Parental Involvement Without Academic Input: A Low-Cost Approach to Improving Student Outcomes[1]

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Abstract

Despite rising primary school enrollment in developing countries, secondary school completion remains low and unequal. This study evaluates a randomized controlled trial in Benin that tested whether providing parents with guidance on managing their child's time and effort improves student learning. Parents of 2,094 8^{th}-grade students across 20 schools received structured recommendations through weekly phone calls over four months. The intervention increased grade completion by 6% and year-end GPA by 0.11 standard deviations, with the largest gains for academically weaker students, who were 40% more likely to progress. These effects persisted one year later, demonstrating the long-term impact of parental involvement. Parents became more engaged at home and school, reduced their child's household chores, and improved their awareness of academic progress. These findings highlight a low-cost, scalable strategy for improving education in sub-Saharan Africa and emphasize the critical role of parental management—beyond financial support—in shaping student success.

JEL Codes: I20, I25, D80, O15

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1 Introduction

Developing countries have experienced large increases in school enrollment over the past few decades, yet school completion rates remain persistently low and unequal (Inoue et al. 2015).[2] Children from low-income families are disproportionately at risk of dropping out or repeating grades, exacerbating educational disparities (UNESCO 2017; Watkins and Ashforth 2019; Alesina et al. 2021).[3][4] These disparities in education contribute to a broader cycle of economic inequality and intergenerational poverty, with lower school attainment linked to lower lifetime earnings and weaker economic mobility (Chetty et al. 2014; Reardon 2012).

Policies aimed at helping low-income parents support their children's education have overwhelmingly focused on alleviating financial constraints—through school fee reductions, conditional cash transfers, or scholarships—based on the assumption that resource scarcity is the primary barrier to educational success. However, this perspective often overlooks a crucial factor: the role of non-financial parental involvement in shaping children's time use, effort, and persistence in school.[5] Moreover, many low-educated and illiterate parents themselves view their role as primarily financial, believing that their limited schooling prevents them from meaningfully contributing beyond paying tuition and covering school expenses (Wolf 2020). This paper asks: Can simple, structured guidance—requiring no academic input from parents—improve student outcomes in low-resource settings?

A large literature has examined interventions aimed at increasing parental involvement in education. One strand focuses on providing parents with information about school quality and the returns to education, assuming that asymmetric information is a key barrier to parental investment (A. V. Banerjee et al. 2010; Hastings and Weinstein 2008; Jensen 2010; Nguyen 2008). Another strand provides parents with information about

2. In sub-Saharan Africa, the primary school completion rate is 78%. The rate is much lower for the poorest children (32%) compared to the wealthiest children (83%). At the lower secondary level, the gap widens further, with only 13% of the poorest children completing compared to 66% of the wealthiest children. These statistics are based on UNESCO data.

3. Poor parents tend to live in rural areas and have little to no education.

4. Akresh, Halim, and Kleemans 2023 suggest that additional education has long-term effects on adult outcomes. Gertler et al. 2014 find higher earnings 20 years after an early child development program in Jamaica. There is also evidence that preschool and kindergarten programs lead to improved adult outcomes (Garces, Thomas, and Currie 2002; Heckman et al. 2010; Chetty et al. 2011).

5. See Glewwe and Muralidharan 2016 for a review of different education interventions in developing countries.

their child's academic performance, behavior, and attendance or about resources available to support their child's learning (Andrabi, Das, and Khwaja 2017; York, Loeb, and Doss 2019; Dizon-Ross 2019; De Walque and Valente 2023; Barrera-Osorio et al. 2020; Bergman 2021; Cunha et al. 2017; Rogers and Feller 2018; Berlinski et al. 2021). However, these interventions often assume that parents, when given information, will take effective action to improve their child's education—implicitly favoring parents with higher education levels who can process and act on complex information.

This study evaluates the impact of an information intervention designed to enhance parental involvement in secondary education in southern Benin. The experiment was conducted in 20 randomly selected secondary schools, targeting parents of 8th-grade students. A total of 2,094 parents participated, with 1,038 randomly assigned to the treatment group and 1,056 to the control group. The intervention consisted of weekly phone calls over four months (January to May), delivering structured, actionable recommendations on how parents—regardless of literacy level—could improve their child's academic performance through better time management, oversight, and engagement.[6]

Unlike many traditional interventions, this program did not provide direct academic instruction, tutoring, financial aid, or performance, absenteeism, or information on student behavior. Instead, it empowered parents to create structure around their child's education. The intervention led to a 4 percentage-point increase in grade completion rates, a 6 percent improvement relative to the control group mean, and a 0.11 standard deviation increase in year-end GPA. The largest gains were observed in Physics (0.12 standard deviations), Biology (0.09 standard deviations), and History-Geography (0.06 standard deviations), while no significant effects were found in Language or Math. The intervention was particularly effective for academically weaker students, who experienced a 12 percentage-point increase in grade completion, a 40 percent improvement. I map out the mechanisms driving these improvements by documenting changes in parental involvement, household dynamics, school engagement and parents knowledge about their children's performance. One of the most striking behavioral changes is a 31% increase in students doing fewer household chores, a shift reported in both parent and student surveys. This suggests that parents adjust household responsibilities to allow children more time

6. The intervention was designed based on insights from psychology literature on parental involvement (Hoover-Dempsey and Sandler 1995), focus groups with school officials, teachers, parents, and students, and personal experiences growing up in a low-income neighborhood where structured parental oversight played a critical role in school persistence.

for studying, reinforcing the idea that parental engagement is not merely about oversight but also about reallocating time and priorities within the household. Parents also become significantly better informed about their child's academic performance, even though the intervention did not explicitly provide performance data. This highlights how a lack of parental structure may not only reduce engagement but also limit parents' awareness of their children's education, further perpetuating disengagement.

One year later, these effects persisted, particularly for students from illiterate households and female students. The intervention led to a 33 percent reduction in dropout among students with illiterate parents, reinforcing the idea that these parents—despite lacking formal education—can play a meaningful role in their child's educational success when provided with simple guidance. The intervention also reduced dropout by 12 percent among female students, an important finding given that girls in low-income settings face additional barriers to school persistence.

A key concern was whether time-intensive parental involvement might reduce financial investment in education. However, I find no evidence of substitution effects: parents did not reduce tuition payments, delay payments, or decrease the likelihood of fully paying school fees. Instead, the results suggest that financial and non-financial parental support function as complements, not substitutes.

The intervention also did not create negative spillovers. Instead, both treated and control students in intervention schools outperformed their peers in non-intervention schools. Treated students exhibited a 6.2 percentage-point increase in grade completion, a 9.4 percent improvement relative to the non-intervention school average, and even control students in intervention schools showed slight improvements.

This study departs from previous work on parental engagement interventions by demonstrating a highly scalable and accessible approach. While prior studies have encouraged structured parent-school interactions (e.g., Avvisati et al. 2014), these interventions typically rely on in-person meetings, structured school involvement, or complex informational materials, which may be difficult to implement in contexts where parents have low literacy or limited time flexibility. My intervention requires no direct academic input from parents, no reliance on school-facilitated interactions, and no complex materials. Instead, it delivers simple, universal, and low-cost behavioral guidance through weekly phone calls, ensuring accessibility regardless of parental education levels or logistical constraints.

This paper contributes to several strands of economic research. First, I extend the literature on management and productivity beyond firms to household decision-making. Prior research has shown that management practices influence firm productivity across countries (Bloom and Van Reenen 2007, Bloom and Van Reenen 2010). I show that similar patterns exist in households, where differences in parental management practices impact children's educational attainment.

Second, I reframe information interventions in education. Unlike studies that assume parents already understand their managerial role but lack school performance data (A. V. Banerjee et al. 2010; Andrabi, Das, and Khwaja 2017; Dizon-Ross 2019), I show that many low-educated parents lack clarity on how to engage effectively. Instead of simply providing parents with school information, this study suggests that teaching them how to engage may be a more sustainable policy approach. While this study focuses on a developing country context, the findings have broader relevance for educational disparities in high-income countries. In settings such as the United States and other developed economies, low-income parents often work multiple jobs, have limited time at home, and may not fully recognize how small but consistent structures—such as setting study schedules or monitoring school attendance—can significantly impact their child's academic success. Research has documented large achievement gaps between low-income and middle-class children (Chetty et al. 2014; Reardon 2012), often attributed to differences in school quality, access to tutoring, or enrichment activities. However, my findings suggest that differences in parental structure and oversight may also play an important role. Even in high-income settings, interventions that emphasize simple, structured parental involvement—rather than direct academic assistance—could help reduce educational gaps by encouraging better time management, school engagement, and accountability at home. These insights extend the discussion beyond financial constraints and school-based policies, highlighting the role of household management as a key but often overlooked determinant of educational success.

Third, I provide evidence that financial and non-financial parental investments function as complements, not substitutes. The findings suggest that when parents are made aware of their role, they increase both financial and time investments in their child's education.

Finally, my intervention is highly cost-effective as it increases both year-end GPAs and

grade completion rates. In many education systems, passing from one grade to the next is performance-based rather than automatic, making grade repetition common, especially in low-income settings. The fact that the intervention improves both student performance and grade completion is particularly important, as grade repetition imposes high costs on families and governments, prolongs schooling, and increases dropout risk. By showing that a low-cost, non-financial parental engagement strategy can boost achievement and reduce grade repetition, this study highlights a scalable solution for improving educational attainment while easing financial burdens on the education system.

A cost-benefit analysis shows that this low-cost intervention pays for itself within a year in the least conservative case and within 40 years in the most conservative. These findings highlight a highly cost-effective and scalable policy tool that can be implemented at scale with minimal infrastructure, making it particularly relevant for low-resource settings.

The remainder of the paper is structured as follows. Section 2 describes the context and experimental design. Section 3 outlines the survey and administrative data collection. Section 4 presents the empirical strategy, and Section 5 reports the empirical results. Section 6 provides the cost-benefit analysis. Section 7 concludes.

2 Education in Benin and Experimental Design

2.1 Education in Benin

Benin is a French-speaking country in West Africa. The country is divided into 12 regions. In 2019, Benin had 1791 secondary schools (873 public and 918 private) (Ministry of Secondary Education, 2019). The education system in Benin is similar to that of most French-speaking countries in Africa. Primary education takes 6 years to complete after kindergarten. At the end of primary education, students take a national exam called "Certificat d'Étude Primair (CEP)". To be enrolled in secondary school, students need to pass the CEP. Secondary education is divided into lower and upper secondary. The lower secondary (middle school) has four grades, and the upper secondary has three grades. In the first two grades of lower secondary, students take 6 subjects (Math, Physics, Biology, Language (French and English), and History-Geography). Each of these subjects has equal weight in computing each semester's GPA. In the third and fourth grades of lower secondary, students take an additional subject (Spanish or German) on top of these

six. At the end of the fourth grade of lower secondary, students take a national exam called "Brevet d'Études du Premier Cycle (BEPC)". Admission to upper secondary (high school) is conditioned on passing that exam. In upper secondary, students are put into five tracks (A1, A2, B, C, D). These tracks can be grouped into two categories: STEM, and Humanities. Students are assigned to these tracks based on their performance in STEM subjects (math, Physics, Biology) versus humanities subjects (French, English, and Geography).

This study took place in the Atlantique region. This region had 95 public secondary schools and 280 private secondary schools in 2019, making it the province with the biggest number of secondary schools (Ministere de l'Enseignement Secondaire, 2019). This study focuses on 8th-grade students. In 2019, there were 146025 8th-grade students in Benin. Out of them, there were 79086 boys and 66939 girls (Ministere de l'Enseignement Secondaire, 2019). In the department of Atlantique, this corresponds to 28332 students (14848 boys and 13484 girls), making it the second department with the highest number of students enrolled in 8th grade. In total, 2094 households were enrolled in this Study. Table 1 shows some descriptive statistics about these households. On average, there are 6 members in each household. The average years of schooling are 2.29 years for mothers and 4.9 for Fathers. 98.4% of the households speak their local language at home. 75.9% have access to electricity (including solar), 97.7% have a mobile phone, 75.5% have a television or radio, and only 54.8% have a table where their schooling children can sit and review their lesson.

2.2 Low Parent-School Communication

The secondary education in Benin offers an interesting setting to investigate the effects of an information intervention to parents on students' performance and grade completion. One of the main differences between primary and secondary education is the number of teachers assigned to a class for an academic year. In primary education, only one teacher is assigned to a given class. The teacher teaches every subject for the whole academic year. In secondary education, there are as many teachers assigned to a class as there are subjects. These teachers work independently of each other. All six can give many home-assignment due roughly around the same time. Also, secondary schools are more sparsely located as opposed to primary schools, leading to a higher commuting time for students.

Because of this design, in primary schools, anecdotal evidence suggests that parents tend to know their primary school child's teacher either through formal or informal meetings. Thus, parents of primary school children get informed of any behavioral or performance issues related to their children through informal discussions with teachers. However, in secondary school, parents–mostly illiterate–are completely disconnected from their child's teachers and their child's school. On the student side, going to secondary school comes with more responsibilities within the household in terms of chores. In summary, parents not only lose the informal interactions with teachers, but students also transition from less demanding primary education to the more time-consuming chores and academics of secondary education. This transition requires parents to assist their children in managing their time and effort effectively for their education. Less educated parents or parents with no education might not understand all the implications of being in secondary school. Besides, there is very little communication between schools and parents.

The secondary education system in Benin keeps parents informed about their children's performance by providing them with two report cards per year. Report cards can either be picked up by parents or by the students themselves. The first is sent at the end of the first semester, and the second at the beginning of the next school year. In my sample (Table 2), only 46.2% of parents declared having received both last year's report cards, 20% received only one, and the remaining 33% received no report cards last year. Among parents who received at least one report card last year, 82% received it from the child. Anecdotal evidence suggests that not all the report cards picked up by students make it home. Having only 46% of parents receiving both last year's report cards is very detrimental to their children's education as it suggests that parents do not keep track of their children's progress.[7] Besides report cards, schools reach out to parents only in case of emergency, such as the child falling sick or being involved in fights at school. In those cases, schools request that a parent come to the school. Outside these circumstances, schools do not reach out to parents. If, for instance, a student is performing very well and the grades suddenly drop, schools do not reach out to parents to investigate or inform them. If a student is on track for grade repetition, schools do not reach out to parents. Schools do not reach out to parents even when a student lacks some basic school supplies

7. For instance, during the baseline data collection, some parents raised the fact that their children failed, but the children told them they passed. Parents only discovered the truth two months after the next academic year had started.

that are key to the success of the student. Discussions with school officials and teachers suggest that two factors can explain this total lack of communication. First, schools do not have the logistics and human resources needed to communicate more regularly with parents. Second, school officials and teachers believe it is the parent's role to seek that information and exploit it. Although many parents–well-educated ones–might be aware of this responsibility, this might not necessarily be true for other parents, such as less educated or illiterate ones.

In a series of in-depth interviews conducted during the summer of 2021 in Benin, [8] I uncovered that less-educated and well-educated parents differ in their understanding of their non-financial role in their children's education and the functioning of the education system. Well-educated parents can get progress information directly from their children by requesting quizzes and test report sheets. They can also visit the school to enquire about their child's performance, or they sometimes have contact with some teachers they call to get an update about their child's progress. Children from these households are more likely to provide accurate information to their parents when asked. On the other side, less-educated parents only rely on what their children tell them. They rarely visit schools, and most of them did not even know they could visit the school to enquire about their child's progress. In my sample, there are 51% illiterate parents and 49% literate. At the baseline–three months into the school year–only 36.6% of parents had visited the school at least once since the start of the school year. Conditional on visiting, 48% talked to a teacher. These visits were mainly for administrative purposes, such as registration and tuition fee payments. It's often the case that students leave home but do not go to school or go to school and do not go to class but rather play while their friends are in class. Only 10.3% of parents ever visited the school to check whether the child did go to school or not. When it comes to parents' knowledge about the education system, overall, a good portion of parents still lack some key information about the education system (Table 2). For instance, 66% of parents do not know the number of subjects their child is taking, and

8. From May to June 2021, I was in Benin to collect qualitative data through several focus groups with 26 teachers, 45 parents (men, women, literate and illiterate), 4 school principals, and 90 students (boys, girls, lower and upper secondary). This preliminary data collection had two goals. First, understand what are some reasons why students are not learning and what are some information bottlenecks in this setting. Second, I derive useful insights from these focus groups regarding the design of an information intervention and the design of survey instruments. For instance, I learned that information needs to be provided through phone calls and not text messages because many parents are illiterate. The education system implicitly puts a huge responsibility on parents for the success of their children's education while many parents expect schools to do everything needed for the success of students.

51.3% do not know the number of tests their child takes every semester. 30% do not know the passing grade, i.e., they do not know the minimum score a child needs to pass to the next grade. Given that the first report card is made available to parents at the end of the first semester, it is important for parents to know when the first semester ends in order to have an idea of when to expect a report card or when to visit the school to withdraw it. 66% of parents in my sample do not have an approximate idea of when the first semester ends. Schools in Sub-Saharan African countries are overcrowded, with teachers teaching the top performers. After school, students are expected to spend most of their time reviewing their lessons and practicing. This requires parents to manage their children's time and efforts. Also, given that schools do not monitor each child's progress in order to take early remedying actions when needed, it is on parents to do such monitoring as well as provide support to their children. Table 2 also provides some statistics on parental involvement at home. 79% of parents have talked to their child about school days at least once in the first three months of the school year, 49% said they have either supervised or found someone to supervise the child's homework at least once, 62% have once asked the child about his/her test scores. 45% have asked their child about the upcoming test date at least once. 51% of parents have checked at least once to see if the child is reviewing his/her lessons. Overall, besides talking to the children about their education or asking how they are performing, parents' involvement is low on the other dimensions. These are precisely the different indicators I am tackling with my intervention. The intervention, as described in the next section, aims to explain to parents their managerial role in the education of their children by providing them with recommendations to better manage their children's time and effort and to get more involved in their children's education both at home and at school regardless of parents' education level. This intervention took place in 20 randomly selected public secondary schools and only focused on 8^{th} grade students. I received permission from the Ministry of Secondary Education of Benin as well as the regional office of secondary education[9]–the highest authority in charge of education–to conduct this study. I also received permission from each school to conduct the study.

9. Authorization Number 145/MESTFP/DC/SGM/DESG/SA

2.3 Experimental Design

In this section, I outline the different elements of my experiment: the recruitment of schools and parents, the randomization of students, and the intervention.

2.3.1 Enrollment of Schools

I randomly selected 20 schools out of the 95 eligible schools. After the random selection, I visited each of the schools to meet with school officials and explained the study. All the schools agreed to participate. Using students' lists and their parents' contacts from these schools, I invited parents to a meeting at the school. These schools have, on average, four eighth-grade classes. As shown in Figure 2, parents were invited to the schools, and baseline data collection took place from November 22nd to December 17th, 2022. Using parents' literacy information from the baseline data, I randomly assigned parents to treatment and control groups. The treatment group receives the intervention, and the control receives nothing.

2.3.2 Treatment

I randomly assigned parents who responded to my invitation and who agreed to participate in this study to the treatment or the control group.

In the treatment group, I provide parents with comprehensive information about managing their child's time and effort on educational production and its crucial importance in their child's education. As detailed in Figure 1, In Benin, 8^{th} grade students spend 32 hours in class. Also, on average, it takes students 26 minutes to commute to the school by motorcycle. Given that most students walk to school, we can assume that students spend, on average, 80 minutes per day commuting. This is equivalent to almost 7 hours of commuting time per week. It is also well-documented that teachers only teach top performers. As a result, students need to devote enough time outside classrooms to reviewing the materials. Discussion with teachers reveal that for every hour spent in class, students should spend the same time reviewing lessons and doing homework at home. So, students need to spend 32 hours reviewing materials. Putting all these together, students spend 65 hours weekly on school-related activities. The 65 hours do not account for hours spent on chores which amount to 17 hours on average per week. Consequently, parents' management of their children's time and effort in educational production becomes crucial

for their children's success. It will determine how much time students devote to their education and the efforts students put in for every hour spent on school-related activities.

Schools notify students in advance about upcoming tests. Students are also informed about their test scores. The assumption is that students will pass all this information on to their parents. However, anecdotal and focus group evidence suggests that many students do not share this information with their parents unless there is a certain level of monitoring from parents. This study addresses this information asymmetry and provides parents with recommendations for supporting and monitoring their child's education. The recommendations also help parents better manage their children's time and efforts. The information is delivered through weekly phone calls. The intervention lasted approximately four months–January 11^{th} 2023 to May 31^{st} 2023 as shown in Figure 2. During the first phone call, I explain to parents the role of each stakeholder (government, school official/teachers) in the education system. Then, I explained to parents their own role and how time-constrained students are and how crucial is parents managerial role in helping students better manage their time and effort on educational production. During that call, I also provided parents with a list of recommendations and informed them I will be making weekly calls to remind them of some of the recommendations and discuss any challenges they face. In other words, the first phone call is aimed at updating and/or reinforcing parents' understanding of their managerial role in their child's education. Subsequent calls included nudging parents about the recommendations and linking the recommendations to upcoming tests to show parents how their actions affect the time and effort their child might put in to prepare for those forthcoming tests. During these calls, I answered parents' questions, and guided them to the school's appropriate people (teachers, school principal...). The recommendations can be put into two groups.[10]

Recommendations on parental involvement at school include visiting schools to enquire about a child's performance, meeting with teachers, and visiting the school to make sure the child did go to school. Recommendations about how parents can be involved at home

10. Seminal work in the psychology literature by Hoover-Dempsey and Sandler 1995 explains why and how parental involvement make a difference. In a subsequent work, Hoover-Dempsey and Sandler 1997 reviews psychology theory to understanding why parents become involved in their children's education. Several works laid out potential actions that parents can take to get more involved and measured the association between those actions and students outcomes(Singh et al. 1995; Potvin et al. 1999; Henderson and Mapp 2002. I designed my intervention based on this literature and based on insights from qualitative data I collected a year before this intervention. During my qualitative data collection, I interviewed teachers, school officials, representative of the ministry, parents, and students.

include having a conversation with the child about his education, asking about his/her test scores, helping the child with home assignments or finding someone that can help, checking his/her notebook to see if they are up to date, have a well-defined timetable that the child must follow to review his/her lessons, checking on the child each evening and make sure the child review lessons, adjusting the time spent on household chores to allow the child to have enough time to study, especially during test periods.[11]

Recommendations are very crucial to this intervention. I designed the treatment around recommendations for two reasons. First, in Benin, adult illiteracy is very high (57.64%). Results from focus groups I conducted with parents, students, school officials, and teachers 18 months before the intervention show that less-educated parents do not understand their role in their child's education beyond the financial aspect and hence fail to support their children's education. Hence, it was crucial to design recommendations in a way that empowers less-educated parents to get involved in their children's education and better manage their children's time and effort. Second, recent studies suggest that information should be bundled with recommendations to be effective (Barrera-Osorio et al. 2020; Cortes et al. 2021; Kraft and Rogers 2015). My recommendations are not subject-specific or student-specific. Parents in my study do not guide their children regarding how to allocate time between different subjects nor which subjects to study. 96.94% of students in my sample decide themselves which subjects to study. Parents, through their different actions, ensure the child has enough time and put in as much effort as possible toward their education. So, I expect to see improvement in any of the subjects taken by students. It could also be the case that students would substitute the time spent between subjects to increase their GPA and avoid repeating the grade, given that each subject is equally important in year-end passing decision. This could lead to positive effects on some subjects and adverse effects on others, but an overall increase in GPA and passing rate. Parents received, on average, ten successful phone calls, representing an average

11. These recommendations were very new to most parents in my sample. 72.67% of them said most of the recommendations were new to them. When I dis-aggregate by literacy, I find that these were new to 81% of the illiterate and 64% of the literate parents. Parents often told the research team "*I was in a deep sleep, and you just woke me up.*" Some of them would explain how some of their actions were potentially hurting their child's education without them knowing. A typical example that often came up was about household chores. In this setting, students usually finish classes around 7 pm. By the time they walk and get home, it can be 8 pm. Then, once they get home, their parents would assign a list of chores to be completed. By the time they complete these chores, it might be 10 pm, and the child is tired and cannot study much. This intervention helped parents understand that their child needs time to learn. Also, we discussed with parents how to better manage their child's time.

success rate of 88%. Moreover, parents could also apply these recommendations to all their school-aged children. This could lead to substantial positive spillovers within the household.[12]

How do these recommendations potentially affect students' performance? Assume students' grades depend on their ability, time spent studying (quantity), and effort (quality). I view effort as how focused students are when reviewing the materials. Parents' actions operate through two main channels. First, it increases the time students devote to study. For instance, by reducing children's chores or having a schedule for when the child should study, parents increase students' time for school-related activities. Second, it boosts students' efforts in school-related activities through actions such as checking on the child when she is studying, supervising the homework, checking whether students' notebooks are up-to-date, or making random visits to the school to check on the child and enquire about the child's progress. In other words, through persuasion, parents will improve their child's effort, and through engagement, parents will increase the time spent on education.

2.3.3 Sampling

I randomly selected 20 schools. In each of these schools, I invited all the parents with a child in 8^{th} grade. 55% of parents showed up to the school.[13] These schools have, on average, four 8^{th} grade classes. Each class has, on average, 50 students. Once parents came and agreed to participate in the study, we collected baseline data, allowing me to randomly assign parents to treatment or control.

Randomization is at the individual level after stratifying by literacy within each class. In Benin, students are assigned to classes at the beginning of the school year. A class is a fixed number of students who take every subject together and stay together from the first day of class to the last. Students in a class are exposed to the same teachers and the same peers. I divide students' parents within a class into two strata, illiterate parents and literate ones. By literate, I mean whether the parent can read a set of sentences shown during the baseline survey. Then, I randomly assigned half of the parents from

12. In a separate project, I am investigating the spillover effects of my intervention. I look at spillovers within students' networks at school and within households.

13. In Section 5.3, I explore the external validity of my sample by examining how outcomes for the 45% of parents who did not show up to the school meeting and were not included in the sampling frame differ from my control group. I find the 45% of parents who did not show up have children that look similar in terms of baseline test scores and year-end grade completion rate with the children in my control group.

each literacy stratum to either the treatment or control group. In total, 2094 students from 20 schools were enrolled in this study, of which 1038 were assigned to the treatment group and 1056 in the control group as shown in Figure 3.

3 Data and Outcomes

The analysis uses survey data and administrative data. I use five rounds of administrative data from schools, data from two rounds of surveys with parents, and one round of survey data from children. This section discusses all data sources and variations across data collection rounds.

3.1 Baseline Survey Data

Baseline surveys were conducted from November 22^{nd}, 2022 to December 17^{th}, 2022 as shown in Figure 2. For the baseline, I surveyed all the parents/guardians whose children were in 8^{th} grade and agreed to participate in this study and answer the baseline survey. In total, I collected baseline data from 2094 parents/guardians. The survey included modules about socio-demographic characteristics of the household and the respondent, parents-home involvement in their child's education, parents general knowledge regarding child's education, parents-school involvement in their child's education, parents general knowledge about education system, parent's belief about child performance, parents aspiration, student learning environment at home.

3.2 Endline Survey Data

End-line data were collected at the end of the second semester from June 1^{st} to June 30^{rd}. Unlike baseline surveys, I collected data from students and parents during the end-line. For the endline, I added a couple of new modules to the parents' baseline questionnaire. The new modules are on parents' willingness to pay for the intervention, distribution of household chores in the household, and gender norms within the household. One concern that might arise when using parents' endline data to investigate mechanisms is that the treated parents might provide socially desirable answers about their involvement in their children's education at home and school and the distribution of household chores within

the household. To deal with that, I included these same modules in the students' survey questionnaire. I interviewed 1921 parents.

Students' surveys included modules on their network of friends within their class, their perception of parental involvement in their education at home and school, their learning strategy, household chores distribution, and gender norms. In total, 1902 students were interviewed.

3.3 Administrative Data

I collected secondary data from school records.[14] Schools keep a detailed record of students' performance in each subject. This includes their grades on each test and their GPA. I conducted five rounds of administrative data collection. The first was to collect baseline test score data; the second was to collect first-semester test score data; the third was to collect first-semester GPA data; the fourth was about second-semester test scores data, and the last was to collect second-semester GPA data as well as year-end GPA. So, I have repeated measures for test scores.

The secondary data is used to evaluate the effect of the intervention on test scores and grade completion. Given that the intervention can affect any of the subjects taken by students, I measure the impact of the intervention on each subject separately (Biology, Physics, Math, Language, History-Geography). I also pull together STEM subjects (Biology, Physics, and Math) and Humanities subjects (Language and History-Geography) together. Survey data is used to investigate how this intervention might change test scores, mainly how the intervention affects parents' involvement, parents' knowledge of their children's performance, and household chores distribution within the household.

14. These administrative data are ledger books, with each page referring to a specific student. There is one book per class. I took pictures of every page of these books and then hired a team to digitize them. I had another team checking a random sample of the digitized data. Moreover, the pay structure was such that the more inaccurate data you enter, the less money you get. Overall, error rate was less than 0.005%.

4 Empirical Strategy

4.1 Identification

The main question I want to answer is whether the information intervention affects students' and parents' outcomes. Students' outcomes are test scores and grade completion. Parents' outcomes are parental involvement, their knowledge about their child's performance, and the distribution of household chores within the household.

The randomized experimental design provides a strong identification strategy and allows me to attribute any differences in outcome indicators between the treatment and control groups to the information intervention. The effect I measure here is the intention to treat effect, and I measure it by estimating equation 1.

$$Y_{it} = \alpha + \beta_0 Y_{i0} + \beta_1 Treat_i + \beta_2 X_i + \epsilon_{it} \tag{1}$$

In equation 1, Y_{it} measures the outcome of interest for individual i at time t, Y_{i0} is the baseline value of the outcome of interest for individual i, $Treat_i$ is a dummy variable equal one if the individual i is treated and 0 otherwise. Standard errors are clustered at the individual level. I include strata fixed effect. I utilize the double-post LASSO procedure outlined in Belloni, Chernozhukov, and Hansen 2014 to select baseline covariates X_i. These covariates vary slightly from one outcome to the next. However, they include a combination of the following covariates: a dummy for whether the student has ever repeated, the parents' years of schooling, the student's gender, a dummy for whether parents know the end of the semester, and the number of household members who have attended secondary school. My coefficient of interest is β_1. β_1 measures the effect of being assigned to the treatment group on Y. I also perform heterogeneity analyses using a fully interacted version of equation 1 as in equation 2.

$$Y_{it} = \alpha + \beta_0 Y_{i0} + \beta_1 Treat_i + \beta_2 Heterogeneity_i + \beta_3 Treat_i \times Heterogeneity_i + \beta_4 X_i + \epsilon_{it} \tag{2}$$

In Equation 2, $Heterogeneity_i$ is a binary variable with values 0 or 1. For example, it equals one if the parent is literate and 0 otherwise when examining heterogeneity based on parental literacy. I employ Equations 1 and 2 in situations with a single observation per student (such as grade completion and GPA) as well as in cases with multiple observations

per student (where all the student's test scores are pooled into one regression).

4.2 Groups of Outcomes

Some of my outcomes, mainly outcomes measuring the mechanisms, are measured through a series of questions. For instance, parental involvement in their child's education at home is measured through a series of five questions. Similarly, parental involvement at school is measured through three questions. For these outcomes, I construct an index. This helps me avoid overemphasizing any single significant result. I build the indexes by following Kling, Liebman, and Katz 2007. The indexes combine all of the outcomes in each family of outcomes. There is an index for parental involvement at home and another for parental involvement at school. The process of creating these indexes is as follows. I define each outcome to construct the indexes so that higher values correspond with better outcomes. Then, I standardize each outcome into a Z-score by subtracting the mean and dividing it by the standard deviation of the control group within the class. The last step consists of taking the average of all Z-scores. Following A. Banerjee et al. 2015, I standardized the Kling index relative to the control group. I then estimate the effect of the intervention on these standardized outcome indexes [15].

5 Empirical Results

5.1 Baseline Balance

Using baseline survey and secondary data, I compare the treated and control groups on a set of characteristics and baseline outcomes. Table 2 shows the results. In Table 2, I present the control group means, the treated group means, the difference in means between treated and control, and the p-value of the equality test between treatment and control. I can reject the null hypothesis that the treatment arm is equal to the control for only two variables out of 29. I also run a regression where I regress all 29 variables on treatment status, including strata fixed effects and cluster standard errors at the individual level. The p-value of global significance is 0.32, showing that the model is not globally significant. These results confirm that the randomization successfully created two groups that are similar in their characteristics; hence, any difference can be attributed to the

15. This strategy has been used by previous researchers such as Akresh, Halim, and Kleemans 2023.

information intervention. The subsequent subsections present the results of the impact evaluation of my intervention.

5.2 The Intervention Improves Student Performance

I evaluate the impact of the intervention on two primary student performance outcomes: grade completion and year-end GPA. Grade completion is a binary indicator equal to 1 if the student successfully advances from grade 8 to grade 9 and 0 otherwise. This advancement is determined based on students' cumulative performance across all subjects, with a passing threshold set at a minimum year-end GPA of 10 out of 20. If a student fails to meet this threshold, they are required to repeat the grade, making grade completion a high-stakes outcome.

The year-end GPA is a continuous measure reflecting a student's overall academic performance across all subjects throughout the school year. It is computed as a weighted average of first-semester GPA (one-third weight) and second-semester GPA (two-thirds weight), following standard educational practices in Benin. Each semester GPA is itself an average of a student's subject-level performance based on test and quiz scores. Tests are standardized at the school level and considered more reliable than quizzes, which are teacher-specific.

To assess subject-specific impacts, I analyze test scores in two ways. First, I group subjects into STEM (Physics, Biology, Mathematics) and Humanities (Language, History-Geography) to evaluate the intervention's broader academic effects. Second, I examine performance in each individual subject, allowing for a more granular understanding of the intervention's impact.

To facilitate comparison, I standardize all GPA and test score outcomes by subtracting the mean of the control group within the same class and dividing by the control group's standard deviation. This normalization ensures that treatment effects are interpreted in terms of standard deviations relative to the control distribution.

Table 3, Column 1 (Figure 4) shows that the intervention increases grade completion by 4 percentage points, equivalent to a 6% improvement relative to the control mean of 0.68. Column 2 (Figure 5) demonstrates a corresponding 0.11 standard deviation (SD) increase in year-end GPA, with effects concentrated in the second semester (0.12 SD) rather than the first (0.07 SD, not significant). This delayed effect is expected, given that

the intervention began only a week before the last test of the first semester, limiting its influence on earlier performance.

Looking at subject groups, Columns 3 and 4 reveal that STEM subjects drive the GPA improvements. Table A1 (Figure 6) breaks these effects down by subject. The largest gains occur in Physics (0.11 SD), followed by Biology (0.09 SD) and History-Geography (0.05 SD). The Physics gains persist across both semesters, while improvements in Biology and History-Geography emerge mainly in the second semester.[16]

These findings establish that a simple parental engagement intervention can meaningfully improve student performance and grade progression. However, given that the intervention was designed to help low-educated parents support their children through simple, non-academic actions, its effectiveness should be strongest for students at the highest risk of grade repetition. If the intervention truly empowers parents with limited formal education, we would expect to see larger effects for academically weaker students.

To investigate this, I next examine how the intervention's impact varies based on students' baseline performance, parental literacy, gender, and whether the calls were received by mothers or fathers.

5.2.1 The Intervention Benefits Academically Weaker Students the Most

The primary goal of this intervention was to reduce grade repetition by equipping parents with structured guidance on how to support their child's education. If lack of awareness about their role was indeed preventing parents from providing this support, we would expect students most at risk of grade repetition to benefit the most from the intervention.

To test this, I divide students into three groups based on their baseline performance: the bottom quartile (students scoring below 10 in at least four out of six subjects in the first test of the first semester), the middle fifty percentile, and the top quartile. Results are presented in Table 4.

Panel A shows that the intervention leads to a statistically significant 12-percentage-point increase in the probability of advancing to grade 9 among students in the bottom quartile. This effect translates to a 40% improvement compared to the control group's mean of 0.30. The intervention also significantly increases the year-end GPA of these

16. These estimates may underestimate the true impact if the intervention encouraged low-performing students—who would otherwise skip tests—to participate. However, a separate analysis confirms that the intervention did not affect students' likelihood of taking tests, mitigating this concern.

students by 0.16 standard deviations (SD). In contrast, the middle fifty percentile and the top quartile experience only a 2 and 1 percentage-point increase, respectively, neither of which is statistically significant.

These findings confirm that the intervention was particularly effective in helping students most at risk of grade repetition. Since grade repetition imposes significant costs on both families and governments, this result underscores the broader policy relevance of structured parental involvement programs.[17]

5.2.2 Stronger Effects for Students with Illiterate Parents

If parental awareness and structure were key drivers of the intervention's success, we might expect students whose parents are illiterate to benefit more. This is because parents with little or no education may be less aware of the simple but effective actions they can take to support their child's education.

Indeed, 58% of students in the bottom quartile have illiterate parents. Given this overlap, it is unsurprising that students of illiterate parents experience larger gains. Results in Table 5 confirm this pattern.

Panel A shows that the intervention significantly increases the probability of passing for students with illiterate parents by 6 percentage points. In contrast, the effect for students with literate parents is only 2 percentage points and is not statistically significant.

The intervention also improves GPAs for both groups: 0.13 SD for students with illiterate parents and 0.10 SD for students with literate parents. While the difference between these estimates is not statistically significant, the larger effect for students with illiterate parents reinforces the idea that basic parental oversight—rather than direct academic help—can be transformative for students, even in low-literacy households.

This challenges conventional wisdom that parents must be educated to meaningfully support their child's education. Instead, these findings highlight that even parents with no formal education can play a crucial role in improving their child's academic outcomes when equipped with structured guidance.

17. The results remain consistent when, instead of using quartiles, I divide my sample into three groups based on deciles. In this approach, each group represents approximately 33% of the total sample.

5.2.3 Heterogeneity by Student Gender

Next, I examine whether the intervention has different effects on male and female students. Table A2 presents results separately for girls (Panel A) and boys (Panel B).

Column 1 shows that both female and male students experience a 5-percentage-point increase in grade completion. This corresponds to a 7.1% increase relative to the control mean for girls and a 7.6% increase for boys. In column 2, however, the intervention significantly increases year-end GPA for girls by 0.19 SD, while the effect for boys is smaller (0.10 SD) and not statistically significant.

Although the difference between these estimates is not statistically significant, the consistently larger effect for girls raises an important question: Why do girls seem to benefit more? One possible explanation is that girls, on average, may respond more to structure and oversight in educational settings. In many low-income contexts, girls face additional barriers to schooling, including household responsibilities and cultural expectations about their role in the family. If the intervention helped parents reallocate household responsibilities or increase monitoring, this could explain why girls benefited more.

5.2.4 Female Students with Illiterate Parents Benefit the Most

While there is no strong evidence of differential treatment effects by parental literacy or student gender alone, I explore whether the combination of both factors—having illiterate parents and being female leads to even larger effects. Table 6 presents results for four groups: female students with illiterate parents (Panel A), female students with literate parents (Panel B), male students with illiterate parents (Panel C) and male students with literate parents (Panel D).

Column 1 shows that the intervention increases the probability of passing for female students with illiterate parents by 9 percentage points, compared to just 1 percentage point for female students with literate parents. Although this effect is nine times larger, the two coefficients are not statistically different.

For male students, the intervention benefits both those with illiterate and literate parents at similar rates, suggesting that the interaction between gender and parental literacy is particularly important for girls.

Taken together, these results suggest that the intervention was especially effective for

students who face the highest barriers to educational success—those from low-performing, illiterate households, particularly girls.

5.2.5 Larger Effects When Mothers Receive the Calls

Finally, I explore whether the intervention was more effective when mothers, rather than fathers, received the phone calls. These results, presented in Appendix Table A3, should be interpreted with caution since the choice of call recipient is endogenous. However, the pattern of results is striking.

Across all four outcomes, the point estimates are consistently larger when mothers receive the calls. For example, in column 1, the effect on grade completion is three times larger when mothers receive the calls. In column 2, the year-end GPA effect is seven times larger when mothers receive the calls, and this difference is statistically significant.

This aligns with findings from other interventions showing that mothers tend to allocate resources more effectively toward child welfare than fathers (**duflo2012grandmothers**). However, further research is needed to determine whether this pattern holds in other settings or reflects specific gender dynamics in household decision-making in this context.

5.3 Behavioral Indicators of Parental Engagement

The findings in this section challenge the traditional framing of parental involvement interventions, which often assume that parents must help with homework, be provided with regular updates on their child's performance or absenteeism, or contribute financially to have an impact. However, absenteeism is a behavior that parents can monitor and enforce even without receiving regular updates from schools. Similarly, parents can monitor students progress at school without receiving regular updates from schools.

5.3.1 The Intervention Reduces Absenteeism

A key concern in evaluating parental involvement interventions is whether increased parental engagement translates into tangible behavioral changes that improve student outcomes. While survey data indicate that parents in the treatment group became more involved at school (Appendix Table A5) and at home (Appendix Table A6), and parents improve their management of household chores (Appendix Table A7) one might worry that these responses suffer from social desirability bias. If parents were truly implementing

the intervention's recommendations—such as monitoring their child's school attendance, engaging with teachers, and enforcing structured study routines—this should manifest in measurable reductions in student absenteeism, an objective outcome that is less prone to reporting bias.

Table 8 confirms this prediction: students in the treatment group were 6.8 percentage points (11%) less likely to miss school during the intervention period compared to the control group. Given a control mean of 61%, this decline in absenteeism is both statistically and economically significant. Since the intervention did not provide direct incentives for school attendance, this reduction suggests that parents became more proactive in enforcing school participation, reinforcing their role as managers of their child's time and effort.

The intervention's effect on absenteeism is significant across most subgroups, with reductions observed among students of varying academic performance, parental literacy, and gender. Students in the top quartile of baseline performance exhibit the largest reduction in absenteeism (13.5 percentage points), suggesting that academically stronger students—who are more responsive to structure—benefit the most from increased parental oversight. Similarly, absenteeism decreases significantly for both male and female students (approximately 7 percentage points), indicating that the intervention was equally effective across gender lines.

Students from both literate (-7.2 pp) and illiterate households (-6.1 pp) experience substantial declines in absenteeism, reinforcing the core finding that low-educated parents, when given clear guidance, can meaningfully contribute to their child's education. While the effect for students in the bottom quartile of baseline performance is not statistically significant, the negative point estimate suggests that the intervention did not harm this group. This could indicate that while parental oversight improves school attendance across the board, low-performing students may require additional support beyond monitoring to significantly reduce absenteeism.

These patterns closely mirror the heterogeneous effects observed for grade completion and GPA, suggesting that absenteeism is a key mechanism driving the intervention's overall impact on academic success. Students who attended school more consistently were likely to perform better on assessments, increasing their engagement and ultimately improving their chances of advancing to the next grade. These findings highlight the

power of structured parental involvement in improving student behaviors that directly impact long-term educational outcomes.

5.3.2 Parents Improve Their Knowledge About Their Child's Performance

A key mechanism through which the intervention operates is by improving parents' awareness of their child's academic progress. Many parental involvement interventions focus on providing parents with direct performance feedback (Dizon-Ross 2019), assuming that parents lack access to such information. However, this intervention did not provide parents with student performance data—yet, it led to a meaningful improvement in their knowledge of their child's academic standing. This suggests that when parents develop a clearer understanding of their managerial role, they naturally become more engaged and proactive in monitoring their child's performance, even in low-literacy settings.

I assess parents' knowledge of their child's academic standing using two complementary measures. First, I examine the deviation between parents' perceptions of their child's GPA and the actual GPA. This measures precision in parental beliefs. Second, I assess whether parents correctly classify their child's GPA as above or below the passing threshold of 10 out of 20. This classification measure is particularly relevant in settings where parents may not track exact grades but are concerned with whether their child is at risk of grade repetition. In my sample, parents are more likely to inquire about the second measure—whether their child is on track to pass—rather than knowing precise GPAs, leading to higher rates of missing data for the first measure. I confirm that the probability of responding to the first measure does not differ between treatment and control, ruling out systematic response bias.

Table 7 presents the results. Column 1 shows that the intervention reduces the deviation between parents' reported and actual GPAs by 0.09 points. Given a control group mean deviation of 0.61, this represents a 15% reduction in parental misperceptions. This improvement suggests that parents in the treatment group are more aware of their child's academic progress, likely due to increased engagement with teachers, school visits, or direct discussions with their child.

Column 2 focuses on whether parents correctly classify their child's GPA as above or below the passing threshold. The intervention increases the likelihood of accurate classification by 6 percentage points, a 7.5% increase relative to the control group mean of 80%.

The fact that parents improve their knowledge without receiving any direct performance updates underscores a critical insight: low-educated parents are not inherently disengaged or unable to track their child's progress—they simply need to be informed about their managerial role and receive clear guidance on how to do so.

These findings reinforce the broader argument that parental engagement goes beyond financial investments or direct academic assistance. When parents are made aware of their role, they actively seek out information, engage with teachers, and monitor their child's progress, even in the absence of structured performance updates. This has important policy implications, suggesting that interventions aimed at improving parental involvement do not necessarily need to rely on information provision alone but can instead focus on equipping parents with simple, actionable strategies to monitor their child's education more effectively.

5.4 Beyond Substitutes and Complements: Non-Financial Parental Engagement Does Not Crowd Out Financial Investment

A key concern in interventions promoting non-financial parental involvement is whether such engagement crowds out or reinforces parents' financial investment in their children's education. If non-financial and financial investments act as substitutes, parents who allocate more time to school visits, monitoring homework, and structuring study routines might reduce income-generating activities, potentially lowering their ability to pay tuition fees or invest in additional educational resources. Conversely, if they are complements, parents who become more engaged in their child's education may place a higher value on schooling and increase financial investments accordingly.

To test this, I examine three financial outcomes: total tuition fees paid, the probability of full tuition payment, and the timing of tuition payment. The results, presented in Table A8, show no significant impact of the intervention on any measure. Being in the treatment group reduces total tuition paid by 147.31 XOF CFA (relative to a control mean of 14,590 XOF CFA), decreases the probability of full tuition payment by 2 percentage points (relative to a control mean of 69%), and leads to full payment being made 0.528 days earlier. None of these effects are statistically significant, and their magnitudes are economically small.

To further validate these findings, I analyze home tutoring expenditures, which rep-

resent a clear financial investment in education. Home tutors are substantially more expensive than tuition fees in this setting, making them an important indicator of parents' willingness to invest financially. I find no statistically significant change in home tutoring expenditures, confirming that the intervention did not alter financial investment behavior.

These findings suggest that increasing parental involvement in non-financial ways does not come at the cost of financial contributions, nor does it induce additional monetary investment in education. This is particularly relevant in contexts where time constraints are perceived as barriers to parental engagement. Since most parents in the sample are self-employed or work in informal sectors, the intervention did not crowd out their ability to pay tuition or invest in supplementary education, indicating that time was not a major constraint on either financial or non-financial parental investment.

More broadly, these results suggest that parental engagement may be constrained by more than just financial barriers. While a large literature has emphasized cash transfers, school fee reductions, and scholarship programs as effective means to increase school participation (e.g., Kremer, Miguel, and Thornton 2009; Baird, McIntosh, and Özler 2011; Fiszbein and Schady 2009), these policies primarily aim to address financial constraints rather than directly fostering parental involvement. In contrast, my results indicate that even in the absence of financial support, guiding parents on how to support their child's education in non-financial ways can yield meaningful improvements in student outcomes.

Moreover, the lack of an effect on financial contributions suggests that parental disengagement may not stem primarily from financial hardship but rather from a lack of awareness about how to effectively support their child's education. When provided with clear guidance on simple actions they can take—such as monitoring school attendance and structuring study time—parents increase their involvement without altering financial commitments. This finding aligns with research showing that parental beliefs and perceived roles in education are key drivers of engagement (Dizon-Ross 2019; Bergman 2021), reinforcing the idea that overcoming informational and behavioral constraints can be just as critical as addressing financial ones.

5.5 The Effects Persist One Year Later

A key concern with light-touch interventions—such as this one, which involved only ten phone calls totaling less than two hours—is whether their effects stem from temporary salience rather than lasting behavioral changes. If parents merely responded to the repeated reminders rather than internalizing new behaviors, we would expect the intervention's impact to fade out quickly once the calls stopped. Moreover, if the intervention simply delayed dropout by pushing marginal students into the next grade, we might even expect higher dropout rates in the treatment group one year later as struggling students faced greater academic challenges.

However, the follow-up results tell a very different story. While the overall effect on dropout is small and statistically insignificant (-0.8 percentage points), the intervention significantly reduces dropout among students from illiterate households, lowering dropout rates by 4.1 percentage points (a 33% reduction relative to the 12% control mean). In contrast, there is no effect for students from literate households, where dropout remains much higher at 24%.

This persistence suggests that parents from illiterate households not only engaged with the intervention during its implementation but also internalized behavioral changes that continued beyond the intervention period. The stark contrast between illiterate and literate parents is particularly striking, as higher parental education is typically associated with lower dropout rates. However, in this context, literacy does not imply high levels of education—the average mother in the sample has only two years of schooling, while fathers have five years. These results suggest that modest levels of parental education do not automatically translate into greater engagement or better school persistence for their children. Instead, parents with very limited schooling appear more receptive to structured behavioral guidance, while those with slightly more education may be less open to external input on educational decision-making[18].

The persistence of effects is even more pronounced for girls, particularly those from illiterate households. One year after the intervention, dropout among female students

18. During implementation, illiterate parents exhibited greater enthusiasm and curiosity, frequently asking questions and seeking guidance as they navigated this new approach to supporting their child's education. In contrast, parents with some education were often less engaged during follow-up calls, expressing confidence in their existing knowledge and rarely seeking additional input. This aligns with research on the Illusion of Knowledge, where individuals with partial expertise overestimate their understanding and are less receptive to external input (Dunning, Heath, and Suls 2004; Lusardi and Mitchell 2014).

declines by 3.6 percentage points, but this effect is entirely driven by girls from illiterate households, where dropout falls by 10 percentage points—a 71% reduction from the 14% control mean. In contrast, there is no significant effect for girls with literate parents, and if anything, the estimated coefficient is slightly positive. Similarly, no significant effects emerge for male students, whose baseline dropout rate is 9%.

These findings challenge conventional wisdom about parental education. While parental literacy is often assumed to be a prerequisite for meaningful parental engagement, these results suggest that low-educated parents—when given clear, actionable guidance—are more likely to adjust their behavior in ways that produce long-term benefits. The results also align with broader evidence on behavioral biases, particularly the idea that individuals with moderate knowledge levels are more resistant to external interventions because they overestimate their own understanding (Dunning, Heath, and Suls 2004; Lusardi and Mitchell 2014).

These findings carry important policy implications. They suggest that light-touch interventions can create lasting changes when they target parents who recognize their informational gaps and are open to behavioral adjustments. At the same time, interventions for more educated parents may need different framing strategies, particularly approaches that counteract overconfidence biases and encourage greater engagement. More broadly, these results provide robust evidence that non-financial parental involvement can produce sustained improvements in school persistence—but only when parents are receptive to learning new behaviors.

5.6 No Evidence of Negative Spillovers on Control Students

A key concern in school-based interventions is the potential for negative spillovers, where untreated students in intervention schools may experience unintended harm due to shifts in teacher attention, altered classroom dynamics, or increased competition. If the intervention benefited treated students at the expense of their untreated peers, we would expect to see a decline in grade completion rates among control students in treated schools. To assess this, I compare outcomes between students in intervention schools and those in non-intervention schools, leveraging a pure control group of 20 randomly selected schools that were unaffected by the experiment.

The results, presented in Table 10, provide no evidence of negative spillovers. First,

comparing control students in treated schools to students in non-intervention schools, I find a small, positive (but not statistically significant) 2-percentage-point increase in grade completion. This suggests that spillovers exist but are not large enough to meaningfully impact untreated students. Second, treated students in intervention schools outperform their counterparts in non-intervention schools by 6.2 percentage points, a 9.4% increase relative to the control mean of 66%, reinforcing the direct impact of the intervention. Finally, pooling all students (treated and control) in intervention schools and comparing them to non-intervention schools, I find a 4-percentage-point increase in grade completion, mirroring the main experimental effect.

If spillovers were a dominant mechanism, we would expect the school-wide effect to exceed the direct treatment effect. Instead, the similarity in magnitudes suggests that the intervention's impact was primarily driven by direct parental engagement, rather than passive knowledge diffusion among parents or competitive pressures disadvantaging untreated students.

These findings align with prior research showing that school-based interventions often generate positive peer effects (Miguel and Kremer 2004; Duflo, Dupas, and Kremer 2011) and information spillovers among parents (A. V. Banerjee et al. 2010). However, the relatively modest spillover effects observed here indicate that behavioral interventions targeting parents do not spread passively—direct participation is crucial for impact.[19]

Importantly, these results also help address concerns that control students were harmed. If increased parental involvement among treated students had diverted teacher attention or classroom resources away from untreated peers, we would expect to see negative effects on control students' grade completion rates. The absence of such effects provides reassurance that the intervention improved learning environments without displacing or crowding out resources for untreated students.

These findings suggest that scaling parental engagement interventions requires direct participation rather than relying on spillovers alone. While some indirect benefits may occur through peer and parental networks, they are not strong enough to replace direct intervention. Future research should explore strategies for enhancing engagement at scale,

19. A secondary analysis explores spillovers within intervention schools by examining whether students in classrooms with a higher proportion of treated peers experienced different outcomes. This analysis, presented in Appendix Table A17 and Appendix Table A18, suggests some positive spillovers, particularly for control students in high-treatment-intensity classrooms, but the effects are modest and do not drive the overall results.

such as integrating behavioral parental support programs into existing school structures or leveraging community-based reinforcement mechanisms.

5.7 Robustness Analysis

To ensure the validity of my findings, I conduct a series of robustness checks addressing five key concerns: differential attrition, sample selection, strata size, sample composition, and sensitivity to control variables.

Attrition and Response Rate: There are two sources of attrition in my study: (i) student dropout affecting test scores and (ii) parental survey non-response. Among the 2,094 students enrolled at baseline, 47 dropped out or changed schools before the second semester, leading to an attrition rate of 2.24% in endline test scores data. Additionally, 1,921 parents completed the endline survey, corresponding to an 8.26% non-response rate.

To assess whether attrition biases my results, I first test whether treatment status predicts attrition. A regression of attrition on treatment status (with strata fixed effects and standard errors clustered at the individual level) yields a p-value of 0.13, indicating no significant differential attrition. Additionally, I estimate a fully interacted model—including all baseline covariates and their interaction with treatment—and conduct a joint significance test of the interaction terms (p-value = 0.85), confirming that attrition is not systematically correlated with treatment or baseline characteristics.

To further validate my findings, I estimate Lee bounds, which provide conservative lower and upper bounds on treatment effects. Appendix Tables A11-A14 show that the treatment effects remain similar in magnitude and statistical significance, reinforcing that the observed effects are not driven by attrition.

Sample Selection: A potential concern in the study design is that participation in the intervention was conditional on parents attending an initial school meeting, where they were introduced to the study and invited to take part. Among all parents with children in 8th grade, 55% attended the meeting, while 45% did not. This raises the possibility that parents who self-selected into attending the meeting were already more engaged in their child's education than those who did not attend. If so, the results could overstate the intervention's impact, as participating parents may have been more inclined to respond

to educational guidance regardless of the treatment.

To assess this concern, I first compare baseline test scores between students whose parents attended the meeting and those whose parents did not. While there are minor differences in math and history-geography scores, a global significance test (p-value = 0.14) suggests no systematic differences in student performance between the two groups.

Second, I compare grade completion rates at endline between my control group (whose parents attended but were not treated) and students whose parents did not attend. Given that these two groups are statistically similar at baseline across most subjects (global p-value = 0.54), their grade completion rates at endline should also be comparable in the absence of treatment effects. Indeed, I find no significant difference in grade completion between the two groups (Column 3, Table A19), suggesting that parental attendance at the initial meeting did not, in itself, drive educational outcomes.

Finally, I examine spillover effects among students whose parents did not attend the meeting. If meeting attendance were a key driver of engagement, we would expect these students to exhibit different patterns of spillovers. However, as shown in Columns 4 and 5 of Table A19, spillover effects are similar across students whose parents attended and those whose parents did not.

These findings collectively suggest that the intervention's positive effects are not limited to a highly engaged subset of parents. Instead, the results are likely to generalize to a broader population of parents, including those who may not have actively participated in the initial school meeting.

Strata Size and Randomization Inference: The randomization was stratified by parental literacy within each class. In some cases, this resulted in small strata or an uneven number of students per stratum, raising concerns about randomization balance.

To assess whether my results could be driven by chance, I perform randomization inference (RI), a non-parametric approach that tests whether treatment effects would hold under all possible random assignments (Fisher et al. 1960; Rosenbaum and Rosenbaum 2002). This method has been widely used in applied economics (Fujiwara and Wantchekon 2013; Cohen and Dupas 2010). Appendix Table A15 presents the results, confirming that the observed treatment effects are highly unlikely to have emerged from random chance alone.

Sample Composition and Test Participation: Some students missed tests for various reasons, leading to slight variations in the sample across different outcomes. To test whether this influences my results, I restrict the sample to students who took all scheduled tests in every subject. Appendix Table A16 shows that the treatment effects remain consistent, indicating that selective test participation does not drive my results.

Sensitivity to Control Variables: My main results use double post-LASSO selection (Belloni, Chernozhukov, and Hansen 2014) to select covariates, maximizing statistical power while minimizing overfitting. To check robustness, I re-estimate my key tables (3 and A1) using the traditional ANCOVA specification, which excludes all additional covariates. Appendix Table A20 shows that results remain virtually unchanged.

Across all robustness checks, the estimated treatment effects remain stable, confirming that the observed improvements in student outcomes are not driven by sample attrition, selection bias, randomization issues, or model specifications.

6 Cost-Benefit Analysis: A Highly Cost-Effective Intervention

The regression results demonstrate the positive impact of providing information to parents on their children's education. To assess the financial feasibility of scaling this intervention in developing countries, I conduct a cost-benefit analysis using three complementary approaches.

Government Tax Revenue Model: In the first approach, I develop an accounting model that weighs the intervention's costs against its projected benefits in government tax revenues. In the absence of the intervention, some students in the control group would have repeated eighth grade and possibly ninth grade, ultimately dropping out. By improving grade completion rates, the intervention reduces grade repetition without increasing overall education costs, as treated students complete middle school in four years instead of repeating and then dropping out. Under these assumptions, the only cost to the government is the implementation cost of the intervention, which totals $9,861.[20]

20. A potential alternative assumption is that students who complete grade 8 due to the intervention continue beyond middle school. In this case, both the government and families would incur additional education costs. However, this assumption would also lead to higher lifetime earnings for students, strengthening the overall cost-benefit results.

For the benefit calculations, I assume that students who complete middle school enter the labor market and begin paying taxes at age 18, contributing for 40 years. To estimate potential wages, I consider two wage benchmarks: (i) Benin's 2023 minimum wage, and (ii) the average earnings of middle school graduates from the 2018 EHCVM survey.[21] I take a conservative approach, assuming wages remain fixed over time.

Table 11 presents the results. Panel A evaluates all students in the sample, while Panel B focuses on marginal students (i.e., those most affected by the intervention). I calculate the break-even year (when tax revenues surpass intervention costs), the net benefits, and the internal rate of return (IRR)—the discount rate at which tax revenues offset the intervention cost. The results show that the intervention breaks even in 1 to 40 years, with net benefits ranging from $241,914 to $754 and IRRs between 2,546% and 8%. These returns are highly favorable compared to other large-scale education programs: for instance, Akresh, Halim, and Kleemans 2023 estimate IRRs of 6% to 10% for the Indonesian school construction program, with break-even periods between 17 and 30 years.

Comparing Costs of Grade Repetition: The second approach directly compares the intervention's cost to the government expenses on grade repetition for marginal students. The World Bank (2015) estimates that each grade repeater in Benin costs the government $149 annually. Among 1,000 marginal students, my intervention increases grade completion by 12 percentage points, preventing 120 additional students from repeating. This would have cost the government $17,880, but the intervention costs only $9,500 for these students ($9.50 per student), generating net savings for the government. This straightforward comparison underscores the cost-saving potential of the intervention on a year-to-year basis.

Cost-Effectiveness in Academic Gains: The third approach examines the improvement in student performance per $100 spent. The intervention, at $9.50 per treated student, increases year-end GPA by 0.11 SD. Converting all costs to 2011 USD for comparability, I estimate that each $100 spent yields a 1.57 SD gain. Appendix Table A20 places this in context: some of the most cost-effective education interventions in Africa include Duflo, Dupas, and Kremer 2011 (16 SD per $100) and Glewwe, Ilias, and Kremer

21. The Harmonized Survey on Households Living Standards (EHCVM) is a nationally representative household survey conducted across the West African Economic and Monetary Union (WAEMU) countries, supported by the World Bank.

2010 (3 SD per $100). While the intervention compares favorably, focusing only on test score improvements per dollar spent underestimates its full impact.

Accounting for Grade Completion Gains. Many cost-effectiveness analyses overlook the critical distinction between improved test scores and actual grade completion. Test score gains do not always translate into higher grade completion rates—particularly if improvements are concentrated among students already above the passing threshold. In contrast, this intervention directly increases both. Since grade repetition is costly for governments worldwide, failing to account for its reduction would significantly underestimate the intervention's benefits.

Taken together, these results indicate that the intervention is highly cost-effective, not only in improving student performance but also in reducing grade repetition and generating long-term economic benefits. Given its low cost and potential for scalability, this approach presents a financially viable policy option for improving educational outcomes in resource-constrained settings.

7 Conclusion

Low intergenerational education mobility remains a pressing issue in many low-income settings, particularly for children in rural areas whose parents have little to no formal education alesina2021intergenerational. This paper presents evidence from a randomized field experiment in rural Benin, where I designed and implemented a low-cost, scalable intervention that provided parents with structured guidance on their non-financial role in their child's education. Through weekly phone calls over five months, parents received clear information about the roles of key education stakeholders, along with simple, actionable strategies to manage their child's time and effort—none of which required any formal education. The intervention was grounded in psychology literature and informed by qualitative data collected in Benin prior to implementation.

Results show that empowering parents with structured guidance led to meaningful improvements in student outcomes. The intervention increased grade completion rates by 6% overall and by 40% for low-performing students, driven by a 0.11 standard deviation (SD) increase in year-end GPA. The effects were largest for academically weaker students (0.16 SD), students with illiterate parents, and girls in disadvantaged households. The

strongest gains emerged in STEM subjects, particularly Physics (0.11 SD) and Biology (0.09 SD).

Analysis of behavioral mechanisms provides further insight into why the intervention worked. Parents improved their involvement at home (0.38 SD) and at school (0.2 SD), strengthened their knowledge about their child's performance, and reduced their child's household chore burden. Moreover, objective behavioral data confirm that student absenteeism declined by 7 percentage points, reinforcing the validity of self-reported parental engagement. Importantly, one year after the intervention ended, dropout rates declined by 33% for students from illiterate households and by 71% for girls in these households, demonstrating the intervention's persistence.

A cost-benefit analysis highlights the high cost-effectiveness of this intervention. Under conservative assumptions, the government breaks even within one year and accrues a net fiscal benefit of up to $241,914 over the career of students who remain in school due to the intervention. Even under the most conservative assumptions, governments break even within 40 years. Additionally, the intervention reduces costly grade repetition, saving public education expenditures in the short term.

These findings contribute to a growing literature showing that parental engagement, even among illiterate parents, can be a powerful lever for improving student outcomes. Unlike traditional parental involvement interventions that provide performance feedback or financial incentives, this study demonstrates that behavioral guidance alone—delivered remotely and at low cost—can generate lasting impacts on learning and school persistence. Given the challenges of scaling teacher-intensive interventions, this light-touch, structured parental engagement model offers a promising, cost-effective alternative for improving education in low-income settings.

Future research should explore how to complement demand-side parental engagement with supply-side interventions, such as training school officials and teachers to better engage with parents, particularly in contexts where schools may not be accustomed to high parental involvement. Understanding how to sustain parental engagement beyond short-term interventions is also critical for maximizing long-term educational gains.

References

Akresh, Richard, Daniel Halim, and Marieke Kleemans. 2023. "Long-term and intergenerational effects of education: Evidence from school construction in Indonesia." *The Economic Journal* 133 (650): 582–612.

Alesina, Alberto, Sebastian Hohmann, Stelios Michalopoulos, and Elias Papaioannou. 2021. "Intergenerational mobility in Africa." *Econometrica* 89 (1): 1–35.

Andrabi, Tahir, Jishnu Das, and Asim Ijaz Khwaja. 2017. "Report cards: The impact of providing school and child test scores on educational markets." *American Economic Review* 107 (6): 1535–1563.

Avvisati, Francesco, Marc Gurgand, Nina Guyon, and Eric Maurin. 2014. "Getting parents involved: A field experiment in deprived schools." *Review of Economic Studies* 81 (1): 57–83.

Baird, Sarah, Craig McIntosh, and Berk Özler. 2011. "Cash or condition? Evidence from a cash transfer experiment." *The Quarterly journal of economics* 126 (4): 1709–1753.

Banerjee, Abhijit, Esther Duflo, Nathanael Goldberg, Dean Karlan, Robert Osei, William Parienté, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry. 2015. "A multifaceted program causes lasting progress for the very poor: Evidence from six countries." *Science* 348 (6236): 1260799.

Banerjee, Abhijit V, Rukmini Banerji, Esther Duflo, Rachel Glennerster, and Stuti Khemani. 2010. "Pitfalls of participatory programs: Evidence from a randomized evaluation in education in India." *American Economic Journal: Economic Policy* 2 (1): 1–30.

Barrera-Osorio, Felipe, Kathryn Gonzalez, Francisco Lagos, and David J Deming. 2020. "Providing performance information in education: An experimental evaluation in Colombia." *Journal of Public Economics* 186:104185.

Belloni, Alexandre, Victor Chernozhukov, and Christian Hansen. 2014. "Inference on treatment effects after selection among high-dimensional controls." *Review of Economic Studies* 81 (2): 608–650.

Bergman, Peter. 2021. "Parent-child information frictions and human capital investment: Evidence from a field experiment." *Journal of political economy* 129 (1): 286–322.

Berlinski, Samuel, Matias Busso, Taryn Dinkelman, and Claudia Martınez. 2021. *Reducing parent-school information gaps and improving education outcomes: Evidence from high-frequency text messages.* Technical report. National Bureau of Economic Research.

Bloom, Nicholas, and John Van Reenen. 2007. "Measuring and explaining management practices across firms and countries." *The quarterly journal of Economics* 122 (4): 1351–1408.

———. 2010. "Why do management practices differ across firms and countries?" *Journal of economic perspectives* 24 (1): 203–224.

Chetty, Raj, John N Friedman, Nathaniel Hilger, Emmanuel Saez, Diane Whitmore Schanzenbach, and Danny Yagan. 2011. "How does your kindergarten classroom affect your earnings? Evidence from Project STAR." *The Quarterly journal of economics* 126 (4): 1593–1660.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, Emmanuel Saez, and Nicholas Turner. 2014. "Is the United States still a land of opportunity? Recent trends in intergenerational mobility." *American economic review* 104 (5): 141–147.

Cohen, Jessica, and Pascaline Dupas. 2010. "Free distribution or cost-sharing? Evidence from a randomized malaria prevention experiment." *The Quarterly Journal of Economics* 125 (1): 1–45.

Cortes, Kalena E, Hans Fricke, Susanna Loeb, David S Song, and Benjamin N York. 2021. *Too little or too much? Actionable advice in an early-childhood text messaging experiment.*

Cunha, Nina, Guilherme Lichand, Ricardo Madeira, and Eric Bettinger. 2017. "What is it about communicating with parents." *Unpublished manuscript]. Stanford University.*

De Walque, Damien, and Christine Valente. 2023. "Incentivizing school attendance in the presence of parent-child information frictions." *American Economic Journal: Economic Policy* 15 (3): 256–285.

Dizon-Ross, Rebecca. 2019. "Parents' beliefs about their children's academic ability: Implications for educational investments." *American Economic Review* 109 (8): 2728–2765.

Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2011. "Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya." *American economic review* 101 (5): 1739–1774.

Dunning, David, Chip Heath, and Jerry M Suls. 2004. "Flawed self-assessment: Implications for health, education, and the workplace." *Psychological science in the public interest* 5 (3): 69–106.

Fisher, Ronald Aylmer, et al. 1960. "The design of experiments." *The design of experiments.,* no. 7th Ed.

Fiszbein, Ariel, and Norbert R Schady. 2009. *Conditional cash transfers: reducing present and future poverty.* World Bank Publications.

Fujiwara, Thomas, and Leonard Wantchekon. 2013. "Can informed public deliberation overcome clientelism? Experimental evidence from Benin." *American Economic Journal: Applied Economics* 5 (4): 241–255.

Garces, Eliana, Duncan Thomas, and Janet Currie. 2002. "Longer-term effects of Head Start." *American economic review* 92 (4): 999–1012.

Gertler, Paul, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, Susan Walker, Susan M Chang, and Sally Grantham-McGregor. 2014. "Labor market returns to an early childhood stimulation intervention in Jamaica." *Science* 344 (6187): 998–1001.

Glewwe, Paul, Nauman Ilias, and Michael Kremer. 2010. "Teacher incentives." *American Economic Journal: Applied Economics* 2 (3): 205–227.

Glewwe, Paul, and Karthik Muralidharan. 2016. "Improving education outcomes in developing countries: Evidence, knowledge gaps, and policy implications." In *Handbook of the Economics of Education,* 5:653–743. Elsevier.

Hastings, Justine S, and Jeffrey M Weinstein. 2008. "Information, school choice, and academic achievement: Evidence from two experiments." *The Quarterly journal of economics* 123 (4): 1373–1414.

Heckman, James J, Seong Hyeok Moon, Rodrigo Pinto, Peter A Savelyev, and Adam Yavitz. 2010. "The rate of return to the HighScope Perry Preschool Program." *Journal of public Economics* 94 (1-2): 114–128.

Henderson, Anne T, and Karen L Mapp. 2002. "A New Wave of Evidence: The Impact of School, Family, and Community Connections on Student Achievement. Annual Synthesis, 2002."

Hoover-Dempsey, Kathleen V, and Howard M Sandler. 1995. "Parental involvement in children's education: Why does it make a difference?" *Teachers college record* 97 (2): 310–331.

———. 1997. "Why do parents become involved in their children's education?" *Review of educational research* 67 (1): 3–42.

Inoue, Keiko, Emanuela Di Gropello, Yesim Sayin Taylor, and James Gresham. 2015. *Out-of-school youth in sub-Saharan Africa: A policy perspective.* World Bank Publications.

Jensen, Robert. 2010. "The (perceived) returns to education and the demand for schooling." *The Quarterly Journal of Economics* 125 (2): 515–548.

Kling, Jeffrey R, Jeffrey B Liebman, and Lawrence F Katz. 2007. "Experimental analysis of neighborhood effects." *Econometrica* 75 (1): 83–119.

Kraft, Matthew A, and Todd Rogers. 2015. "The underutilized potential of teacher-to-parent communication: Evidence from a field experiment." *Economics of Education Review* 47:49–63.

Kremer, Michael, Edward Miguel, and Rebecca Thornton. 2009. "Incentives to learn." *The Review of Economics and statistics* 91 (3): 437–456.

Lusardi, Annamaria, and Olivia S Mitchell. 2014. "The economic importance of financial literacy: Theory and evidence." *American Economic Journal: Journal of Economic Literature* 52 (1): 5–44.

Miguel, Edward, and Michael Kremer. 2004. "Worms: identifying impacts on education and health in the presence of treatment externalities." *Econometrica* 72 (1): 159–217.

Nguyen, Trang. 2008. "Information, role models and perceived returns to education: Experimental evidence from Madagascar." *Unpublished manuscript* 6.

Potvin, Pierre, Rollande Deslandes, Paula Beaulieu, Diane Marcotte, Laurier Fortin, Égide Royer, and Danielle Leclerc. 1999. "Risque d'abandon scolaire, style parental et participation parentale au suivi scolaire." *Canadian Journal of Education/Revue canadienne de l'education,* 441–453.

Reardon, Sean. 2012. "The widening academic achievement gap between the rich and the poor." *Community Investments* 24 (Sum): 19–2438.

Rogers, Todd, and Avi Feller. 2018. "Reducing student absences at scale by targeting parents' misbeliefs." *Nature Human Behaviour* 2 (5): 335–342.

Rosenbaum, Paul R, and Paul R Rosenbaum. 2002. *Overt bias in observational studies.* Springer.

Singh, Kusum, Patricia G Bickley, Timothy Z Keith, Patricia B Keith, Paul Trivette, and Eileen Anderson. 1995. "The effects of four components of parental involvement on eighth-grade student achievement: Structural analysis of NELS-88 data." *School psychology review* 24 (2): 299–317.

UNESCO. 2017. "More than one-half of children and adolescents are not learning worldwide." *UIS Fact Sheet* 46.

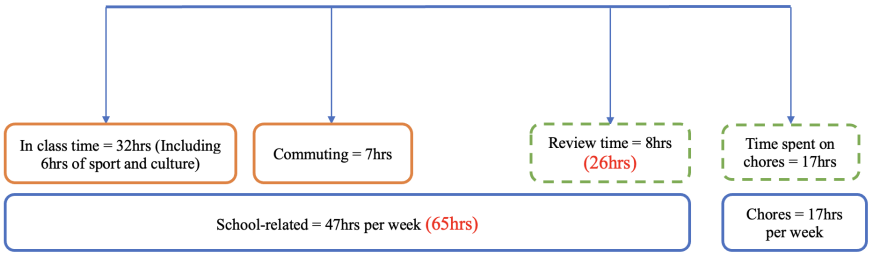
Watkins, Susan, and Adam Ashforth. 2019. "An analysis of the political economy of schooling in rural Malawi: Interactions among parents, teachers, students, chiefs and primary education advisors." *Research on Improving Systems of Education (RISE), Working Paper* 19:031.

Wolf, Sharon. 2020. ""Me I don't really discuss anything with them": Parent and teacher perceptions of early childhood education and parent-teacher relationships in Ghana." *International Journal of Educational Research* 99:101525.

York, Benjamin N, Susanna Loeb, and Christopher Doss. 2019. "One step at a time: The effects of an early literacy text-messaging program for parents of preschoolers." *Journal of Human Resources* 54 (3): 537–566.

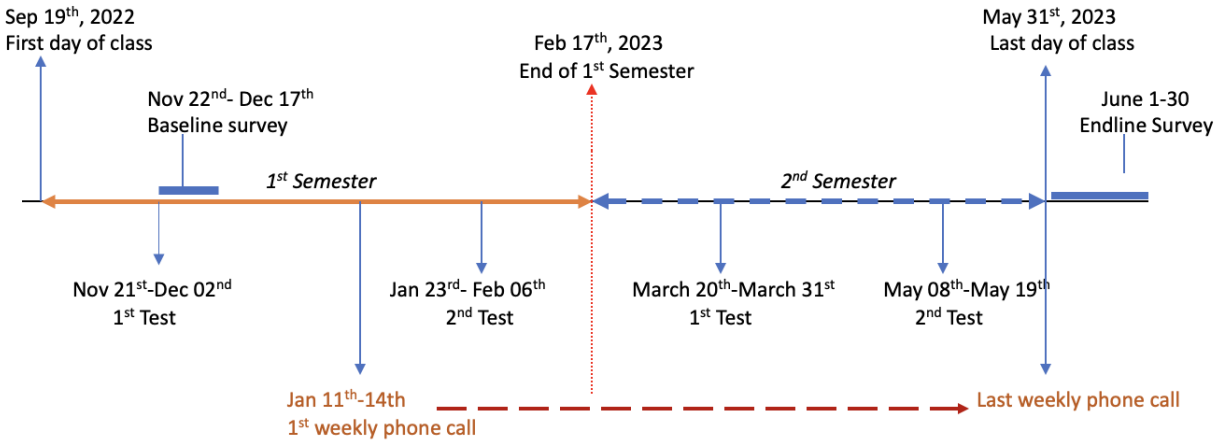
8 Figures

Figure 1: Students Weekly Time Use



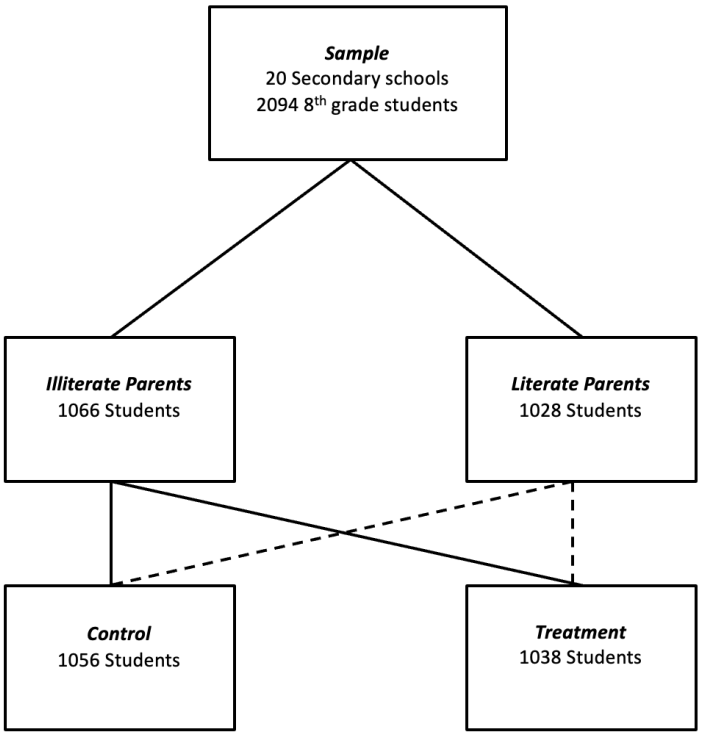
Notes: Data on commuting time comes from baseline data collection. Data on time spent reviewing school materials comes from data collection from another project the author is working on. Data on time spent in class comes from discussions with school officials.

Figure 2: Timeline of Activities



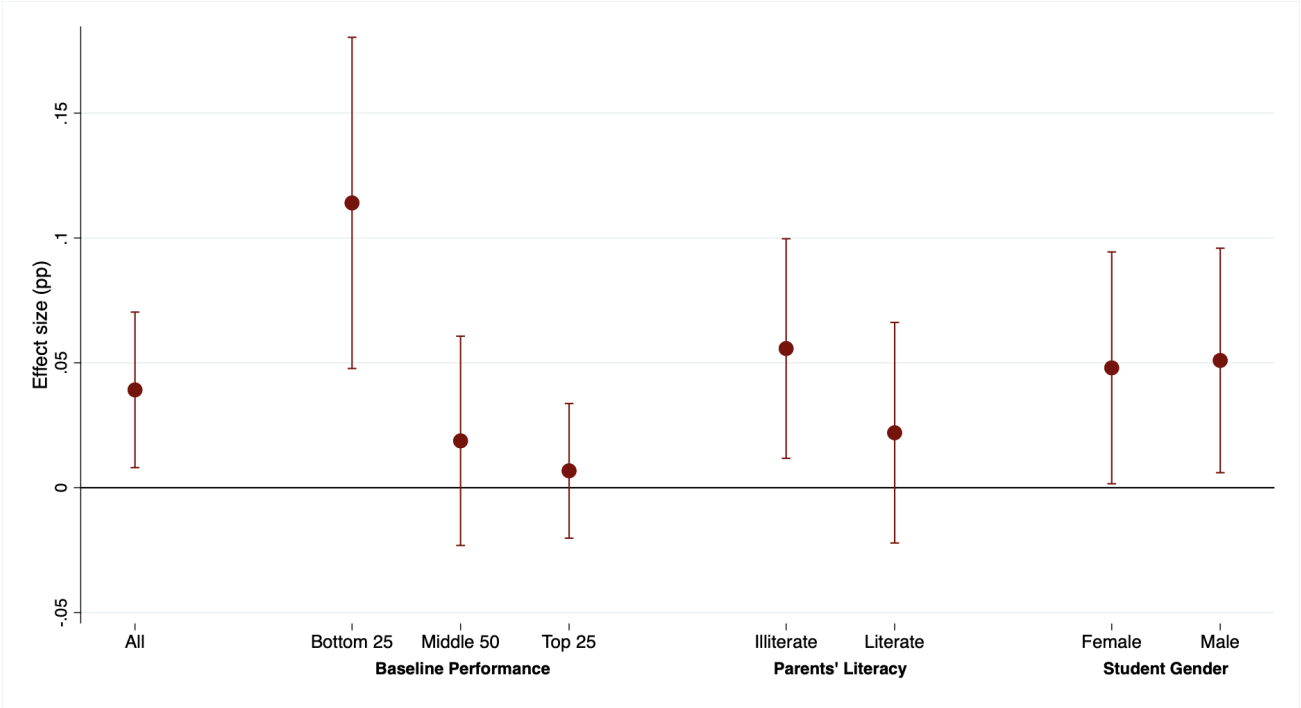
Notes: This figure shows the timeline of activities. At each test date, students take a test in all six subjects. Weekly phone calls started on January 11^{th} and ended on May 31^{st}. Parents received on average 10 phone calls.

Figure 3: Sampling



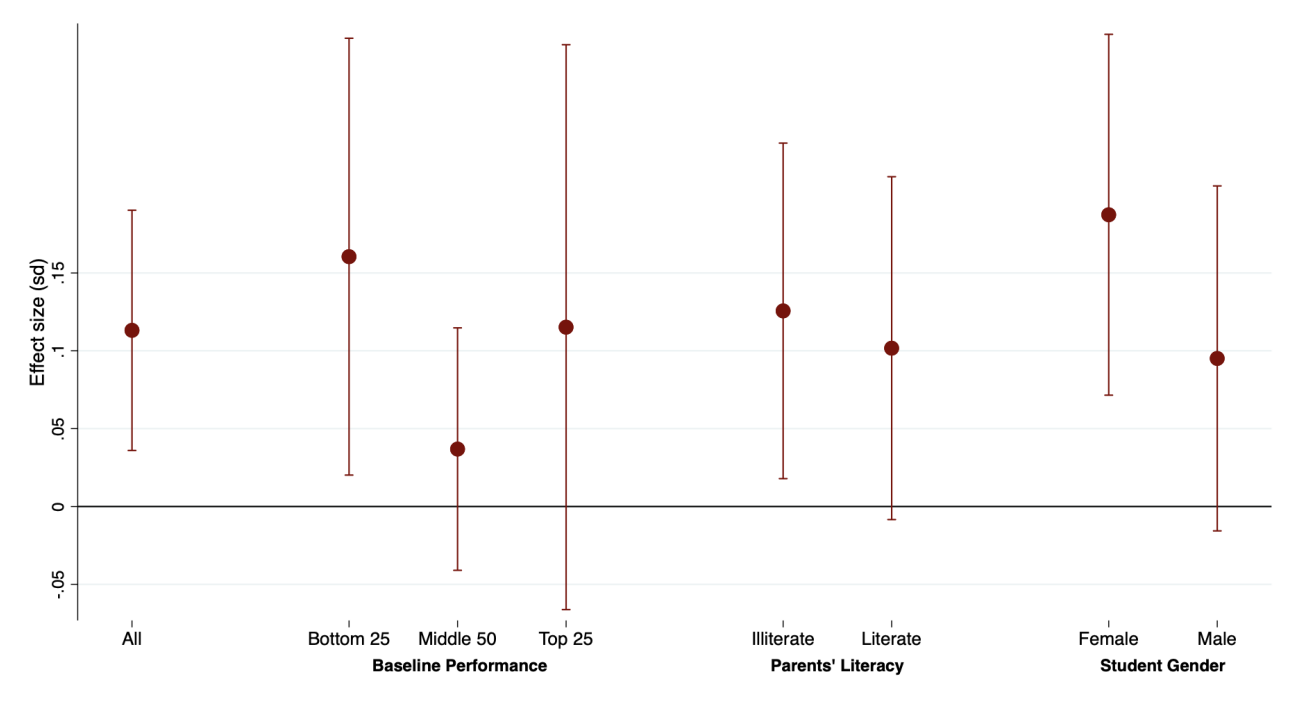
Notes: This figure depicts the sampling procedure. In each of the 20 randomly selected schools, there are, on average, four 8^{th} grade classes. In each class, I create literacy strata. Within each stratum, I randomly assign half of the students into treatment and the other half into control.

Figure 4: Effect on Grade Completion



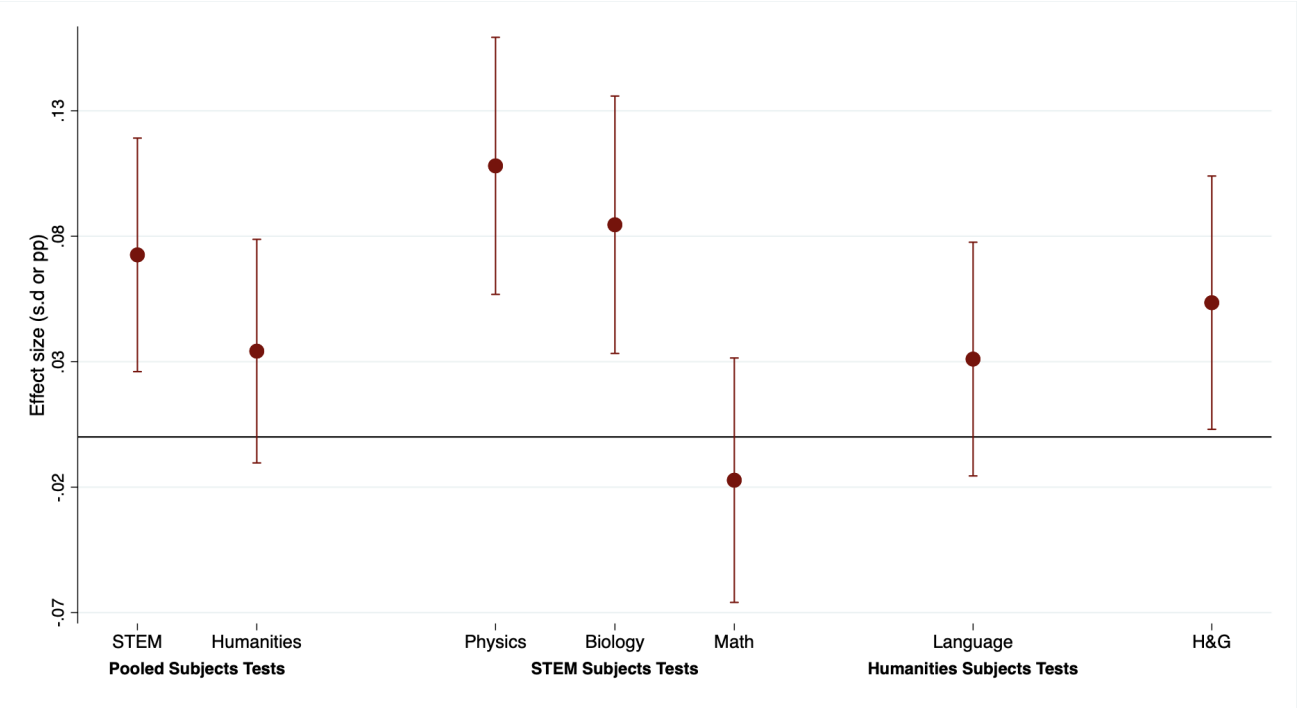
Notes: This graph displays point estimates and 90% confidence intervals of the effect of the intervention on grade completion (passing from grade 8 to grade 9). A grade is completed if the year-end GPA is at least 10 out of 20. I measure the effect on the full sample and then investigate heterogeneity across baseline performance, parents' literacy, and student gender.

Figure 5: Effect on year-end GPA



Notes: This graph displays point estimates and 90% confidence intervals of the effect of the intervention on students' standardized year-end GPA. I measure the effect on the full sample and then investigate heterogeneity across baseline performance, parents' literacy, and student gender.

Figure 6: Effect on Student Test Scores



Notes: This graph displays point estimates and 90% confidence intervals of the effect of the intervention on students' standardized test scores. H&G refers to History and Geography. Language is composed of French and English. STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math) for each test. The humanities score is computed by taking a simple average of Language and History-Geography for each test. In total, there are three test scores for each subject. I pool all three test scores together in each regression to increase power. Each regression controls for the baseline value of the outcome. On top of that, for each regression, I run a lasso to select some covariates out of all the variables shown in Table 2. Each regression controls for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are clustered at the individual level.

9 Tables

Table 1: Household Characteristics

Variables	Mean	Standard Deviation
Household head is father	0.73	0.44
Household size	6.02	2.24
Mother years of schooling	2.29	3.57
Father years of schooling	4.9	4.75
Survey respondent is literate	0.49	0.5
Number of household members with some secondary education	1.56	1.36
Local language is spoken at home	0.98	0.13
Household has electricity(including solar)	0.76	0.43
Household has a mobile phone	0.97	0.16
Household has a television or radio	0.75	0.43
Household has a study table	0.55	0.5
Number of students		2094

Notes: Data source is the baseline survey. I measured literacy by administering a literacy test to respondents during the baseline survey. The test was similar to that of DHS.

Table 2: Baseline Summary Statistics

	Control	Treatment	Control-Treatment	
	Mean	Mean	Mean	p-val T=C
Panel A: Respondent Background				
Father or Mother	0.81	0.82	-0.01	0.42
Age	42.38	43.04	-0.65	0.11
Literate	0.49	0.49	0.00	0.89
Understand report cards	0.56	0.56	0.00	0.91
Panel B: Student Information				
Age	14.15	14.07	0.08	0.40
Male	0.55	0.52	0.03	0.26
Attended kindergarten	0.29	0.30	-0.01	0.94
Ever repeated	0.58	0.61	-0.03	0.14
Panel C: Student Performance				
Physics	10.49	10.33	0.16	0.57
Biology	10.06	10.16	-0.10	0.78
Math	8.00	8.35	-0.35	0.02**
Language	10.34	10.44	-0.09	0.35
History-Geography	12.14	12.05	0.08	0.50
Panel D: Parents Knowledge & Involvement at School				
Parents know number of subjects	0.34	0.32	0.02	0.23
Parents know number of tests	0.49	0.48	0.02	0.33
Parents know when 1st semester ends	0.33	0.32	0.01	0.79
Parents know passing grade	0.70	0.68	0.02	0.48
Parents received two report cards	0.47	0.46	0.01	0.71
Parents visited school	0.37	0.36	0.00	0.92
Parents checked attendance	0.11	0.10	0.01	0.50
Parents talked to teachers	0.18	0.17	0.01	0.80
Panel E: Parents Involvement at Home				
Parents talked to child	0.79	0.79	0.00	0.92
Parents supervised homework	0.49	0.50	-0.01	0.74
Parents asked test scores	0.64	0.61	0.03	0.14
Parents asked test dates	0.46	0.45	0.01	0.81
Parents checked on child during reviews	0.53	0.52	0.01	0.54
Panel F: Parents' Baseline Belief				
Parent is correct about student's passing/failing	0.73	0.71	0.03	0.052*
Joint F-test test p-value				0.22
Students	1056	1038		

Notes: Data source is a baseline survey and administrative data from schools. Language is a composite subject in which there are French and English. "Parent Is Correct about Student's Passing/Failing" is a dummy variable that takes 1 if the parent was able to accurately tell whether the child is below or above the passing threshold of 10. The p-values are derived from regressions of each variable on a treatment dummy, with strata fixed effects included and I use robust standard errors. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 3: Effect of the Intervention on Student Performance

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Pooled				
Treatment	0.04**	0.11**	0.07**	0.03
	(0.02)	(0.05)	(0.05)	(0.03)
Control Mean	0.68	0.00	0.01	0.00
Observations	2056	2056	6174	6180
Panel B: 2nd Semester				
Treatment	-	0.12***	0.06**	0.05*
	-	(0.05)	(0.03)	(0.03)
Control Mean	-	0.00	0.00	0.00
Observations	-	2056	4091	4094
Panel C: 1st Semester				
Treatment	-	0.07	0.09**	0.00
	-	(0.05)	(0.04)	(0.03)
Control Mean	-	0.01	0.01	0.01
Observations	-	2094	2083	2086

Notes: This table shows the effect of the intervention on students' outcomes. Grade Completion (Column 1) is a dummy variable that takes 1 if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is at least 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B looks at the second semester only, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 4: Effect on Different Quartiles of Baseline Performance

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Bottom Quartile				
Treatment	0.12**	0.16*	0.09	0.11**
	(0.04)	(0.08)	(0.06)	(0.06)
Control Mean	0.3	-0.74	-0.80	-0.85
Observations	540	540	1608	1614
Panel B: 2nd and 3rd Quartile				
Treatment	0.02	0.03	0.07**	0.01
	(0.03)	(0.05)	(0.04)	(0.04)
Control Mean	0.76	-0.02	0.01	0.04
Observations	1102	1102	3317	3317
Panel C: Top Quartile				
Treatment	0.01	0.12	0.08	0.04
	(0.02)	(0.11)	(0.07)	(0.07)
Control Mean	0.98	1.04	1.10	1.06
Observations	414	414	1249	1249
P-value Bottom = Middle	0.027	0.214	0.766	0.181
P-value Bottom = Top	0.004	0.675	0.768	0.378

Notes: This table looks at the effect of the intervention for different quartiles of baseline performance. Panel A looks at the bottom quartile. Panel B is for the middle 50 percentile, and Panel C is for the top quartile. Grade Completion (Column 1) is a dummy variable that takes 1 if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is at least 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B looks at the second semester only, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 5: Heterogeneity by Parents' Literacy

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Illiterate Parents				
Treatment	0.06**	0.13**	0.07*	0.01
	(0.03)	(0.07)	(0.04)	(0.04)
Control Mean	0.66	-0.10	-0.09	-0.08
Observations	1047	1047	3133	3143
Panel B: Literate Parents				
Treatment	0.02	0.10	0.08*	0.06
	(0.03)	(0.07)	(0.04)	(0.04)
Control Mean	0.70	0.10	0.10	0.09
Observations	1009	1009	3041	3037
p-value	0.348	0.552	0.875	0.387

Notes: This table looks at the effect of the intervention by Parents' Literacy. Panel A shows the results for students whose parents are illiterate, and Panel B is for literate parents. Grade Completion (Column 1) is a dummy variable that takes 1 if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is at least 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B looks at the second semester only, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 6: Heterogeneity by Parent Literacy and Student Gender

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Illiterate Parents, Female Students				
Treatment	0.10**	0.24**	0.04	0.07
	(0.04)	(0.10)	(0.06)	(0.05)
Control Mean	0.67	-0.10	-0.10	-0.05
Observations	482	482	1439	1441
Panel B: Literate Parents, Female Students				
Treatment	0.01	0.14	0.09	0.10*
	(0.04)	(0.10)	(0.06)	(0.06)
Control Mean	0.72	0.12	0.02	0.14
Observations	487	487	1460	1456
p-value	0.127	0.399	0.66	0.787
Panel C: Illiterate Parents, Male Students				
Treatment	0.05	0.09	0.11**	-0.01
	(0.04)	(0.09)	(0.05)	(0.05)
Control Mean	0.65	-0.09	-0.08	-0.11
Observations	565	565	1694	1701
Panel D: Literate Parents, Male Students				
Treatment	0.05	0.07	0.07	0.05
	(0.04)	(0.10)	(0.06)	(0.05)
Control Mean	0.69	0.09	0.18	0.05
Observations	521	521	1578	1578
p-value	0.953	0.873	0.615	0.414

Notes: This table looks at the effect of the intervention by Parents' Literacy for each Students' Gender. Panel A shows the results for female students whose parents are illiterate. Panel B displays the results for female students whose parents are literate. Panel C presents the results for male students whose parents are illiterate, and panel D for male students whose parents are literate. Grade Completion (Column 1) is a dummy variable that takes 1 if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is at least 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B looks at the second semester only, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: Parents' Knowledge about their Children's Performance

	(1)	(2)
	Parental Error about Student Performance	Parent Is Correct about Student's Passing/Failing
Treatment	-0.09**	0.06***
	(0.04)	(0.02)
Control Mean	0.61	0.80
Observation	903	1921

Notes: This table shows the effect of the intervention on parents' knowledge about their children's performance for the first semester of the 2022-2023 academic year. "Parental Error about Student Performance in 2021-2022" (Column 1) is the absolute value of the difference between the true first-semester performance (GPA) and parents' beliefs. This difference gives me a parental error. "Parent Is Correct about Student's Passing/Failing" (Column 2) is a dummy variable that takes 1 if the parent was able to accurately tell whether the child is below or above the passing threshold of 10. Standard errors are in parenthesis and are clustered at the individual level. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 8: Absenteeism Disaggregated by Baseline Performance

	(1)	(2)	(3)	(4)
	Full Sample	Bottom Quartile	2nd and 3rd Quartile	Top Quartile
Treatment	-0.068***	-0.025	-0.065**	-0.135**
	(0.019)	(0.043)	(0.027)	(0.053)
Control Mean	0.61	0.66	0.6	0.54
Observations	2,085	549	1,116	420

Notes: This table presents the estimated impact of the intervention on student absenteeism. Absenteeism is defined as a binary variable equal to 1 if the student was absent at least once during the intervention period and 0 otherwise. Column (1) reports results for the full sample, while Columns (2) to (4) show results by students' baseline academic performance. All regressions control for the baseline value of absenteeism. In addition, each regression incorporates a double post-LASSO procedure to select relevant covariates from the full set of variables listed in Table 2. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Table 9: Dropout Rate 1-Year after the Intervention

	(1)	(2)	(3)	(4)	(5)
	Full Sample	Illiterate Parents	Literate Parents	Female Students	Male Students
Treatment	-0.008	-0.041**	0.027	-0.036**	0.019
	(0.012)	(0.018)	(0.016)	(0.018)	(0.018)
Control Mean	0.092	0.12	0.24	0.3	0.09
Observation	2,068	1,058	1,010	967	1,101
p-value		0.006		0.028	

Notes: This table presents the estimated impact of the intervention on student dropout one year after the intervention. Dropout is defined as a binary variable equal to 1 if the student left school and 0 otherwise. Column (1) reports results for the full sample, while Columns (2) and (3) present results separately for students with illiterate and literate parents, respectively. Columns (4) and (5) examine the effects by student gender (female and male students). Each regression incorporates a double post-LASSO procedure to select relevant covariates from the full set of variables listed in Table 2. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Table 10: Spillovers Analysis using Grade Completion as Outcome

	(1)	(2)	(3)
	Treated students vs. students in non-intervention schools	Control students in treated schools vs. students in non-intervention schools	All students in treated schools vs. students in non-intervention schools
Spillover	0.06***	0.02	0.04***
	(0.02)	(0.02)	(0.12)
Non-Intervention Schools Mean	0.66	0.66	0.66
Observation	5,136	5,146	6,179

Notes: This table presents the estimated spillover effects by comparing grade completion rates in the 20 intervention schools to 20 randomly selected non-intervention schools. Column (1) reports the comparison between treated students in intervention schools and students in non-intervention schools. Column (2) compares control students in intervention schools to students in non-intervention schools, capturing potential spillover effects on untreated students. Column (3) examines the overall effect of the intervention at the school level by comparing all students (both treated and control) in intervention schools to students in non-intervention schools. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

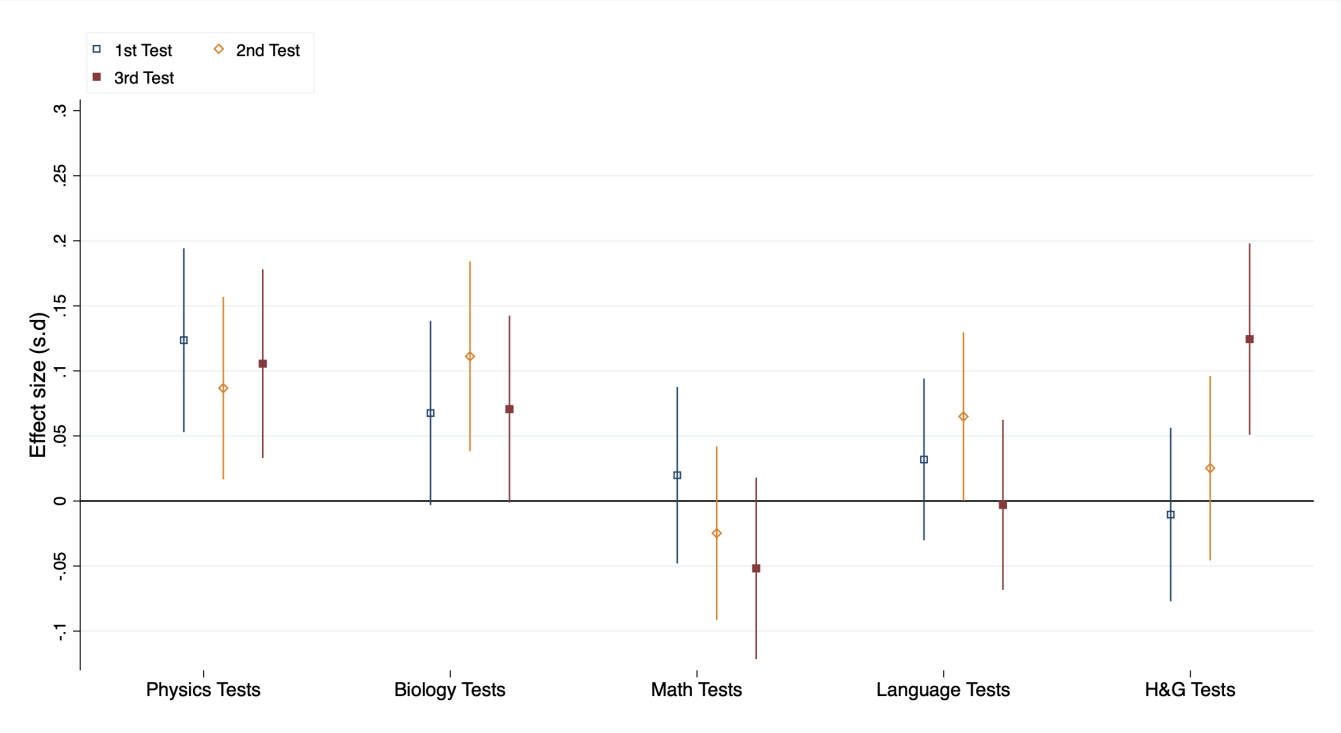
Table 11: Cost Benefit Analysis Accounting for Tax Revenues

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: All (4 percentage points)				**Panel B: Marginal Students (11 percentage points)**			
	100% Formal Sector		15% Formal Sector		100% Formal Sector		15% Formal Sector	
Parameters								
Monthly Salary	minimum wage	average	minimum wage	average	minimum wage	average	minimum wage	average
Amount (USD)	83	111	83	111	83	111	83	111
Discount rate (%)	5	5	5	5	5	5	5	5
Start paying taxes after age	18	18	18	18	18	18	18	18
Life expectancy	60	60	60	60	60	60	60	60
Income tax rate (%)	10	10	10	10	10	10	10	10
Costs								
Intervention costs	9500	9500	9500	9500	9500	9500	9500	9500
Teachers salaries	N	N	N	N	N	N	N	N
Tuition fees expenses for parents	N	N	N	N	N	N	N	N
Benefits								
Collected between years	2027-2069				2027-2069			
Tax receipts	68361	91423	10254	13713	187994	251414	28199	37712
Net Benefit (Benefits-Costs)	58861	81923	754	4213	178494	241914	18699	28212
Breakeven year	3	2	40	23	1	1	7	5
Internal Rate of Return (%)	620	862	8	44	1878	2546	196	297

Notes: All values are in US dollars in 2023. The assumption of discount rate follows Akresh, Halim, and Kleemans 2023. I assume that students who completed grade 8 due to my intervention will also complete middle school before entering the labor market. Panel A (Columns 1 through 4) considers the overall impact of 4 percentage points on grade completion. Panel B (Columns 5 through 8) considers the impact of 11 percentage points on grade completion for marginal students. Within each panel, I consider two scenarios. In the first scenario, I assume that all the students will work in the private sector, and in the second scenario, I follow Miguel and Kremer 2004 and assume that only 15% of the students will end up working in the formal sector. I assume students will either make the minimum wage in Benin or make the current average of middle school graduates based on 2018-2019 EHCVM data. The breakeven year is the first year when the present discounted value of benefits exceeds that of costs. Tax receipts consist of 10% income tax. This can also be considered total expenditures tax if these students work in the informal sector. The internal rate of return is the discount rate that equates to the present discounted value of benefits and costs.

A Appendix Figures

Figure A1: Effect of the Intervention on each of the three Tests



Notes: This graph displays point estimates and 90% confidence intervals of the intervention's effect on each of the three test scores for each subject. The 1st test was the second test of the first semester. This test took place ten days after the intervention started. The 2nd and 3rd tests took place during the second semester. H&G refers to History and Geography. Language is composed of French and English. STEM score is computed by taking a simple average of all three STEM subjects (Physics, Biology, and Math) for each test. The humanities score is computed by taking a simple average of Language and History-Geography for each test. In total, there are three test scores for each subject. I pool all three test scores together in each regression to increase power. Each regression controls for the baseline value of the outcome except for grade completion and GPA. On top of that, for each regression, I run a LASSO to select some covariates out of all the variables shown in Table 2. Except for grade completion, all the other regressions control for some combinations of these variables: number of household member who has attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parenthesis and are clustered at the individual level.

B Appendix Tables

Table A1: Effect of the Intervention on Specific Subjects

	(1)	(2)	(3)	(4)	(5)
	Physics	Biology	Math	Language	H&G
Panel A: Pooled					
Treatment	0.11***	0.09***	-0.02	0.03	0.05*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Control Mean	0.00	0.00	-0.00	0.00	0.00
Observations	6047	6107	6144	6177	6090
Panel B: 2nd Semester					
Treatment	0.10***	0.09***	-0.04	0.03	0.08**
	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)
Control Mean	0.00	0.00	-0.00	0.00	0.00
Observations	4011	4040	4073	4092	4040
Panel C: 1st Semester					
Treatment	0.12***	0.07	0.02	0.03	-0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Control Mean	0.00	0.01	0.00	0.01	0.01
Observations	2036	2067	2071	2085	2050

Notes: This table shows the intervention's effect on student performance in specific subjects. H&G refers to History and Geography. Language is composed of French and English. Panel A pools 1st and 2nd semesters test scores together to get more power. Panel B looks at the second semester only, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The second test of the first semester took place before the intervention started. Each regression controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. Columns 1 to 5 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Table A2: Heterogeneity by Students' Gender

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Female Students				
Treatment	0.05*	0.20***	0.07*	0.08**
	(0.03)	(0.07)	(0.04)	(0.04)
Control Mean	0.69	0.01	-0.04	0.05
Observations	969	969	2899	2897
Panel B: Male Students				
Treatment	0.05*	0.09	0.093**	0.02
	(0.03)	(0.07)	(0.04)	(0.04)
Control Mean	0.67	-0.01	0.04	-0.04
Observations	1087	1087	3275	3283
p-Value	0.877	0.461	0.516	0.429

Notes: This table shows the effect of the intervention by Student Gender. Panel A shows the results for female students, and Panel B is for males. Grade Completion (Column 1) is a dummy variable that takes one if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed using a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B only looks at the second semester, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A3: Heterogeneity by the person receiving the calls (Mothers vs. Fathers)

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Mother Receives Calls				
Treatment	0.09**	0.36***	0.11*	0.08
	(0.04)	(0.10)	(0.06)	(0.06)
Control Mean	0.66	-0.05	-0.03	-0.04
Observations	615	615	1857	1860
Panel B: Father Receives Calls				
Treatment	0.03	0.05	0.08**	-0.02
	(0.02)	(0.06)	(0.03)	(0.03)
Control Mean	0.69	0.02	0.02	0.02
Observations	1441	1441	4317	4320
p-Value	0.491	0.041	0.731	0.077

Notes: This table shows the effect of the intervention based on whether mothers receive the calls or fathers receive the calls. Panel A shows the results when mothers receive the calls, and Panel B is for when fathers receive the calls. Grade Completion (Column 1) is a dummy variable that takes one if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is 10 out of 20. GPA (Column 2) measures the year-end performance. Column 3 (STEM) is the average STEM score. The average STEM score is computed using a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table A4: Absenteeism Disaggregated by Parents' Literacy and by Students Gender

	(1)	(2)	(3)	(4)
	Illiterate Parents	Literate Parents	Female Students	Male Students
Treatment	-0.061**	-0.072***	-0.070**	-0.069***
	(0.027)	(0.028)	(0.03)	(0.027)
Control Mean	0.61	0.49	0.52	0.67
Observations	1,061	1,024	975	1,110

Notes: This table presents the estimated impact of the intervention on student absenteeism. Absenteeism is defined as a binary variable equal to 1 if the student was absent at least once during the intervention period and 0 otherwise. Columns (1) and (2) report results by parental literacy status, while Columns (3) and (4) present results by student gender. All regressions control for the baseline value of absenteeism. Additionally, a double post-LASSO procedure is applied in each regression to select relevant covariates from the full set of variables listed in Table 2. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table A5: Parental Involvement at School

	(1)	(2)	(3)	(4)
	Visited School	Talked to Teacher	Checked Attendance at School	Involvement at School Index
Panel A: Extensive Margin				
Treatment	0.08***	0.05***	0.06***	0.20***
	(0.02)	(0.02)	(0.02)	(0.05)
Control Mean	0.43	0.20	0.18	0.00
Observation	1921	1921	1921	1921
Panel B: Intensive Margin				
Treatment	0.20	0.16**	-0.10	1.24***
	(0.13)	(0.08)	(0.14)	(0.26)
Control Mean	0.85	0.44	0.79	0.00
Observation	1921	1921	1921	1921

Notes: This table presents the effects of the intervention on parental involvement at school through a set of three actions (Columns 1, 2, and 3). Panel A looks at the extensive margin of these actions– Have parents taken these actions at least once or not? Panel B looks at the intensive margin–the number of times parents have taken these actions. In column 4, I create a Kling (Kling, Liebman, and Katz (2007)) index of all three actions after standardizing each of them using the control group in each classroom as the reference group. Following Banerjee et al. (2015) to get standardized treatment effects, I then standardized the Kling index relative to the mean and standard deviation of the control group. Column 1 is about parents visiting the school irrespective of the reason. Column 2 is about visiting the school and talking to teachers, while column 3 is about visiting the school and checking the presence of one's child at school. Standard errors are in parenthesis and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A6: Parental Involvement at Home

	(1)	(2)	(3)	(4)	(5)	(6)
	Talked to Child	Supervised Homework	Asked Test Scores	Asked Test Dates	Checked on the child during Lesson' Review	Involvement at Home Index
Panel A: Extensive Margin, Parents Survey						
Treatment	0.06***	0.11***	0.11***	0.17***	0.09***	0.38***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.04)
Control Mean	0.88	0.60	0.77	0.63	0.70	0.00
Observation	1921	1921	1921	1921	1921	1921
Panel B: Extensive Margin, Students Survey						
Treatment	0.11***	0.13***	0.10***	0.18***	0.05***	0.45***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.04)
Control Mean	0.85	0.59	0.83	0.73	0.91	0.04
Observation	1902	1902	1902	1902	1902	1902
Panel C: Intensive Margin, Parents Survey						
Treatment	2.24***	1.94***	2.55***	2.79***	1.68***	0.74***
	(0.33)	(0.32)	(0.30)	(0.27)	(0.35)	(0.06)
Control Mean	11.05	5.78	6.06	3.66	7.83	0.00
Observation	1921	1921	1921	1921	1921	1921
Panel D: Intensive Margin, Students Survey						
Treatment	3.75***	2.35***	3.38***	3.90***	2.26***	0.64***
	(0.32)	(0.30)	(0.30)	(0.29)	(0.30)	(0.04)
Control Mean	10.33	5.36	6.77	5.27	13.56	0.00
Observation	1902	1902	1902	1902	1902	1902

Notes: This table looks at the effects of the intervention on parental involvement at home through a set of five actions (Columns 1, 2, 3, 4, and 5). In column 6, I create a Kling (Kling, Liebman, and Katz (2007)) index of all five actions after standardizing each of them using the control group in each classroom as the reference group. Following Banerjee et al. (2015) to get standardized treatment effects, I then standardized the Kling index relative to the mean and standard deviation of the control group. Panel A looks at the extensive margin of these actions–Have parents taken these actions at least once or not, using a parents survey. Panel B looks at the same thing but uses students' survey data. Panel C looks at the intensive margin–the number of times parents have taken these actions, using parents' survey data, and panel D looks at the same thing using data from student surveys. Column 1 is about parents having discussions with their child about his/her education. Column 2 is about supervising or finding someone to supervise/help with homework. Column 3 is about asking about test scores information, column 4 is about asking about upcoming test dates, and column 5 is about checking on the child during lesson review. Standard errors are in parenthesis and are clustered at the individual level. Randomization Inference p-values are in brackets. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A7: Allocation of Household Chores

	(1)	(2)	(3)
	Students doing Fewer Chores	Parents doing More Chores	Siblings doing More Chores
Panel A: Parents Survey			
Treatment	0.11***	0.08***	0.04**
	(0.02)	(0.02)	(0.02)
Control Mean	0.35	0.26	0.14
Observation	1940	1940	1940
Panel B: Students Survey			
Treatment	0.14***	0.07***	0.08***
	(0.02)	(0.02)	(0.02)
Control Mean	0.37	0.21	0.19
Observation	1902	1902	1902

Notes: This table looks at the effect of the intervention on household chores allocation within the household. Column 1 is a dummy that takes one if parents have ever asked the child not to perform some household chores that the child used to perform to allow the child to have more time to study and 0 otherwise. Column 2 is a dummy variable that takes one if parents are doing more chores and 0 otherwise. Column 3 is a dummy variable that takes one if the student's siblings now doing more chores as a consequence of the reduction in chores for the student and 0 otherwise. Panel A looks at these outcomes from parents' survey data, while the panel uses students' survey data. Using data from parent and student surveys allowed me to see whether parents were giving me socially desirable answers. Standard errors are in parenthesis and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A8: Parents Financial Involvement

	(1)	(2)	(3)
	Total Tuition Fees Paid	Tuition Fees Fully Paid	Date of Tuition Fees Settlement
Treatment	-147.31	-0.021	-0.528
	(174.34)	(0.019)	(3.64)
Control Mean	14590	0.69	23017
Observation	1,769	1,695	1,056

Notes: This table presents the estimated impact of the intervention on parents' financial involvement, using tuition fee payments as a proxy. Column (1) examines the total amount paid toward tuition fees. Column (2) reports results for a binary outcome indicating whether tuition fees were fully paid (1 = fully paid; 0 = otherwise). Column (3) analyzes the timing of the final payment, conditional on full tuition payment. Since dates are recorded as the number of days since January 1, 1960, a positive coefficient indicates that the treatment group made their final payment later than the control group, while a negative coefficient indicates earlier payment. Each regression incorporates a double post-LASSO procedure to select relevant covariates from the full set of variables listed in Table 2. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table A9: Mediators of the Effects of Information on Year-end GPA

	(1)	(2)	(3)	(4)	(5)	(6)
Mediator:	None	Involvement at School Index	Involvement at Home Index	Students doing Fewer Chores	Parent Is Correct about Student's Passing/Failing	All
Treatment	0.11**	0.09*	0.05	0.10*	0.07	0.06
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Mediator	-	-0.03	0.13***	-0.10*	0.23***	-
	-	(0.03)	(0.04)	(0.06)	(0.06)	-
Control Mean	0.00	0.00	0.00	0.00	0.00	0.00
Observations	2056	1884	1884	1884	1884	1884

Notes: This table shows the mediation analysis results performed on the standardized year-end GPA. In each column, I show the impact of the intervention on the year-end GPA but include mediator variables. Column 2 includes parental involvement at school index as a mediator. Column 3 includes the parental involvement at home index. Column 4 includes a dummy variable that takes one if the student experienced a reduction in household chores. Column 5 includes a dummy variable equal to 1 if parents have an accurate belief about whether the child's 1st semester GPA is below or above the passing threshold. In column 6, I include all four mediators. Standard errors are in parenthesis and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A10: Table 3 ANCOVA

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Pooled				
Treatment	0.04**	0.09*	0.06**	0.02
	(0.02)	(0.05)	(0.03)	(0.03)
Control Mean	0.68	0.00	0.01	0.00
Observations	2056	2056	6174	6180
Panel B: 2nd Semester				
Treatment	x	0.10**	0.05*	0.04
	x	(0.05)	(0.03)	(0.03)
Control Mean	x	0.00	0.00	0.00
Observations	x	2056	4091	4094
Panel C: 1st Semester				
Treatment	x	0.05	0.09**	-0.01
	x	(0.05)	(0.04)	(0.03)
Control Mean	x	0.01	0.01	0.01
Observations	x	2094	2083	2086

Notes: The table shows the results in Table 3 using an ANCOVA specification. Standards errors are clustered at the individual levels and are in parentheses. Significance: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table A11: Lee Bounds for Grade Completion and GPA

	Grade Completion			GPA		
	(1)	(2)	(3)	(4)	(5)	(6)
	Lower	Higher	Main Estimate	Lower	Higher	Main Estimate
Panel A: Pooled						
Treatment	0.038**	0.043**	0.039**	0.08*	0.13***	0.11**
	(0.02)	(0.02)	(0.02)	(0.05)	(0.05)	(0.05)
Panel B: 2nd Semester						
Treatment	-	-	-	0.09**	0.14***	0.12***
	-	-	-	(0.05)	(0.05)	(0.05)

Notes: Columns 1, 2, 4, and 5 report the Lee Bounds (lower and upper bounds) from regression of grade completion and year-end GPA on treatment. To generate the lower (upper) bounds, I compare the proportion in treatment and control groups who respond to the survey and trim the excess respondents with the highest(lowest) values in the group with more respondents. Standards errors are clustered at the individual levels and are in parentheses. Significance: $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Table A12: Lee Bounds for STEM and Humanities

	STEM			Humanities		
	(1)	(2)	(3)	(4)	(5)	(6)
	Lower	Higher	Main Estimate	Lower	Higher	Main Estimate
Panel A: Pooled						
Treatment	0.06**	0.08***	0.07**	0.02	0.05*	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Panel B: 2nd Semester						
Treatment	0.05	0.07**	0.06**	0.03	0.06**	0.05*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Panel C: 1st Semester						
Treatment	0.09**	0.09***	0.09**	-0.01	0.01	0.00
	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)

Notes: Columns 1, 2, 4, and 5 report the Lee Bounds (lower and upper bounds) from regression of STEM and Humanities test scores on treatment. To generate the lower (upper) bounds, I compare the proportion in treatment and control groups who respond to the survey and trim the excess respondents with the highest(lowest) values in the group with more respondents. Standards errors are clustered at the individual levels and are in parentheses. Significance: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A13: Lee Bounds for School and Home Involvement Indexes

	Involvement at School Index			Involvement at Home Index		
	(1)	(2)	(3)	(4)	(5)	(6)
	Lower	Higher	Main Estimate	Lower	Higher	Main Estimate
Panel A: Extensive Margin						
Treatment	0.13**	0.24***	0.20***	0.34***	0.43***	0.38***
	(0.06)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)
Panel B: Intensive Margin						
Treatment	0.41*	1.41***	1.24***	0.57***	0.82***	0.74***
	(0.21)	(0.27)	(0.24)	(0.08)	(0.08)	(0.06)

Notes: Columns 1, 2, 4, and 5 report the Lee Bounds (lower and upper bounds) from regression of the school involvement index, home involvement index, and reduced chores dummy on treatment. To generate the lower (upper) bounds, I compare the proportion in treatment and control groups who respond to the survey and trim the excess respondents with the highest(lowest) values in the group with more respondents. Standards errors are clustered at the individual levels and are in parentheses. Significance: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table A14: Lee Bounds for Household Chores and Parents Information About their Children's Performance

	Student doing Less Chores			Parental Error about Student Performance			Parent Is Correct about Student's Passing/Failing		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Lower	Higher	Main Estimate	Lower	Higher	Main Estimate	Lower	Higher	Main Estimate
Treatment	0.10***	0.13***	0.11***	-0.13*	-0.08**	-0.09**	0.05***	0.07***	0.06***
	(0.02)	(0.02)	(0.02)	(0.08)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)

Notes: Columns 1, 2, 4, and 5 report the Lee Bounds (lower and upper bounds) from regression of reduced chores and parental information about their children's performance on treatment. To generate the lower (upper) bounds, I compare the proportion in treatment and control groups who respond to the survey and trim the excess respondents with the highest(lowest) values in the group with more respondents. Standards errors are clustered at the individual levels and are in parentheses. Significance: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A15: Randomization Inference for Table 3

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Pooled				
Treatment	0.04**	0.11**	0.07***	0.03
	[0.033]	[0.016]	[0.006]	[0.24]
Control Mean	0.68	0.00	0.00	0.00
Observations	2056	2056	6174	6180
Panel B: 2nd Semester				
Treatment	-	0.12**	0.06**	0.05
	-	[0.011]	[0.049]	[0.11]
Control Mean	-	0.00	0.00	0.00
Observations	-	2056	4091	4094
Panel C: 1st Semester				
Treatment	-	0.07	0.09**	0.00
	-	[0.11]	[0.008]	[0.993]
Control Mean	-	0.01	0.01	0.01
Observations	-	2094	2083	2086

Notes: This repeats Table 3 results and provides randomization inference p-values in brackets. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ based on the randomization inference p-values.

Table A16: Effect of the Intervention on Student Performance using Restricted Sample

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Pooled				
Treatment	0.04**	0.11**	0.08***	0.02
	(0.02)	(0.05)	(0.03)	(0.03)
Control Mean	0.7	0.02	0.01	0.02
Observations	1 879	1 879	5 637	5 637
Panel B: 2nd Semester				
Treatment	-	0.12***	0.07**	0.02
	-	(0.05)	(0.03)	(0.03)
Control Mean	-	0.02	0.01	0.03
Observations	-	1 879	3 758	3 758
Panel C: 1st Semester				
Treatment	-	0.07	0.10***	0.01
	-	(0.05)	(0.04)	(0.04)
Control Mean	-	0.04	0.02	0.02
Observations	-	1 879	1 879	1 879

Notes: This table shows the effect of the intervention on students' outcomes but restricts the sample to only students with all their test scores available for all the tests and every subject. Grade Completion (Column 1) is a dummy variable that takes one if the student has completed grade 8 (passing to grade 9) and 0 otherwise. A grade is completed if the year-end GPA is at least 10 out of 20. GPA (Column 2) measures the year-end performance (Panel A) and also the performance in each semester (Panel B and C). Column 3 (STEM) is the average STEM score. The average STEM score is computed using a simple average of all three STEM subjects (Physics, Biology, and Math). Column 4 (Humanities) is the average Humanities score. The average Humanities score is computed by taking a simple average of Language and History-Geography. Language includes French and English. Panel A pools 1st and 2nd-semester test scores together to get more power. Panel B only looks at the second semester, where students took two tests per subject. Panel C focuses only on the first semester, where students took one test per subject. The first test of the first semester happened before the intervention started. Each regression, except column 1, controls for the baseline value of the outcome. On top of that, for each regression, I run a LASSO regression to select some covariates out of all the variables shown in Table 2. For column 1, no covariate was selected. Columns 2 to 4 control for some combinations of these variables: number of household members who have attended secondary education, whether or not the student has ever repeated a class, whether or not the parent knows when the first semester ends, survey respondent's years of schooling, and student gender. All test scores are standardized. Standard errors are in parentheses and are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A17: Spillovers Analysis of Table 3

	(1)	(2)	(3)	(4)
	Grade Completion	GPA	STEM	Humanities
Panel A: Full Sample				
Treatment	0.04	0.08	0.04	0.00
	(0.03)	(0.06)	(0.04)	(0.03)
Treatment*High intensity	-0.01	-0.02	-0.02	0.04
	(0.04)	(0.08)	(0.05)	(0.05)
Control Mean	0.68	0.06	0.01	-0.01
Observations	2047	2047	6141	6177
Panel B: Treatment Group Only				
High Intensity	0.08***	0.18***	0.10**	0.06
	(0.03)	(0.06)	(0.04)	(0.04)
Low Intensity Mean	0.68	0.00	0.00	0.00
Observations	1018	1018	3048	3071
Panel C: Control Group Only				
High Intensity	0.08***	0.16**	0.14***	0.02
	(0.03)	(0.06)	(0.04)	(0.04)
Low Intensity Mean	0.64	0.00	0.00	0.00
Observations	1029	1029	3093	3106

Notes: In this table, I compare high-intensity classrooms to low-intensity classrooms. The intensity is determined by the proportion of treated students within the classroom. I assigned classrooms that were below the median to the low-intensity group (proportion of treated students below 30.51% of the class size) and those above the median to the high-intensity group. Panel A investigates whether the treatment effect varies between high and low-intensity classrooms. Panel B compares treated students in high intensity to treatment students in low intensity. Panel C compares control students in high intensity to control students in low intensity. Columns 2, 3, and 4 are standardized test scores where the reference group is low-intensity students. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table A18: Spillovers Effect of the Mechanisms

	(1)	(2)	(3)	(4)	(5)
	School Involvement Index	Home Involvement Index	Students doing Less Chores	Parental Error about Student Performance	Parent being Correct about Student's Passing/Failing
Panel A: Full Sample					
Treatment	0.18***	0.30***	0.11***	-0.08	0.04*
	(0.05)	(0.04)	(0.03)	(0.05)	(0.02)
Treatment*High intensity	-0.07	-0.07	0.01	-0.05	0.03
	(0.07)	(0.06)	(0.05)	(0.08)	(0.03)
Control Mean	0.00	0.00	0.35	0.61	0.82
Observations	1921	1921	1921	903	1921
Panel B: Treatment Group Only					
High Intensity	-0.09*	0.07*	-0.03	0.10*	0.00
	(0.05)	(0.04)	(0.03)	(0.05)	(0.02)
Low Intensity Mean	0.00	0.00	0.48	0.49	0.87
Observations	963	963	963	449	963
Panel C: Control Group Only					
High Intensity	-0.03	0.13***	-0.04	0.15**	-0.03
	(0.05)	(0.04)	(0.03)	(0.06)	(0.03)
Low Intensity Mean	0.00	0.00	0.37	0.54	0.84
Observations	958	958	958	454	958

Notes: In this table, I compare high-intensity classrooms to low-intensity classrooms. The proportion of treated students within the classroom determines the intensity. I assigned classrooms below the median to the low-intensity group (proportion of treated students below 30.51% of the class size) and those above the median to the high-intensity group. Panel A investigates whether the treatment effect varies between high and low-intensity classrooms. Panel B compares treated students in high intensity to those in low intensity. Panel C compares control students in high intensity to those in low intensity. Column 1 looks at parental involvement at school at the extensive margin, and Column 2 looks at parental involvement at home at the extensive margin. Column 3 is a dummy equal to 1 if the students experienced reduced chores. Columns 4 and 5 are about parental knowledge about student performance. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Table A19: Students endline Performance across different Samples

	(1)	(2)	(3)	(4)	(5)
	Treat & Control	Treat & 45% sample	Control & 45% sample	Control High Intensity & Control Low Intensity	45% High Intensity & 45% Low Intensity
Coefficient	0.04**	0.04**	-0.002	0.08***	0.06***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)
Comparison group mean	0.68	0.68	0.68	0.63	0.66
Observations	2 047	2563	2574	1029	1545

Notes: This table provides some evidence of the similarities between students in my study and those whose parents are in the 45% of parents who did not participate in the study. The outcome in this table is grade completion. It takes one if the student is passing from grade 8 to 9 and 0 otherwise. Column 1 repeats the result in column 1 of Table 3. In column 2, I compare my treatment group to students in the 45% sample. In column 3, I compare my control group to students in the 45% sample. In column 4, I compare my control group in high-intensity classrooms to those in low-intensity classrooms. In column 5, I compare the 45% sample in high-intensity classrooms to those in low-intensity classrooms. Intensity is measured by the proportion of treated students in a given classroom. Classrooms above the median proportion of treated are in high intensity, and those below the median are in low intensity. I do the same analysis for different outcomes such as year-end GPA and results lead to the same conclusion. I do the same analysis for different outcomes such as year-end GPA and results lead to the same conclusion. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A20: Cost Benefit Results adjusting for Inflation

Authors	**Interventions**	**Cost Benefits (SD per $100)**
Yedomiffi(2023)	Parents' Managerial Role	2.7
Duflo et al. (2011)	Streaming, Kenya	16.44
Glewwe et al. (2010)	Teachers Incentive, Kenya	2.97
Kremer et al. (2009)	Scholarship Kenya	1.38
Duflo et al. (2011)	ETP and streaming, Kenya	0.93
Baird et al. (2011)	CCT Malawi	0.65
Baird et al. (2011)	UCT Malawi	0.06
Duflo et al. (2011)	Reducing class size in Kenya	0.00
Glewwe et al. (2004)	Flipcharts, Kenya	0.00
Glewwe et al. (2009)	Textbooks, Kenya	0.00

Notes: This table shows a cost-benefit analysis where I only consider improvement in students' performance for every $100 spent. Every cost is in dollars. The benefits are the improvement in year-end GPA expressed in standard deviation. Cost benefits results for the other papers are from Bhula et al. (2020) and expressed in 2011 values–adjusting for inflation. I accessed the report by Bhula et al. (2020) through this link:: https://www.povertyactionlab.org/resource/conducting-cost-effectiveness-analysis-cea