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# LARGE LEARNING GAINS IN POCKETS OF EXTREME POVERTY: EXPERIMENTAL EVIDENCE FROM GUINEA BISSAU

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Large Learning Gains in Pockets of Extreme Poverty: Experimental Evidence from Guinea Bissau

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## ABSTRACT

Children in many extremely poor, remote regions are growing up illiterate and innumerate despite high reported school enrollment ratios. Possible explanations for such poor outcomes include demand – for example, low perceived returns to education compared to opportunity cost; and supply – poor state provision and inability of parents to coordinate and finance better schooling. We conducted a cluster-randomized trial in rural Guinea Bissau to understand the effectiveness and cost of concerted supply-based interventions in such contexts. Our intervention created simple schools offering four years of education to primary-school aged children in lieu of the government. At endline, children receiving the intervention scored 58.1 percentage points better than controls on early grade reading and math tests, demonstrating that the intervention taught children to read and perform basic arithmetic, from a counterfactual condition of very high illiteracy. Our results provide evidence that particularly needy areas may require more concerted, dramatic interventions in education than those usually considered, but that such interventions hold great potential for increasing education levels among the world's poorest people.

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A randomized controlled trials registry entry is available:
https://www.socialscienceregistry.org/trials/3670

## 1. Introduction

Children in many extremely poor, remote regions are growing up illiterate and innumerate despite high reported school enrolment ratios. This "schooling without learning" has many alleged sources, such as insufficient demand for schooling, inadequate schooling materials, and lack of qualified, motivated teachers. This leads to three phenomena: one, a substantial part of the population being illiterate and innumerate; two, for those groups, lower lifetime incomes as a result, and less opportunity to succeed in the growing worlds around them; and three, greater socioeconomic inequality.

In this paper, we report the results of a cluster-randomized controlled trial (RCT) evaluating a supply-based intervention which aims to dramatically increase learning levels in particularly poor, rural areas of the developing world. The intervention provides the early years of primary school in lieu of the government; this entails hiring, training, and monitoring teachers tasked with delivering schooling, from the pre-primary level on to grade 3, to primary-aged children. The intervention uses a bespoke curriculum which includes teacher training materials and teaching and learning materials for both teachers and students. It also employs frequent monitoring and assessment of teachers and children and regular community outreach / involvement. We conducted this RCT in rural areas of Guinea Bissau, one of the poorest and most troubled countries on the planet (da Silva and Oliveira 2017).

The intervention yielded transformative learning gains among children who would otherwise be unlikely to ever achieve literacy and numeracy. After four years of receiving the intervention, children in the intervention group scored 58 percentage points better than children in the control group on a composite score of tests of mathematics and reading ability. This difference comprises large gains in both math and reading ability across the difficulty spectrum,

from letter and number recognition to reading comprehension and two-digit subtraction with borrowing. A very high proportion of control children had zero scores on these tests, suggesting that the counterfactual is functional illiteracy and innumeracy for many children.

These gains are dramatic in absolute as well as relative terms, with intervention children from rural Guinea Bissau exhibiting literacy and numeracy skills similar to children in much wealthier countries with functioning school systems. A commonly-used metric for measuring reading skill among early grade children is oral reading fluency (ORF), measured by the correct number of words read per minute from a set passage. Endline ORF of children randomized to receive the intervention was 75 correct words per minute. This compares favorably to the ORF measured in a 2014 national assessment of third grade students in the Philippines and is similar to that of the (much wealthier) Latin American countries who have used similar tests.[1]

Our approach has important common traits with the influential studies of ambitious, highly-resourced interventions in the US designed to address inequality and raise outcomes for the less fortunate. The most famous of these are the Perry Pre-school and Abecedarian programs (Campbell and Ramey 1994; 1995; Heckman, Pinto, and Savelyev 2013). There are three main similarities: first, these programs targeted needy or at-risk children. Second, they provided a suite of services, including a comprehensive educational intervention which comprised well-trained and well-supervised teachers, a structured curriculum, and family outreach. Finally, similar to our program, those programs were also relatively expensive, but demonstrated a positive return on investment above that of equity (Heckman et al. 2010). Overall, we argue that our study provides proof of concept that a resource-intensive intervention can generate large gains in a challenging setting, but perhaps with a model that might be difficult to scale or replicate. This is

[1] Philippines: https://earlygradereadingbarometer.org/overview, accessed on October 28, 2019. Latin America: the average grade three ORF is 73 words per minute in English, and 79 in Spanish according to USAID (2019)

reflected in other work which documents that achieving scalable impacts in education is difficult, especially among highly effective interventions (Banerjee et al. 2017; Bold et al. 2018).

Our approach also parallels research on the efficacy of charter schools and "model schools" in the US (Angrist, Pathak, and Walters 2013; Dobbie and Fryer Jr 2013). These studies show that new, non-governmental schools which combine a suite of teaching practices and other components known to be effective can substantially improve learning, relative to traditional public schools. Furthermore, gains are largest in contexts, similar to ours, where the status quo option is of particularly low quality (Chabrier, Cohodes, and Oreopoulos 2016).

Our findings contribute to ongoing efforts to identify effective means to increase learning levels, and welfare more generally, in the poorest parts of the world (McEwan 2015; Glewwe and Muralidharan 2016). A growing set of studies shows the potential for targeted interventions to achieve large gains in settings with low learning levels (c.f., Burde and Linden 2012; Muralidharan, Singh, and Ganimian 2019). We advance this work by showing the success of a concerted supply-based intervention –which delivered all aspects of early primary education instead of the government – in achieving these goals in a particularly challenging setting. Our approach mirrors the use of "bundled" interventions to tackle otherwise intractable problems, such as extreme poverty (Banerjee et al. 2015).

The rest of our paper proceeds as follows. Section 2 describes the context we work in, the challenges we encountered in initial implementation, and the final intervention design. Section 3 describes our research design. Section 4 presents our main results. Section 5 discusses our results in the context of other studies of education in disadvantaged areas and Section 6 concludes.

## 2. Background and intervention details

In this section, we describe the context in which the study took place, the initial challenges faced in early attempts to implement the intervention, and the final intervention we study.

### *2.1 Context*

Guinea Bissau is a Lusophone country in West Africa with a population of approximately 1.8 million people. Once a Portuguese colony, it attained independence in 1974. Since then, it has been beset by political and economic troubles. There have been four coups d'etat since its founding. Until 2018, there had been no elected president who had completed a full five-year term. It is one of the poorest countries in the world both on per-capita GDP terms and according to the UN's Human Development Index (da Silva and Oliveira 2017). Aside from some parts of the capital, there is no national power or water grid. The economy is largely dependent on agriculture, primarily cashews. Because of its geographic location and low state capacity, Guinea Bissau has been used as a way station for the transportation of cocaine to Europe, adding to corruption and governance issues (da Silva and Oliveira 2017). The official language of the country is Portuguese but the dominant language is Crioulo – a hybrid of Portuguese and several local tongues – which is spoken as a first or second language by the majority of the population.

In Figure A.1 we show a map of the country and our study areas. Our study took place in villages in the Quinara and Tombali regions in the southwest of the country. These regions were selected for two reasons: first, the government requested that we work in the two regions as they were less well-served by existing NGO work; second, Boone et al. (2014) identified them as the regions with the lowest learning levels in the country.

*2.2 Education, literacy, and numeracy in Guinea Bissau*

Guinea Bissau's official education system comprises three levels: nine years of compulsory, basic education (four years of lower primary, called the "first cycle"; two years of upper primary, or second cycle; and three years of middle school, or third cycle), followed by three years of elective secondary school and then higher education. The official ages for primary school are currently 6 to 12; they were 7 to 13 at the start of our trial. As in many developing countries, the age at which children actually enter school varies widely.

Boone et al. (2014) report the results of a nationally representative survey of schools, families, and children across Guinea Bissau in 2010.[2] They found very low education levels among parents, with much lower levels for mothers than for fathers: among fathers, approximately 40 percent had ever been to school, and 24 percent were able to read a printed paragraph. Among mothers, only nine percent had ever been to school, and 2.8 percent were able to read the same paragraph. Among children, however, the survey found substantial enrolment in school: approximately 85 percent of interviewed children between the ages of 7 and 17 had been to school, and 70 percent were currently enrolled. Unfortunately, these high enrolments did not translate to learning. Among all surveyed children in this age range, fewer than one third could recognize a single digit number or read a single, simple Portuguese word.

Parents appeared to recognize the low quality of the education their children were getting, and in the survey they expressed demand for higher quality schools. Of the over 8,500 parents and caregivers interviewed, more than 98 percent asserted that they would be willing to pay, on average, approximately 20 percent of household income per school-aged child, for better schooling for the child. The authors' interpretation of the patterns in their data is that there is

[2] Excluding the islands of Bolama and Bilagós.

probably substantial demand in rural Guinea Bissau for quality schooling, but some combination of income, credit market failures, capacity, and collective action constraints impede its provision. Even so, the extremely poor educational outcomes in these regions – regardless of the type of schools – suggests that either demand or supply could be the key reason that children grow up mostly illiterate and innumerate. These findings motivated the current study.

*2.3 Status quo provision of education in study area*

Guinea Bissau is often considered a "failed state" because of its frequent coups, highly irregular payment of its civil servants, and the absence of many basic government services. Education is one such service, and the reach of government schools in most areas, including our study area, is uneven and erratic. At baseline, only half of schools in our trial area were run by the government, with the rest run by either the local community (35%) or an NGO or other private organization (15%). Ostensibly, children are meant to attend school for four hours per day, five days per week, nine months out of the year. In practice, government schools were open less frequently in our study area because of teacher strikes in these schools; according to official data, strikes disrupted roughly 25% of school days for government schools during our study. Not all official strikes made their way to our rural areas, however, and roughly half of the schools in the control area were not run by the government and so were not affected.

While statistical data from the government and other sources is sparse, Boone et al. (2014) also provide a thorough description of the "status quo" of education provision in rural Guinea Bissau. The study visited schools to collect data on teachers (presence and demographic data), as well as infrastructure data from a representative sample of 351 schools and 781 teachers. The authors found that 86 percent of visited schools were open, with teachers present

and teaching, and 72 percent of enrolled children were present when the schools were visited.[3] These schools all had chalkboards and roughly one textbook for every 30 children. The average pupil:teacher ratio (for combined grades 1-4, as many schools have combined classrooms) was 63.4, with a high standard deviation (24.4). Boone et al. (2014) found very low correlation between either teacher qualifications or school resources and child learning levels, corroborating prior studies of this correlation in schools in the country (Lepri 1988; Daun 1997).

Overall, these areas are characterized by extremely low learning levels despite the fact that, barring strikes, schools are usually open and teacher and student absenteeism is relatively low. Although Boone et al. (2014) set out to find examples of success in these areas, it found no such examples. A main conclusion of their paper, which also motivated this study, is that in Guinea Bissau "the public sector cannot be relied on to provide regular services due to political instability, institutional capacity, and a political system that does not serve the very poor."

*2.4 Intervention design*

Initially, we recruited a group of nearly 50 prospective "untrained" teachers to deliver the intervention and trained them for one year.[4] At the end of this year of training, the trainees reneged on their commitments to us, demanding a dramatic change in the agreed-upon employment conditions – including a salary increase to a level equivalent to that of the education ministry's director-general – and sued us in the country's courts. While the government sided with us and these individuals' suit was determined to be without merit, we were forced to postpone the study until the court case was resolved. The case was ultimately resolved in our

[3] This level of teacher absenteeism is lower than found in Uganda in Chaudhury et al. (2006) and at the lower end of the range of what Blimpo, Evans, and Lahire (2011) observe in Gambia.
[4] Originally this study was part of a larger effort to study the generalizability of a para teacher intervention in India (Lakshminarayana et al. 2013), run in tandem with a similar effort in The Gambia (Eble et al. 2019)

favor, but resulted in our loss of all 48 selected candidates. In Appendix A, we explain this experience in greater detail.

We then had to begin the search for – and training of – candidates anew, and we decided to hire certified teachers instead of untrained ones. The logic behind this decision was twofold: one, these teachers required less training and so the extra training we gave them would be less likely to cause them to demand dramatically higher compensation; two, it would allow us to start the intervention more promptly. Using this strategy, we were able to identify fewer willing and suitable candidates. As we describe in the next section, this led us to change our randomization strategy from a 1:1 control:intervention cluster ratio to a 2:1 ratio.

In villages randomly selected to receive the intervention, we provided four years of school – first, a year of pre-primary school focusing on Portuguese language acquisition, then grades 1-3 of the national primary education curriculum. This schooling was meant to take the place of official instruction in these years usually delivered by Guinea Bissau's government educational system. We included the year of pre-primary because the national curriculum is in Portuguese. To the best of our knowledge, only a trivially small number of children in our study area had any knowledge of the language at the time of school entry.

We aimed to have 25 to 30 students per class, resulting in a total of 24 academic classes across the 16 intervention villages in our study. Classes were held in spaces provided and furnished by each community. This request for support from the community was intended to promote community backing of the intervention and to increase parent involvement in the formal education of their children and the management of the academic classes.

The curriculum of these classes was designed to maximize child participation throughout the day. The overall intervention strategy was inspired by the experience, design, tools, and

teaching methods of an early primary school intervention designed by the Naandi Foundation and evaluated in a prior RCT in India (Lakshminarayana et al. 2013).[5] Final instructional tools were developed in consultation and with review by the ministry of education in Guinea Bissau, covering the content in the official Guinea Bissau primary curriculum. These tools included daily lesson plans, a teacher handbook, child workbooks, and other grade-specific didactic materials.

Teachers were recruited with the requirement that they be able to speak and teach in the local language spoken in the community in which they were assigned to work. Once hired, they received two types of training: first, 10 weeks of initial pre-service training in how to implement our intervention; second, four weeks of in-service training conducted annually before the beginning of each new academic year to prepare teachers to teach the next year's content. These emphasized the use of relevant, grade-appropriate teaching strategies as well as use of the intervention's bespoke teaching and learning materials. In each village, the intervention also hired a local adult who spoke the most prominent local language. This person assisted the teacher for the first four months of the intervention to assist with classroom management and children's transition from their use of their mother tongue to Portuguese.

Teachers then conducted classes for five hours per day, five days a week, plus additional hours when required by the curriculum plan or teachers' assessments of child learning needs. This occurred for the duration of the study, nine months per year over the period February 2014 to December 2017, comprising 730 school days in total. Teachers were paid salaries of 200,000 Central African Francs (or CFA; roughly, US $345) per year, with an additional per-diem to

[5] This study, along with the study reported in Eble et al. (2019), were a part of larger efforts to attempt to replicate the success of Lakshminarayana et al. (2013) in newer, more challenging contexts. In Eble et al. (2019), which took place in The Gambia, the authors used the after-school supplementary lesson design of the intervention studied in Lakshminarayana et al (2013). In Guinea Bissau, we shifted our strategy to providing regular schooling, instead of the state, in light of the frequent, prolonged disruptions to state-provided education.

compensate them for the difficulty of living in the villages in which they worked (1,500 CFA, or US $2.59, per day).[6]

Throughout the trial, the intervention team monitored both teachers' work and children's learning in order to track progress and ensure that learning was progressing as planned. Monitors – a separate cadre of staff recruited by the intervention arm – visited each academic class for two days each month. This amounted to roughly 18 days of classroom observation in each class, each year. The team conducted monthly, two-day review meetings for teachers and monitors. In these meetings, teachers received feedback and training based on the evidence collected during that month's classroom observations/monitoring. These meetings were also used to reinforce the intervention's main methodology and teaching strategies, focusing on concrete examples of what to do, how to do it, and what not to do. Each month, the intervention team assessed some children on the curriculum in their current grade, and conducted larger-scale evaluations of child learning every six months.

Implementing this intervention was intensely challenging. We chose to work in small, isolated villages; the rugged terrain, long distances between villages, and poor state of the roads between them made frequent, spontaneous monitoring difficult, particularly during the rainy season when some villages become inaccessible. These villages lacked internet connections and reading materials, and had few or no literate residents who might reinforce child learning. This also made it difficult to recruit qualified teachers, who were required to reside in the village.[7] Further complicating literacy efforts, multiple languages are spoken in these regions, none of which have their own script. Finally, none of the parents enumerated were native speakers of

[6] This was raised midway through the trial to be a 250,000 salary and 2,500 per diem, respectively.
[7] Although recruitment of teachers was difficult, once recruited, all teachers remained in the project until its completion.

Portuguese, the official language of the curriculum and of the intervention; this also restricted children's ability to practice and apply the lessons from class outside of school.

## 3. Research design

This section describes our research design, including the study population, our sample size/power calculations, the nature of the data collected, and the pre-specified (relative to unblinding of the data) analysis plan.

### *3.1 Study design*

In the first screening of villages for eligibility, we began with all four hundred and thirty-nine villages in the Quinara and Tombali regions with between 50 and 400 households according to the Guinea Bissau National Institute of the Census.[8] We used existing map information and Quantum GIS (version 1.7.2) to select villages that were at least nine kilometers apart from each other to avoid risks of spillover from one village to another. With this method we pre-selected 49 villages for enumeration, along with a set of backups should there be need for replacement.[9]

We then conducted field visits to record the GPS points of these villages and confirm whether they met the following three eligibility criteria for inclusion in our study: i) the village had between 50 and 400 households; ii) the village was reachable by land during the country's dry season; and iii) the village had no other NGO-administered education program taking place. Within these villages, our eligibility criteria for enrolling children in the study were that: i) the child was born between January 2007 and September 2008; ii) the child was resident in an eligible village; iii) the child did not have any serious physical or mental conditions that may

[8] In this initial screening we also included villages for which information on the number of households was missing.
[9] As described in Section 2, because of the small number of trained teachers we could ultimately hire, we decided upon a sample of 49 villages, with a 2:1 control:intervention ratio, meaning that 16 villages would be randomly assigned to receive the intervention.

have impaired learning, i.e., severe developmental handicaps; and iv) the child's parents gave consent to participate in the study.

We further restricted eligibility to villages which had at least 20 eligible children. After the initial village visits to confirm eligibility, four of the 49 pre-selected villages had fewer than 20 eligible children and therefore were not included; these villages were replaced with other villages from the list of backups. We then enrolled these final 49 villages, containing a total of 2,112 eligible children, for participation in our study.[10] Given the difficulty of finding qualified teachers after the loss of our initial pool described in the previous section, we switched from a 1:1 control:intervention cluster ratio to a 2:1 ratio to ensure that we only worked in as many villages as we could find qualified teachers for. Our final sample comprised 16 intervention villages and 33 control villages.

We conducted randomization by computer, stratifying at the village level based on a composite variable comprising a weighted average of several indicators: the village's distance to the nearest road, the highest grade taught by the local school (in the one case where the village did not have a school, we set this to zero), the number of households in the village, the proportion of mothers speaking Crioulo in the village, and the third quartile of mothers' educational attainment in the village. We selected these variables on the assumption that they would be correlated with the primary outcome, as shown in Boone et al. (2014). The results of our cluster analysis suggested that randomizing within two strata were sufficient.[11] This led to the generation of one stratum with 32 villages, in which villages were randomized 2:1 to control and intervention status, and another stratum with 17 villages and the same randomization profile.

[10] While the sample size is smaller than we initially planned, it is consistent with or somewhat larger than the sample size of studies of other hard-to-reach populations, e.g., Burde and Linden's (2012) study of community schools in Afghanistan.

[11] The cluster analysis was conducted in SAS Software version 9.3, using the command "PROC CLUSTER."

From December 2012 to April 2013, we conducted our baseline enumeration for the purposes of enrolling children into the study. The mean number of enumerated children per village was 43. To conduct our sample size calculation, we took attrition figures from a study of child health in the country, which suggested roughly 17% loss to follow-up over the course of the study (Mann et al. 2009). Using this, we expected an average of 35 children per village to be present for the endline test, and thus contribute to the primary outcome.

This led to the following power calculation, conducted before commencing randomization: a study population of 49 villages, with an average of 35 eligible children per village and a 2:1 control:intervention randomization ratio, provides 92% power to detect a difference in test scores of at least 0.25 SD in a two-sided test with a five percent significance level, assuming an intra-cluster coefficient of 0.03. In Appendix Table A.1 we show similar calculations for different scenarios (greater loss to follow-up and a 1:1 control:intervention ratio). We registered our statistical pre-analysis plan (also known as an SAP or PAP) at www.socialscienceregistry.com prior to unblinding of the data.[12]

While the study was unblinded to participants – it was impossible to prevent parents from knowing whether or not they were in a village that was receiving materials and teaching support – the research team that conducted the surveys and tested the children were not given information on which villages were in each arm. Furthermore, these staff were closely monitored to ensure that data collection procedures were consistent across all villages.

In Tables 1 and 2, we provide summary statistics at the village and child level, respectively, showing characteristics separately by whether the village/child is in the intervention or control group. Relative to intervention villages, control villages tended to be slightly more

[12] RCT ID: AEARCTR-0003670

remote and larger in population. For the most part, children in the intervention and control arms were quite similar. At the bottom of each table, we conduct a test for the joint significance of these characteristics in predicting randomization status, as in Bruhn and McKenzie (2009).

**Table 1. Baseline cluster characteristics**

| Variable | (1) Intervention | (2) Control | (3) Difference |
|---|---|---|---|
| Overall distance to a main road* in km (distance=0 if village has a road) | 7.88 | 8.52 | -0.64 |
| Randomized children: mean (SD) | 40.56 (19.12) | 44.33 (23.59) | 3.77 |
| *Predominant ethnic group* | | | |
| Balanta | 25% (4) | 51.5% (17) | -21.5% |
| Fula | 25% (4) | 15.2% (5) | 9.8% |
| Beafada | 25% (4) | 24.2% (8) | 0.8% |
| Other | 25% (4) | 9.1% (3) | 15.9% |
| Cluster size (number of households): mean (SD) | 117.31 (47.36) | 128.85 (74.59) | 11.54 |
| Number of villages | 16 | 33 | -- |
| *F-statistic for test of joint significance (p-value)* | -- | -- | 1.51 (0.199) |

**Table 1 notes:** this table shows baseline characteristics for the villages in our trial, separately by treatment group and the raw difference between these values.*: Main road is defined as a road that is connected to at least one peri-urban or urban area via regular public transport.

### *3.2 Primary outcome and analysis methods*

The pre-specified primary outcome of our study is the child's "composite score." This is the arithmetic mean of the child's scores on EGRA an EGMA tests, administered sequentially, to each enrolled child present in the village at time of testing in November and December of 2017.[13] EGRA and EGMA tests assess early grade reading and math ability, respectively

[13] Our aggregation of EGRA and EGMA tests into a composite score was chosen for simplicity as a single primary outcome, and for consistency with related work on delivering educational interventions to other deprived areas (Lakshminarayana et al. 2013; McEwan 2015; Evans and Popova 2016; Eble et al. 2019). We note that this method of aggregation is a departure from conventional use of EGRA and EGMA scores.

**Table 2. Baseline child characteristics**

| Variable | (1) Intervention | (2) Control | (3) Difference |
|---|---|---|---|
| Child is female | 49.15% (319) | 48.60% (711) | 0.55% |
| *Identity of the interviewed caregiver for the child* | | | |
| Mother | 49.77% (323) | 51.26% (750) | -1.49% |
| Father | 16.02% (104) | 18.87% (276) | -2.85% |
| Grandmother | 10.32% (67) | 10.39% (152) | -0.07% |
| Grandfather | 2.00% (13) | 0.96% (14) | 1.04% |
| Aunt | 11.71% (76) | 7.52% (110) | 4.19% |
| Uncle | 3.39% (22) | 4.03% (59) | -0.64% |
| Other | 6.78% (44) | 6.97% (102) | -0.19% |
| *Mother's education* | | | |
| No education | 66.10% (429) | 71.16% (1,041) | -5.06% |
| Grades 1 to 4 | 22.96% (149) | 18.80% (275) | 4.16% |
| Grades 5 to 10 | 7.86% (51) | 4.99% (73) | 2.87% |
| Grades 11+ | 0.31% (2) | 0.48% (7) | -0.17% |
| Don't know | 2.62% (17) | 4.31% (63) | -1.69% |
| *Father's education* | | | |
| No education | 28.35% (184) | 30.69% (449) | -2.34% |
| Grades 1 to 4 | 16.18% (105) | 19.62% (287) | -3.34% |
| Grades 5 to 10 | 18.95% (123) | 17.02% (249) | 1.93% |
| Grades 11+ | 4.01% (26) | 2.12% (31) | 1.89% |
| Don't know | 29.28% (190) | 29.12% (426) | 0.17% |
| Child's age at baseline (sd)* | 4.81 (0.58) | 4.76 (0.58) | 0.05 |
| Number of observations | 649 | 1463 | -- |
| *F-statistic for test of joint significance (p-value)* | -- | -- | 1.15 (0.334) |

**Table 2 notes:** this table shows baseline characteristics (percent, with corresponding number in parentheses) for the children in the villages in our trial, separately by treatment group, and the raw difference between these values. For age at baseline, mean age is reported, with the number in parentheses showing the within treatment group standard deviation. For mother's education, one observation is missing from the intervention and four from the controls. For father's education, 21 observations are missing from the intervention and controls, respectively. *: Due to the paucity of official birth or health records, we only have precise child age for 200 intervention children and 332 control children. To calculate the F-statistic, we replace these missing values with an arbitrary number not equal to any of the observed values and add a dummy for missing age. This estimate is robust to alternative choices of the arbitrary number.

(Platas et al. 2014; Dubeck and Gove 2015). They are administered orally, one-on-one between instructor and child. We chose them to serve as our primary outcome because they are particularly sensitive in measuring small differences in ability among children who have very

low levels of learning, such as those in many parts of our trial area. Each test paper has several different subtasks, evaluating a different skill or competency. In Table A.2, we describe the nature of each subtask (the full test papers we used are given in Appendix B). In line with other work using EGRA and EGMA tests, we also present individual test scores, subtask scores, zero scores, and fluency measures (Platas et al. 2014; Dubeck and Gove 2015).

For our primary analysis, we use a linear regression to estimate the child-level difference between intervention and control groups in the primary outcome, controlling for the stratification factor used in the randomization and nothing else. In all analyses we report robust standard errors, clustering at the village level. Secondary analyses extend this model to (separately) investigate interactions by a series of prespecified subgroups. For secondary outcomes that are continuous, we also use a linear model. For those that are dichotomous (such as whether the child was enrolled in school), we show both "adjusted" differences from a linear probability model (i.e., the estimated coefficient for the intervention variable from the regression) and odds ratios from our (pre-specified) logit model. To account for bias from potential differential attrition between groups, we calculate lee bounds (Lee 2009) for our primary outcome and the individual EGRA and EGMA scores.

*3.3 Attrition and adherence*

We next describe the flow of participants through the trial. Table 3 presents data on whether enrolled children were present in their village at the trial's midline survey and again at the endline survey. We observe roughly 13 percent attrition at midline (in the 2014/15 school year), and roughly 20 percent attrition at endline, with greater attrition from the control arm than from the intervention arm. We show the broader flow via a CONSORT-style diagram, in Figure 1 (M. K. Campbell et al. 2012). We also present data on how frequently children assigned to the

## Table 3. Children resident in study village (migration)

| Year residence measured | (1) Intervention | (2) Control | (3) Adjusted Difference [CI] | (4) p-value |
|---|---|---|---|---|
| *Midline (late 2014- early 2015)*<br>N: I=648; C=1,462 | 89.04%<br>(577) | 84.95%<br>(1,242) | 4.51%<br>[0.70, 8.31] | 0.025 |
| *Endline (early 2017)*<br>N: I=646, C=1,455 | 87.77%<br>(567) | 75.19%<br>(1,094) | 12.53%<br>[8.13, 16.93] | <0.001 |

**Table 3 notes:** columns 1 and 2 shows the group-specific proportion of children whom we observed at two stages of the trial – at the time of a midline survey in late 2014/early 2015, and at the endline survey in early 2017, with the \ number of observations shown in parentheses below. Column 3 shows the "adjusted" difference estimated using our main estimating equation (i.e., the coefficient on the intervention variable in the linear regression described in the previous section), along with its confidence interval, and column 4 shows the p-value of a test of the null that the adjusted difference is zero. At midline, 7 observations are missing from the intervention group and 13 from the control group. At endline, 14 are missing from the intervention group and 23 from the control group.

## Figure 1. Flow of participants through the study

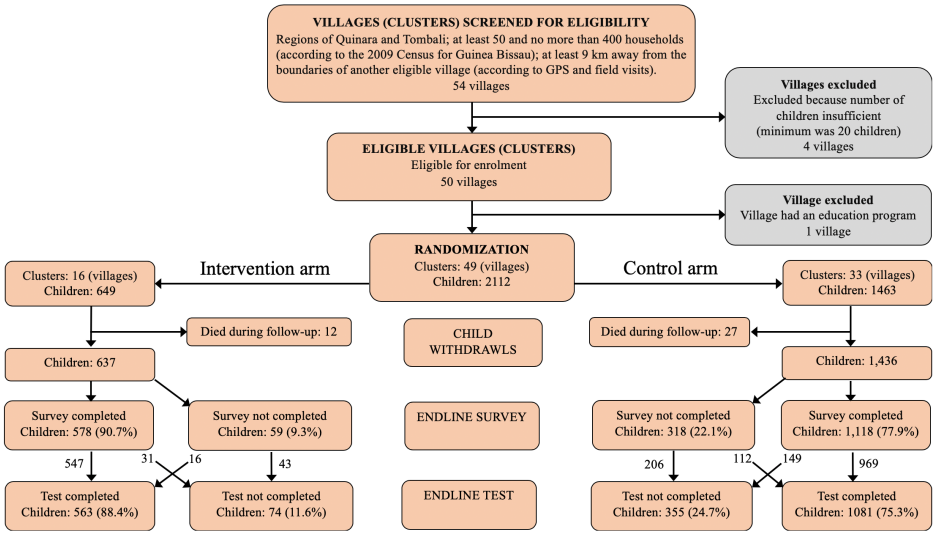


**Figure 1 notes:** this figure shows how participants (villages and children) flowed through the trial, from screening for eligibility to participation in the endline survey and test.

intervention attended the intervention classes in Table A.3. The average of all intervention children's attendance in intervention classes is above 80%, and about nine percent of intervention children attended no intervention classes.

## 4. Main results

In this section, we present our pre-specified empirical analyses describing the main results of our study. We begin with the primary outcome – the composite test score – and then present comparisons by test (reading or math) and subtasks within each test. We then analyze heterogeneity in these results, the intervention's impact on enrollment in school and attendance, and spillover effects to the child's siblings.

### *4.1 Primary outcome*

We show our primary outcome, alongside the secondary outcomes for overall math and reading scores, in Table 4. We observe a very large difference in composite test scores between children in the control and intervention arms at the end of our study. The control child mean score was 11.2%; for intervention children, this mean is 70.5%, or a 58.1 percentage point adjusted difference.[14] A common learning metric in similar studies is to use the standard deviation of the control group as a scale factor. In our setting, this is uninformative given the extremely low learning levels of the control group.[15] We show the distribution of test scores of the two groups in Figure 2. Decomposing the composite score into its reading and math components, we observe large differences in both tests, although they are larger in reading (6.8% correct vs. 72.5%) than in math (15.6% correct vs. 68.5%). All differences are statistically significant ($p<.001$). To bound the potential impact of differential attrition on our primary outcome estimates, we calculate Lee bounds and show them in column 5 (Lee 2009). Because our randomization was conducted with a small number of clusters, we also present finite sample randomization

[14] The adjusted difference is the intervention-control difference for a given variable after controlling for stratification variables as pre-specified for our main analysis; equivalently, this is the regression coefficient on the intervention using our main regression specification.

[15] Were we to use the control SD as a scale factor, the 58.1 percent difference in scores would correspond to a 5.31 SD difference in test scores between the two groups.

## Table 4. EGRA and EGMA total scores

| Variable | (1) Intervention (SD) | (2) Control (SD) | (3) Adjusted difference (CI) | (4) Conven-tional p-value | (5) Lee Bounds (SE) | (6) RI finite sample p-value |
|---|---|---|---|---|---|---|
| Composite test score | 70.48 (15.35) | 11.21 (10.93) | 58.14 (55.63, 60.65) | p<0.001 | L: 55.04 (1.01) U: 63.20 (0.91) | p<0.001 |
| Math score | 68.48 (16.55) | 15.58 (14.82) | 51.85 (48.27, 55.43) | p<0.001 | L: 48.87 (1.11) U: 57.67 (1.04) | p<0.001 |
| Reading score | 72.48 (17.07) | 6.84 (8.85) | 64.44 (62.52, 66.36) | p<0.001 | L: 60.57 (1.11) U: 69.73 (0.97) | p<0.001 |
| Observations | 563 | 1,081 | -- | -- | -- | -- |

**Table 4 notes:** columns 1 and 2 show the group-specific mean of the test score (either composite, math, or reading) with the group-specific SD in parentheses below. Column 3 shows adjusted difference between the two groups (i.e., the coefficient on the intervention variable in a linear regression, estimated with the inclusion of a control for the stratum variable) with the confidence interval in parentheses below, clustering standard errors at the village level. Column 4 shows the p-value of the test that this difference is equal to zero. Column 5 shows lee bounds on the estimate in column 3, accounting for the possibility that differential attrition affects our estimates, and column 6 shows exact randomization inference p-values of the adjusted difference to account for the potential that the small number of clusters contributed to the effect sizes we measure.

## Figure 2. Distribution of test scores, by treatment group

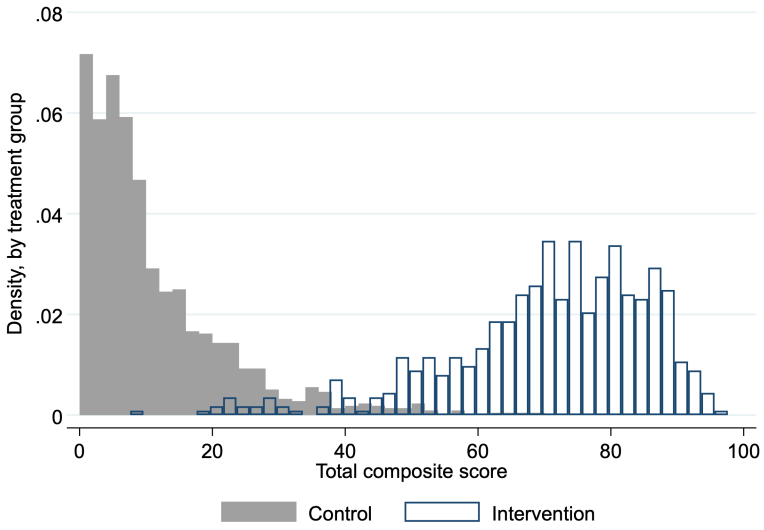


**Figure 2 notes:** this figure shows the distribution of the composite test score for the control and intervention groups, separately, for all children who took the endline test.

inference p-values in column 6. These yield strong evidence that the control-intervention test score differences we estimate are not likely to be the result of differential attrition or chance.

*4.2 Reading*

In this section, we describe the results of the EGRA test in greater detail. These are shown in Table 5. In this table, we show three scores for each subtask: i) the average percent correct, ii), for timed subtasks, the fluency scores, and iii) the percent of children with a zero score.

**Table 5. EGRA subtasks**

| | *Percent correct* | | *Fluency scores* | | *Percent with zero score* | |
|---|---|---|---|---|---|---|
| **Subtask** | **Intervention** | **Control** | **Intervention** | **Control** | **Intervention** | **Control** |
| Letter recognition (1) | 68.3% | 11.5% | 68.7 | 11.4 | 0.0% | 35.2% |
| Initial sound recognition (2) | 63.1% | 20.9% | --- | --- | 3.7% | 43.0% |
| Invented-word reading (3) | 58.0% | 2.3% | 29.3 | 1.2 | 1.6% | 90.6% |
| Familiar word reading (4) | 79.1% | 2.7% | 45.5 | 1.3 | 1.2% | 88.8% |
| Oral reading fluency* (5a) | 86.9% | 4.3% | 75.1 | 2.9 | 0.2% | 59.1% |
| Reading comprehension (5b) | 72.3% | 1.1% | --- | --- | 2.8% | 95.9% |
| Listening comprehension (6) | 79.7% | 5.1% | --- | --- | 6.2% | 89.2% |

**Table 5 notes:** this table shows children's scores on the individual components of the reading test, separately by treatment group. The number in parentheses next to each subtask corresponds to the subtask number given in Table A.2. There are 563 observations in the intervention group and 1,081 observations in the control group. *: The lower proportion of control group zero scores on subtask 5a is a result of the fact that the first question in this subtask happened to be unusually easy. The question asks the child to read the Portuguese word "O," equivalent to the English article "the," in the sentence "O macaco convidou a sua amiga…" Because O is also a letter, this question is substantially less difficult than the questions asking children to read familiar or made-up words in subtasks 3 and 4.

Intervention children substantially outperformed control children in reading: for all subtasks, the control-intervention difference is at least 42 percentage points (out of 100). Children in the intervention group demonstrated reading skill mastery across subtasks of all

difficulty levels. They were able to correctly read more than two thirds of the letters presented to them (under a one minute time limit). For familiar word reading, the mean intervention child read 79 percent of the 50 words presented correctly in one minute. For connected text reading, the intervention children achieve a mean reading fluency of 75 words per minute, which is higher than the defined reading proficiency benchmark for Grade 3 in most of the EGRA countries (RTI International 2017). For the untimed tasks, the pattern was roughly the same. In the subtask measuring children's comprehension of a connected text, the mean score for intervention children was 72% of questions answered correctly. For the control group, it was one percent.

Another meaningful comparison in EGRA- and EGMA-style tests is the proportion of children with zero correct answers (i.e., "zero scores") in each subtask. We show this in the two right-most columns of Table 5. These data highlight the exceptionally low learning levels among the control group. In three of the five most difficult reading subtasks, 88 percent or more of the control group earned zero scores. For example, more than 88 percent of the control children tested at endline were unable to read even one of the 50 familiar words presented, compared to only 1.2 percent of children in the intervention group (subtask 4). Similar patterns appear across all subtasks involving reading or oral comprehension, except for subtask 5a (see footnote 15). This corroborates the very low levels of literacy found in Boone et al. (2014).

*4.3 Math*

Next, we discuss children's performance, by intervention arm, on math subtasks. We present these results in Table 6, mirroring the format of Table 5. Children in intervention villages also dramatically outperformed children in control villages in terms of math ability, as seen in scores for all subtasks. Intervention children could solve around 15 simple addition problems and

**Table 6. EGMA subtasks**

| Subtask | *Percent correct* | | *Fluency scores* | | *Percent with zero score* | |
|---|---|---|---|---|---|---|
| | **Intervention** | **Control** | **Intervention** | **Control** | **Intervention** | **Control** |
| Number identification (1) | 96.7% | 30.6% | 47.7 | 7.3 | 0.0% | 15.5% |
| Quantitative comparisons (2) | 89.7% | 19.9% | --- | --- | 0.2% | 41.4% |
| Missing number (3) | 64.7% | 11.0% | --- | --- | 0.5% | 41.6% |
| Addition level 1 (4a) | 67.0% | 10.7% | 14.6 | 2.7 | 1.6% | 52.8% |
| Addition level 2* (4b) | 54.8% | 3.5% | --- | --- | 9.2% | 88.5% |
| Subtraction level 1 (5a) | 45.6% | 4.5% | 9.6 | 1.3 | 4.3% | 72.5% |
| Subtraction level 2* (5b) | 33.0% | 1.0% | --- | --- | 28.2% | 95.8% |
| Word problems (6) | 52.0% | 18.8% | --- | --- | 5.7% | 37.7% |

**Table 6 notes:** this table shows children's scores on the individual components of the math test, separately by treatment group. The number in parentheses next to the subtask corresponds to the subtask number given in Table A.2. There are 563 observations in the intervention group and 1,081 observations in the control group, but there are 46 missing time values for subtask 1 (40 control, 6 intervention); there are 17 missing time values for subtask 4a (8 control, 9 intervention); there are 21 missing time values for subtask 5a (6 control, 15 intervention). Adjusting for these missing values changes the fluency score estimates by 0.01-0.35. Given the large intervention-control differences in fluency scores, we do not report these sensitivity analyses here. *: These subtasks were only administered to children with non-zero scores in addition level 1 and subtraction level 1, respectively.

around 10 simple subtraction problems per minute, compared with around three addition problems and one subtraction problem for control children, respectively. This suggests intervention children were at least five times more "fluent" in these core arithmetic skills, fundamental and important predictors for subsequent mathematical development (Jordan et al. 2009). For two-digit problems, some with borrowing/carrying, intervention children answered 55% of addition problems and 33% of subtraction problems correctly, compared with 3.5% and 1%, respectively, for control children. For the subtask that evaluates children's ability to discern and complete number patterns – EGMA subtask 3, identifying the missing number in a sequence

such as [ 2, 4, 6, __ ] – more than half of the intervention group correctly answered 60% or more of the questions. This would be classified as reaching a desired level of performance in this skill for third grade students in several other countries which use the EGMA test to assess child learning (RTI International 2009). Only around 0.2% of the control group score this well on subtask 3. As with reading, far fewer intervention children had zero scores on math subtasks than did control children, with larger control/intervention gaps for more difficult subtasks.

*4.4 Heterogeneity in effect size for the primary outcome*

We next present pre-specified tests for heterogeneity in the effect of the intervention across a series of demographic characteristics, shown in Table 7. We investigate differential effects of the treatment by child gender, a proxy for the wealth of the family, and the level of education of the child's mother and, separately, father. We see large control-intervention test score differences across all subgroups, but the only statistically significant dimension of heterogeneity is for father's education, and this result is not robust to standard adjustments for multiple hypothesis testing, such as a Bonferroni adjustment (List, Shaikh, and Xu 2019).[16]

*4.5 Other effects*

In this section we discuss the impact of the intervention on whether or not the child was enrolled in school at two stages of the trial – at the midline of the study in 2014, and again in 2016. In Table 8, we report the proportion of children in each randomization group enrolled in school at each stage. In 2014, approximately 94% of intervention children were enrolled in school, while only 60% of control children were. This gap narrows in 2016, driven largely by an increase

[16] We also pre-specified heterogeneity tests by the village's distance to the main road, whether the child most commonly speaks Crioulo, as opposed to other languages, and whether there was an economic shock to the main breadwinner of the child's family during the course of the trial. We found no evidence of heterogeneity and do not present them here for the sake of brevity.

**Table 7. Composite test scores by subgroup, with interaction tests**

| Group | (1) Intervention | (2) Control | (3) Adjusted difference | (4) p-value |
|---|---|---|---|---|
| | | ***Child gender*** | | |
| Male | 72.57 | 12.58 | 57.41 | 0.188 |
| (N: I=297, C=586) | (14.07) | (11.49) | [56.15, 61.63] | |
| Female | 68.14 | 9.59 | 58.89 | |
| (N: I=266, C=495) | (16.37) | (9.99) | [54.71, 60.11] | |
| | | ***Household wealth*** | | |
| Low wealth index | 70.47 | 10.73 | 58.15 | 0.835 |
| (N: I=227, C=489) | (15.60) | (10.05) | [55.10, 62.08] | |
| High wealth index | 71.03 | 12.08 | 58.59 | |
| (N: I=320, C=475) | (14.37) | (11.73) | [55.17, 61.13] | |
| | | ***Mother's education*** | | |
| No education | 69.41 | 10.23 | 57.98 | 0.900 |
| (N: I=366, C=765) | (15.80) | (10.19) | [55.37, 61.05] | |
| At least grade 1 education | 72.46 | 13.59 | 58.21 | |
| (N: I=197, C=316) | (14.30) | (12.23) | [54.79, 61.17] | |
| | | ***Father's education*** | | |
| No education | 70.83 | 9.72 | 57.24 | 0.025 |
| (N: I=157, C=335) | (15.45) | (10.29) | [57.48, 63.00] | |
| At least grade 1 education | 70.35 | 11.88 | 60.24 | |
| (N: I=406, C=746) | (15.32) | (11.15) | [54.48, 60.00] | |

**Table 7 notes:** this table follows the custom of columns 1-4 in Table 4, showing control/intervention differences in children's scores on the composite test by subgroup. The p-values report tests for an equal effect of the intervention across subgroups, estimated by calculating the p-value on an interaction term between the treatment variable and the subgroup dummy. *: The wealth index is high if the caregiver reports 1) that they could find money to pay a sudden medical bill of 42,000 CFA (roughly US $72), and 2) that in the last year their family went no longer than one month without income; it is low otherwise. We exclude "data missing" as a category for wealth (excluding 133 observations, 117 control and 16 intervention).

in enrollment among the control group: 92% of intervention children were enrolled in school at the end of the trial, while 79% of control children were. These differences are both statistically significant.

We also collected parents' report of whether or not the child missed any school in the past two weeks. In Figure A.2, we show these results, which suggest that intervention children are much less likely than control children to miss school in both AY 2014-15 and AY 2016-17.

## Table 8. Enrollment in school

| Date of measurement | (1) Intervention (N) | (2) Control (N) | (3) Adjusted difference [95% CI] | (4) Odds Ratio (95% CI) | (5) p-value |
|---|---|---|---|---|---|
| Midline (2015)<br>(N: I=629, C=1,379) | 96.82%<br>(609) | 63.96%<br>(882) | 31.68%<br>[24.14, 39.21] | 15.27<br>(9.16, 25.46) | p<0.001 |
| Endline (2017)<br>(N: I=611, C=1,354) | 97.05%<br>(593) | 84.71%<br>(1,147) | 10.90%<br>[5.92, 15.88] | 5.00<br>(2.48, 10.07) | p<0.001 |

**Table 8 notes**: the dependent variable in this table is the child's enrollment in school at midline (first row) and endline (second row). Columns 1 and 2 of this table show the proportion of students enrolled in school, in each group, at the midline of the study and endline survey, following the custom of Table 4. Column 3 shows the adjusted difference, column 4 shows the odds ratio, and column 5 shows the p-value for the null of equal enrollment across treatment groups.

Because we are missing attendance data for many of these children, particularly for controls, we have put these particular results in the appendix and urge caution in their interpretation.

At endline, we collected information from the child's nearest older sibling and nearest younger sibling about their enrollment in school up to that point. We also administered simple ASER-style reading and math tests (Pratham 2010). We were only able to locate siblings in between 25 and 40 percent of cases. Of the siblings we did find, we found little difference in enrollment in school (see Table A.4). Nonetheless, among these children we found significantly higher literacy and numeracy among the intervention group for both older and younger siblings. We show these differences in Figure A.3. This suggests potential spillovers of learning to siblings, with two important caveats. First, the magnitudes of the differences are very small compared to the differences we find for study children. Second, because roughly 70 percent of siblings were not found, we are hesitant to draw strong conclusions from these analyses.

*4.6 Cost-benefit analysis*

We estimate that this intervention would cost approximately US $1,700 per child to run for four years; equivalently, the per-child, per-year cost is roughly $425. While this is a very highly-resourced intervention relative to others in this literature, such as those described in Kremer, Brannen, and Glennerster (2013), it achieves learning gains of unprecedented magnitude in an exceedingly challenging environment.[17]

We provide a rough estimate of a lower bound for the benefit-cost ratio of this intervention (Levin et al. 2017). To generate our assumption about the per-person benefit, we need an approximation of the income premium that achieving literacy and numeracy might yield later in life. To generate this, we use the following assumptions. One, using the zero scores on the reading comprehension subtask (EGRA subtask 5a), we assume that the intervention generates a 71.3 percentage point increase in the likelihood a child will be literate. Two, we assume that, as a result, the child's future employment is characterized by the following probability set: they continue subsistence farming (30% chance), they work in their village for a local NGO (30% chance) they become a community teacher (30% chance), or they progress in school until the 12$^{th}$ grade, at which point they gain employment in a national NGO (10% chance).[18] We estimate the lifetime gain in income, over a baseline of subsistence farming with certainty, given current salaries for these positions[19], and assuming a 5% annual GDP growth rate (The World Bank 2019) and a 5% annual discount rate (Duflo 2001). Finally, we assume

[17] To calculate the cost of our project, we use the projected costs for the ongoing (at time of writing) expansion of the project. We chose this instead of the actual costs incurred during the implementation of this study because of the costs incurred during the previously described challenges with early implementation. Without dramatic assumptions, it is not clear how to extract the "true" costs of the final project from those data (e.g., the "right-sizing" of administration, procurement, and other costs for this smaller scale).

[18] We generated these probabilities based on our understanding of the local labor markets and discussion with project staff.

[19] NGO salary: 15,000 CFA per month for 12 months per year. Community teacher salary: 25,000 per month for 9 months per year. National NGO salary: 100,000 CFA per month for 12 months per year.

that affected individuals work from age 17 to age 55, during which time they earn the income benefit assumed above.

Using these assumptions, our intervention has a benefit:cost ratio of at least 3.32. We expect this to be a lower bound on the true ratio, given the various, harder-to-estimate returns to literacy and numeracy that accrue in health, longevity, and welfare more broadly (Dickson and Harmon 2011). This ratio suggests the intervention is highly cost-efficient, and compares favorably with many other studies in similar contexts (Evans and Popova 2016).

An increasingly common approach to this type of analysis is to calculate the "marginal value of public funds" or MVPF (Hendren and Sprung-Keyser 2020). This calculates the after-tax benefit to participants, accounting for changes in tax revenue because of the program. These changes can be negative (e.g., distorting behavior away from productive activity in order to qualify for the program) or positive (e.g., generating externalities). In Guinea Bissau, the effective tax rate is zero for most people, as most government revenue comes from two sources: cashew nut exports and foreign aid. We assume, therefore, that there are no negative externality-type changes in revenue that would accrue from implementing this policy. The likely positive externalities of the policy – greater economic, health, and political benefits from a higher literacy rate – make our benefit:cost calculation a lower bound on the true benefit:cost ratio.

## 5. Discussion

In this section, we discuss the potential reasons for the large gains we measure in the previous section. First, we present an exploratory, quantitative analysis of heterogeneity in effect size to illuminate how the intervention was beneficial, and to whom. Second, we describe the uniqueness and scalability of our results.

*5.1 Exploratory heterogeneity analysis*

In this section, we describe a series of exploratory analyses to investigate for whom our intervention had the largest effects and, potentially, why. We first estimate heterogeneity in effect size by the grade the child was enrolled in at the end of the trial. Here we see that grade progression appears to be an important contributor to the effects we measure. We show conditional means and the adjusted difference (e.g., the coefficient on the intervention dummy in a simple linear regression) for a regression restricting the sample to just the grade / enrollment status in question. This shows that while scores in the intervention group were higher

**Table 9. Heterogeneity in effect on composite score by grade progression and enrollment**

| Group | (1) Intervention | (2) Control | (3) Adjusted difference |
|---|---|---|---|
| Not enrolled<br>(N: I=2, C=161) | 40.04<br>(23.94) | 4.9<br>(6.09) | 34.37<br>[8.01, 60.73] |
| Pre-school<br>(N: I=1, C=26) | 91.68<br>(.) | 7.35<br>(7.34) | 76.81<br>[74.24, 79.38] |
| Grade 1<br>(N: I=10, C=637) | 41.84<br>(18.94) | 9.49<br>(8.20) | 31.69<br>[18.30, 45.08] |
| Grade 2<br>(N: I=18, C=203) | 59.36<br>(23.34) | 18.65<br>(12.99) | 40.85<br>[26.31, 55.39] |
| Grade 3<br>(N: I=514, C=39) | 71.51<br>(14.00) | 28.88<br>(15.79) | 42.75<br>[35.91, 49.59] |
| Grade 4 or 5<br>(N: I=11, C=5) | 75.66<br>(8.99) | 23.39<br>(20.31) | 66.16<br>[61.93, 70.39] |
| Missing data<br>(N: I=7, C=10) | 61.87<br>(25.48) | 6.58<br>(8.13) | 49.92<br>[21.50, 78.34] |

**Table 9 notes**: Columns 1 and 2 shows the average scores of intervention and control children, respectively, based on their school enrollment status at endline. Column 3 shows the adjusted difference, calculated as the coefficient on the intervention dummy on the intervention variable estimated in an OLS regression of endline test score on intervention group and randomization stratum, restricting the sample to the group listed in the "group" column. We do not show a p-value for the heterogeneity of treatment effect across endline grades/enrollment, as in tables 7 and 8, because the cells are too sparsely populated to estimate a model with all [intervention x final grade] variables.

for those in the third grade, this was also true for the control group. The adjusted difference in the endline test scores of intervention and control group children, conditional on their being in grade 3 at the end of the study (where they should have been were they to progress normally through the grades), is 42.75 percentage points. A simple back-of-the-envelope calculation, dividing that by the 58.1 percentage point overall difference, suggests that slightly more than one a quarter of the total impact of the intervention came from grade progression, with the remaining three quarters coming from learning impacts of the intervention independent of endline grade.

We next report results of exploratory heterogeneity analysis by characteristics of the school in the village. All but one village had some sort of school in it at baseline. We conduct our analyses based on the number of teachers in the village, the type of school in the village, the highest grade taught in the school, and the quality of the school infrastructure, proxied by the material of its roof. We show these results in Table A.5. We find no evidence of meaningful heterogeneity in the effect of the intervention along any of these dimensions, consistent with the consensus from prior work showing that, in rural areas like those we study, existing variation in school type, school resources, and even teacher credentials generates very little variation in student learning levels (Daun 1997; Boone et al. 2014; da Silva and Oliveira 2017).

*5.2 Features, uniqueness, and scalability of the intervention*

In this section, we discuss potential explanations for the large magnitude of the results we find, describing what features of the intervention are unique and its potential for scalability.

We think there are two core reasons for the large impacts we observe. First, the intervention's focus was on child learning, as opposed to test score improvement or child or teacher attendance. All implementers, from teachers to monitors to senior staff, understood that learning was the main objective. This focus informed the design of all teaching and learning

materials, from textbooks to teacher handbooks and lesson plans. These materials also incorporated scripted lessons, which have been shown to work in numerous settings (Piper et al. 2018; Romero, Sandefur, and Sandholtz 2020; Eble et al. 2019) and are alleged to be particularly helpful for teachers with less training and suboptimal supervision, potentially raising the level of the "floor" of teaching quality in challenging contexts.

Second, we conducted regular, in-depth, and responsive monitoring of both student learning and, separately, teaching. This is in stark contrast to the control condition, where there is little monitoring of teaching or student learning. For our monitoring of teaching, we focused on improving teaching skill with an emphasis on learning, not just ensuring teachers were in school. At the outset, the intervention invested heavily in teachers, conducting three months of pre-service training in the new pedagogical model we implemented and in how to use the teaching materials we designed. As the trial progressed, we continued to train the staff in how to teach new content using new lesson plans. We also employed two tiers of staff whose main role was to monitor teachers throughout the trial, observing their teaching, providing feedback, and using these lessons to guide the ongoing teacher training that we administered as the intervention progressed through the curriculum. This pairing of training and monitoring with the goal of improving teacher practice has previously yielded large improvements in learning across diverse settings (Piper et al. 2018; Eble et al. 2019), and we believe this "coaching" played an important role in generating the large gains in learning outcomes we observe. For student learning, the intervention team measured child learning regularly through in-class tests and periodic external testing.[20] Supervisors and intervention managers closely monitored these measurements and took action as needed, e.g., giving teachers of lagging students extra attention or assistance. In

[20] These tests were designed in-house and deliberately diverged from EGRA- and EGMA-style tests to ensure that we were not "teaching to the test."

addition, the team followed up with parents to ensure children attended classes and provided additional after-school support to struggling students.

There are other clear contributors. The most obvious are the increased instructional time and resources provided, though extra time and money are no guarantee of a large effect (Woessmann 2016; De Ree et al. 2018). Intervention students had an additional hour per day in school, and our schools did not suffer from the teacher strikes that occurred in government schools over the period of our study. These strikes did not happen in non-governmental schools, however, and the absence of a difference in effect size between villages with and without a government school suggests that more instructional time does not necessarily translate into learning in this context. The long literature on credit constraints in education shows both theoretically and empirically that, in such areas, private provision of education is also particularly likely to under-supply quality (c.f., Becker 1994; Lochner and Monge-Naranjo 2012; Heckman and Mosso 2014).

We believe that efficient implementation of these core components – a stronger, concerted focus on learning throughout materials, training, recruitment, and scripted lessons, paired with regular monitoring of teachers and student learning levels and action taken in response to observed need – could lead to quality education in many other contexts even in the absence of a large influx of resources. As described in Bold et al. (2018) and Banerjee et al. (2017), however, an important challenge is stakeholder buy-in. Implementing such a system would constitute a large change in focus and responsibilities from teaching and support staff, which may meet with resistance. Nonetheless, we think that this intervention provides important guidance on how to proceed in poor, remote areas such as the one we study,

Our ongoing work shows that this model is scalable. In response to the preliminary results of this study, we are on track to scale up the intervention in Guinea Bissau to an additional 2,000 children. In Telangana, India, and The Gambia, we have scaled up a para-teacher intervention with similar foci to 15,000 and 4,000 children, respectively. Aside from buy-in, the main barrier to scalability, as we see it, is resources. Implemented outside of the government, this is a highly expensive intervention. Implemented within the government, we anticipate both political and logistical challenges to widespread adoption (c.f., Bold et al. 2018).

We comment on two other potential contributors to these results that warrant discussion: teaching to the test and floor effects. We chose to use EGRA and EGMA tests precisely because of their focus on the skills necessary to read, make sense of written content, to do arithmetic, and to make sense of simple arithmetic expressions. In this sense, these skills are aligned with the goals for almost all education systems at this level of learning; indeed, in many other education systems, these tests are used by the government itself to measure learning (Sprenger-Charolles 2008; USAID 2019). The second potential contributor is that the tests were not sensitive enough to pick up very basic skills, i.e., floor effects. EGRA and EGMA tests are designed to be particularly sensitive at measuring low levels of learning (Platas et al. 2014; Dubeck and Gove 2015). Comparing only subtasks where the control group has a substantial amount of nonzero scores[21] reduces the overall impact estimate to a difference of 54.08 percentage points, from 58.14 percentage points, providing little evidence of floor effects.

Our study design did not attempt to identify individual mechanisms behind our intervention. Instead, we targeted areas with great need and evaluated a comprehensive intervention to dramatically increase learning levels in them. This "bundled" approach is in the

[21] We calculated the arithmetic mean of average performance on EGMA subtasks 1-4a and on EGRA subtasks 1-2.

spirit of the multifaceted poverty alleviation program studied by Banerjee et al. (2015) and, as in Muralidharan, Singh, and Ganimian (2019), does not allow us to isolate mechanisms driving the results we observe, though we speculate that there are complementarities between the individual components, as in Mbiti et al. (2019).

At the outset, we were unsure whether such an intervention would work. If demand factors explained most of the lack of schooling – i.e., parents and their children do not believe education merits the opportunity cost – then the poor outcomes of children may not be impacted by changes to the provision of schooling. Furthermore, as we experienced, implementation challenges could have derailed our efforts entirely and it is important to document this. We also argue that it is worthwhile to understand the costs of implementing such a program in an exceedingly deprived and difficult environment. Due to the fragility of the state in Guinea Bissau, public institutions such as schools, customs, and the courts often function poorly or not at all (Sangreman, Delgado, and Martins 2018). Furthermore, we chose to work in hard-to-reach, extremely poor regions within Guinea Bissau, making provision even more expensive, and logistics more difficult, than in the country's urban or peri-urban areas.

The other main contributor to the large difference between children in control and intervention villages is, sadly, the failure of the state and other actors to deliver education in these areas. Education levels in Guinea Bissau have remained consistently low over the last fifty years, and there is little evidence that, in the absence of external intervention such as ours, this is likely to change (Daun 1997; Boone et al. 2014; da Silva and Oliveira 2017). During the course of our study, government provision of education in the control villages, as in the rest of the country, was erratic. The counterfactual case, therefore, is one in which many children reach adulthood without achieving meaningful levels of literacy and numeracy. We expect that it is

easier to raise learning from such a low baseline than it would be in contexts with higher learning levels.

## 6. Conclusion

In the least fortunate parts of the developing world, many children receive schooling which is unable to teach them even basic literacy and numeracy. We ran an RCT in rural Guinea Bissau to evaluate an intervention that provided schooling in lieu of the state and other status quo providers for four years. We find the intervention yielded dramatic increases in learning among recipient children, leading them to be functionally numerate and literate in a way that the vast majority of them would not have been in the absence of the intervention.

Our findings contain a few core messages. First, we show that offering this kind of an intervention at a near-free price to parents and children in two regions with extremely low learning and economic outcomes leads to a very high proportion of take-up. This suggests that supply constraints may be more important than demand constraints in understanding low educational outcomes in these and similar areas. Second, our results suggest there may be similarly large learning gains that can be realized by motivated donors or agencies through implementing a similar type of intervention in contexts where the status quo provider of education is either irregular or of extremely low quality.

This intervention achieved learning gains of unprecedented magnitude. While the intervention is much more highly-resourced than other interventions in this literature, a rough benefit cost calculation suggests that, even using conservative assumptions, it is highly cost-efficient. This work, in conjunction with Eble et al. (2019), shows that the upper bound on the magnitude of intervention-driven learning gains in such deprived areas is much larger than previously thought. As noted in the introduction, the endline oral reading fluency of children

randomized to receive the intervention was 75 correct words per minute. This compares favorably to the oral reading fluency measured in a 2014 national assessment of third grade students in the Philippines, a country with a per-capita GDP nearly an order of magnitude larger than that of Guinea Bissau.[22] It is also much higher than oral reading fluency measures from other African countries who have used EGRA: average grade 3 oral reading fluency in English-speaking African countries is 9.2, and in Francophone African countries it is 32.4 (USAID 2019). It is also comparable to EGRA results from wealthier Latin American countries, such as Guatemala, Jamaica, and Peru. Average oral reading fluency in Latin America is 73 words per minute in English, and 79 in Spanish.

Finally, our study provides an opportunity to follow these children later in life, and learn about the longer-term economic and social returns to education, and literacy and numeracy more specifically, in a particularly poor region. This, we hope, will advance our understanding of two important phenomena: one, how best to help similar regions; and two, to quantify where, when, and how these basic skills can transform lives in the developing world.

[22] Accessed from https://earlygradereadingbarometer.org/overview on October 28, 2019.

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# Appendix

**Table A.1. Power calculation**

| Allocation ratio intervention: control | Loss to follow-up | Average no. of children per cluster after loss to follow-up* | Minimum difference to detect (%) | |
|---|---|---|---|---|
| | | | **20** | **25** |
| 1:1 | 17% | 35 | 80 | 94 |
| | 25% | 32 | 82 | 95 |
| 1:2 | 17% | 35 | 75 | 91 |
| | 25% | 32 | 77 | 92 |

**Table A.1 notes**: Power obtained with a two-sided 5% level test with 49 clusters total, assuming an Intra-cluster Coefficient =0.03. *: the assumed average number of children per cluster before loss to follow up is 43.

## Table A.2. Description of subtasks

| EGRA | EGMA |
|---|---|
| 1: Read a letter's sound (e.g., "oh" for o) | 1: Read a number (e.g., 2, 9, 45) |
| 2: Differentiate sounds (e.g., which word starts with a different sound: casa, livro, or cama) | 2: Choose the larger number (e.g., 7 or 5) |
| 3: Read a made-up word (e.g., tila) | 3: Complete a sequence (e.g., 14 15 16 __ ) |
| 4: Read a familiar (Portuguese) word (e.g., sol) | 4a: Simple addition (e.g., 1+3) |
| | 4b: Two-digit addition (e.g., 14+25) |
| 5a: Read a short passage | 5a: Simple subtraction (e.g., 5-2) |
| 5b: Answer questions on the passage's content | 5b: Two-digit subtraction (e.g., 26-14) |
| 6: Listen to a different short passage, answer questions on the passage's content | 6: Solve a simple word problem read aloud |

**Table A.2 note**: this table provides descriptions of the different types of questions asked on the reading (EGRA) and math (EGMA) tests, respectively. These are referred to as "tasks" or "subtasks", by the number given in this table.

## Table A.3. Attendance of enrolled children in intervention classes

| | (1)<br>Attendance (N) |
|---|---|
| Mean | 85.72% |
| SD | 30.80% |
| *Distribution of attendance* | |
| 0% of classes | 9.27% (60) |
| >0 to 25% of classes | 1.24% (8) |
| >25% to 50% of classes | 2.32% (15) |
| >50% to 75% of classes | 2.01% (13) |
| >75% to 100% of classes | 85.16% (551) |
| Missing data | 0.31% (2) |
| Number of non-missing observations | 647 |

**Table A.3 notes:** this table shows the average attendance of children in the intervention arm at intervention classes, as a proportion of total classes held. The number of observations corresponding to these proportions are given in parentheses.

## Table A.4. Sibling enrollment in school

| Group | (1) Intervention | (2) Control | (3) Adjusted difference | (4) p-value |
|---|---|---|---|---|
| Older sibling enrolled in school<br>(N: I=269, C=521) | 0.892<br>(0.311) | 0.923<br>(0.266) | -0.05<br>[-0.093,-0.007] | 0.023 |
| Younger sibling enrolled in school<br>(N: I=176, C=363) | 0.636<br>(0.482) | 0.556<br>(0.497) | 0.013<br>[-0.077, 0.103] | 0.777 |

**Table A.4 note**: this table shows the levels of enrollment of the child's next-younger and next-older siblings in school, and tests for differences across treatment group, following the convention of Table 4.

## Table A.5. Heterogeneity of effect by village school traits

| Group | (1) Intervention | (2) Control | (3) Adjusted difference | (4) p-value |
|---|---|---|---|---|
| | *Highest grade taught in village* | | | |
| Third or fourth grade | 0.713 | 0.126 | 0.577 | 0.771 |
| (N: I=337, C=459) | (0.152) | (0.121) | [0.559, 0.595] | |
| Fifth grade or higher | 0.692 | 0.103 | 0.581 | |
| (N: I=226, C=607) | (0.155) | (0.100) | [0.561, 0.601] | |
| | *Total number of teachers in village* | | | |
| One or two teachers | 0.694 | 0.109 | 0.581 | 0.189 |
| (N: I=393, C=932) | (0.147) | (0.103) | [0.565, 0.597] | |
| Three or four teachers | 0.730 | 0.142 | 0.559 | |
| (N: I=170, C=134) | (0.164) | (0.143) | [0.530, 0.588] | |
| | *Lowest quality material of school roof* | | | |
| Roof is natural | 0.725 | 0.136 | 0.577 | 0.801 |
| (N: I=122, C=48) | (0.135) | (0.120) | [0.563, 0.591] | |
| Roof is synthetic | 0.699 | 0.112 | 0.583 | |
| (N: I=441, C=1018) | (0.158) | (0.109) | [0.542, 0.624] | |
| | *Presence of public school in village* | | | |
| No public school in village | 0.679 | 0.120 | 0.568 | 0.212 |
| (N: I=179, C=284) | (0.159) | (0.113) | [0.544, 0.592] | |
| Public school in village | 0.717 | 0.110 | 0.587 | |
| (N: I=384, C=782) | (0.150) | (0.108) | [0.569, 0.605] | |
| | *Presence of community school in village* | | | |
| No community school in village | 0.696 | 0.111 | 0.579 | 0.912 |
| (N: I=416, C=892) | (0.146) | (0.105) | [0.563, 0.595] | |
| Community school in village | 0.729 | 0.126 | 0.577 | |
| (N: I=147, C=174) | (0.170) | (0.132) | [0.548, 0.606] | |

**Table A.5 note**: this table shows exploratory estimates of heterogeneity in the effect of the intervention on composite test scores by the characteristics of the schools in the village. There is only one village in our study which does not have a school in the village, and we exclude it from this analysis.

## Figure A.1. Map of Guinea Bissau and study area

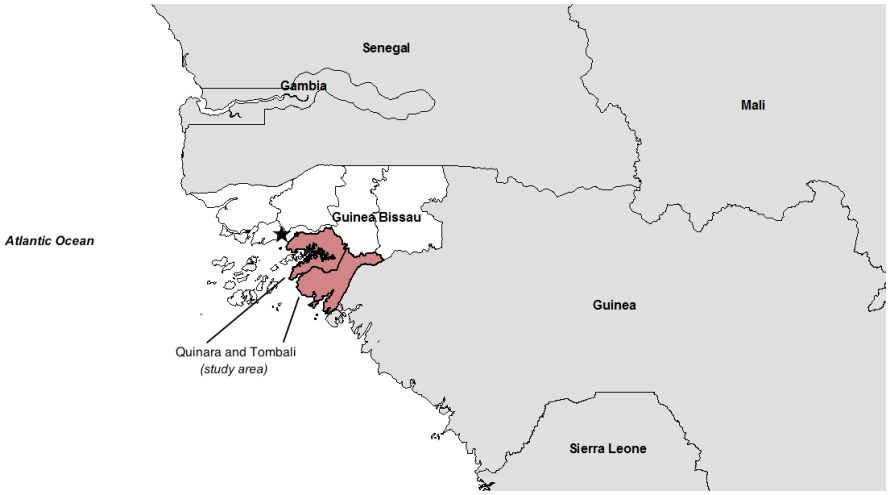
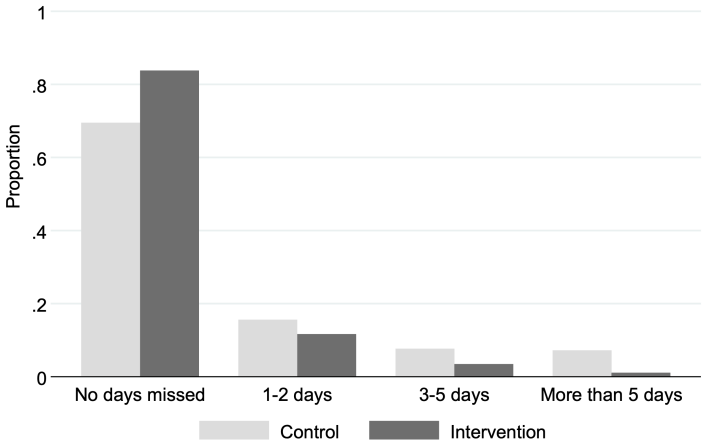



**Figure A.1 note:** this figure shows a map of Guinea Bissau and surrounding countries, with the regions of Guinea Bissau with thinner lines, and the two study regions shaded in red and labeled.

## Figure A.2. Attendance in school: number of days missed in last two weeks

*Panel A: Data from midline (2015)*




*Panel B: Data from endline (2017)*

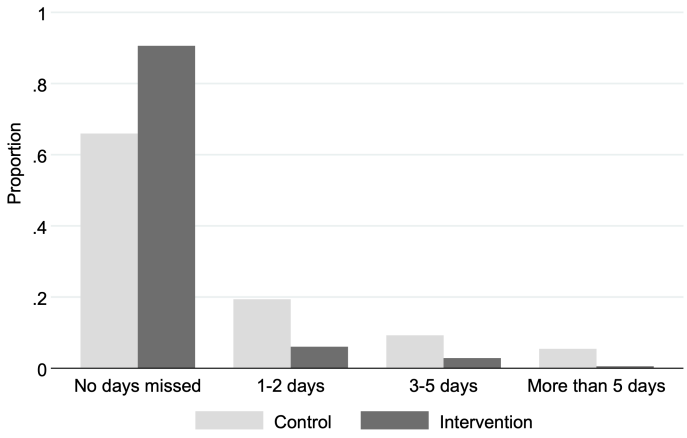
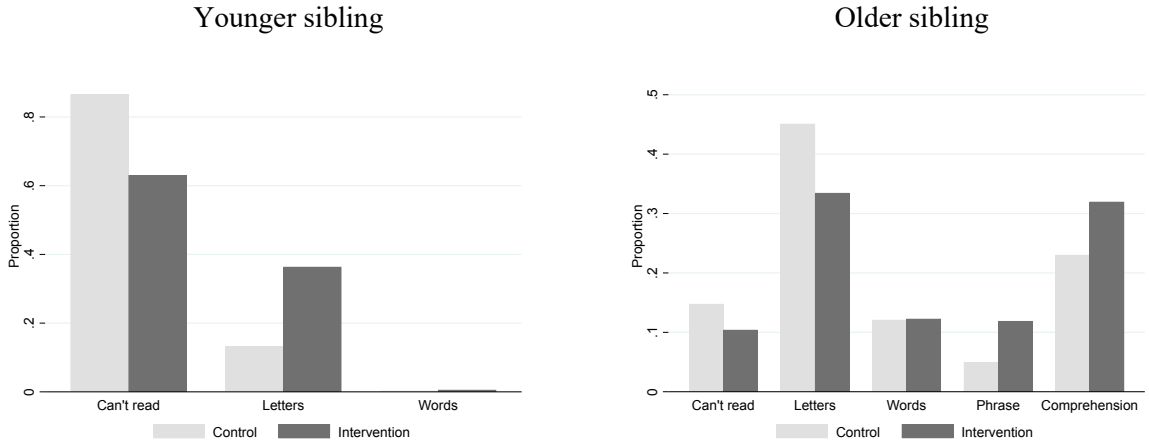
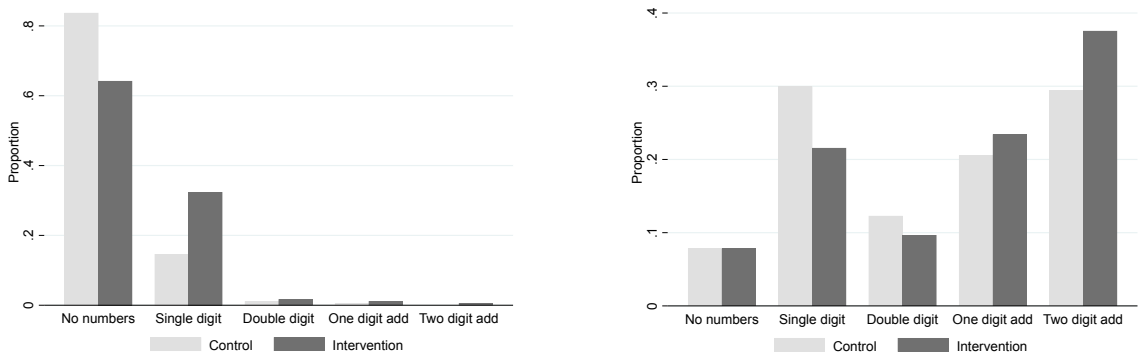



**Figure A.2 notes:** This figure shows parents' report of how many days their child missed school in the two weeks prior to being interviewed, separately at the midline and at the endline surveys (in Panels A and B, respectively), and separately by randomization group. We present results only for those children who were enrolled in school at the time of survey. A simple chi-square test rejects the null of no relationship between attendance and intervention status, with $p<0.001$ in both panels.

## Figure A.3. Sibling literacy and numeracy tests




*Panel A: Literacy*




*Panel B: Numeracy*

**Figure A.3 notes**: This figure shows the results of the sibling literacy and numeracy tests administered at the endline for students who had siblings present in the village that we located in the endline survey. There were 362 younger siblings and 521 older siblings found in the control villages, and 176 younger siblings and 269 older siblings in the intervention villages. A simple chi-square test rejects the null of no relationship between literacy and intervention status, with $p<0.001$ in both panels. It rejects the null of no relationship between numeracy and intervention status with $p=0.040$ for older siblings, and $p<0.001$ for younger siblings.

**Electronic appendix (for online publication only)**

**Contents:**

## Appendix A: Further description of disruption to implementation of the para teacher model

We began discussions with the government about an education research project in 2011, after the completion of the data collection for Boone et al. (2014). We originally agreed with the government on an experiment in which we would open dozens of academic centers where we would deliver our curriculum. For training, we recruited 100 candidates with at least a high school education, but no teacher qualifications. Our plan was that, at the end of the training, we would select as many final candidates from this group as were qualified for implementation of our intervention and, as described in Section 2, run a para teacher intervention as part of a larger effort to evaluate that model's scalability and generalizability.

We hired Portuguese-language and teacher training professionals to travel to Guinea-Bissau and train our candidates for one year. During the training, candidates were paid a living stipend and, as part of the training, they received Portuguese language proficiency certification from an international organization and a pedagogy certification from the Guinea Bissau Ministry of Education. In return, they provided a written agreement that after the training, should they be selected, they would commit to residing in the villages we assigned them in Quinara and Tombali and working as teachers there for at least one year.

At the end of the year of training, we selected 48 of the 100 candidates to serve as teachers. Prior to the start of implementation, these individuals reneged on their commitment, refusing to work under the previously agreed-upon employment conditions. They formally submitted a new set of demands, including the salary increase described in the introduction and the removal of the initial probationary period of employment we had agreed upon in order to

remove low-performing teachers. We were not in a position to accept these demands and refused. Guinea Bissau's government supported us in the dispute, but the teachers attempted to litigate in the country's courts and the resolution of this took several months. As described in Section 2, this led us to change the focus of the intervention to one in which we hired trained teachers, as opposed to para teachers, which also consisted of a change in the research question asked by the study.

## Appendix B: EGMA and EGRA test papers used in endline test

*(tests begin on next page)*

**ROPE**
**EGMA Guiné-Bissau, 2017**

# Teste de Matemática em língua Portuguesa na Guiné-Bissau: Formulário de Instruções para o Administrador e Respostas dos alunos

*Portuguese Early Grade Mathematics Assessment in Guinea Bissau: Instructions for Enumerators and Children Response Form*

## MATEMÁTICA *Mathematics*

Instruções Gerais

É importante estabelecer uma relação descontraída e de confiança com a criança que vai ser avaliada através de uma conversa inicial com questões de interesse para a criança (ver exemplo abaixo). A criança deve ver este exercício mais como um jogo do que uma avaliação. É importante que leia SOMENTE em voz alta o texto que está a **negrito**, de forma calma e clara, para que a criança possa compreender os exercícios.
*It is important to establish a playful and relaxed relationship with the child that will be assessed through an initial talk on topics of interest to the child (see example below). The child should perceive the assessment more as a game rather than an evaluation. It is important that you ONLY read aloud the text in **bold**, slowly and clearly, so that the child can understand the exercises.*

**Bom dia, o meu nome é_____. E tu, como te chamas? Eu gosto muito de _____. E tu, o que mais gostas de fazer? Agora que já fizeste uns jogos de leitura com o meu colega, vamos fazer uns jogos de matemática. Ao longo deste exercício podes responder na língua que preferires. Pode ser? Estás pronto? Vamos começar!** *Good morning. My name is _____. And you, what's your name? I like to _____. And you, what do you like to do? Now that you have done some reading games with my colleague, let's do some maths game. Throughout this exercise, you can answer in the language that you prefer. Is that ok? Are you ready? Let's start.*

| | | | |
|---|---|---|---|
| A. Data: *Date:* | ____/_____/_____ (dd / mm / aaaa) | D. Nome da Criança: *Name of child:* | |
| B. Hora Início: *assessment start time:* | ____h_____m | E. Código da Criança *Code of child:* | |
| C. Code of Enumerador: *Code of Enumerator:* | | | |

**ROPE**
**EGMA Guiné-Bissau, Novembro 2017**

| **TAREFA 1. IDENTIFICAÇÃO DE NÚMEROS**<br>*TASK 1. Number identification* | **Página 1**<br>*Page 1* | **60 segundos**<br>*60 seconds* |
|---|---|---|

**Nesta folha estão alguns números. Aponta para cada um dos números e diz-me que número é. Eu vou dizer quando deves começar e quando deves parar. Começa aqui** [aponte para o primeiro número]. **Estás pronto/a?** [espere que a criança responda] **Podes começar.** *In this sheet there are some numbers. Point to each number and tell me what number it is. I will tell you when to begin and when to stop. Start here [point to the first number]. Are you ready? [wait for the child's reply] You can start.*

Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*

( / ) = Marque os números incorrectos ou sem resposta com uma barra ( / ). Mark any *incorrect number or no response with a slash ( / ).*

( ] ) = Marque o último número lido com um parênteses recto ( ] ). *Mark the final number read with a bracket ( ] ).*

Se a criança hesitar durante 5 segundos, diga o número e depois aponte para o numero seguinte e diga "Continua". Marque o número que disse como incorrecto. *If the child hesitates for 5 seconds, say the number and then point to the next item and say "Go on". Mark the number that you provided as incorrect.*

| | | | | |
|---|---|---|---|---|
| **2** | **9** | **0** | **12** | **30** |
| **22** | **45** | **39** | **23** | **48** |
| **91** | **33** | **74** | **87** | **65** |
| **108** | **245** | **587** | **731** | **989** |

Tempo restante no cronómetro no momento em que terminou (SEGUNDOS)
*Time remaining on stopwatch at completion (SECONDS)*

*NA:* *NE:*

Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
*Which languages did the child use in this task? (circle all answers that apply)*

Português Crioulo Fula Mandinga Balanta Beafada

Outras (especificar) *Others (please specify)* _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 2. DISCRIMINAÇÃO DE NÚMEROS** (**exemplos**)<br>TASK 2. *Number discrimination (examples)* | **Página 2**<br>*Page 2* | ⏱ ✗ |
|---|---|---|

**P1**

**Olha para estes números. Diz-me qual deles é maior.** [Só se pode considerar a resposta correcta se as crianças "disserem" o número maior, apontar não é suficiente] *Look at these numbers. Tell me which number is bigger [students can only be considered correct if they "say" the bigger number, pointing is not enough].*

**8 4**

✓ [Se a criança respondeu 8, diga] **Muito bem, 8 é o maior. Vamos fazer outro exemplo.** *[If the child answered 8, say] Well done, 8 is bigger. Let's do another example.*

✗ [Se a criança não respondeu 8, diga] **O número maior é o 8.** [aponta para o 8] **Este é 8.** [aponta para o 4] **Este é o 4. 8 é maior do que 4. Vamos fazer outro exemplo.** *[If the child did not answer 8, say] The bigger number is 8. [Point to 8] This is 8. [Point to 4] This is 4. 8 is bigger than 4. Let's do another example.*

**P2**

**Olha para estes números. Diz-me qual deles é maior.** *Look at these numbers. Tell me which number is bigger.*

**10 12**

✓ [Se a criança respondeu 12, diga] **Muito bem, 12 é o maior. Vamos continuar.** *[If the child answered 12, say] Well done, 12 is bigger. Let's continue.*

✗ Se a criança não respondeu 12, diga] **O número maior é o 12.** [aponta para o 10] **Este é 10.** [aponta para o 12] **Este é o 12**. **12 é maior do que 10. Vamos continuar.** *[If the child did not answer 12, say] The bigger number is 12. [Point to 10] This is 10. [Point to 12] This is 12. 12 is bigger than 10. Let's continue.*

| **TAREFA 2. DISCRIMINAÇÃO DE NÚMEROS (exercício)**<br>*TASK 2. Number discrimination (exercise)* | **Página 3**<br>*Page 3* | ⏱ ✗ |
|---|---|---|

**Olha para estes números. Diz-me qual deles é maior.** [repetir para cada item] *Look at these numbers. Tell me which number is bigger.* [*repeat for each item*]

(✓) 1 = Correcto. *Correct*
(✓) 0 = Incorrecto ou Sem resposta. *Incorrect or without answer*

| | | | | | |
|---|---|---|---|---|---|
| **7** | **5** | **7** | | **1** | **0** |
| **11** | **24** | **24** | | **1** | **0** |
| **47** | **34** | **47** | | **1** | **0** |
| **58** | **49** | **58** | | **1** | **0** |
| **65** | **67** | **67** | | **1** | **0** |
| **94** | **78** | **94** | | **1** | **0** |
| **146** | **153** | **153** | | **1** | **0** |
| **287** | **534** | **534** | | **1** | **0** |
| **623** | **632** | **632** | | **1** | **0** |

Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque abaixo e passe para a tarefa seguinte. *If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to the next task.*

➲ Se a criança hesitar durante 5 segundos, diga a resposta para esse item e depois

| | | |
|---|---|---|
| **867 965 <u>965</u>** | **1** **0** | aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, tell the answer of the item and then point to the next item and say "Go on". Mark the item that you provided answer as incorrect.* |
| ✍ Exercício descontinuado porque a criança fez 4 erros sucessivos. *Exercise discontinued because the child made 4 successive mistakes.* | | |
| *NA:* | *NE:* | |

✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
*Which languages did the child use in this task? (circle all answers that apply)*

Português Crioulo Fula Mandinga Balanta Beafada

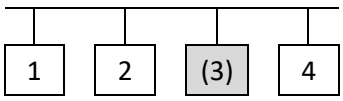
Outras (especificar) *Others (please specify)* _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 3. NÚMERO AUSENTE (praticar)**<br>*Task 3. Missing Number (practice)* | **Página 4**<br>*Page 4* | ✗ |
|---|---|---|

**P1**

**Aqui estão alguns números. 1, 2 e 4, que número deve estar aqui**? [Aponte para a caixa vazia] *Here are some numbers. 1, 2 and 4, what number goes here [point to the empty box]?*

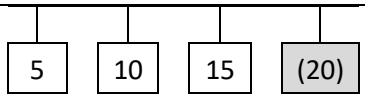



✓ [Se a criança respondeu 3, diga] **Muito bem, é o 3. Vamos fazer outro.** *[If the child answered 3, say] Well done, it's 3. Let's do another one.*

✗ [Se a criança não respondeu 3, diga] **Aqui deve estar o número 3. Diz os números comigo** [aponte para cada número] **1, 2, 3, 4. O 3 fica aqui. Vamos fazer outro exercício.** *[If the child did not answer 3, say] The number 3 goes here. Say the numbers with me [point to each number]. 1, 2, 3 and 4. 3 goes here. Let's do another one.*

**P2**

**Aqui estão alguns números. 5, 10 e 15, que número deve estar aqui?** *Here are some numbers. 5, 10 and 15, what number goes here?*

<table>
<tr><td colspan="2"> 

<br>✓ [Se a criança respondeu 20, diga] Muito bem, é o 20. Vamos continuar. [If the child answered 20, say] Well done, it's 20. Let's continue<br>✗ [Se a criança não respondeu 20, diga] Aqui deve estar o número 20. Diz os números comigo [aponte para cada número] 5, 10, 15, 20. O 20 fica aqui. Vamos continuar. [If the child did not answer 20, say] The number 20 goes here. Say the numbers with me [point to each number]. 5, 10, 15 and 20. 20 goes here. Let's continue.</td><td></td></tr>
<tr><td>TAREFA 3. NÚMERO AUSENTE (exercício)<br>Task 3. Missing Number (exercise)</td><td>Página 5 e 6<br>Page 5 and 6</td><td>✗</td></tr>
<tr><td colspan="2">Aqui estão alguns números [aponte para a caixa]. Que número deve estar aqui? [repita para cada item] Here are some numbers [point to the box]. What number goes here? [repeat for each item]</td><td rowspan="2">Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque</td></tr>
<tr><td colspan="2">(✓) 1 = Correcto Correct<br>(✓) 0 = Incorrecto ou Sem resposta Incorrect or without answer</td></tr>
</table>

| | |
|---|---|
| 1. 5 6 7 **(8)** — 1 0<br>2. 14 15 **(16)** 17 — 1 0<br>3. 20 **(30)** 40 50 — 1 0<br>4. **(200)** 300 400 500 — 1 0<br>5. 2 4 6 **(8)** — 1 0<br>6. 348 349 **(350)** 351 — 1 0<br>7. 28 **(26)** 24 22 — 1 0<br>8. 30 35 **(40)** 45 — 1 0<br>9. 550 540 530 **(520)** — 1 0<br>10. 3 8 **(13)** 18 — 1 0 | abaixo e passe para o próximo exercício. *If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to next task.*<br>➲ Se a criança hesitar durante 5 segundos, diga a resposta e depois aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, say the item and then point to the next item and say "Go on". Mark the item that you provided answer as incorrect* |
| ✍ Exercício descontinuado porque a criança fez 4 erros sucessivos. *Exercise discontinued because the child made 4 successive mistakes.* | |
| *NA:* | *NE:* |
| ✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas) *Which languages did the child use in this task? (circle all answers that apply)*<br>Português Crioulo Fula Mandinga Balanta Beafada<br>Outras (especificar) *Others (please specify)* _____ | |

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| | | |
|---|---|---|
| **TAREFA 4A. ADIÇÃO (Nível 1)**<br>*Task 4A. Addition (level 1)* | **Página 7 e 8**<br>*Page 7 and 8* | **60 segundos**<br>*60 seconds* |

**ROPE**
**EGMA Guiné-Bissau, Novembro 2017**

Papel e lápis. *Paper and pencil*

**Nestas duas páginas estão algumas somas** [aponte com o dedo de cima para baixo, mostrando as duas páginas]. **Podes usar este papel e este lápis se quiseres, mas não é obrigatório. Eu vou te dizer quando deves começar e quando deves parar. Diz-me as respostas para cada soma. Se não souberes uma resposta, avança para a soma seguinte. Estás pronto?** ([espere que a criança responda] **Começa aqui** [aponte para a primeira soma]. *In these two pages there are some addition problems [glide hand from top to bottom on the two pages].You can use this paper and pencil if you want to, but it is not mandatory. I will tell when to start and when to stop. Say the answer for each problem. If you don't know an answer, move to the next problem. Are you ready (wait until the child responds)? Start here [point to the first problem].*

(✓) 1 = Correcto. *Correct*
(✓) 0 = Incorrecto ou Sem resposta. *Incorrect or without answer*
( ] ) = Até aonde a criança chegou aos 60 segundos. *At the point reached by the child after 60 seconds.*

| | | |
|---|---|---|
| 1 + 3 = (4) | 1 | 0 |
| 3 + 2 = (5) | 1 | 0 |
| 6 + 2 = (8) | 1 | 0 |
| 4 + 5 = (9) | 1 | 0 |
| 3 + 3 = (6) | 1 | 0 |
| 8 + 1 = (9) | 1 | 0 |
| 7 + 3 = (10) | 1 | 0 |
| 3 + 9 = (12) | 1 | 0 |
| 2 + 8 = (10) | 1 | 0 |
| 9 + 3 = (12) | 1 | 0 |

| | | |
|---|---|---|
| 7 + 8 = (15) | 1 | 0 |
| 4 + 7 = (11) | 1 | 0 |
| 7 + 5 = (12) | 1 | 0 |
| 8 + 6 = (14) | 1 | 0 |
| 9 + 8 = (17) | 1 | 0 |
| 6 + 7 = (13) | 1 | 0 |
| 8 + 8 = (16) | 1 | 0 |
| 8 + 5 = (13) | 1 | 0 |
| 10 + 2 = (12) | 1 | 0 |
| 8 + 10 = (18) | 1 | 0 |

A criança usou: *The child used:*

| | |
|---|---|
| | Os dedos para contar. *Fingers to count.* |
| | Papel e lápis. *Paper and pencil.* |
| | Resolveu a questão de cabeça. *Solved the question in his/her head.* |

Marque com ✓ todas as respostas que se apliquem. *Tick all answers that apply.*

Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*

Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to next task.*

Se a criança hesitar durante 5 segundos, diga a resposta e depois aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, provide the answer and then point to the next item and say "Go on". Mark the item that you provided answer as incorrect.*

| | |
|---|---|
| Tempo restante no cronómetro no momento em que terminou (SEGUNDOS). *Time remaining on stopwatch at completion (SECONDS)* | |
| Exercício descontinuado porque a criança fez 4 erros sucessivos. *Exercise discontinued because the child made 4 successive mistakes.* | |

| | |
|---|---|
| *NA:* | *NE:* |

Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
Which languages did the child use in this task? (circle all answers that apply)

Português Crioulo Fula Mandinga Balanta Beafada

Outras (especificar) Others (please specify) _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

**TAREFA 4B. ADIÇÃO (Nível 2)**
*Task 4B. Addition (level 2)*

**Página 9**
*Page 9*

Papel e lápis. *Paper and pencil*

**Aqui estão algumas somas** [aponte com o dedo de cima para baixo]. **Podes usar este papel e este lápis se quiseres, mas não é obrigatório. Eu vou te dizer quando deves começar e quando deves parar. Diz-me as respostas para cada soma. Se não souberes uma resposta, avança para a soma seguinte. Estás pronto?** [espere que a criança responda] **Começa aqui** [aponte para a primeira soma]. *Here are some addition questions [glide hand from top to bottom]. You may use this paper and pencil if you want to, but it is not mandatory. Tell me the answers for each question. if you do not know the answer, move to the next one. Are you ready? [wait until the child responds] Start here (point to the first problem]*

(✓) 1 = Correcto *Correct*
(✓) 0 = Incorrecto ou Sem resposta *Incorrect of without answer*

| | | |
|---|---|---|
| 13 + 6 = (19) | 1 | 0 |
| 18 + 7 = (25) | 1 | 0 |
| 14 + 25 = (39) | 1 | 0 |
| 22 + 37 = (59) | 1 | 0 |
| 38 + 26 = (64) | 1 | 0 |

A criança usou: *The child used:*

| | |
|---|---|
| | Os dedos para contar *Fingers to count.* |
| | Papel e lápis *Paper and pencil.* |
| | Resolveu as somas de cabeça *Solved the question in his/her head.* |

Marque com ✓ todas as respostas que se apliquem. *Tick all answers that apply.*

Não fazer esta tarefa se a criança não tiver respondido correctamente a nenhum exercício de adição nível 1. *Skip this subtask if the child scores zero in level 1 Addition questions.*

Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to next task.*

Se a criança hesitar durante 5 segundos, diga a resposta e depois aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, provide the answer and then point to the next item and say "Go on". Mark the item that*

| | |
|---|---|
| | *you provided answer as incorrect.* |
| ✍ Exercício descontinuado porque a criança fez 4 erros sucessivos. *Exercise discontinued because the child made 4 successive mistakes.* | |
| *NA:* | *NE:* |
| ✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas) *Which languages did the child use in this task? (circle all answers that apply)*<br>Português Crioulo Fula Mandinga Balanta Beafada<br>Outras (especificar) *Others (please specify)* _____ | |

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 5A. SUBTRACÇÃO (Nível 1)**<br>*Task 5A. Subtraction (level 1)* | **Página 10 e 11**<br>*Page 10 and 11* | **60 segundos**<br>*60 seconds* |
|---|---|---|
| Papel e lápis. *Paper and pencil* | | ✋ Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*<br><br>✋ Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. |
| **Nestas duas páginas estão algumas subtracções** [aponte com o dedo de cima para baixo, mostrando as duas páginas]. **Podes usar este papel e este lápis se quiseres, mas não é obrigatório. Eu vou-te dizer quando deves começar e quando deves parar. Diz-me as respostas para cada subtracção. Se não souberes uma resposta, avança para a subtracção seguinte. Estás pronto/a?** [espere que a criança responda] **Começa aqui** [aponte para a primeira soma]. *In these two pages there are some subtraction questions [glide hand from top to bottom, showing the two pages]. You may use this paper and pencil if you want to, but it is not mandatory. I will tell when to start and when to stop. Say the answer for each question. If you don't know an answer, move to the next question. Are you ready? [wait until the child responds] Start here [point to the first problem]* | | |
| (✓) 1 = Correcto<br>(✓) 0 = Incorrecto ou Sem resposta<br>( ]) = *At the point reached by the child at 60 seconds.* | | |

| | | |
|---|---|---|
| 4 - 1 = (3) | 1 | 0 |
| 5 - 2 = (3) | 1 | 0 |
| 8 - 2 = (6) | 1 | 0 |
| 9 - 5 = (4) | 1 | 0 |
| 6 - 3 = (3) | 1 | 0 |
| 9 - 8 = (1) | 1 | 0 |
| 10 - 7 = (3) | 1 | 0 |
| 12 - 3= (9) | 1 | 0 |
| 10 - 2 = (8) | 1 | 0 |
| 12 - 9 = (3) | 1 | 0 |

| | | |
|---|---|---|
| 15 – 7 = (8) | 1 | 0 |
| 11 - 4 = (7) | 1 | 0 |
| 12 - 7 = (5) | 1 | 0 |
| 14 - 8 = (6) | 1 | 0 |
| 17 - 9 = (8) | 1 | 0 |
| 13 - 6 = (7) | 1 | 0 |
| 16 - 8 = (8) | 1 | 0 |
| 13 - 8 = (5) | 1 | 0 |
| 12 - 10 = (2) | 1 | 0 |
| 18 - 8 = (10) | 1 | 0 |

*If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to next task.*

➲ Se a criança hesitar durante 5 segundos, diga a resposta e depois aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, provide the answer and then point to the next item and say "Go on". Mark the item that you provided answer as incorrect*

A criança usou: *The child used:*

| | |
|---|---|
| | Os dedos para contar. *Fingers to count.* |
| | Papel e lápis. *Paper and pencil.* |
| | Resolveu as subtracções de cabeça. *Solved the questions in his/her head.* |

Marque com ✓ todas as respostas que se apliquem. *Tick all answers that apply.*

✍ Tempo restante no cronómetro no momento em que terminou (SEGUNDOS). *Time remaining on stopwatch at completion (SECONDS)*

✍ Exercício descontinuado porque a criança fez 4 erros sucessivos. *Exercise discontinued because the child made 4 successive mistakes.*

*NA:*

*NE:*

✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas) *Which languages did the child use in this task? (circle all answers that apply)*

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Outras (especificar) *Others (please specify)* _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

**TAREFA 5B. SUBTRACÇÃO (Nível 2)**
*Task 5B. Subtraction (level 2)*

**Página 12**
*Page 12*

Papel e lápis. *Paper and pencil*

**Aqui estão algumas subtracções** [aponte com o dedo de cima para baixo]. **Eu vou-te dizer quando deves começar e quando deves parar. Se quiseres podes usar este papel e lápis, mas não é obrigatório. Diz-me as respostas para cada subtracção. Se não souberes uma resposta, avança para a subtracção seguinte. Estás pronto? Começa aqui** [aponte para a primeira soma]. *Here are some subtraction problems [glide hand from top to bottom]. I will tell when to start and when to stop. You may use this paper and pencil if you want to. You do not have to do*

Não fazer esta tarefa se a criança não tiver respondido correctamente a nenhum exercício de subtracção nível 1. Skip this subtask

*so. Tell me the answer for each subtraction. If you do not know an answer, move to the next one. Are you ready? Start here (point to the first problem]*

(✓) 1 = Correcto *Correct*
(✓) 0 = Incorrecto ou Sem resposta *Incorrect or without answer*

| | | |
|---|---|---|
| 19 - 6 = (13) | 1 | 0 |
| 25 - 7 = (18) | 1 | 0 |
| 26 - 14 = (12) | 1 | 0 |
| 59 - 37 = (22) | 1 | 0 |
| 64 - 26 = (38) | 1 | 0 |

A criança usou: *The child used:*

| | |
|---|---|
| | Os dedos para contar. *Fingers to count.* |
| | Papel e lápis. *Paper and pencil.* |
| | Resolveu os problemas de cabeça. *Solved the questions in his/her head.* |

Marque com ✓todas as respostas que se apliquem. *Tick all answers that apply.*

*if the child scores zero in Level 1 subtraction questions.*

✋ Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child makes 4 successive errors, say "thanks", stop the exercise, mark below and move to next task.*

➲ Se a criança hesitar durante 5 segundos, diga a resposta e depois aponte para o item seguinte e diga "Continua". Marque o item que disse como incorrecto. *If the child hesitates for 5 seconds, say the item and then point to the next item and say "Go on". Mark the item that you provided answer as incorrect.*

*NA:* | *NE:*

✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
*Which languages did the child use in this task? (circle all answers that apply)*

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Outras (especificar) *Others (please specify)* _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 6. PROBLEMA DE PALAVRAS (praticar)**<br>*Task 6. Word problems (practice)* | | |
|---|---|---|
| Contadores, papel e lápis. *Counters, paper and pencil,* | | |
| **Vou-te ler alguns problemas e vou-te pedir para os resolveres. Aqui estão algumas coisas que podem te ajudar. Podes usá-los se precisares, mas não é obrigatório usá-los. Ouve com muita atenção cada problema. Se precisares eu posso repetir. Estás pronto/a? Vamos começar.** *I am going to read some problems for you to solve them. If you want you can use these counters, paper and pencil, but it is not mandatory. Listen carefully to each problem. If you need, I can repeat. Ready? Let's start.* | | |
| **Há 3 crianças na sala de aula.** [pausa e confira]<br>**1 das crianças sai da sala de aula.** [pausa e confira]<br>**Quantas crianças ficaram na sala de aula?**<br>*There are 3 children in the classroom [pause and check]*<br>*1 child gets out of the classroom. [pause and check]*<br>*How many children stay in the classroom?*<br><br>✓ [Se a criança respondeu 2, diga] **Muito bem, ficaram 2 crianças na sala de aula. Vamos continuar.** *[If the child answers 2, say] Well done, 2 children stayed in the classroom. Let's continue.*<br>× [Se a cirnaça não responder 2, coloque 3 contadores em cima da mesa]<br>**Imagina que estes contadores são crianças. Uma das crianças sai da sala de aula. Mostra-me uma criança a sair da sala de aula. Quantas crianças ficaram na sala de aula?**<br>**Muito bem, ficaram duas crianças na sala de aula. Vamos continuar.**<br>*[If the child does not answer 2, Put 3 counters on top of the table] Imagine that these counters are children. One of the children gets out of the classroom. Show me the child getting out of the classroom. How many children stayed in the classroom?*<br>*Well done, two children stayed in the classroom. Let's continue.* | | |

| **TAREFA 6. PROBLEMA DE PALAVRAS (exercício)**<br>*Task 6. Word problems (exercise)* | | |
|---|---|---|
| Contadores, papel e lápis. *Counters, paper and pencil.* | | [Pare e confirme] para ter a certeza que a criança percebe o que disse antes de continuar. Pode perguntar "Percebeste?".<br>Se a criança pedir pode ler de novo UMA VEZ cada problema.<br>*[pause and check] at the end of each sentence to make* |
| **Agora vou-te ler alguns problemas.** *Now I will read some more problems for you.* | | |
| (✓) 1 = Correcto *Correct*<br>(✓) 0 = Incorrecto ou Sem resposta *Incorrect or no response* | | |
| **Problema 1** *Problem 1*<br>**Estavam 2 crianças na sala de aula. Entram mais 3 crianças na sala de aula. Quantas crianças ficaram agora na sala de aula?**<br>*There are 2 children in the classroom. Another 3 children get inside the classroom. How many children are now in the classroom?* | **(5)** | **1** **0** |
| **Problema 2** *Problem 2*<br>**Estão 5 crianças na sala de aula. 2 são meninos e o resto são meninas. Quantas meninas estão dentro da sala de aula?**<br>*There are 5 children in the classroom. 2 are boys and the rest are girls. How many girls are inside the classroom?* | **(3)** | **1** **0** |

**Problema 3** *Problem 3*

**Estão 2 laranjas no cesto do Demba. Estão 7 laranjas no cesto da Aua. Quantas laranjas tenho de dar ao Demba para ficarem os dois com o mesmo número de laranjas?**

*There are 2 oranges in Demba's basket. There are 7 oranges in Aua's basket. How many oranges do I have to give to Demba so that both baskets have the same number of oranges?*

**(5)** | **1** | **0**

**Problema 4** *Problem 4*

**Estavam 5 crianças numa sala de aula. Entram mais algumas crianças e agora ficam 12 crianças na sala de aula. Quantas crianças entraram na sala de aula?**

*There were 5 children in the classroom. Some more children got inside the classroom. Now there are 12 children in the classroom. How many children got inside the classroom?*

**(7)** | **1** | **0**

**Problema 5** *Problem 5*

**Tenho 12 amêndoas para dividir entre 4 crianças. Quantas amêndoas devo dar a cada criança, para que fiquem todas como mesmo número de amêndoas?**

*I have 12 candies to share between 4 children. How many candies should I give to each child so that all of them get the same number of candies?*

**(3)** | **1** | **0**

**Problema 6** *Problem 6*

**Existem 5 carteiras na sala de aula. Em cada carteira estão sentadas duas crianças. Quantas crianças estão sentadas no na sala de aula?**

*There are 5 desks in the classroom. At each desk there are two children seated. How many children are in the classroom altogether?*

**(10)** | **1** | **0**

A criança usou: *The child used:*

| | |
|---|---|
| | Os dedos para contar. *Fingers to count.* |
| | Contadores *Counter (if panel decide it is appropriate to provide)* |
| | Papel e lápis. *Paper and pencil.* |
| | Resolveu os problemas de cabeça. *Solved the problems on his/her head.* |

Marque todas as respostas que se apliquem. *Tick all answers that apply.*

*sure that the child understands what you have said before continuing. You can ask "Do you understand?" when in doubt.*

*If the child requests, you may repeat the question ONCE only.*

Se a criança fizer 4 erros sucessivos diga "Muito Obrigado", pare o exercício e marque no quadro abaixo. *If the child makes 4 successive errors, say "thanks", stop the exercise and mark below.*

Se a criança demorar mais de 60 segundos num problema e não conseguir responder, diga "Vamos tentar outro" e avance para o item seguinte e marque o item anterior como incorrecto.

*If the child has worked on the problem for more than 60 seconds and not produced an answer, say "let us try another one" and move on to the next item and mark the item as incorrect.*

Exercício descontinuado porque a criança fez 4 erros sucessivos.
*Exercise discontinued because the child made 4 successive mistakes.*

| *NA:* | *NE:* |
|---|---|

✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
*Which languages did the child use in this task? (circle all answers that apply)*

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Outras (especificar) *Others (please specify)* _____

**Muito obrigada, fizeste um bom trabalho. Agora podes regressar para a tua sala de aula /podes ir para casa.**

*Thank you, you did a good job. Now please return to your own classroom/you can go home.*

Hora de fim da avaliação (*Time of ending*): _____h_____ m

Que língua(s) é que usou para administrar este teste? (circule todas as opções que se apliquem) *Which language(s) did you use to apply this test? (circle all answers that apply)*

Português Crioulo Fula Balanta Beafada Outras_____

**Teste de Leitura em língua portuguesa para os primeiros anos de ensino na Guiné-Bissau: Formulário de Instruções para os Enumeradores e Respostas dos alunos**

*Portuguese Early Grade Reading Assessment in Guinea-Bissau: Instructions for Enumerators and Children Response Form*

## PORTUGUÊS *Portuguese*

Instruções Gerais

É importante estabelecer uma relação descontraída e de confiança com a criança que vai ser avaliada através de uma conversa inicial com questões de interesse para a criança (ver exemplo abaixo). Aproveite este momento para identificar qual a língua em que a criança se sente mais confortável. A criança deve ver este exercício mais como um jogo do que uma avaliação. É importante que leia SOMENTE em voz alta o texto que está a **negrito**, de forma calma e clara, para que a criança possa compreender os exercícios. *It is important to establish a playful and relaxed relationship with the child that will be assessed through an initial talk on topics of interest to the child (see example below). Use this time to identify in what language the child is most comfortable with. The child should perceive the assessment more as a game rather than an evaluation. It is important that you ONLY read aloud the text in **bold**, slowly and clearly, so that the child can understand the exercises.*

**Bom dia. O meu nome é_____ e trabalho para a Effective Intervention. E tu, como te chamas? Como está a tua família? Quando eu não estou a trabalhar, eu gosto muito de _____. E tu, o que mais gostas de fazer quando não estás na escola?**

*Good morning. My name is _____ and I work at Effective Intervention. And you, what's your name? How is your family? When I am not at work, I like to _____. And you? What do you most enjoy doing when you are not at school?*

Consentimento Verbal

- **Vou-te explicar porque é que eu hoje estou aqui. Eu trabalho para um projecto da Effective Intervention. Viemos à tua escola fazer um trabalho para compreendermos melhor como é que as crianças aprendem a ler e matemática e tu foste escolhido para nos ajudares.** *Let me tell you why I am here today. I am working with a project of Effective Intervention. We came today to your school to do an exercise to help us better understand how children learn how to read and do mathematics, and you were chosen to help us.*
- **Gostaríamos de pedir a tua ajuda. Mas não tens de participar se não quiseres.** *We would like to ask for your help. But you do not have to take part if you do not want to.*
- **Vamos fazer um jogo de leitura e matemática. Eu vou pedir-te para leres em voz alta algumas letras, palavras e pequenas histórias. Depois irás ter com o meu colega** (aponte na direcção do enumerador de EGMA), **e ele/ela vai-te pedir para identificares números, fazeres contas e resolveres alguns problemas.** *We are going to play reading and mathematics games. I am going to ask you to read letters, words and a short story out loud. Then you will go to my friend/colleague sitting at the other side (point to the direction of the EGMA enumerator), and he/she will ask you to identify numbers, do some calculations and solve a few problems.*
- **Por vezes vou utilizar este relógio para saber quanto tempo demoras a completar algumas tarefas. Se ouvires um som, não prestes atenção.** *Sometimes I will use this timer to time how long it takes you to complete some of the tasks. If you hear it beeps, please do not pay attention to it.*
- **Este exercício NÃO é uma ficha de avaliação e não vai influenciar as tuas notas da escola.** *This is NOT a test and it will not affect your grade at school.*
- **Relembro que não tens de participar se não quiseres. Depois de começarmos, se preferires não responder a uma das perguntas, não há problema.** *Once again, you do not*

*have to participate if you do not wish to. Once we begin, if you would rather not answer a question, that's all right.*

- **Podemos começar?** [Espere até a criança responder] *Can we start? (wait until the child replies)*

Se o consentimento verbal é obtido, marque a caixa: ☐ **SIM**

*If the oral consent is obtained, please tick:* ☐ *YES*

Se o consentimento verbal não for obtido, marque na lista de alunos.

*If the oral consent is not obtained, please make a note on the student list.*

| | | | |
|---|---|---|---|
| A. Data: *Date:* | ____/_____/_____ (dd / mm / aaaa) | F. Género do Aluno: *Child Gender:* | ☐ 1. Fem<br>☐ 2.Masc |
| B. Hora Início: *Assessment start time:* | _____ h _____m | G. Nome da Escola que a criança frequenta*: Name of School the child attends:* | _____<br>☐A criança não frequenta este ano a escola. *The child is not attending school this school year* |
| C. Code of Enumerador: *Code of Enumerator:* | | H. Código da Escola: *Code of School:* | |
| D. Nome da Criança: *Name of child:* | | F. Turno (marque a opção aplicável): *School shift (tick as appropriate):* | ☐ 1. Manhã: *Morning*<br>☐ 2. Tarde: *Afternoon* |
| E. Código da Criança *Code of child:* | | I. Centro de Avaliação: *Assessment centre:* | |

| **TAREFA 1. IDENTIFICAR O NOME DAS LETRAS**<br>*TASK 1. Letter name Identification* | **Página 1** *Page 1* | **60 segundos** / *60 seconds* |
|---|---|---|
| **Nesta folha estão escritas letras do alfabeto. Por favor, lê as letras que estão escritas nesta folha.**<br>*On this page there are written letters of the alphabet. Please read the letters on this page.*<br><br>[Aponte para "J"] *[Point to "J"].* **Por exemplo, esta letra é "J".** *For example, this letter is "J".*<br><br>[Aponte para "n"] *[Point to "n"]* **Vamos praticar. Diz-me qual é esta letra.** *Let's practice. Tell me what letter this is.*<br>✓ [Se a criança respondeu "n", diga] **Muito bem, esta letra é o "n".** *[If the child answered n, say] Very good, this letter is "n".*<br><br>✗ [Se a criança não respondeu "n", diga] **Esta letra é "n".** *[If the child has not answered "n", say]* This letter is "n".<br><br>[Aponte para "X"] *[Point to "X"].* **Agora vamos experimentar outra. Diz-me que letra é esta.** *Now let's try another one. Tell me what letter this is.*<br>✓ *[*Se a criança respondeu "X", diga] **Muito bem, esta letra é "x"** *If the child answered "X", say] Very good, this letter is "x".* | | Inicie o cronómetro assim que a criança lê a primeira letra. Pare o cronómetro assim que a criança lê a ultima letra. *Start the timer when the child reads the first letter. Stop the timer when the child reads the last letter.*<br><br>➲ Se a criança hesitar numa letra mais de 3 SEGUNDOS, leia a letra e depois aponte para a letra |

✗ [Se a criança não respondeu "X", diga] **Esta letra é "x".** *[If the child has not answered "X", say] This letter is "x".*

[Aponte para a primeira letra na linha depois do exemplo]. *[Point to the first letter on the line just after the example]* **Percebeste o que vamos fazer? Quando eu disser "começar", começas a aqui, lê ao longo da página** [aponte] **o melhor que souberes. Aponta para cada letra que lês e lê em voz alta. Lê o mais depressa e correctamente que conseguires. Se houver uma letra que não conheces, passa para a letra seguinte.** *Have you understood? When I say "start", start reading and begin here, read across the page [point] the best you can. Point to each letter you read and read in a loud voice. Read as quickly and carefully as you can. If you come across a letter you do not know, just go on to the next letter.*

**Coloca o teu dedo na primeira letra** [confira que a criança o faz]**. Estás pronto? Podes começar.** *Put your finger on the first letter (make sure the child does so). Ready? Let's start.*

✍ ( / ) Marque as letras incorrectas com uma barra. *Mark any incorrect words with a slash ( / ).*

(ø) Marque com um círculo as autocorrecções se já marcou uma letra incorrecta. *Mark with a circle the self-corrections if you already marked as incorrect.*

( ] ) Marque a última letra lida com um parênteses recto. *Mark the final word read with a bracket ( ] ).*

Exemplos: J n X

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|
| S | i | h | R | B | p | E | o | n | t | (10) |
| L | E | t | d | A | t | a | D | e | N | (20) |
| h | O | E | M | u | r | L | G | R | U | (30) |
| g | r | b | e | v | f | m | T | S | R | (40) |
| t | S | q | A | M | c | O | t | N | P | (50) |
| E | A | e | S | o | F | h | U | a | T | (60) |
| R | g | H | b | S | i | g | m | J | L | (70) |
| L | V | n | O | e | o | E | r | p | x | (80) |
| S | t | C | n | p | A | F | c | a | E | (90) |
| n | A | c | D | d | Q | O | j | E | n | (100) |

seguinte e diga "Continua". Marque a letra que leu como incorrecta. *If the child hesitates for 3 seconds, read that letter and then point to the next letter and say "Continue". Mark the letter you read as incorrect.*

✋ Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*

✋ Se a criança não deu nenhuma resposta correcta na primeira linha, diga **"Muito Obrigado**", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child does not provide a single correct response on the first line, say "Thank you!", discontinue this subtask, check the box at the bottom, and go on to the next subtask.*

| | |
|---|---|
| ✍ Tempo restante no cronómetro no momento em que terminou (SEGUNDOS). *Time remaining on stopwatch at completion (SECONDS)* | |
| ✍ Exercício descontinuado porque a criança não disse nenhuma letra correcta na primeira linha. *Exercise discontinued because the child had no correct answers in the first line* | |

| | |
|---|---|
| *NA:* | *NE:* |

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 2. IDENTIFICAR O SOM INICIAL** | | |
|---|---|---|
| **Neste exercício deves ouvir as palavras que eu vou ler. Eu vou ler três palavras e uma delas começa com um som diferente. Diz-me que palavra começa com um som diferente.** *In this exercise, you will listen to the words that I read. I will read three words and one of them starts with a different sound. Tell me which one starts with a different sound.*<br><br>**Por exemplo:** *For example:*<br><br>**bota, bola, sapo, qual começa com um som diferente?**<br>*bota, bola, sapo, which one starts with a different sound?*<br><br>✓ [Se a criança respondeu "sapo", diga] **Muito bem, "sapo" começa com um som diferente.** *[If the child answered "sapo", say] Very good, "sapo" starts with a different sound.*<br><br>✗ [Se a criança não respondeu "sapo", diga] **"bota", "bola", "sapo". "sapo" começa com um som diferente do que "bota" e "bola".** *[If the child did not answer "sapo", say] "bota", "bola", "sapo". "sapo" starts with a different sound than "bota" and "bola".*<br><br>**Agora vamos experimentar outra vez:** *Now let's try agin:*<br><br>**casa, livro, cama, qual começa com um som diferente?** *casa, livro, cama which one starts with a different sound?*<br><br>✓ [Se a criança respondeu "livro", diga] **Muito bem, "livro" começa com um som diferente.** *[If the child answered "livro", say] Very good, "livro" starts with a different sound.*<br><br>✗ [Se a criança não respondeu "livro", diga] **"casa", "livro", "cama". "livro" começa com um som diferente do que "casa" e "camisa".** *[If the child did not answer "livro", say] "casa", "livro", "cama". "livro" starts with a different sound than "casa" and "cama".*<br><br>**Compreendeste? Estás pronto? Vamos começar.** *Did you understand? Are you ready? Let's start.*<br><br>(✓) 1 = Correcto *Correct*<br>(✓) 0 = Incorrecto *Incorrect*<br>(✓) . = Sem resposta *No answer* | | ✋ Se a criança não responder os primeiros 5 itens, diga "**Obrigado**", pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child does not provide an answer in the first 5 items, say "Thank you!", discontinue this subtask, check the box at the bottom, and go on to the next subtask.*<br><br>➲ Se a criança hesitar num item mais de 5 SEGUNDOS, diga a resposta. Marque o item que mencionou como "Sem resposta". *If the child hesitates for 5 seconds, provide the answer. Mark the item that you provided answer as "no response".* |

| | | | | Resposta | Correcto | Incorrecto | Sem resposta |
|---|---|---|---|---|---|---|---|
| 1. | lápis | cama | lenha | [cama] | 1 | 0 | . |
| 2. | mota | mola | dedo | [dedo] | 1 | 0 | . |
| 3. | salto | rato | roda | [salto] | 1 | 0 | . |
| 4. | manga | vaso | mola | [vaso] | 1 | 0 | . |
| 5. | sala | banco | saia | [banco] | 1 | 0 | . |
| 6. | boca | bebé | tambor | [tambor] | 1 | 0 | . |
| 7. | copo | tenda | tecto | [copo] | 1 | 0 | . |
| 8. | vaca | fome | fumo | [vaca] | 1 | 0 | . |
| 9. | carvão | planta | pedra | [carvão] | 1 | 0 | . |
| 10. | pato | poço | tinta | [tinta] | 1 | 0 | . |

✍ Exercício descontinuado porque a criança não deu respostas certas nos primeiros 5 itens. *Exercise discontinued because the child had no correct answers in the first 5 items.*

*NA:* *NE:*

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

**TAREFA 3. LER PALAVRAS INVENTADAS** *Invented word Reading*

**Página 2** *Page 2*

**60 segundos** *60 seconds*

**Nesta folha estão escritas palavras inventadas. Gostava que lesses o máximo de palavras que conseguires. Não deves soletrar, mas sim ler as palavras.** *In this sheet there are some made-up words. I would like you to read as many as you can. Do not spell the words, but read them.*

*[Aponte para a palavra "leto"]* **Por exemplo, esta palavra inventada é "leto".** *[Point to the word "leto"] For example this made up word is "leto".*

*[Aponte para "difa"]* **Vamos praticar. Lê esta palavra.** *[Point to the word "difa"] Let's practice. Read this word.*

✓ [Se a criança respondeu "difa", diga] **Muito bem, esta palavra inventada é "difa".** *[If the child answered "difa", say] Very good, this made up word is "difa".*

✗ [Se a criança não respondeu "difa", diga] **Esta palavra inventada é "difa".** *[If the child did not answer "difa", say]This made up word is "difa".*

*[Aponte para a palavra "maba"]* **Agora vamos experimentar outra. Lê esta palavra.** *[Point to the word "maba"] Now let's try another one. Read this word.*

✓ [Se a criança respondeu "maba", diga] **Muito bem, esta palavra inventada é "maba".** *[If the child answered "maba", say] Very good, this made up word is "maba".*

✗ [Se a criança não respondeu "maba", diga] **Esta palavra inventada é "maba".** *[If the child did not answer "maba", say] This made up word is "maba".*

Inicie o cronómetro assim que a criança lê a primeira palavra. Pare o cronómetro assim que a criança lê a última palavra. *Start the timer when the child reads the first word. Stop the timer when the child reads the last word.*

➲ Se a criança hesitar ou parar numa palavra mais de 3 SEGUNDOS, diga a palavra, aponte para a próxima palavra e diga

*[Aponte para a primeira palavra "bó"]* **Quando eu disser "começar", começa aqui** [aponte para a primeira palavra]**, e lê ao longo da página** [aponte]. **Aponta para cada palavra e lê em voz alta. Lê o mais depressa e o melhor que puderes. Se houver uma palavra que não consigas ler, passa para a palavra seguinte. Coloca o teu dedo na primeira palavra** [confirmar que a criança coloco ao dedo]**. Estás pronto? Podes começar.** *[Point to the word "bó"]. When I say "start", start here [point to the first word], and read through the page [point]. Point to each word and read out loud. Read as fast and the best you can. If there is one word you can't read, move to the next one. Put your finger in the first one [make sure the child does so]. Are you ready? You can start.*

✍ ( / ) Marque as palavras incorrectas com uma barra. *Mark any incorrect words with a slash ( / ).*

(ø) Marque com um círculo as autocorrecções se já marcou uma palavra incorrecta. *Mark with a circle the self-corrections if you already marked as incorrect.*

( ] ) Marque a última letra lida com um parenteses recto. *Mark the final word read with a bracket ( ] ).*

Exemplos: leto difa maba

| 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|
| bó | tila | lum | poa | hove | (5) |
| leta | ezal | rou | bunfe | pafa | (10) |
| pil | fó | chuda | orpa | nusa | (15) |
| gava | zala | lorta | dasa | lora | (20) |
| dalu | himo | enha | nabel | saliz | (25) |
| mesca | vesta | hodem | muide | nalha | (30) |
| teça | pajam | darca | orpão | dação | (35) |
| dalé | igua | seva | jile | gamola | (40) |
| bavai | bleta | coeta | foxe | vono | (45) |
| gorão | leço | golca | jalno | cefo | (50) |

"Continua". Marque a palavra que leu como incorrecta. *If the child hesitates for 3 seconds, say the word and then point to the next word and say "Continue". Mark the word that you provided as incorrect.*

✋ Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*

✋ Se a criança não conseguiu ler nenhuma palavra correctamente na primeira linha (5 palavras), diga **"Obrigado"**, pare o exercício, marque no quadro abaixo e passe para o próximo exercício. *If the child does not provide a single correct response in the first line (5 words), say "Thank you!", discontinue this subtask, check the box at the bottom, and go on to the next subtask.*

| | |
|---|---|
| ✍ Tempo restante no cronómetro no momento em que terminou (SEGUNDOS). *Time remaining on stopwatch at completion (SECONDS)* | |
| ✍ Exercício descontinuado porque a criança não disse nenhuma palavra correcta na primeira linha. *Exercise discontinued because the child had no correct answers in the first line* | |

| | |
|---|---|
| *NA:* | *NE:* |

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 4. LEITURA DE PALAVRAS FAMILIARES**<br>*Task 4. Familiar Word Reading* | **Página 3**<br>Page 3 | **60 segundos**<br>*60 seconds* |
|---|---|---|

**Nesta folha estão escritas algumas palavras. Lê o máximo de palavras que conseguires. Não deves soletrar as palavras, mas sim ler as palavras.** *In this sheet, there are some words. Read as much words as you can. You should not spell them, but read them.*

**Por exemplo, esta palavra é "gato".** *For example this word is "gato".*

**Vamos praticar.** *[Aponte para a primeira palavra "vaca"].* **Lê esta palavra.** *Let's practice. [Point to the word "vaca"]. Read this word.*

✓ [Se a criança respondeu "vaca", diga] **Muito bem, esta palavra é "vaca".** *[If the child answered "vaca", say] Very good, the word is "vaca".*

✗ [Se a criança não respondeu "vaca", diga] **Esta palavra é "vaca".** *[If the child did not answer "vaca", say] This word is "vaca".*

**Agora vamos experimentar outra** *[Aponte para a primeira palavra "casa"]. Now let's try another one. [Point to the word "casa"]*

✓ [Se a criança respondeu "casa", diga] **Muito bem, esta palavra é "casa".** *[If the child answered "casa", say] Very good, the word is "casa".*

✗ [Se a criança não respondeu "casa", diga] **Esta palavra é "casa".** *[If the child did not answer "casa", say] This word is "casa".*

**Quando eu disser "Começa", lê o máximo de palavras que fores capaz. Se houver uma palavra que não consegues ler, passa para a palavra seguinte. Põe o teu dedo na primeira palavra** [verifique que a criança colocou o dedo]**. Estás pronto? Podes começar.** *When I say "start", read as many words as you can. If there is a word you can't read, move to the next one. Put your finger on the first word [make sure the child does so]. Are you ready? You can start.*

( / ) Marque as palavras incorrectas com uma barra. *Mark any incorrect words with a slash ( / ).*

(ø) Marque com um círculo as autocorrecções se já marcou uma palavra incorrecta. *Mark with a circle the self-corrections if you already marked as incorrect.*

( ] ) Marque a última palavra lida com um parenteses recto. *Mark the final word read with a bracket ( ] ).*

Exemplo: gato vaca casa

| 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|
| sol | rio | lata | remo | gelo | (5) |
| sapo | anel | voa | tomate | sapato | (10) |
| cebola | aqui | dormir | barco | saco | (15) |
| ninho | horta | ir | ela | pai | (20) |
| tinta | ar | ler | árvore | caracol | (25) |
| animal | dedo | quando | voar | sete | (30) |
| uma | tabanca | carro | tambor | cadeira | (35) |

Inicie o cronómetro assim que a criança leia a primeira palavra. Pare o cronómetro assim que a criança lê a última palavra. *Start the timer when the child reads the first word. Stop the timer when the child reads the last word.*

➲ Se a criança hesitar ou parar numa palavra mais de 3 SEGUNDOS, diga a palavra e depois aponte para a próxima palavra e diga "Continua". Marque a palavra que mencionou como incorrecta. *If the child hesitates for 3 seconds, provide the word and then point to the next word and say "Continue". Mark the word that you provided as incorrect.*

Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."*

Se a criança não conseguiu ler nenhuma palavra correctamente na primeira linha (5 palavras), diga "Obrigado", pare o exercício,

| | | | | | | |
|---|---|---|---|---|---|---|
| cantar | canoa | gazela | sempre | dia | (40) | marque no quadro abaixo e passe para o próximo exercício. *If the child does not provide a single correct response on the first line (5 words), say "Thank you!", discontinue this subtask, check the box at the bottom, and go on to the next subtask.* |
| mão | gostar | azul | bola | beber | (45) | |
| terra | arroz | pé | guiar | fonte | (50) | |
| ✍ Tempo restante no cronómetro no momento em que terminou (SEGUNDOS). *Time remaining on stopwatch at completion (SECONDS)* | | | | | | |
| ✍ Exercício descontinuado porque a criança não disse nenhuma letra correcta na primeira linha. *Exercise discontinued because the child had no correct answers in the first line* | | | | | | |
| *NA:* | | | *NE:* | | | |

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 5a. LEITURA** *Reading* | | **60 segundos** | **SECÇÃO 5b. COMPREENSÃO DA LEITURA** *Reading Comprehension* | | | |
|---|---|---|---|---|---|---|
| **Página 5**. *Page 5.* | | Inicie o cronómetro assim que a criança lê a primeira palavra. *Start the timer when the child reads the first word.* | Quando a criança acabar de ler, ou os 60 segundos terminarem, RETIRE a história da frente da criança e pergunte a primeira questão. *When the child finishes reading, REMOVE the passage from the child's view and ask the first question.* | | | |
| Mostre à criança a folha do livro do aluno enquanto lê as instruções. *Show to the children the page of the stimulus booklet while you read the instructions.* | | ➲ Se a criança hesitar ou parar numa palavra mais de 3 SEGUNDOS, aponte para a próxima palavra e diga "Continua". *If the child hesitates or stops more than 3 seconds on a word, move to the next word and say "Continue".* | Pergunte à criança somente as perguntas relacionadas com o texto lido. Uma criança deve ter lido a parte do texto que corresponde a uma pergunta. Se uma criança não der uma resposta depois de 10 segundos, marque "não respondeu" e passe para a pergunta seguinte. Não repita as perguntas. *Ask the child only the questions related to the text read. The child should have read the part of the text that correspond to the question. If a child does not give an answer after 10 seconds, mark "no response" and move to the next question. Do not repeat the questions.* | | | |
| **Temos aqui uma pequena história. Lê esta história em voz alta, sem demora e correctamente. Quando acabares de ler, vou fazer algumas perguntas sobre a história. Quando eu disser "Começa", lê a história o melhor que puderes. Se houver uma palavra que não consegues ler, passa para a palavra seguinte. Põe o teu dedo na primeira palavra. Estás pronto? Podes começar.** *Here is a short story. I would like that you read this story aloud, quickly but carefully. When you finish, I will ask you some questions about the story. When I say "Start", read the story the best you can. If there is a word that you cannot read, go to the next one. Ready? You can start.* | | ✋ Quando o cronómetro chegar a zero, diga "pára". *When the timer reaches 0, say "stop."* | **Agora vou-te fazer algumas perguntas sobre a história que acabaste de ler. Responde às perguntas o melhor que conseguires. Podes responder na língua que preferires.** *Now I am going to ask you about the story you just read. Answer the questions the best you can.* | | | |
| (/) Marque as palavras incorrectas com uma barra<br>(ø) Marque com um círculo as autocorrecções se já marcou uma palavra incorrecta<br>(]) Marque a última palavra lida com um parenteses | | ✋ Se a criança não conseguiu ler nenhuma palavra correctamente antes da palavra na caixa, diga **"Obrigado"**, pare o exercício, marque no quadro abaixo e passe para o próximo exercício. Não faça quaisquer perguntas de compreensão. *If the child does not read any word correctly before the word in the box mark below and move to the next task.* | (✓) 1 = Correcto<br>(✓) 0 = Incorrecto<br>(✓) . = Sem resposta | | | |
| O macaco convidou a sua amiga vaca *The monkey invited his friend cow* | 7 | | Perguntas [Respostas] *Questions [Answers]* | | | |
| para irem à horta do Tio Mussa. O macaco queria roubar bananas *to go to uncle Mussa's garden. The monkey wanted to steal bananas* | 19 | | **Quem é a amiga do macaco?** *Who is friend of the monkey?* [A vaca] [*The cow]* | 1 | 0 | . |
| mas a vaca ficou zangada e disse: - Não podemos fazer isso, roubar é muito feio. | 34 | | **O que é que o macaco queria fazer na horta do Tio Mussa?** *What did the monkey want to do in uncle Mussa's garden?* [Roubar bananas] *[To steal bananas]* | 1 | 0 | . |
| | | | **Porque é que a vaca ficou zangada?** *Why was the cow upset?* | 1 | 0 | . |

| | | | | | | |
|---|---|---|---|---|---|---|
| *but the cow was upset and said: - We cannot do that, to steal is very ugly.* | | Se a criança disser "Não sei" marque como incorrecto. *If the child says "I don't know", mark incorrect*. | [Porque roubar é uma coisa muito feia; Porque o macaco queria roubar](considere todas as respostas sensatas como correctas) [*Because to steal is very bad; because the monkey wanted to steal (consider all sensible answers as correct]* | | | |
| Vamos pedir ao Tio Mussa para nos oferecer uma banana.<br>A vaca e o macaco foram à horta e o Tio Mussa deu-lhes uma banana.<br>*Let's ask uncle Mussa to offer us one banana.*<br>*The cow and the monkey went to the garden and uncle Mussa gave them a banana.* | 59 | | **O que é o Tio Mussa deu ao macaco e à vaca?** *What did uncle Mussa gave to the monkey and the cow?*<br>[Uma banana / bananas / uma banana para cada um]<br>*[One banana /bananas /one banana for each one]* | 1 | 0 | . |
| O macaco e a vaca ficaram muito felizes.<br>*The monkey and the cow were very happy.* | 67 | Fazer a última pergunta mesmo se a criança conseguir ler somente até à palavra 60. *Ask the last question even if the child only reads up to word 60.* | **Como é que o Tio Mussa se teria sentido se descobrisse o que é que o macaco queria fazer?** *How would uncle Mussa feel if he found out what the monkey wanted to do?*<br>([Triste / zangado] *[Sad /mad]* | 1 | 0 | . |
| ✍ Tempo restante no cronómetro no momento em que terminou (SEGUNDOS) *Time remaining on stopwatch at completion (SECONDS)* | | | ✍ Exercício descontinuado porque a criança não deu leu nenhuma palavra correctamente antes da palavra dentro da caixa *Exercise discontinued because the child did not read any word correct before the boxed word.* | | | |
| *NA (5a):* | *NE(5a):* | | *NA(5b):* | *NE(5b):* | | |

✍ Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)
*Which languages did the child use in this task? (circle all answers that apply)*

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Outras (especificar) *Others (please specify)* _____

**Obrigada, vamos passar para o exercício seguinte.** *Thank you, let's move to the next task.*

| **TAREFA 6. COMPREENSÃO ORAL**<br>*TASK 6. ORAL COMPREHENSION* | | | | |
|---|---|---|---|---|
| **Agora eu vou ler um pequeno texto em voz alta e a seguir vou-te fazer algumas perguntas. Por favor ouve com atenção e responde às perguntas o melhor que puderes. Podes responder às perguntas na língua que preferires. Estás pronto? Vamos começar.**<br>*I am going to read you a short story aloud ONCE and then ask you some questions. Please listen carefully and answer the questions as best as you can. You can answer the questions in whichever language you prefer. Ready? Let's start.* | | | | Retire o livro do aluno do olhar da criança. *Remove the passage from the child's view.*<br>Não permita que a criança veja o texto ou as perguntas. *Do not allow the child to look at the passage or the questions.*<br>Se uma criança responder "Eu não sei", marque incorrecto. *If a child says "I don't know", mark as incorrect.* |
| (✓) 1 = Correcto *Correct*<br>(✓) 0 = Incorrecto *Incorrect*<br>(✓) . = Sem resposta *No answer* | | | | |
| **O Demba estava muito triste, porque perdeu uma das cabras do avô. O Demba não podia ir procurar a cabra, porque não podia deixar as outras sozinhas. O avô do Demba foi à procura da cabra e encontrou-a. O Demba ficou muito contente.** *Demba was very sad because he lost one of grandfather's goat. He could not go to look for the goat, because he cannot leave the others alone. Demba's grandfather went to look for the goat and found her. Demba was very happy.* | | | | |
| **Porque é que o Demba estava triste?** *Why was Demba sad?*<br>*[Ele perdeu a cabra do seu avô; ele não podia ir procurar a cabra] [He lost his grandfather's goat; he could not go to look for it]* | 1 | 0 | . | |
| **Quem é que foi à procura da cabra?** *Who went to look for the goat?*<br>[O avô do Demba] *[Demba's grandfather]* | 1 | 0 | . | |
| **Porque é que o Demba ficou contente?** *Why was Demba happy?*<br>[O avô regressou com a sua cabra; a cabra está de volta; O avô encontrou a cabra] *[Grandfather returned with his goat; his goat is back; Grandfather found the goat]* | 1 | 0 | . | |
| Que língua(s) é que a criança usou nesta tarefa? (circule todas as linguas que foram faladas)<br>*Which languages did the child use in this task? (circle all answers that apply)*<br>Português Crioulo Fula Mandinga Balanta Beafada<br>Outras (especificar) *Others (please specify)* _____ | | | | |

**Obrigada por teres feito este exercício comigo.** *[Siga as instruções do manual de enumeração]* Hora de fim da avaliação: _____h_____ **m**

*Thank you for doing this exercise with me. [Follow the instruction on the enumeration manual] Time of ending: _____h_____m*

Que língua(s) é que usou para administrar este teste? (circule todas as opções que se apliquem) *Which language(s) did you use to apply this test? (circle all answers that apply)*

Português Crioulo Fula Balanta Beafada Outras_____