and music, to break down stereotypes of feminine and masculine activities. INOVASI plans to work with local governments to identify opportunities to continue the training and will develop simple guides and tools to be used by other schools to make the training tools accessible to schools more broadly, without requiring training.

3.3. Learning Outcomes Based on Mother Tongue

There was a substantial gap in literacy performance for students whose mother tongue is a local language compared to students whose mother tongue is Bahasa Indonesia. In our sample, 42.5% of the students' (41.8% male and 43.3% female) mother tongue was Bahasa Indonesia, and 57.5% (58.2% male and 56.7% female) mother tongue was a local language. As presented in Figure 11, the proportion of students whose mother tongue was the local language that were at level 1 (falling short of MPL) (26%) was higher than that of students whose mother tongue was Bahasa Indonesia[14]. Girls who spoke a local language as their mother tongue did better than boys; 30% of the boys whose mother tongue was a local language were at level 1 compared with only 21% of the girls.

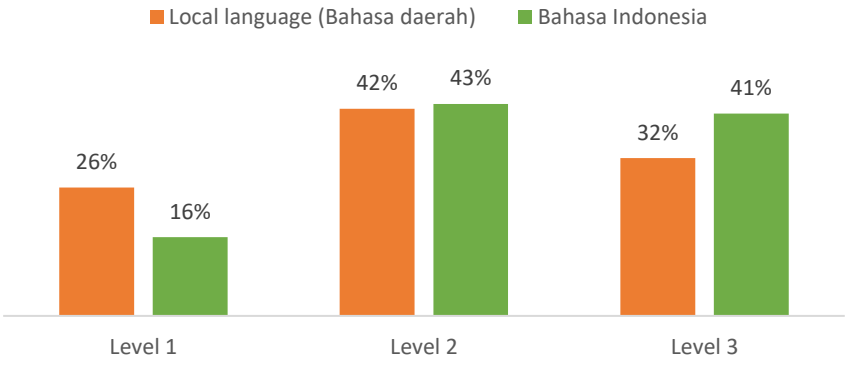

Figure 11: Learning gap in literacy (by students' mother tongue language)

In numeracy we found only a small gap for students whose mother tongue was a local language compared to students whose mother tongue was Bahasa Indonesia (see Figure 12). As presented in Figure 12, the proportion of students whose mother tongue was a local language that were only at level 1 literacy (21%) was significantly higher than that of students whose mother tongue was Bahasa Indonesia (17%). This finding is consistent with existing literature showing that development of numeracy skills is more dependent on instructional strategies and methods, teacher competency in math education, and students' motivation rather than on students' mother tongue (Saritas & Akdemir, 2009).

[14] Our findings in literacy and numeracy are consistent with earlier studies by Pusat Penilaian Pendidikan (Puspendik) (2019), using PISA micro data from 2000–2018, finding that students whose mother tongue were local language were likely to have lower learning outcomes than students whose mother tongue were Bahasa Indonesia. Moreover, in general, the gap was significantly higher in literacy compared to numeracy and science.

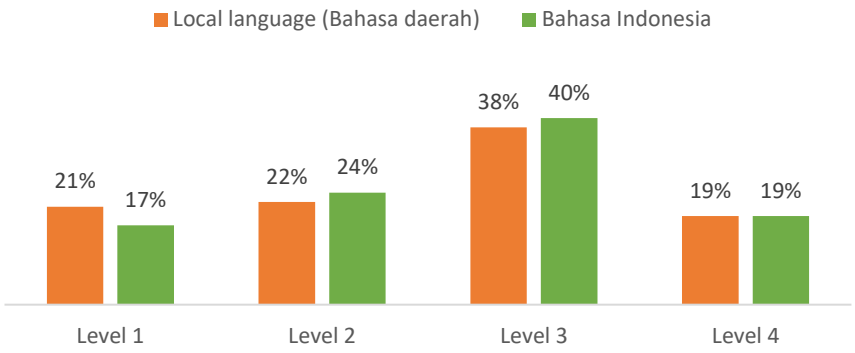

Figure 12: Learning gap in numeracy (by students' mother tongue language)

In the LGS, the majority of the parents of students whose mother tongue was a local language had less education and a lower socioeconomic status. About 63% of parents whose mother tongue was a local language had only a junior high school degree or lower. In comparison, about 58% of the parents of students whose mother tongue was Bahasa Indonesia had a senior high school degree or higher (see Annex 3, Figure 12). Our findings echo the findings of the Purba (2022), who found that a difference in the instructional language used by teachers and the language used in the family home it can affect the academic achievement of students whose mother tongue is a local language.

3.4. Learning Outcomes in Rural and Remote and Urban Areas

We found that students in rural and remote areas had lower performance in literacy than students in urban areas. Of the students in our study, 56.9% lived in urban areas, while 43.1% lived in rural and remote areas. As presented in Figure 13, the proportion of rural and remote students that were at level 1 (the lowest literacy level) was much higher (31%) than that of their urban counterparts (only 15%).

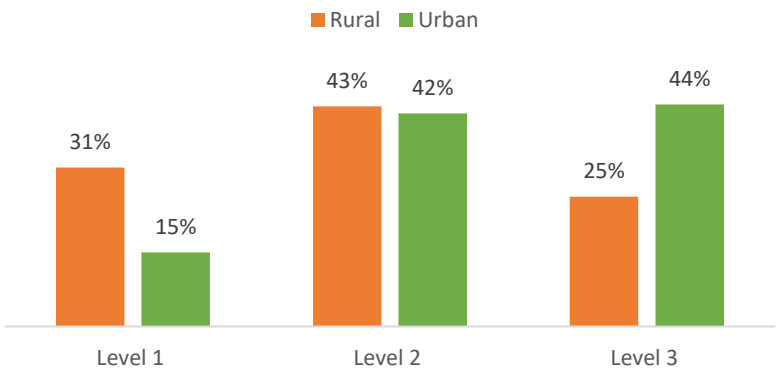

Figure 13: Learning gap in literacy (by student location)

Consistent with our literacy results, in numeracy, urban students outperformed rural students. As shown in Figure 14, there were more rural students (26%) that perform at level 1 (lowest level) compared to 14% of urban students.

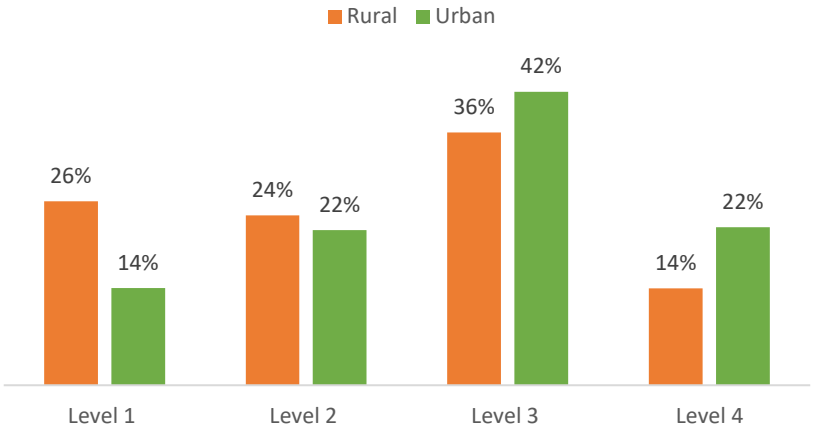

Figure 14: Learning gap in numeracy (by student location)

The lower performance for students in rural and remote or disadvantaged areas is consistent with the earlier analysis of PISA micro data from 2003–2018 by Pusat Penilaian Pendidikan (Puspendik) (2019). That analysis found that on average, students who lived in the capital of a province scored 60 points higher than their counterparts in rural and remote areas, or it is equivalent of two academic years. The COVID-19 situation was expected to significantly widen this pre-pandemic gap because the quality and effectiveness of distance learning may be different for disadvantaged areas (McKinsey, 2022). Existing literature has discovered several factors that may explain the lower academic achievement of students in rural and remote areas. UNICEF (2021) in its Indonesia case study found that students' access to technology and learning resources, teachers' capability in delivering lessons, and family socioeconomic status (including parents' support) may have contributed to students' performance in rural and remote locations during the pandemic. Section 2 examines our evidence related to these factors. Box 8 shares an example of creative and localised approaches to non-governmental partnerships that can support teaching and learning in rural and remote areas.

Box 8: Student learning recovery that also trains a future generation of teachers

Program Relawan Literasi (RELASI) is a volunteer literacy program in West Nusa Tenggara (NTB) launched early in the pandemic in response to the struggles children faced learning remotely; it focuses on learning recovery for vulnerable children, including children with disabilities. It is a collaboration between NTB Provincial Education Office and 16 Teacher Training Institutions, 82 civil society organisations (called NTB Reading Consortium), and four village administrations.

TTI and NTB Reading Consortium members mobilised trainee teachers and CSOs members as volunteers and trained them to teach literacy to children experiencing learning difficulties. The training has improved the volunteers' effectiveness, particularly the student teachers' skills in teaching basic literacy, communicating with parents, and conducting formative assessments. These are all important skills for them as future teachers. The volunteers have helped parents better support their children's learning, and the formative assessments provide early evidence of improved student literacy levels as a result of the volunteers' efforts.

RELASI has been independently implemented and expanded by TTIs, CSOs and the literacy community in NTB. The NTB TTI Association is looking at ways to integrate RELASI's literacy approach within their internship and community service programs. The RELASI approach has attracted interest beyond the NTB province. For example, a TTI branch in NTT has replicated this approach by integrating it into its internship program to support families in addressing learning challenges during the pandemic. MoECRT also has facilitated the sharing of RELASI through the Teaching Campuss Program (known locally as *Program Kampus Mengajar)*.

3.5. Learning Outcomes for Children with Disability

The LGS showed significant gaps in literacy attainment of students with disability compared to students without disability. This is in line with international research (DiNapoli, 2021). As seen in Figure 15, 43% of students with disabilities are only at level 1 literacy (not meeting the minimum level of proficiency expected by the end of Grades 2 and 3) in contrast to 20% of the students without disabilities. A similar difference was shown in numeracy, with students without disability clearly outperforming students with disability. As shown in Figure 16, 63% of students with disability are in the lowest numeracy levels 1 or 2, in contrast to 41% of students without disability. INOVASI undertook research prior to the pandemic which measured baseline and endline literacy and numeracy among students with disabilities across various pilot programs seeking to build teacher capacity in inclusive education (Sprunt, 2021). A smaller proportion of students with disabilities passed the basic literacy and numeracy tests compared to students without disabilities. Students with cognitive, behavioural, or attention difficulties performed worse on the basic tests compared to students with 'physical' disabilities (vision, hearing, gross and fine motor skills, and speech).

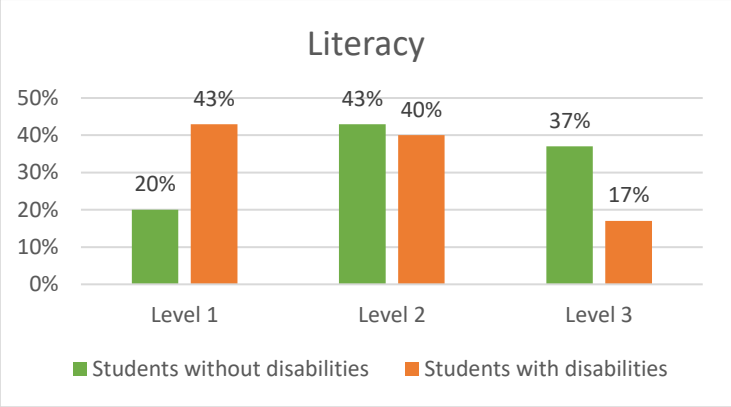

Figure 15: Learning gap in literacy (by student disability status)

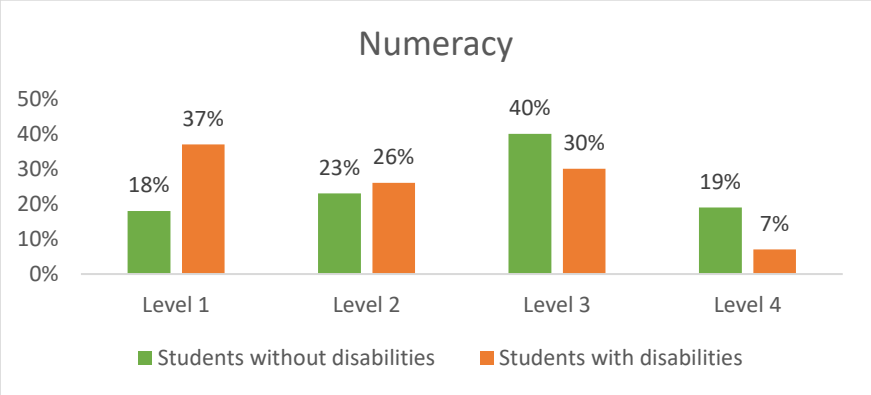

Figure 16: Learning gap in numeracy (by student disability status)

4. Intersectionality of Identity and Literacy Outcomes

The LGS showed that that 64% of students in Grade 1–3 have not met the SDG minimum proficiency level for early primary reading. This section of the report unpacks this percentage to better understand the intersectionality of student identity with literacy outcomes. We explore the intersectionality of gender, disability, rural and remote and urban areas, and mother tongue to identify students with the greatest underperformance in literacy proficiency. In summary, the most disadvantaged students who are not meeting the minimum proficiency level in literacy are male (91%) and female (87%) students with disability living in rural and remote areas, and male students in rural and remote areas whose mother tongue is a local language (81%).

While the intersectionality analysis does not include socioeconomic status of students involved in the study, we believe that the urban and rural and remote categories are sufficient to capture the socioeconomic status of our respondents. In our study, we used some variables as proxies to understand the economic status of our respondents. The variables included household level variables such as household expenditure and household facilities, and parent variables such as parent education and occupation. Our analysis showed that students living in urban areas tended to have more favourable outcomes compared to students living in rural and remote areas. As a result, we believe that the use of the urban and rural and remote categories suffice for the purpose of this intersectionality analysis.

More male students in rural and remote areas (80%) are not meeting the minimum proficiency level compared to male students in urban areas (63%). While female students outperformed male counterparts overall, they also saw the same disparity between urban and rural and remote areas, with 50% of female students in urban areas not meeting the minimum proficiency level, compared to 69% in rural and remote areas. See Figure 17 below.

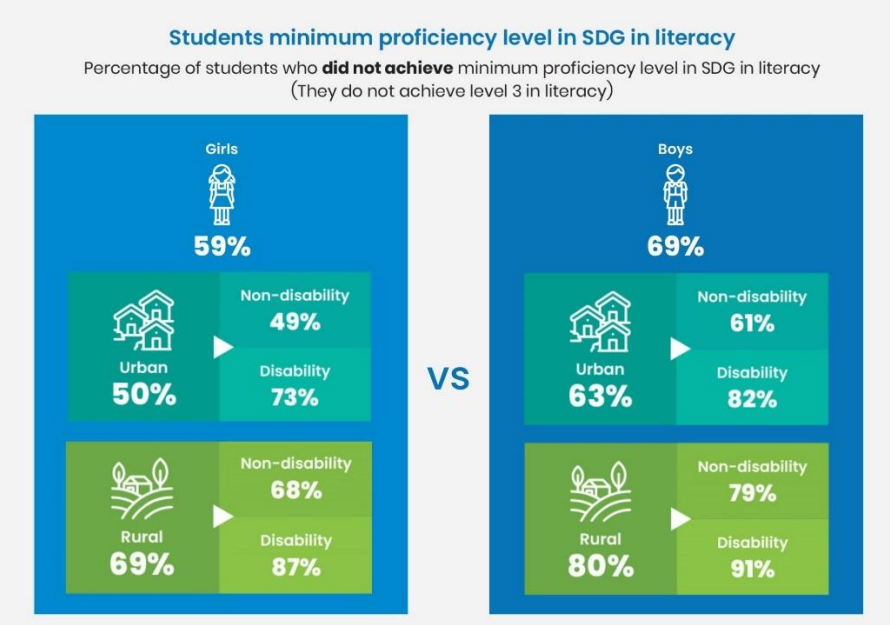

Figure 17: Proportion of Grades 1–3 students not meeting the MPL in literacy (by student gender, location, and disability status)

Students with disability are highly disadvantaged, and this disadvantage is further compounded if they attend a rural and remote school. Eighty-six percent of male students with disability did not meet the minimum proficiency level for literacy in Grade 3. See Figure 18 below. Living in a rural and remote area compounded this disadvantage; 91% of rural and remote boys with disability underperformed compared to urban boys with disability (82%). Similarly, more rural and remote girls with disability (87%) did not meet the minimum proficiency level compared to urban girls with disability (73%). These findings can be explained by the analysis in Part 1 of this study that showed that students with disability—particularly those in rural and remote areas—were reportedly less supported, had less access to learning resources and felt more burdened by homework during the pandemic compared to children without disability.

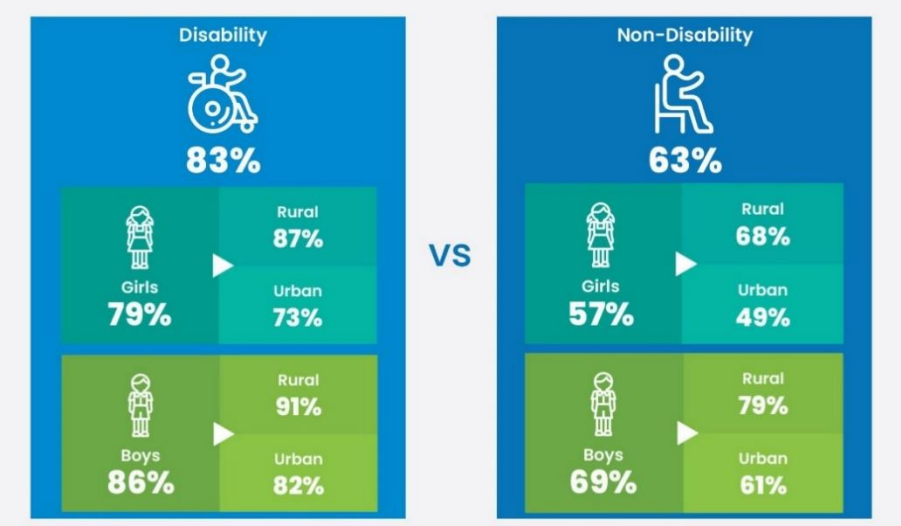

Figure 18: Proportion of Grade 1-3 students not meeting the MPL in literacy (by student disability, gender, and location)

Finally, disaggregating the data based on mother tongue again highlighted a pattern of disadvantage for rural and remote male students. Disaggregating the data on students by mother tongue in rural and remote and urban areas showed that 81% of boys in rural and remote areas whose mother tongue was a local language did not meet the minimum proficiency levels in literacy. See Figure 19 below. While girls performed better overall, more girls with local language mother tongue failed to achieve the minimum proficiency levels in literacy, compared to girls with Bahasa Indonesia as their mother tongue. Not far behind males, 71% of rural and remote girls whose mother tongue was a local language did not achieve the minimum proficiency levels in literacy.

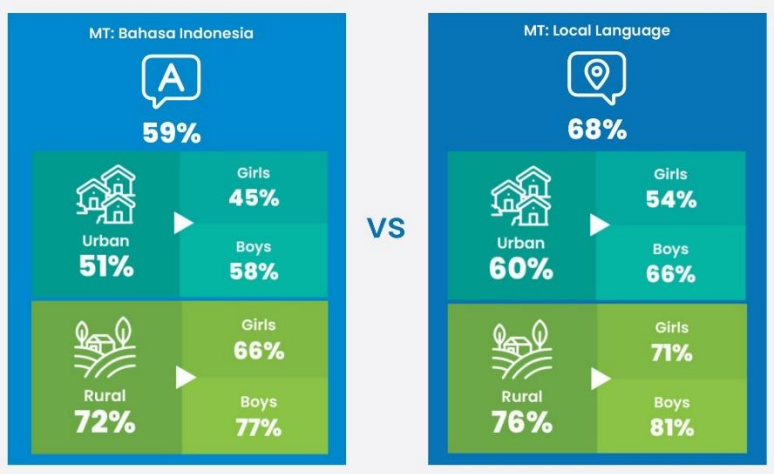

Figure 19: Proportion of Grade 1–3 students not meeting the MPL in literacy (by mother tongue, location, and student gender)

Box 9: Achieving learning outcomes for students transitioning from a local language to Bahasa Indonesia

As noted in Box 5 above, The District Government of East Sumba in NTT Province is scaling a Language Transition Program initially piloted through a partnership between INOVASI and a CSO Sulinama. The program began in 2021 with nine SD (*Sekolah Dasar,* or elementary schools) in Haharu subdistrict (East Sumba District) and is now scaling to include 10 PAUD (preschools) and 10 SD students in Boawae subdistrict (Nagekeo District).

The program adopts a model of teaching that transitions from mother tongue to Bahasa Indonesia. First, teachers explain the key concept of the lesson in students' mother tongue. When students understand the concept, the teacher makes the transition to using Bahasa Indonesia as the language of instruction. This approach is called 'a language bridge'. Second, the teacher develops and introduces learning materials that are presented in two languages, the students' local mother tongue and Bahasa Indonesia.

Based on baseline data gathered in July 2021 and an endline survey in May 2022, Grades 1–3 students in 10 of the SD in Boawae subdistrict increased their learning outcomes, from 50% to 97% in letter recognition, from 32% to 77% in reading fluency, and from 27% to 77% in reading comprehension.

For students in Grades 1–3 students in the nine SD in Haharu subdistrict, the baseline data were gathered in September 2021 and the endline data in May 2022. Their learning outcomes also increased, from 75% to 93% in letter recognition, from 13% to 43% in reading fluency, and from 8% to 43% in reading comprehension.

5. Intersectionality of Identity and Numeracy Outcomes

The LGS showed no significant difference in numeracy outcomes between boys and girls. However, if we look at the data on intersectionality of student identity, some significant differences emerge. We see a pattern similar to the outcomes in literacy: the most disadvantaged and underperforming students were males in rural and remote areas with disability, with females with a disability not far behind. This section looks at data for the Grade 3 students in our sample that did not meet the SDG minimum proficiency level in numeracy. That is, they did not achieve level 4 numeracy. In summary, the greatest intersection of disadvantage was for females in rural and remote areas with disability (96%). The next greatest intersection of disadvantage was for boys with disability in urban and rural and remote areas; 94% of them did not meet the minimum proficiency level.

The most disadvantaged students in terms of numeracy outcomes were students with disability; particularly girls with disability in rural and remote areas. Of the male students in rural and remote areas, 87% did not achieve the minimum proficiency level in numeracy, compared to 79% of male students in urban areas. Of the male students, 94% with disability did not achieve the minimum proficiency level both in urban and rural and remote areas. Of the female students who did not achieve the minimum proficiency level in numeracy, we see a similar trend: a slightly greater proportion (85%) of girls in rural and remote areas did not meet the numeracy minimum proficiency level compared to 76% of girls in urban areas. Further, for female students in rural and remote areas, 96% with disability did not achieve the minimum proficiency level. In urban areas, although these female students performed better overall in comparison to their rural and remote counterparts, of those female students with a disability, 88% did not meet the minimum proficiency level. This is also shown below in Figure 20.

These findings can be informed by the findings in Section 2 of our study. Male students, students with disability, particularly females with disability in rural and remote areas, received less support for their learning in the home and in school, and they had less access to devices compared to their counterparts in urban areas and those without a disability. Interestingly there was no significant differences in numeracy for either male of female students whose mother tongue was a local language as opposed to Bahasa Indonesia.

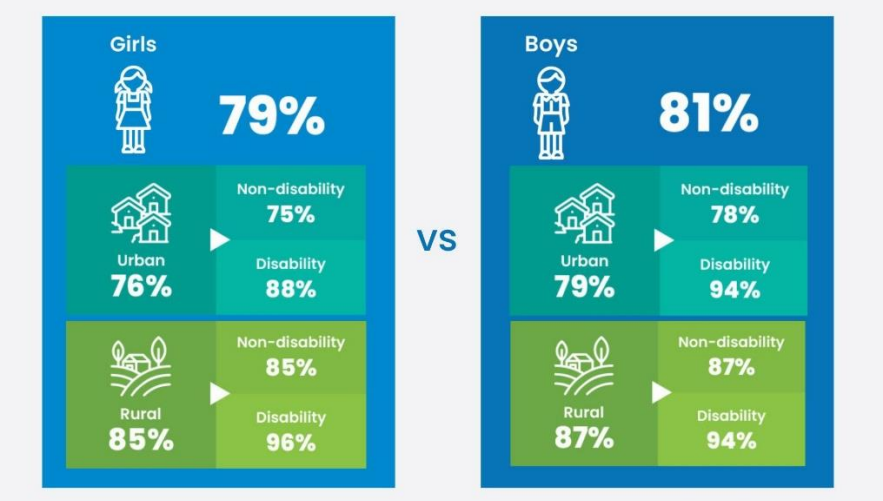

Figure 20: Proportion of Grade 1–3 students not meeting the MPL in numeracy for (by student gender, location, and disability)

6. Conclusion

Gender effects, disability, and the disadvantaging factors of home, location, mother tongue, and school (teachers and resources) are attributes of large proportions of children with the lowest performing levels in literacy or numeracy.

Our findings from this report showed that rural and remote locations (where schools have less access to resources and professional support, and teachers tend to have lower levels of qualifications) amplified the disadvantages some students faced based on their identity (such as disadvantage due to disability, their mother tongue not being Bahasa Indonesia, or gender). Rural and remote locations—and their language implications where Bahasa Indonesia is not a student's mother tongue—may also account for the low-level schooling of their parents and the associated effect of inability to assist their children. Rural and remote locations and low socioeconomic status (SES) are also often correlated, limiting families' capacity to afford devices and connectivity to support learning and even to prioritise it, as is suggested by the heavier labour load on rural and remote children during school closures, compared with that of urban children.

These findings illustrate the influence of rurality and remoteness over so many of the most salient findings in this study:

- More rural and remote students (31% and 26%) performed at level 1 literacy and numeracy compared to urban students (15% and 14%).
- After disability, the next greatest intersection of disadvantage was for rural and remote male students whose mother tongue was a local language. About 81% of these students did not meet the minimum proficiency level, and 71% of rural and remote girls whose mother tongue was a local language did not achieve the minimum proficiency levels in literacy.
- About 63% of parents whose mother tongue was a local language had only a junior high school degree or lower. In comparison, about 58% of the parents of students whose mother tongue was Bahasa Indonesia had a senior high school degree or higher.
- Urban parents were more involved in their children's learning (76.9%) compared to rural and remote parents (68.8%), with no difference between student genders.
- About 16% of students whose mother tongue was a local language reported that they never received learning support from their parents with learning, compared to only 8.7% of students whose mother tongue is Bahasa Indonesia[15].
- Rural and remote students had less access to internet connection and devices to support their learning compared to urban students.
- About 56% of rural and remote teachers felt less confident in conducting distance learning compared to only 37% of the urban teachers.

The multiple dimensions of disadvantage faced by students in rural and remote locations call for government action to mitigate their effects on learning outcomes. The *Merdeka Belajar* reform that supports equity can help address the multiple forms of disadvantages that affect

[15] The LGS, and this report, define student's mother tongue as the main language that the student uses to interact with their families. In the LGS, 57.5% of the sampled students spoke a local language as their mother tongue, while 42.5% used Bahasa Indonesia as their mother tongue, with no significant difference by gender.

student learning outcomes, especially in rural and remote areas. It aims to lift national performance on literacy and numeracy proficiency overall and emphasises contextualising curriculum and teaching to identified needs. Because the government increasingly relies on digital platforms to provide teacher guidance and resources for implementing these reforms, this study highlights the need to be mindful of a widened gap between rural and remote students and urban students throughout the pandemic, which gap includes a digital divide that between teachers and students. Central and local government can make a difference *by extending policies and priorities already adopted or under consideration.* Recommendation 1 and its proposed action points below are made on this basis.

Recommendation 1. To strengthen the implementation of existing reform policies associated with *Merdeka Belajar* for areas where location, low SES, and home language is not Bahasa Indonesia, compounding learning disadvantage. This recommendation proposes action on several fronts:

1.1 Establishing a database of the schools in such communities to target affirmative support and monitor performance. The new *Rapor Pendidikan* as well as *Data Pokok Pendidikan (*Basic Education Data System, or Dapodik could be put to this use to provide an evidence base for targeting such schools.

1.2 Developing a comprehensive language transition policy for PAUD and early grades in discussion with affected provinces. There is considerable potential for the PAUD sector to make inroads into children's language proficiency, both in literacy in mother tongue and in student readiness for transition. An initial step would be mapping the rural and remote locations across Indonesia where communities are not literate in Bahasa Indonesia and identifying the languages in active use as the basis for a comprehensive language-transition policy. The national government already has the policy basis for this development in Law No.20/2003 on the National Education System and in the promotion of use of mother tongue teaching. However, this encouragement needs systemic support for the practice at scale by teachers, schools, and districts. This policy for the PAUD sector should apply to the early grades as well. In both sectors the policy would need to be applicable to different linguistic situations (mixed language as well as single language communities). The government could invest in start-up initiatives for PAUD such as have been used in the *Sekolah Penggerak* program.

1.3 Expanding the access of rural and remote schools to resources for teaching learning and for teacher professional development, including digital resources and connectivity. During school closures, schools were given discretion to use the school operational assistance funds (BOS) to enable distance learning. The precedent is therefore established for supporting teachers and students. A mechanism for continuing this is the 2021 Ministerial Regulation indexing the school grant to better meet the infrastructure costs of small disadvantaged schools. (Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia Nomor 6 Tahun 2021). Connectivity and devices could legitimately be considered relevant infrastructure for such schools, catering to their access to low-cost resource platforms operating from cluster hubs; and to online communities of

practice, as successfully modelled by the Bulungan and Tana Tidung districts in North Kalimantan.

1.4 Development and resourcing mini Kelompok Kerja Guru (Teacher Working Group, or KKG) in remote schools through local district funds to provide classroom level mentoring, a model also successfully scaled in some North Kalimantan and NTT districts.

1.5 Increasing reading material to improve children's literacy in remote areas. The government has a current policy of supplying book titles to disadvantaged districts denominated 3T districts (frontier, outermost, and remote regions). This could be extended to schools in villages outside the formally identified 3T areas identified on the Index of Village Development as disadvantaged.

1.6 *Increasing the role of the subdistrict and village government in education delivery, including through community-based programs and partnerships.* This includes those involving *Taman Bacaan Masyarakat* (Community Reading Friends, or TBM) and *Pemberdayaan Kesejahteraan Keluarga* (Family Welfare Empowerment, or PKK) in remote areas. Local solutions have been developed and tested to address the issue of support for children from non-literate families. The volunteer movement affiliated with Teacher Training Institutes in NTB (RELASI) provides an example at scale of how volunteer candidate teachers successfully support disadvantaged children to help literacy learning at home. The national government has a similar initiative in *Kampus Mengajar*. In Bulungan District, PKK North Kalimantan is working with parents to engage in and value their children's learning.

Our study has highlighted that gender attributes can lead to different educational disadvantages for boys and for girls, in addition to the compounding effect for those in rural and remote localities. Relevant recommendations relate to two salient findings.

1. *Boys' performance*. The proportion of male students (27%) at level 1 literacy (the lowest level, for those who do not meet the minimum proficiency level by the end of Grades 2 and 3) is greater than the proportion of female students (19%). There is a clear need for specific attention to effective teaching for boys. This could begin with initial research and analysis to better understand the developmental and learning characteristics of boys of early-grade age. Approaches could then be piloted to test and learn what works well and why. This may include replicating approaches in Indonesia (for example, community immersion programs run by the organisation *Sekolah Kasih Bangsa*)[16]. This may also involve adapting for Indonesia's context-tested approaches in other countries that are more engaging, active, and practical for boys.

[16] Sekolah Kasih Bangsa is a non-governmental organisation conducting a community immersion program for high school students in East Nusa Tenggara. This program combines classroom learning with periods of time living in communities from diverse cultures to develop awareness and understanding of different cultures, language, and ways of life, and to learn about an environment that is beyond the classroom.

2. *Girls' learning loss particularly in numeracy*. Although female students outperformed male students in literacy and numeracy, they experienced a significantly greater learning loss during school closures, particularly in numeracy. The loss was equivalent to 7 months' study for female students (compared to 4 months' study for male students). We could not determine the difference between girls' and boys' learning loss. However, this might imply something about girls' attitudes and level of motivation in mathematical learning, even at this early age. As is the case with boys and literacy, the finding about girls' learning loss calls for more research that focuses a gender lens on early-grades learners in these foundational skills, to identify differences and then develop appropriate programs for more gender responsive teaching and learning.

Recommendation 2: For local governments to directly target boys' literacy difficulties and girls' COVID-19-related numeracy learning loss in learning recovery programs. The national government can encourage districts, schools, and madrasah to implement the *Kurikulum Khusus*, to prioritise diagnostic assessments, and to follow up TARL.

Educational reforms in Indonesia create opportunities for significant expansion of disability-inclusive education that respond to the findings in this study related to disadvantages for students with disability. The *Kurikulum Merdeka* (Emancipated Curriculum) is a disability-friendly curriculum, enabling teachers to undertake formative assessments and provide teaching at the right level. *Rapor Pendidikan* (National Schools Report) facilitates schools to self-reflect and assess themselves against indicators of disability inclusivity. New regulations pave the way for schools to provide reasonable accommodations for students with disabilities and to access specialists and assistant teaching staff. The *Merdeka Mengajar* (Emancipated Teaching) learning platform allows teachers to access inclusive education training and resources to support differentiated lesson planning and adapted materials for students with disabilities.

Additionally, progress has continued in integrating an improved disability-identification mechanism, the Student Learning Profile (*Profil Belajar Siswa,* or PBS), into the education management information systems in both MoECRT and MoRA. Both ministries are piloting the use of a reading application called Bookbot Indonesia, which supports children with dyslexia and other reading difficulties. This has potential to contribute to the individualised literacy teaching supports required to bridge the literacy gap for children who have been struggling.

However, these systems will result in successful educational outcomes for children with disabilities only if provincial and district education offices support the implementation of these reforms. This includes efforts to test and improve strategies for their implementation; for example, teacher guidance and training is required to ensure that formative assessments have appropriate adjustments and accommodations for students with disabilities and that the curriculum is used effectively for students with cognitive difficulties who are significantly out-of-phase with their classroom peers. Working partnerships are required among provincial and district education offices and teacher training institutions, disability service units, communities,

other ministries and civil society partners, including Organisations of Persons with Disabilities (OPDs) and other non-governmental organisations (NGOs).

Recommendation 3: For provincial and district education offices to support the implementation of central level reforms for expansion of disability-inclusive education. This recommendation proposes action on several fronts:

3.1 *Strengthening partnerships among provincial and district education offices and schools and a range of government, non-government organisations and community-based organisations.* These include the teacher training institutes; organisations of persons with disabilities (OPDs); community-based programs; local government health, social welfare, and village offices; and parents of children with disabilities.

3.2 *Enabling Teaching at the Right Level for students with disabilities by providing advice and support for schools and teachers:*

- To assess the current level of student attainment, which establishes the starting point for teaching and learning. Assessment strategies could include formal assessment (e.g., standardised tests) or informal assessment (e.g., teacher observation to record what the student knows and can do and/or using observation checklists). Where necessary, reasonable accommodations and adjustments should be made to the assessment strategy to provide a fair and reasonable opportunity for each student to demonstrate what they know and can do. Note: Depending on the nature of the disabilit(ies) students may be working towards the same educational outcomes as others of their age, or may be several phases behind where their peers are working. An initial assessment by those administering the assessment may lead to adjustments being made to the assessment instrument to ensure it is focused on each student's current level of attainment;
- To develop and implement a teaching and learning plan that builds on what individual students know and can do. This may take the form of an Individual Education Plan (Program Pendidikan Individual), taking account of individual student's current levels of attainment, goals for the next stage of learning and accommodations and adjustments to be made to assist each student to maximise their learning and progress. Formative assessment strategies, with suitable accommodations and adjustments, should be a key feature of the teaching and learning plan or the IEP (PPI);
- Through expanded teacher training in inclusive education, through partnerships with TTIs and other non-government partners inclusive methods for teaching mathematics; and
- By integrating the role of special supervising teachers (*Guru Pembimbing Khusus*) to improve the learning quality of students with disabilities by collaborating with class/subject teachers and parents, implementing the Individual Education Plan (Program Pendidikan Individual) and supporting provision of appropriate accommodations and adjustments.

3.3 *Ensuring additional efforts to overcome disadvantages for children with disabilities in rural areas.* This may include raising awareness in rural areas and in local languages about the rights to and benefits of early childhood development; intervening in the education for

children with disabilities; linking with village disability identification systems to strengthen early access to services; and linking with PAUD and schools for children with disabilities.

3.4 *Expanding training for Provincial and District Education Offices and their supervisors to enable effective monitoring and support for schools to strengthen disability-inclusive education.* This includes assisting schools with awareness of regulations, resources, and systems to enable provision of additional supports as required for students with disabilities, including accessing assistive devices and technologies, adaptive learning materials, Disability Service Units, specialised human resources, and facilitating the partnerships outlined in 3.1.

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Annex 2: Glossary

Disability	People with disability are defined as those who have a long-term physical, mental, intellectual, or sensory impairment that can, in interaction with various barriers, hinder their full and effective participation in society on an equal basis with others.
Disability inclusion	Disability inclusion refers to the meaningful participation of persons with disabilities in all their diversity, when their rights are promoted, and when their disability-related concerns are addressed in compliance with the Convention on the Rights of People with Disability.
Gender	A social and cultural construct, which distinguishes differences in the attributes of men and women and girls and boys, and accordingly refers to the roles and responsibilities of men and women[17].
Gender equality	The concept that women and men and girls and boys have equal conditions, treatment, and opportunities for realizing their full potential, human rights, and dignity, and for contributing to (and benefitting from) economic, social, cultural, and political development[18].
Identity of the student	Student identity in our study includes gender, disability, their mother tongue language, and whether they attend an urban or rural and remote school. As identities can shape the various experiences of students in the classroom, it is important to understand these to develop inclusive learning environments for all students (https://ctl.stanford.edu/student-identities).
INOVASI panel schools	69 INOVASI panel schools from seven districts (Probolinggo, Sumenep, Bima, West Sumba, Southwest Sumba, Bulungan, and Malinau) in four provinces (West Nusa Tenggara, East Nusa Tenggara, North Kalimantan, and East Java)
MPL SDG for Literacy [19]	**Level 3** = Students performing at level 3 and above were assessed as meeting or exceeding the MPL for SDG 4.1.1a.

[17] UNICEF Gender equality: GLOSSARY OF TERMS AND CONCEPTS (unicef.org)

[18] UNICEF Gender equality: GLOSSARY OF TERMS AND CONCEPTS (unicef.org)

[19] USAID. (2019). Global Proficiency Framework for Reading and Mathematics Grades 2 to 6. http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2019/05/GAML6-REF-16-GLOBALPROFICIENCY-FRAMEWORK.pdf

	Meet the Minimum Proficiency Levels (MPL) SDG means: Students are able to master foundational literacy skills, and to read simple texts fluently and independently according to their age. They are able to find information that is stated explicitly in a text. They are able to provide simple interpretations of key ideas from a text. They are able to give simple personal opinions or judgements about information, events, or actors in a text. **Level 2** = Students meet some but not all of the required proficiencies in the MPL SDG. Students in this level, with additional support targeting a greater range of skills essential to listening and reading comprehension, could meet international benchmarks. **Level 1 =** Students are still performing at pre-primary levels and jave not yet formed essential foundation skills to be able to progress through primary school.
MPL SDG for Numeracy[20]	**Level 4** = students performing at level 4 and above are assessed as meeting or exceeding the MPL for SDG 4.1.1a. Meet the Minimum Proficiency Levels (MPL) SDG means: Students are able to master foundational numeracy skills, to recognize numbers and perform simple mathematical operations, to read simple data display, and to recognize simple spatial shapes and orientations. **Level 3** = Students meet some but not all required proficiencies in the MPL SDG. Students in this level, with additional support targeting a greater range of skills essential to numeracy comprehension, could meet international benchmarks. **Level 2 =** Students meet only a small portion of the required proficiencies in the MPL SDG. **Level 1 =** Students are still performing at pre-primary levels and have not yet formed essential foundation skills to be able to progress through primary school.
School location (urban or rural and remote)	School location is categorised into urban or rural and remote areas based on the Village Development Index (Indeks Desa Membangun) Data published by the Ministry of Villages, Disadvantaged Regions, and Transmigration. The index provides five categories based on the social, economic, and ecological resilience of a geographic area as being either (1) autonomous/developed, (2) advanced, (3) developing, (4) underdeveloped, or (5) very underdeveloped. Urban areas are covered in the first three categories, and the rural and remote areas are covered the last two categories.

[20] Ibid.

Student disability	This category includes children who reported having: a ‘lot of difficulty’ or ‘cannot do at all’ in any domain; or ‘some difficulty’ in both physical and non-physical domains; or had ‘some difficulty’ in at least two or more physical domains (for instance, hearing and speaking, walking and hearing).
Student mother tongue	The main language that the student uses to interact with their families.

Annex 3: Supporting data tables/figures

Figure 1: Number of schools by school type

School Type	Private	Public
Elementary School (SD)	62	433
Elementary Madrasah (MI)	99	18
TOTAL	161	451

Figure 2: Number of students by gender, location, disability status, mother tongue, and school grade

Variables	Male students	Female students	TOTAL
Gender	9,189	9,181	18,370
Location			

Rural	3,951	3,949	7,900
Urban	5,238	5,232	10,470
Students who have disability	604	452	1,056
Mother tongue			
Bahasa Indonesia	3,839	3,974	7,813 (42.5%)
Local language (other than Bahasa Indonesia)	5,350	5,207	10,557 (57.5%)
Grade			
Grade 1	3,060	3,068	6,128
Grade 2	3,066	3,053	6,119
Grade 3	3,063	3,060	6,123

Figure 3: Study at home with the help of parents/guardians (by student gender, disability, and location)

Frequency of learning activity	All	Boys	Girls	Non-disability	Disability	Urban			Rural		
						All	Boys	Girls	All	Boys	Girls
Never	12.9%	13.2%	12.6%	12.8%	14.8%	11.2%	11.8%	10.6%	15.2%	15.1%	15.3%
Rarely (1–4 days a month)	13.6%	13.8%	13.5%	13.6%	13.9%	11.9%	11.9%	11.9%	16.0%	16.4%	15.6%

Often/always (2–5 days a week)	73.5%	73.0%	73.9%	73.6%	71.3%	76.9%	76.4%	77.5%	68.8%	68.6%	69.1%

Figure 4: Source of help provided for learning activities during pandemic (by student gender, disability, and location)

Who most often accompanies / helps you study or do school assignments?	All	Boys	Girls	Non-Disability	Disability	Urban	Rural
Father and mother	2.81%	2.81%	2.82%	2.80%	3.13%	2.92%	2.67%
Only father	8.95%	8.76%	9.15%	9%	8.24%	8.39%	9.71%
Only mother	60.88%	61.36%	60.40%	61.27%	54.36%	65.85%	54.29%
Older sister	12.81%	11.87%	13.76%	12.73%	14.20%	10.37%	16.05%
Older brother	5.02%	5.67%	4.37%	4.88%	7.29%	3.86%	6.56%
Grandfather	0.33%	0.29%	0.36%	0.32%	0.47%	0.22%	0.47%
Grandmother	1.27%	1.43%	1.11%	1.27%	1.33%	1.38%	1.13%
Uncle	0.41%	0.40%	0.41%	0.40%	0.47%	0.39%	0.43%
Aunty	1.80%	1.71%	1.88%	1.78%	2.08%	1.65%	1.99%
Others	0.68%	0.59%	0.76%	0.63%	1.42%	0.81%	0.49%
No one	5%	5.07%	4.92%	4.88%	6.91%	4.14%	6.14%

Figure 5: Parents' education by location

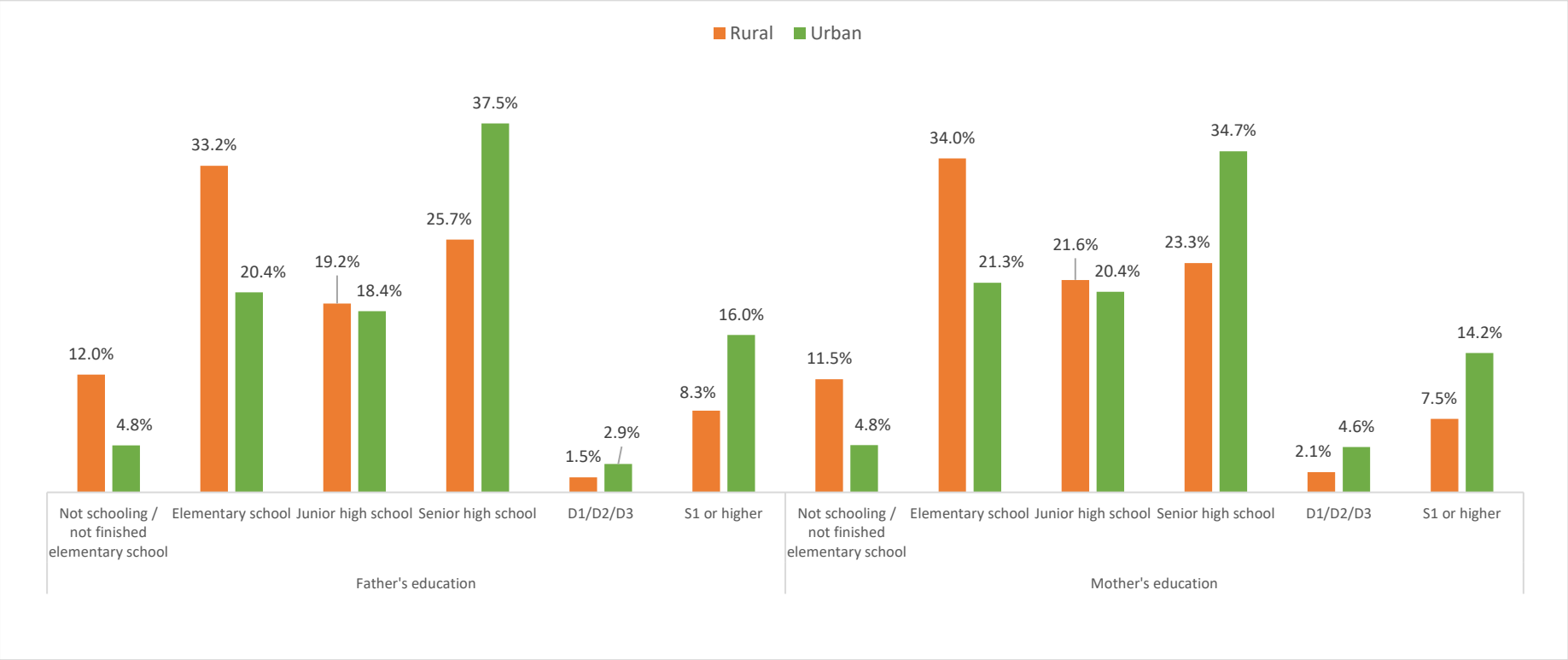


Figure 6: Teacher access to technology during the pandemic by gender and location

	All	Teacher gender				Location			
		Male	Female	Urban	Urban Male	Urban Female	Rural	Rural Male	Rural Female
Laptop/Desktop computer	66.2%	66.7%	66.1%	75.3%	72.4%	75.7%	54.5%	62.0%	52.6%
Mobile (cannot be used to access the internet)	36.2%	43%	34.9%	33.5%	38.8%	32.7%	39.8%	46.4%	38.1%
Smartphone (can be used to access the internet)	94.6%	91%	95.3%	97%	88.8%	98.2%	91.6%	92.8%	91.3%
Access to internet connection	88.5%	84.3%	89.3%	95.2%	88.1%	96.2%	79.9%	81.3%	79.5%
Access to vehicles (for offline learning activities outside school)	85.3%	94.3%	83.6%	87.1%	94.8%	86%	82.9%	94%	80.1%

Figure 7: Teacher perceptions of their ability to conduct distance learning during the pandemic (by teacher gender and location)

Teachers' perceived ability to conduct distance learning during the pandemic		National			LOCATION					
		All	Male	Female	URBAN			RURAL		
					All	Male	Female	All	Male	Female
a. Designing materials for distance learning (e.g.: RPP)	Very Good	3.9%	4.3%	3.9%	5.4%	8.2%	5.0%	2.1%	1.2%	2.3%
	Good	55.3%	49.7%	56.3%	54.2%	41.8%	56.0%	56.6%	56.0%	56.7%
	Enough	30.8%	32.0%	30.5%	33.5%	40.3%	32.5%	27.3%	25.3%	27.8%
	Lacking	9.3%	11.7%	8.9%	6.8%	9.0%	6.5%	12.6%	13.9%	12.2%
	Very lacking	0.7%	2.3%	0.4%	0.1%	0.7%	0.0%	1.5%	3.6%	0.9%

b. Using learning material for distance learning	Very Good	5.4%	6.7%	5.2%	6.8%	11.9%	6.1%	3.7%	2.4%	4%
	Good	58.2%	56.3%	58.6%	59.2%	49.3%	60.7%	57%	62.0%	55.7%
	Enough	25.8%	27%	25.6%	25.9%	29.1%	25.4%	25.7%	25.3%	25.8%
	Lacking	9.6%	8.3%	9.8%	7.8%	9.7%	7.5%	12%	7.2%	13.1%
	Very lacking	0.9%	1.7%	0.8%	0.3%	0.0%	0.3%	1.7%	3%	1.4%
c. Designing formative assessments for students during distance learning	Very Good	3.8%	1.7%	4.2%	5.0%	3.0%	5.3%	2.2%	0.6%	2.6%
	Good	63.7%	59.7%	64.5%	65.6%	56.0%	67%	61.3%	62.7%	61%
	Enough	26.2%	29.7%	25.5%	25.3%	34.3%	24%	27.3%	25.9%	27.7%
	Lacking	5.7%	7.7%	5.3%	4.1%	6.7%	3.7%	7.7%	8.4%	7.5%
	Very lacking	0.6%	1.3%	0.5%	0.0%	0.0%	0.0%	1.5%	2.4%	1.2%
d. Using distance learning applications such as zoom	Very Good	2.6%	2.3%	2.7%	3.8%	5.2%	3.6%	1.1%	0.0%	1.4%
	Good	32.5%	31.7%	32.6%	37.3%	32.8%	38.0%	26.2%	30.7%	25.1%
	Enough	19.3%	20%	19.2%	21.5%	23.9%	21.2%	16.5%	16.9%	16.4%
	Lacking	27.7%	29%	27.4%	25.5%	26.9%	25.3%	30.5%	30.7%	30.4%
	Very lacking	17.9%	17%	18.1%	11.8%	11.2%	11.9%	25.7%	21.7%	26.8%

Figure 8: Student perception of number of homework/assignments given by the teacher during pandemic

Students' perception	All	Boys	Girls	Non-Disability	Disability	Urban	Rural
Too little	19.73%	18.62%	20.84%	19.65%	21.02%	17.99%	22.03%
Enough	46.91%	44.84%	48.99%	47.74%	33.33%	49.28%	43.77%
Too much	33.36%	36.54%	30.17%	32.61%	45.64%	32.72%	34.20%

Figure 9: Support provided by teachers to parents during the pandemic by disability

Forms of support	Parents' perception	Disability status	
		Parents Without Disability Students	Parents with Disability Students
a. clear information and guidance	Enough	75%	64%
	Not enough	16%	21%
	None	9%	15%
b. learning materials	Enough	73%	64%
	Not enough	20%	26%
	None	7%	10%
c. training for parents	Enough	16%	13%
	Not enough	5%	6%
	None	79%	81%

Figure 10: Type of learning activities done by students during pandemic (by gender, disability, and location)

Learning activity type	All	Students' gender		Students' disability status		Location					
		Male	Female	Do not have disability	Have disability	Urban			Rural		
						All	Male	Female	All	Male	Female
Study at home with teachers using online methods (via Zoom, Google Meet, WhatsApp, telephone, etc.)	33.1%	32.7%	33.5%	33.5%	27.0%	45.6%	45.1%	46.0%	16.6%	16.4%	16.8%
Self-study using websites, videos, learning applications (e.g. Rumah belajar, Ruang guru, Sekolah kita, Quipper,and Zenius).	5.5%	5.2%	5.8%	5.5%	5.6%	7.4%	6.8%	7.9%	3.1%	3.1%	3.0%
Self-study using learning programs on television	5.8%	5.6%	5.9%	5.8%	5.7%	6.7%	6.4%	7.0%	4.5%	4.5%	4.5%
Self-study using learning programs on radio.	0.4%	0.5%	0.4%	0.4%	0.8%	0.5%	0.6%	0.4%	0.4%	0.4%	0.3%
Playing games or math game/ counting	27.8%	26.1%	29.5%	28.0%	23.7%	29.5%	27.5%	31.4%	25.6%	24.2%	27.0%

Figure 11: Box plot depicting distribution of abilities for the mathematics domain by grade and gender

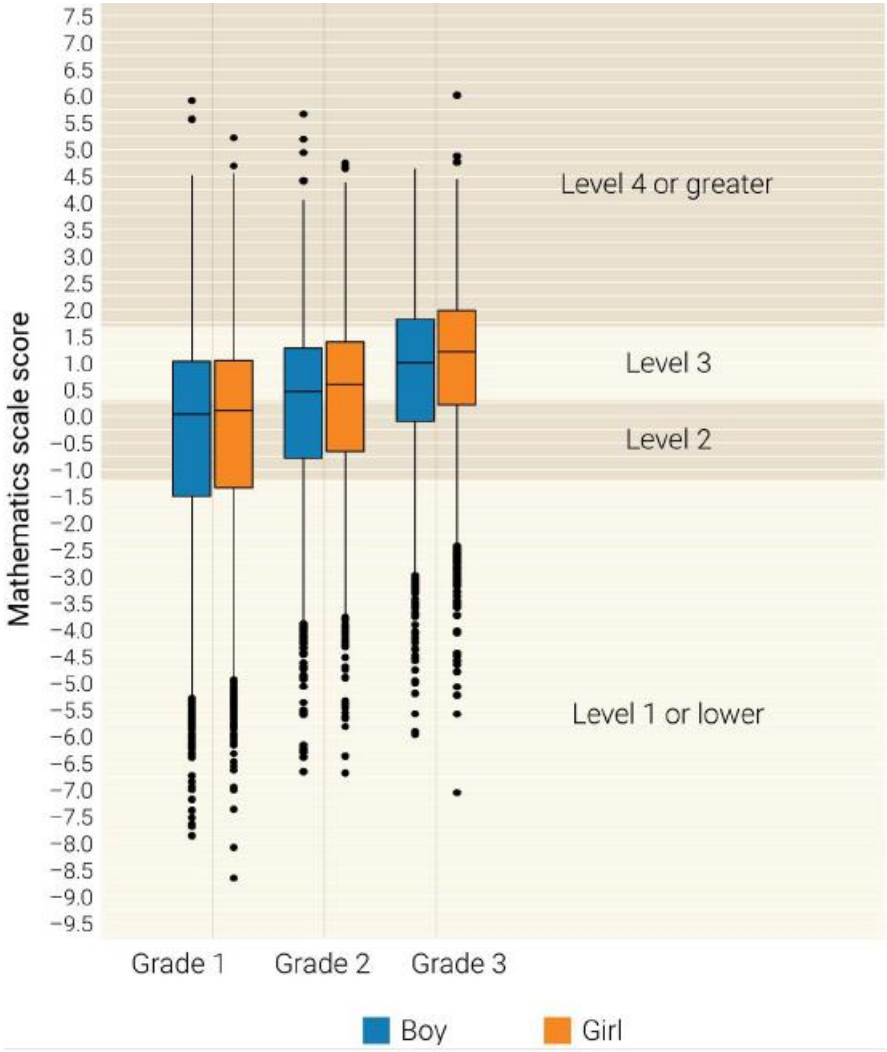
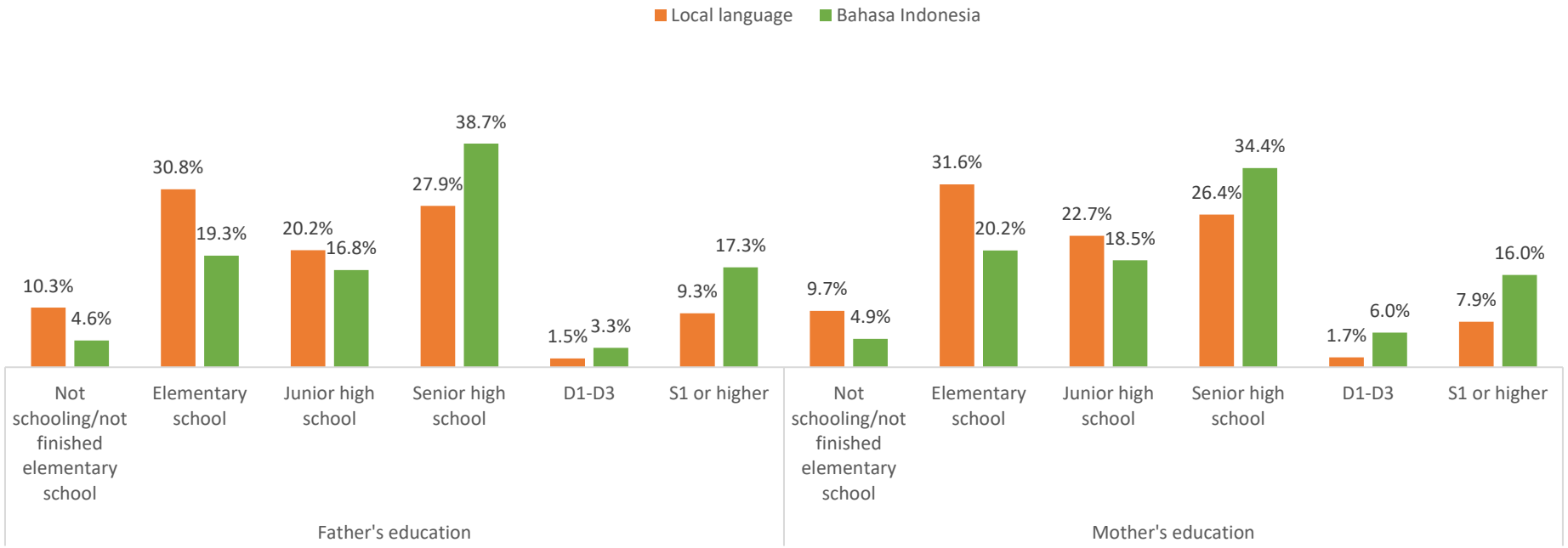


Figure 12: Parents' education (by students' mother tongue)



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