



Speed School Programme: Ethiopia

Tracking the Progress of Speed School Students: 2011-17

RESEARCH REPORT: MARCH 2018



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Acknowledgements

This report has benefited from the hard work, insights and time of many individuals. The research team from the University of Sussex, University of Cambridge and the Institute of Education, University College London worked collaboratively at all stages of the research to achieve this research output. We would like to recognise the work of Ethiopia field research team led by Asmelash Haile Tsegay who tracked the 2011 baseline students and assisted in the translation and piloting of test items for this study. We would also like to thank Geneva Global staff in Ethiopia who were always ready to assist us at all stages of qualitative and quantitative field work. Special thanks to Legatum Foundation and Luminos who provided funding for this longitudinal study. The team from Geneva Global Inc. inspired this study and without their support this report would not be possible - thank you for the tremendous work you do on the front line to build a better future for school aged out-of-school children in Ethiopia. We are also grateful to our research collaborators from Hawassa University, Ethiopia who worked so well with us on the qualitative research studies. We appreciate the inputs you made to the analysis of qualitative data and the insights you helped us develop. Finally, a special thank you to Joshua Muskin at Geneva Global for his feedback and input to this report.

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Akyeampong K., Delprato, M., Sabates, R., James, Z., Pryor, J., Westbrook, J., Humphreys, S., & Tsegay A.H. (2018) *Speed School Programme in Ethiopia: Tracking the Progress of Speed School Students: 2011-17*. Research Report. Centre for International Education, University of Sussex, Falmer, Brighton, UK

Executive Summary

This report is a culmination of a 6-year evaluation of the Geneva Global Inc. Speed School program in Ethiopia. Geneva Global Inc. contracted the University of Sussex Centre for International Education (CIE) to carry out a comprehensive impact study of the Speed School Program which began in 2011. The Speed School program provides opportunity for primary school-aged out-of-school children between the ages of 9 to 14 to be reintegrated into government schools after ten months of accelerated learning instruction. The program aims to improve individual learning by seeking not only faster learning but also deeper and more effective learning. An impact evaluation study in 2014 found that after one year in government schools, former Speed School students make faster progress in learning than other non-Speed School students. However, the expectation that former Speed School students, will continue with this progress in terms of school retention, reduced drop out, and improved learning outcomes by the end of their primary education had not been evaluated.

The main focus of the longitudinal evaluation study was to track students who attended Speed School to measure the impacts of the program on primary school completion, learning outcomes, and attitudes towards learning. The research team tracked the progress of former Speed School students from the time they completed the Speed School program in 2012 to the expected end of their primary school at grade 8. Tracking, also included, former Speed School students who had entered government primary schools but afterwards had dropped out.

To effectively study the educational trajectories of former Speed School students from 2011, the research design included two comparison groups – students in two types of government schools. The first type of government schools we called ‘Link’ schools simply because these were expected to enrol students who had completed Speed Schools. Link Schools often provided spaces for the Speed School classrooms. The second type of government schools were those where students who had completed Speed School were not earmarked for transition.

Using a household survey and achievement tests, the research focused on three diverse but interrelated long-term outcomes of the Speed School accelerated learning program; namely, school completion, academic performance, and attitudes towards learning and further education.

The research was guided by the following questions:

1. What is the impact of the Speed School program on progression through the grades to completion of primary education of former Speed School students compared to students who had attended government schools?
2. How do the attitudes to learning and further education for former Speed School students compare with students who had attended government schools?
3. What is the impact of the Speed School program on the learning outcomes of former students compared to other students who had attended government schools?
4. Which household and student-level factors are the most important correlates of differences in learning outcomes and progression over time?

The following are the key findings of the study:

1. Of all the former Speed School students in 2011 who were tracked to 2017, about 75% were still in school compared to 66% of tracked government school students who were still attending, and 60% of Link School students still attending. The higher proportion of Speed School students still attending school compared to government and Link school students, suggests that more Speed School students persist in their education than non-Speed School students. .
2. Former Speed School students are generally less likely to dropout compared to government school students with whom they have had the same primary education.
3. Former Speed School students have higher aspiration to progress beyond primary education, and by the time they reach lower secondary, are less likely to drop out compared to government school students.
4. The wealth status of the households of Speed School students had improved much more than the households of Government and Link School students. From 2011 to 2017, household assets of Speed School students improved by about 45%, and the average livestock increased by about 88% - in real terms an increase of about two times the livestock of a household. For Government and Link School households' assets and average livestock stayed almost the same for the same period.
5. The wealth gap between the relatively 'rich' and 'poor' former Speed School students is narrower than the other students, for both boys and girls, and appears to have had a positive knock-on effect on the educational performance of former Speed School students.

6. Next to lack of money to cover the cost of schooling which includes indirect costs, starting a family is the second most important reason for some former Speed School students to drop out of government schools.
7. Former Speed School students view support from their family as an important factor in encouraging them to continue with their education – this is consistent with findings from the Self-Help-Group (SHG) study¹.
8. Although former Speed School students do not find lessons in government schools easy, nevertheless, they are motivated to want to try harder to learn – Former, Speed School students rate confidence in one’s own ability to learn higher than students who did not attend Speed Schools.
9. Domestic tasks are a barrier for girls’ learning and farm tasks for boys learning, whereas educational aspirations are very strong determinant of learning levels – Former Speed School students appear to have this in abundance.
10. Former Speed School students perform consistently better than Government School students and Link School students for all three subjects – math, Sidama and English. Speed School students scored 10.4% (Math), 13.5% (Sidama) and 7.4% (English) more points than their Government School students counterparts. The differences are statistically significant. Former Speed School students answer *correctly* between or one and two more questions than Government School students for all the test items. These results are statistically significant at the 1% level.
11. Former Speed School students who dropped out before completing primary education perform better than government school students who attended the same schools and had also dropped out. In effect, former Speed School student who dropped out of government school still reached higher scores than government school students who had also dropped out. This finding suggests that there are residual benefits of the Speed School program in terms of learning outcomes even for those who do not complete their primary education.
12. Interestingly, former Speed School students who did not complete primary education scored as well as some Government and Link School students who are still attending school – for math and Sidama, but not for English.

¹ see Humphreys et al., 2017

The Speed School program achieves its long-term impact because it takes a long-term view of the education of out-of-school students. The ‘boost’ Speed School students receive from the Speed School instruction does not only bring many of them up to the standard of their peers, but also gives them some advantage over the majority, in terms of their persistence and commitment to learn. Former Speed School students who have been accustomed to an active involvement in lessons are more likely to have the confidence to participate in lessons in government schools – a phenomenon that we witnessed in the government school classroom observation study.

This report provides the clearest evidence that the education Speed School students receive in their 10 months instruction has benefits that go beyond this period. The findings are consistent with the other qualitative studies which examined in detail what happens in the Speed School and Link School classroom. Overall, we find that it is not simply because former Speed School students learn in the local language that gives them a good starting point for learning in government schools, but the Speed School pedagogy makes learners more confident in their ability to learn.

Three key recommendations that emerge from the study are:

1. Although Speed School students outperform other government school students, a good number still drop out or do not achieve at an appropriate level. Identify and offer additional instructional support to Speed School students who may be at risk of dropping out of government schools, especially those who are overaged and underperforming.
2. For some older Speed School students, there may be the need to provide them with skills-based vocational training. This could also be extended to dropouts from primary and lower secondary schools. Research in sub-Saharan Africa suggests that transitioning older students whose ages fall within the secondary school age group or above, into primary schools increases their risk of dropping out (see Lewin 2007).
3. The program has three important components², inclusive pedagogy in the Speed School classroom; mothers’ self-help-groups, and support for teachers in Government/Link Schools. Ensuring that all three arms of the program receive equitable attention in terms of investment and support would go a long way to make the Speed School program achieve even greater long-term impact.

² The Speed School program actually has a fourth component – the child to child component, but was not included because it was not integral to the impact assessment of the Speed School students in the study

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1. Introduction

1.1 Background: Speed School Program

The Speed Schools Program in Ethiopia, funded by Legatum³ and managed by Geneva Global Inc. was introduced in 2011 in the Southern Nations, Nationalities and People's Region (SNNPR). Implementation is subcontracted to local NGOs. The SNNPR is one of nine federal states in the country. Within SNNPR are over ethnic groups and languages. The program targeted five woredas (districts) - Alaba, Boricha, Chench, Kabena and Shebedino in year 1. Three of these woredas have different languages, and two in the Sidama region, share the Sidamigna language. The woredas of Boricha and Shebedino were chosen for the evaluation because it reduced the number of languages that would need to be translated and reduced the effects of language as an interfering variable in the research design. The Speed School Program also includes a Self-Help Group microfinance initiative for mothers whose students have been selected to participate in the program. Through training in micro-business and access to seed money, the women are expected to generate income that they can lend to each other to increase their chances of surviving income shocks, and also to cover the costs of schooling once their children transition to government schools.

The Speed School Program works as follows. Students who have dropped out from government primary schools prior to having acquired basic literacy and numeracy skills, and a few others, who had never entered school are selected to undertake an intensive basic literacy and numeracy program for 10 months. At the start of the program in 2011, some staff development was provided for teachers in public schools linked to Speed Schools (which in this report we refer to as 'Link Schools' to differentiate them from other government schools in the study). In fact, some Speed Schools were located in the premises of the government schools that Speed School students were expected to enter. This last initiative of the project was to help reduce the chances of future drop out after reintegration into mainstream education. However, it emerged from the 2012 impact evaluation that the professional development component for the Link School teachers had not been implemented as effectively as originally intended in the two woreda (Boricha and Shebedino) by local NGO grantees of Geneva Global who were responsible for delivery and supervision of the Speed School program⁴.

1.2 Aims, research design and questions

The Speed School program provides opportunity for primary school-aged out-of-school students (9 to 14 years) to be reintegrated into public education after ten months of accelerated learning instruction. The program aims to improve individual learning by seeking not only faster learning but also deeper and more effective learning. An impact evaluation study in 2012 found that former Speed Schools in their first year in government schools at grades 3 & 4 make faster progress in learning than other non-Speed School

³ Later, Luminos funded the Speed School program

⁴ See Akyeampong et al., 2012

students⁵. However, the expectation that former Speed School students will continue to make progress, in terms of school retention, reduced drop out, and improved learning outcomes after transition into public schools had not been rigorously evaluated.

A core question for the Speed School program is whether it provides a sustainable route back into education for out-of-school students. Thus, the goal of the longitudinal tracking study was to measure the long-term benefits of the Speed School program, from 2011 to 2017. Impact evaluations of education interventions in low-income countries are common. However, beyond the provision of accelerated learning, there is limited evidence on what works as far as ensuring that former Speed School students mainstreamed into government schools, complete basic education successfully. Thus, the Speed School Program offers a unique opportunity to assess the long-term impact of an accelerated learning program, offering lessons that can be applied widely in Ethiopia and in the wider context of Sub-Saharan Africa.

The main focus of the longitudinal evaluation study was to track students who had formerly attended Speed School to measure the impacts of the program on their formal primary school completion, learning outcomes, and attitudes towards learning. The research team tracked a group of former Speed School students who completed the program in 2012 and had transitioned into government schools. The team also tracked former Speed School students who had entered government schools but later dropped out before completing either their primary or lower secondary education. The idea of tracking dropouts was to see if they retained any advantage over government school students dropouts in terms of cognitive ability. This would help to establish whether Speed School students retain residual benefits even after dropping out, and if so, strengthen the argument about the efficacy of the Speed School pedagogy.

To effectively study the educational trajectories of students from 2011, the research design included two comparison groups – students in two types of government schools. The first type of government schools we called ‘Link’ schools simply because these were schools expected to enrol students who had completed Speed Schools. Link schools often provided spaces for the Speed School classrooms. The second type of government schools were the ones which did not receive any Speed School completers.

Overall, the research design enabled the research team to compare educational outcomes of students who attended Speed Schools and students with no association with Speed School education. Using a household survey and achievement tests, the research focused on three diverse but interrelated long-term outcomes of the Speed School accelerated learning program; namely, school progression, academic performance, and attitudes towards learning and further education.

⁵ See Akyeampong et al., 2012, Impact Evaluation of the Speed School Program

The research was guided by the following questions:

1. What is the impact of the Speed School program on progression and primary completion rates of former Speed School students compared to students who had attended government schools?
2. What are the attitudes to learning and schooling for former Speed School students compared to students who had attended government schools?
3. What is the impact of the Speed School program on the learning outcomes of former students compared to other students who had attended government schools?
4. Which household and student-level factors are the most important correlates of differences in learning outcomes and progression over time?

1.3 Sampling and Statistical Approach

To understand how students in the study were tracked, it is important to describe the sampling and statistical methods that were used in selecting the samples at the start of program in 2011⁶.

Students from Speed Schools were matched with students from government schools based on age and gender. Students in government schools were either in schools that Speed School students were expected to move into and which for the purpose of the research we called 'Link Schools', or to government schools that were not going to receive Speed School students. To achieve a matching sample, students in the two types of schools were selected from Grades 1 to 4 of primary school. In matching the three samples, it was important to ensure that all the students shared similar characteristics. We started with the Speed School students who were a self-selected group because they were already enrolled in Speed Schools in 2011. They were students who had dropped out from grades 1 to 4. To ensure that the two comparison groups had similar characteristics, teachers from these schools helped to identify students with high risk factors – attending irregularly or underperforming relative to other students in the same grade.

Selecting low-risk students, such as high performing and regular attenders, as comparison groups would have meant the three samples were not comparable. Selecting students from Grades 1 to 4 of same ages as students in Speed Schools also meant that many were overage, (although the age and grade of students were already factors considered in the selection of students) (see Figure 1). Research has shown that overage, low attainment and irregular attendance are precursors of drop out⁷.

In addition, we used the propensity score matching method to assess the comparability of the samples. With the propensity score matching, a number of other important variables from the 2011 household survey are used to compute the probability that a student who is enrolled in a Speed School shares similar characteristics as students from the other two groups. This probability is based on observed characteristics, such as household level of

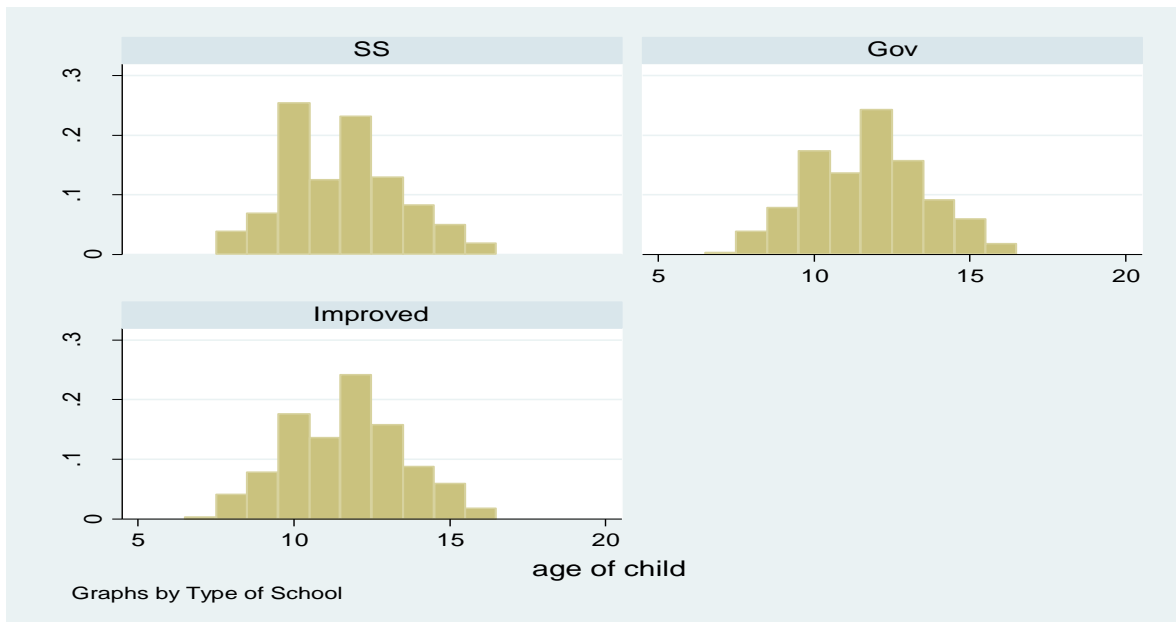
⁶ See Akyeampong K., Amado Y., Sabates, R., & Zeitlyn B (2012) Evaluation of Speed School Project – Baseline Report for a fuller account

⁷ Lewin, 2007; Hunt, 2008,

poverty, number of students living in the household. Once the propensity score has been computed, - which is a number between 0 and 1 as it stands for a probability - students from the Speed Schools who have a close propensity score with students from the other two schools can be matched. Thus, the matched students became the comparison groups.

Each Speed School classroom has 25 students, and between the two districts selected, there were 25 schools, making a total of 625 Speed Schools students in the sample. This was matched with 625 students from the Link Schools and 625 students from the Government Schools, making a total of 1875 students as the original sample to be tracked. The distribution by age for students in the two treatment groups and control is shown in figure 1.

Figure 1: Age distribution of students in Speed Schools, Improved Schools (Link Schools) and Government Schools⁸.



Analysis of the household ownership assets of our sample at baseline in 2011⁹ showed that students attending Speed Schools live in households with the lowest levels of asset ownership whereas students enrolled in Link Schools and Government Schools live in households with similar levels of asset ownership. Thus, Speed School students were relatively poorer than students from the Government Schools. This reflects the program’s objective of enrolling the most marginalised and poor students.

As with most quantitative studies that focus on measuring program evaluation impacts, dealing with the issue of causality is problematic, particularly for quasi-experimental studies where assignments to each treatment group is not random. We dealt with this by minimising selection bias. We could have used proxy measures in the data collected to condition out the impact of socioeconomic status of parents, parental educational status, or student’s motivations to learn prior to enrolling on the program. However, it is difficult to isolate all possible factors and some of this information is not available in the tracking survey (e.g., parental education)¹⁰. Nonetheless, we used an array of controls at the individual, family and school levels so we could reach robust conclusions about the impact of the Speed School program. As well as standard frameworks (e.g. OLS, logit), we used matching methods, as explained earlier, to ensure we could compare the outcomes of

⁸ At baseline in 2011 Link Schools were called ‘Improved Schools’ because of the in-service teacher support that the program was expected to provide. The idea was that teachers in these schools would improve their practice and add value to the education of former Speed School students

⁹ See Akyeampong K., Amado Y., Sabates, R., & Zeitlyn B (2012) Evaluation of Speed School Project – Baseline Report, p. 10-11

¹⁰ Some of the students at the time of the tracking survey had moved out of their original households and therefore, any attempt to link original household characteristics to the current would have left gaps that make asset comparison analysis unreliable.

students with similar background and personal characteristics. Assuming that all relevant differences between the groups are captured by their observable characteristics, the average outcome experienced by the matched sample of non-treated students identifies the counterfactual outcome of what treated students would have experienced, on average, had they not been in the Speed School Program.

1.4 The 2017 Tracking Exercise

First, a tracking exercise on panel households in June 2016 was used to identify the whereabouts of the three groups of students who were the original cohort of students in 2011 – our baseline students. After tracking the students, the survey team gathered inputs for the household/student questionnaire and test item development for the second and final tracking exercise conducted from June to September 2017. During this period household and student survey, and tests were administered to the sample identified from the 2011 baseline work.

1.4.1 Tracking and Data Collection Procedures

We used the same Ethiopian survey organisation, EDRI, that carried out the baseline and endline data collection in 2011 and 2013 respectively to carry out the tracking and data collection in 2017. The survey team used the following techniques to locate the sampled households and students.

1. *Information from previous rounds:* Household and student level information from the previous surveys in 2011 (baseline survey) was used to track and interview the sample households for the final round in 2017. Before the final tracking in 2017, the survey team carried out a first tracking exercise in 2016 to track the 2011 sample. The team collected contact information: address, telephone and student information during the 2016 tracking exercise and used this information to track the sampled households and administer household and student level questionnaires and tests. From the 2016 tracking we were able to identify household head name, index student name, school name and address of the sampled households.
2. *School administrators, Local administration staff and official records at local administration level:* The team also used records in the local administration in the two districts to identify ‘missing’ households. The information provided was used in combination with other strategies to identify the whereabouts of the sampled households. Local administrative staff with good knowledge of the communities were recruited as field guides to help identify individual sampled households’ homesteads.
3. *Using former field workers and guides to track the households:* The survey team also employed two senior field guides who were part of the field team in the 2011 baseline survey to track the households since they had previous knowledge of the households’ homestead.

4. *Using CAPI:* The computer-assisted personal interviewing software (CAPI) was used to pre-load information from previous survey rounds as well as information from the 2016 tracking onto tablet devices, making it accessible to interviewers. The pre-loaded information included location information (location address), names of the household head and index student. The head of the team was able to use CAPI to receive updated information everyday on the progress of the tracking exercise, as well as the whereabouts of the sampled households. Moreover, the use of CAPI helped the team to process the data in good time for transmission to the UK research team for review and feedback.
5. *Using GPS coordinates to record the address of the sampled households for future work:* GPS coordinate of the households' address was collected during this round of the survey. This will be helpful for future tracking of the households and students.

1.4.2 Location of Sampled Households and Index Student

In total, the team interviewed a combined total of 1703 households for the three sample groups representing about 91 percent of the baseline household sample (2011). The remaining 9% were not interviewed either because they were untraceable, had refused to participate, or had migrated outside the zone of the study (see Table 1).

Table 1. Households Survey Interview

	Frequency	Percent
Dropped households due to duplicates	9	0.48%
Tracked and not interviewed	162	8.64%
Tracked and interviewed	1,703	90.88%

1.4.3 Testing Index Student

Among the interviewed households, about 76 students were not able to take the literacy and numeracy tests either because they had moved outside the region for work or marriage reasons, or had moved to other urban places within the region but their detailed contact was unknown. Both tests were also administered to all students not currently attending school (drop out) from the three sample groups. The testing was done in two rounds. The first round, in 2016, was used to pilot the test items on students in the sample areas. For the second round in 2017, all sampled students including students who had moved were interviewed and tested, resulting in 1627 households with student interview and test data (Table 2). The reasons for some students not able to take the tests are shown in Table 3. For the majority, it was either because the student had moved outside the region of the study or moved to an unknown place.

Table 2. Number of students who have taken tests from tracked households

	Frequency	Percent
Households without student interview and tests	76	4.46
Households with student interview and tests	1,627	95.54

Table 3. Reason for not taking tests

Reason for test not conducted	Freq.	Percent
Student Moved outside the region	29	38.16
Student Moved to unknown place	22	28.95
Refused	6	7.89
In jail/ In prison	5	6.58
Same student in different household	5	6.58
Deceased	4	5.26
Married and Moved out	4	5.26
Student moved outside the country	1	1.32

About 10 percent of the students were not living with the index household. They were either living with other relatives, living in rented houses, or had married and had established their own household.

Finally, to minimise attrition, the survey team took the following steps:

- Field workers who took part in the 2011 baseline work in each woreda were used to track households.
- All schools where the sampled students had studied and reported at the time of the 2011 baseline data collection were visited to identify the address of the sampled households.
- Geneva Global project implementing staff and school teachers were used to identify households that were initially untraceable.
- Finally, the team reached out to initially untraceable household and index student by visiting the local market and churches for information about their whereabouts

The cumulative effect of these efforts was the identification of a further 100 households which helped to reduce sample attrition to below 10%. For a six-year longitudinal tracking study, the ability to track about 91% of the original sample for the household survey and 95% for the tests was considered to be a very satisfactory outcome.

1.4.4. Data Quality Assurance

The following steps were taken by the technical team in the UK and the field research team in Ethiopia to ensure the quality and integrity of the data for this report.

- Questionnaires were reviewed and translated to local language before the start of the field work. All test related translations were reviewed by local teachers and zonal education experts.
- We used translators who had similar experience of translating tests into Sidama.
- Multiple questionnaire options were piloted and reviewed by the UK evaluation team. This enabled the team to select appropriate questions after pilot data analysis.
- The use of CAPI for data collection helped to avoid field worker errors and data entry related errors. It also helped to cut data entry time and reduced the cost of data collection.

1.5. Test Items: Development, Design and Piloting

Since the Speed School intervention aims to improve school-related educational outcomes, we ensured that the final test items were linked to what is taught in government public schools, and met the the Ministry of Education's Minimum Learning Competencies. Each of the achievement tests drew on items which had previously been used and/or piloted in Ethiopian schools, from the Young Lives Household and School Surveys. Thus, each test item was linked directly to the Ethiopia Minimum Learning Competency (MLC) and grade¹¹.

The tests included the assessment of student's educational outcomes in three key subject areas: Mathematics, Sidama reading comprehension, and English reading comprehension. The inclusion of separate assessments of reading comprehension in Sidama and English reflected the shift in language of instruction which takes place at grade 5 in public schools, and the fact that students are expected to be proficient in both languages as a result of schooling. It is important to note that both Sidama and English use similar script English alphabets although the letters have different sounds.

In mathematics, items were designed to link to curricular content from a variety of different primary grades, drawing on items developed as part of the Young Lives school surveys and covered a breadth of curricular content. When considered in combination, these three areas of assessment offer a strong indication of whether students have acquired proficiency in some of the key outcomes of schooling, whilst also facilitating the identification of variation between students who did and did not attend Speed Schools.

The items which were piloted in 2016, followed two different formats: (i) student-completed multiple-choice questions (each item had four options), and (ii) fieldworker-read questions. The rationale for piloting two alternative formats was to ascertain the appropriate method of administration and level of difficulty for the final assessments. Specifically, the second format resembled the baseline assessments both in terms of domain coverage and structure, and its inclusion in the pilot allowed the research team to test whether this type of test continued to be appropriate for the surveyed students 6-7 years later. Tracking data suggested that both formats of the assessment instruments would have to accommodate students with a wide range of exposures to schooling, and also a wide range of ability. Drawing on estimates of the grades (i.e. grades 4-8) in which the largest portion of the sample were expected to be enrolled in at the time of the survey, it was decided that the assessments should be targeted at competencies which students across grades 4-8 could be reasonably expected to have mastered, whilst a limited number of items below and above these levels would also have to be included to accommodate those at the tails of the ability distribution.

Also, the two forms of assessment format piloted ensured that we could pilot as many items as possible. The pilot took place in 4 schools that did not have students who were part of our study and administered to students from across grades 4-8. The 2016 household

¹¹ For example, the Minimum Competencies for Mathematics stipulate that by Grade 3 pupils will be able to add whole numbers to 10,000, multiply whole numbers up to 100 by 1-digit number and divide multiples of 10 and 100 up to 10,000.

tracking exercise revealed that students were in grade 4 to 8, suggesting that some had repeated. The numeracy and literacy items that followed a multiple-choice format were administered to 300 students by three members of the survey research team. The fieldworker-administered format reached a much smaller sample of 20 students. The pilot data was analysed by the UK Research team using psychometric methods to select both the format for the final assessments, as well as specific items.

The fieldworker-administered assessments were found to exhibit strong ceiling effects, and so were not considered for inclusion in the final endline tests. The student-completed multiple-choice format was selected for the final assessments. Twenty items were selected from the two-piloted multiple-choice mathematics assessments, to reflect a diversity of subdomains and levels of difficulty, whilst three passages each with four associated questions were selected for each of the English and Sidama reading comprehension tests, making a total of 12 items per assessment.

These final assessment instruments drew entirely upon multiple choice items developed by the Young Lives¹² primary and secondary school surveys, and multiple waves of the household surveys. The use of these Young Lives items offered significant advantages, since they had all been extensively piloted and used in the Ethiopian context, whilst they also linked directly to the Ethiopian school curriculum, and had been previously translated into the relevant language.

2. Progression, Dropout, Repetition and Completion

In this section of the report, we present summary statistics on progression, dropout, repetition and completion and across relevant dimensions, which are then used as the basis for estimates using a regression analysis framework.

2.1. Progression

Of the households surveyed, containing all the students in the study sample, 67.1% were found to be still attending school, 20.5% of students were not attending school or had dropped out, and 12.3% of households were unable to provide information because the student no longer lived in the household (Table 4). Of all the former Speed School students tracked, about 74.6% were still in school compared to 66.1% of tracked government school students who were still attending and 60.5% of Link School students still attending. The 75% retention rate of Speed School students suggests that a majority of the original cohort of Speed School students had persisted in their education than students from either the Link or Government schools.

¹² Young Lives is an international study of childhood poverty following the lives of 12,000 students in Ethiopia, India (in the states of Andhra Pradesh and Telangana), Peru and Vietnam over 15 years. For research and publications of Young Lives work see <http://www.younglives.org.uk>

Table 4. School attendance of all index students (excluding untraceable index students)

School attended at baseline (2011)		Is the child attending school? (2017)		
		No	Yes	Don't Know
Speed School	N	90	430	56
	%	15.63	74.65	9.72
Government School	N	110	360	75
	%	20.18	60.06	13.76
Link School	N	146	341	77
	%	25.89	60.46	13.65
Total	N	346	1,131	208
	%	20.53	67.12	12.34

2.2. Dropout

In this study, dropout is measured by whether a child is currently not attending school. If students answered that they were not currently attending school, this was used as a proxy for dropout.

2.2.1 Dropout by School attended at Baseline

The dropout rate by school attended by the index student suggests that those who attend Speed Schools have, overall, a lower dropout rate than those students who attend Government or Link Schools (see Table 5). Dropout rates were calculated for the group which attended Grades 1 to 10. The school type is the school a student attended at the time of the baseline in 2011. Also, the gap in dropout rate for Speed School students is lower in comparison to Government School students at lower secondary level. It suggests that Speed School students who reach lower secondary are less likely to drop out compared to a similar group of students from Government or Link schools.

Table 5. Dropout rates by original school type and education level

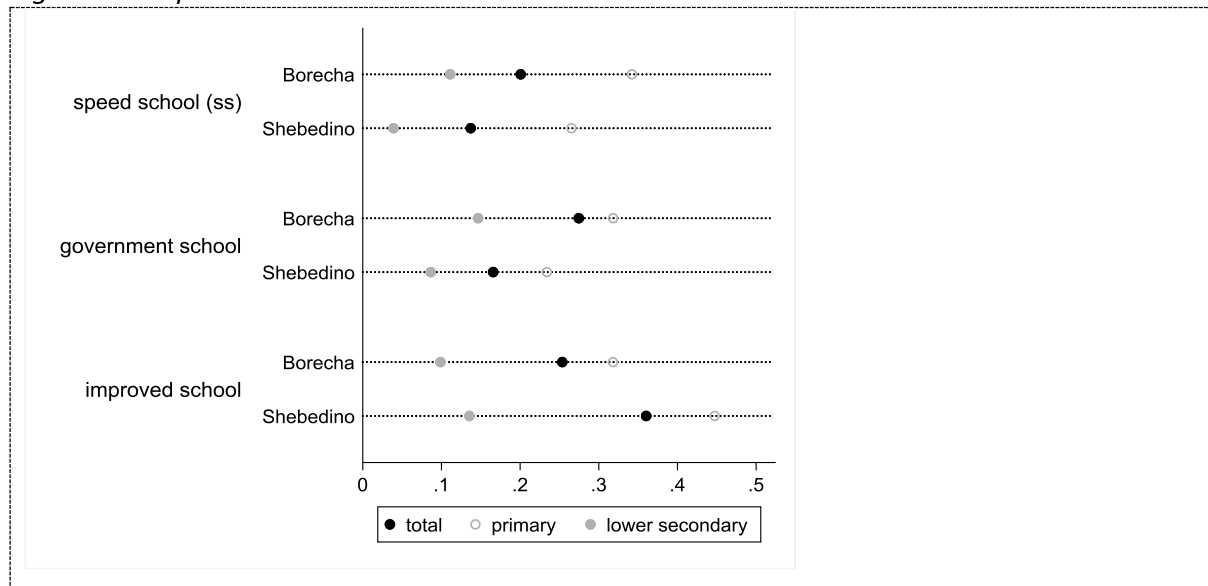
Sample	Speed	Government	Link
All grades	0.173	0.234	0.300
At primary	0.307	0.293	0.375
At lower secondary	0.081	0.115	0.114

2.2.2. Dropout Rates – Woreda and Age

Dropout rates for the Link School students were much higher in the Shebedino Woreda than in the Borecha Wored. Shebedino is a cash crop area whereas Borecha is a semi-low land area with no cash crop that attracts children to petty trade or labour activities. It may be that the cash crop economy is a bigger attraction for students in Shebedino, hence the relatively higher dropout.

Overall, the likelihood of dropping out before completing primary education is higher for Link School students than it is for Government and Speed School students. Also, overall dropout rates were lower in both Boricha and Shebedino for Speed School students than they were for other students (Figure 2). Since the Speed School program recruits the most marginalised children in the most marginalised communities, the higher persistence of Speed School students in these schools suggests even more that they performed well.

Figure 2. Dropout rates across woredas



The dropout gap between Government School students and Speed School students steadily widens with age; for instance, at age 14, a gap of about 5% emerges but by age 18, this gap has widened by about 15% (see Figure 3). Significantly, what we see is that overage dropout occurs predominantly at primary school level. Dropout rates reduce for older students who survive this stage and progress to lower secondary, especially for Speed School students. It is likely that Speed School students who have survived up to lower secondary are those with a greater commitment to persist in education or were doing well in school.

Our data also explored why students dropped out. We found that fewer than 1% of Speed School students said they left school because they were not 'doing well at school'. For Government School students, about 7.4% said they left school for the same reason (see Table 6). Low family income was still given as a reason for leaving school. The data also revealed the incidence of marriage for girls and its effect on leaving school across school types, to start a family. It is also worth noting that fewer Speed School students said they had to help with housework than Link School students. Differences were found to be statistically significant between Speed School and Government School students for three reasons: 'was not doing well at school', 'frequently punished at school' and 'lack of money' (see Table 6, last column).

Figure 3. Probability of dropping out by age and school type at primary and lower secondary

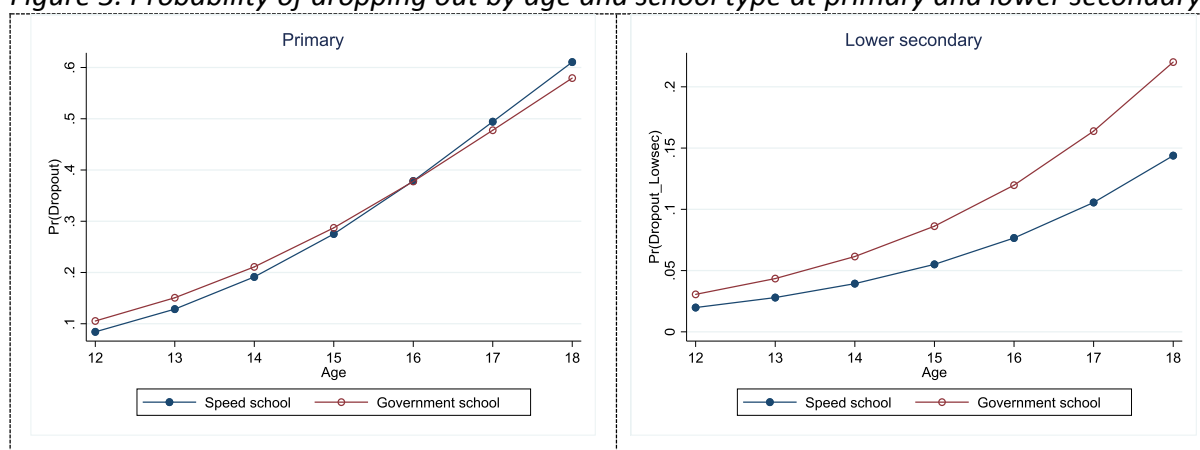


Table 6. Most important reason for stopping school (percentage)

	Speed school	Government school	Link schools	Statistically different
I was not doing well at school	0.8	7.4	5.0	YES
I had to work to earn money	12.5	12.5	12.9	NO
I was frequently punished at school	0.0	2.2	2.5	YES
I was frequently sick	11.7	11.8	11.4	NO
My family had no money to pay for school	40.8	30.9	30.2	YES
I had to help with housework	10.8	12.5	16.8	NO
I started a family of my own	18.3	17.7	16.3	NO
Others (Specify)	5.0	5.2	5.0	NO

2.2.3 Changes in wealth status

We used information on the number of mobile phones used in the household, radios, television, tables, chairs, bicycles, watches, metal or wood beds, benches and refrigerator to construct an index for asset ownership. We then used factor analysis, which combines the variation of these assets to construct a score variable which is centred at zero. A negative value of this variable indicates lower levels of assets and positive values indicate higher levels of assets. A similar analysis was carried out at the time of baseline in 2011, (table 7) which showed that Speed School students lived in households with the lowest levels of asset ownership (-0.33), whereas students enrolled in Link Schools and Government Schools lived in households with similar higher levels of asset ownership (0.12 and 0.21 for students in Link and Government schools, respectively).

In addition, for the 2011 baseline, we estimated the total number of livestock owned by the household, only taking into account cows, goats, sheep, donkeys, horses and mules. Results show again that students enrolled in Speed Schools lived in households with the lowest livestock (on average 1.26 animals), whereas students enrolled in Link and Government schools lived in households with more average livestock (2.3 and 3.0 animals on average, respectively). Thus, from the asset index and average household livestock in 2011, Speed School students were clearly from households that were relatively poor compared to students from either Link or Government School households. These results confirmed that the Speed School program recruited the most marginalised children in the most marginalised communities.

Table 7. Descriptive statistics for assets ownership (Wave 1)

Variables	Speed School	Link School	Government School	Statistics	Significance
Asset index	-0.33	0.12	0.21	t-test	Partial
Average livestock	1.26	2.31	3.01	t-test	Partial

Source: Speed School Project Survey. Wave 1- 2011

We carried out similar analysis on the 2017 survey (wave 2) (see table 8). It showed that although Speed School students were in households that are still relatively poor, but this time, their households had seen the biggest improvement in assets compared to Link and Government school students. Household assets of Speed School students have improved by about 45%, and the average livestock had also increased by 88%. For Government School households', their asset index fell from 0.21 to 0.04 and stayed almost the same for Link School households. For both groups, their average livestock stayed almost the same between 2011 to 2017.

The average asset index gap between Speed School students' household and Government School students' household had reduced from 0.45 in 2011 to 0.19. Similarly, the average livestock gap between Speed School households and Link School households had reduced considerably from 1.05 in 2011 to about 0.58 in 2017. Overall, these results suggest that over the two waves of data collection, Speed School student households had made considerable gains in the their asset and livestock. For the research, we used asset and livestock as a proxy measure of household wealth. The key issue is whether there was a corresponding positive effect of this improvement on educational performance.

Table 8. Descriptive statistics for assets ownership (Wave 2)

Variables	Speed School	Link School	Government School	Statistics	Significance
Asset index	-0.15	0.11	0.04	t-test	Partial
Average livestock	2.38	2.45	2.93	t-test	Partial

Source: Speed School Project Survey, Wave 2 – 2017

2.2.4 Dropout and Wealth Status

The data revealed that, the former Speed School students from the 'poorest' households were less likely to dropout than the poorest Government and Link School student (Figure 8). For all groups, generally, students from relatively rich households had the lowest dropout. The improvement in the economic well-being of the households of Speed School students, suggest there may be some association with lowering the dropout among this group, although some Speed School students who dropped out, said money was still an important reason for dropping out (see table 6).

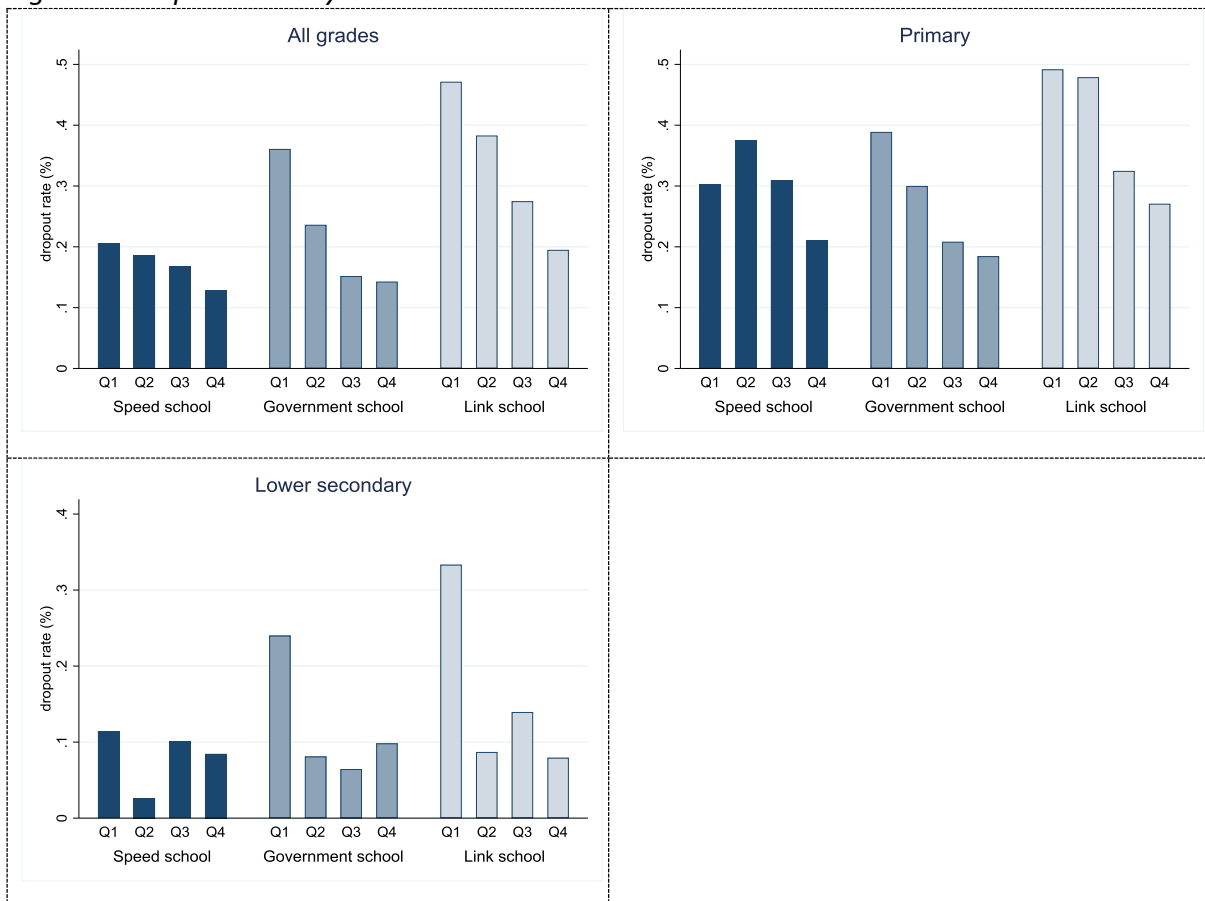
Thus, the combination of improved wealth and household commitment to support Speed School students may have some association with lowering dropout. Note that this is not a suggestion that there is a causal effect. An important component of the Speed School program is the mothers' Self-Help Group. The mothers of Speed School students were expected to join a Self-Help Group. The groups were provided financial assistance to form small cooperatives to improve their business and investment skills. The ultimate goal of the Self-Help Groups is to enable mothers to send their children to school and to help them complete primary education. The assumption is that improving the business and investment skills of the mothers will improve household income, and that this will impact on the commitment of mothers to support their children stay in school. In effect, the Self-Help Group was acting as a condition for participation in Speed Schools. Qualitative evidence strongly suggested that, mothers of students in Speed Schools perceived the quality of Speed Schools to be better, offering the best prospects for their childrens future and were clearly pleased that their children had attended Speed Schools¹³. This perception that Speed Schools provide high quality education demonstrated in the changes the mothers were seeing in their children may have increased their commitment to keep their children in school.

For Speed School students, the ratio of the mean dropout rate between the wealthiest (top quartile – Q4) and poorest households (bottom quartile – Q1) is about 1.7. For Government and Link School students the ratio is about 3. In effect, dropout rate has narrowed much more between the 'richest' and 'poorest' Speed School student than it has for the other two groups of students. This effect shows up strongly especially at lower secondary level (third plot of Figure 4) – where the dropout rate for Speed School students at this level, is nearly the same for the poorest (Q1) and richest (Q4) student, but nearly doubles for Government and Link School students.

¹³ See Humphreys et al., 2017 Researching self-help groups and experiences of Speed School students in public schools.

It is not possible from our analysis to conclusively suggest that improvements in the asset and livestock came directly from the investments of the mothers in Self-Help Groups, and that this had a knock-on effect on reducing dropout. Yet, the coincidence is striking for us to suggest that there may be an association. However, we know from research that household income or socio-economic status is strongly correlated with school participation and performance. As household income improves, the education performance of children tends to also improve. The findings of this study is consistent with this evidence.

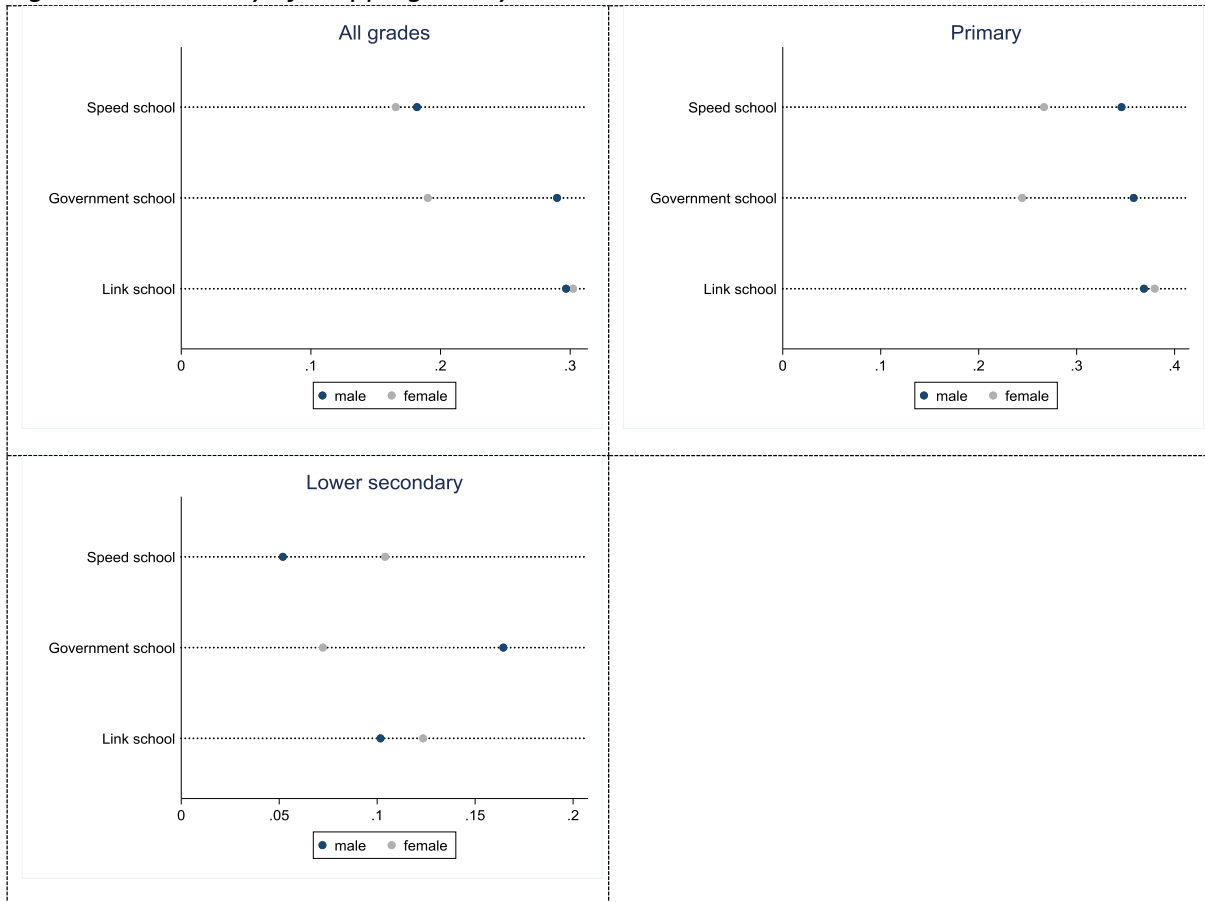
Figure 4. Drop out rate by wealth



2.2.4 Gender, Wealth, and Dropout

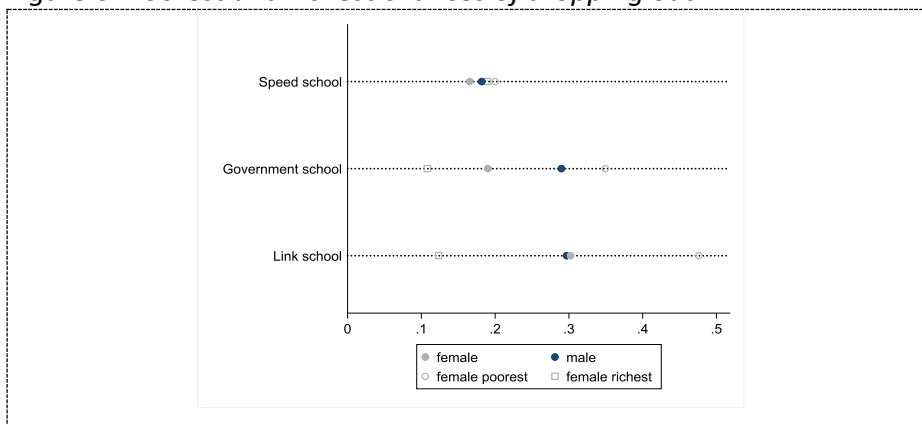
Our data suggest a possible relationship between gender and the propensity to dropout. The differences are larger for Government School students than it is for either Speed School or Link School students (Figure 5). Generally, male students are prone to leaving school irrespective of the level they are attending - primary or lower secondary. Interestingly, the gender gap on dropout changes direction in the case of Speed School students, with girls more likely to leave school at lower secondary (third plot).

Figure 5. Probability of dropping out by educational level



When we overlap gender with wealth (Figure 6), gender gaps are nearly the same for Speed School students, but increases considerably between the 'poorest' and 'richest' Government School students. This is consistent with the narrowing of the wealth which appears to have benefitted the poorest Speed School girls compared to the poorest Government and Link School girls. Differences in female dropout rates for the top and bottom wealth quartiles for Government School students is significant (p -value = 0.00), but not significant in the case of Speed School students (p -value = 0.12). This is an important result as it appears to suggest that the contribution of wealth to widening gender gap for Speed School students is not as significant as it is for government school students.

Figure 6. Poorest and richest chances of dropping out



2.2.5. Further Exploration of Dropout

We carried out basic regression analysis to explore how dropout overlaps with other factors.¹⁴ Table 7 contains logit estimates (odds ratio) for dropout. The results show that, even after accounting for a range of individual and household controls, the lower effects on dropout for those students who attended Speed School persists.

The odd ratio for a Speed School student reduces by only about 8% - from 0.69 to 0.609 - when controls are added (columns 1 and 2). This indicates that, Speed School students with the same age, wealth and care responsibilities as Government School students are 31% less likely to drop out than Government School students. When we include as an additional control, educational aspiration, the impact for the Speed School student is lower but not statistically significant. This is not the case, for example, for students who attended Link Schools. Thus, it could be argued that a key channel for lowering the likelihood of dropout among Speed School students, compared to students who attended other schools, is to enhance their desire to continue their education beyond grade 12. *As more Speed School students see that they can further their education beyond primary education level, the more likely they are to persist in their education and not drop out.* This desire, we would argue, may have been nurtured through the unique Speed School learning experience which has raised their aspirations and expectations. Mothers of former Speed School students who were still in school felt strongly that Speed School education was a factor in their persistence in school (Humphreys et al., 2017; Akyeampong et al., 2017).

When we include school quality and distance to school as controls (column 4, Table 9), the effect on dropout is not statistically significant for Speed School students (an odd ratio “OR” of nearly 1). This suggest that the willingness of Speed School students to stay on in education is the same as for Government School students when we account for the contextual level of learning taking place within each school as well as the distance they need to travel to their schools.

¹⁴ For robustness, we also include matching estimates for dropout and learning in Appendix (see Table A1). Moreover, we carried out estimations for the transition sub-sample (i.e. after grade 4) which are shown in Table A.2.

Table 9. Logit estimates for dropout (odds ratio)

	(1) M0	(2) M1	(3) M2	(4) M3
Link school	1.411**	1.612***	1.598***	1.652***
Speed school	0.690**	0.609***	0.861	0.989
Age		1.342***	1.384***	1.346***
# students (higher than 3) live with parents		1.132	1.221	1.121
wealth Q2		0.241***	0.305***	0.250***
wealth Q3		0.635**	0.670**	0.632**
wealth Q4		0.432***	0.503***	0.451***
responsibility care - high		0.276***	0.387***	0.292***
female		1.201	1.188	1.233
responsibility care - high x female		0.905	0.649	0.884
responsibility domestic task high		1.262	1.660	1.230
responsibility domestic task high x female		1.291	1.207	1.269
responsibility farm task high		1.245	1.153	1.237
responsibility farm task high x female		1.659**	1.489*	1.628**
minutes to school (SD)		0.541**	0.622	0.578**
school quality				1.069*
Woreda, Shebedino	0.890	1.405**	1.646***	1.394**
Education aspirations - high			0.160***	
Observations	1,477	1,464	1,457	1,463

Notes: (1) Wealth quartiles are based on an index constructed from a combination of variables on house's material, land, assets (e.g. TV, fridge) and livestock. (2) Variables for care, domestic and farm tasks are defined as dummies equal to 1 if a student is engaged in these activities above the median number of hours, and 0 otherwise. (3) Minutes to school is standardised. (4) School quality is defined by the average school performance on math (IRT 2pl score). (5) High education aspirations is a dummy taking the value of 1 if a student would to carry on his/her education at post-secondary level or beyond, and 0 otherwise.

Significance levels: *** p<0.01, ** p<0.05, * p<0.1 based on robust standard errors.

Specifically, when looking at the covariates effects on dropout *we find that being overage increases the chances of dropout quite significantly (OR = 1.3) – for each additional increase in age, the chances of dropping out increases by about 30%*. This has implications for the Speed School program. Older Speed School students who transition to government primary schools risk later dropout, especially if they do not make progress in their learning and are repeated as a result of their poor performance. As shown earlier, irrespective of school type, the likelihood or probability of dropping out, increases as students get older, although 'the gradient of dropout with age' is not as steep for Speed School students as it is for the other students (see Figure 3). There are some important messages to take from this. Older children who start their education in public school would have an increased risk of dropout. On the other hand if older children re-enter government public schools through the Speed School route, this risk may be reduced particularly if they have made significant gains in their learning prior to transition to public schools. Placing older Speed School graduates in much lower grades (e.g. grade 1), may still increase their risk of dropout because these students will be much older for their grade, which would increase their risk of dropout due

to the pull from the labour market and pressure to marry particularly for older girls. This justifies the usefulness of the Speed School program which gives an alternative route for such older children and increases their chances of learning in age appropriate grades or grades that are much closer to their ages after transition. In addition, the Speed School pedagogy caters for a wider age-range, thus ensuring that the learning needs of older children are given the necessary attention.

Wealth is an important determinant of dropout as estimates from Table 9 consistently shows. In comparison to the poorest student (from quartile 1), the chances of a student dropping out is reduced by 37% if the student is from quartile 2, reduced by 57% if he or she is from a quartile 3 household, and reduced by 72% if he or she comes from the richest quartile. These differences on the likelihood of dropout by wealth groups are statistically significant and highlight the importance of a student's economic situation on their chances of staying in school. It vindicates the Self-Help-Group concept as an important component of the initiative to improve educational performance of former Speed School students. Although, the qualitative study of the Self-Help-Groups reveals teething challenges, if these are adequately addressed, the combination with the effective Speed School education, could reduce dropout, even further.

The chances of leaving education is reduced by about 25% if a student lived with their parents (OR around 0.25). This means students who have either moved to live on their own or with relatives may be at a greater risk of dropping out. However, we do not find gender differential on dropout (OR are non-significant). All work-related variables have OR over 1, though the only one which is significant, is farming work which appear to affect predominantly, boys. Distance to school matter with OR coefficient of 1.06, but the most important predictor is educational aspirations with OR of 0.16 which is also statistically significant.

2.3. Completion and Repetition

An important objective of the study was to determine who completes primary education and who repeats one or more grades. Our analysis shows that the *completion rates for primary education are nearly twice as high for Speed School student than it is for Government School students* (Table 10). In addition, even relatively poor Speed School students (Q1 & Q2) achieve able to achieve a higher completion rate than Government and Link School students. These findings are consistent with the earlier observation that as households become relatively richer, their children are less likely to dropout. The ratio of 'richest' and 'poorest' students completion rates is only 1.32 for Speed School students, whereas this is much higher for students who attended Government Schools. This would also suggest that, a poor Speed School student has a better chance of completing primary education (at grade 6) than a Government or Link School student of any wealth quartile.

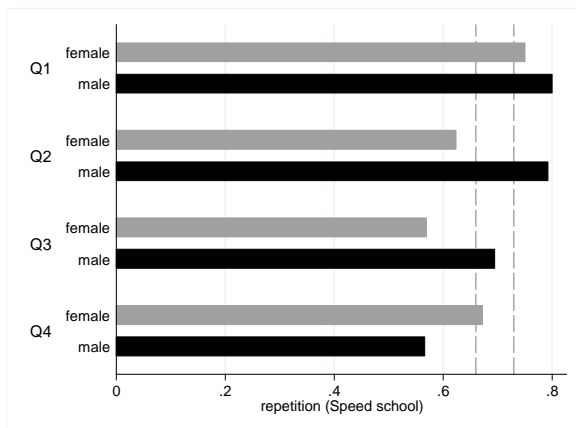
Table 10. Primary completion by wealth and gender

	Speed	Government	Link
Panel A - Wealth			
Q1	0.49	0.18	0.11
Q2	0.49	0.28	0.23
Q3	0.63	0.36	0.24
Q4	0.65	0.47	0.37
Ratio - Q4/Q1	1.32	2.63	3.25
Panel B - Gender			
Male	0.59	0.30	0.28
Female	0.52	0.32	0.24
Ratio - Male / female	1.12	0.93	1.17
Mean	0.56	0.31	0.26

When it comes to gender differences, we do not detect a consistent pattern for the three schools. However, overall, the data suggests that gender and wealth are key drivers of inequality especially when we consider the role or effect of factors such as work, marriage and pregnancy. Both male and female Speed School students have a higher chance of completing (59% and 52% respectively) compared to Government School or Link School students. For Speed School students, the likelihood of completing is higher for male students than it is for female students (about 12% higher). In the case of Government School students, it is 2% in favour of female students.

However, it appears that more Speed School students repeat (around 69%) and is higher for male (73%) than female (66%) students (see Figure 7). For repetition, we used the proxy of at least repeating one grade at the time of 2017 survey. For quintile 1 to 3, repetition is higher for boys than for girls, but for quintile 4 repetition is higher for girls. It is not clear why Speed School students are slightly more likely to repeat, but it may be related to the challenges of adjusting to their new challenging education environment with large class size, didactic approaches to teaching and learning, lack of group work etc. (see Akyeampong et al., 2017). It may be that, moving from a highly active, student-centred learning environment of the Speed School with twenty-five students in a class, to a highly teacher-centred classroom with about sixty students in a class, poses problems with adjustment for some Speed School students. If that were the case, some parents may encourage repetition for their Speed School child struggling with the change. Similarly, Government Schools operating a policy of repetition for poor performance or intermittent dropout may repeat poor performing Speed School students. For the Speed School program, it will be worth exploring further the extent to which this is an issue as our data does not provide a conclusive explanation.

Figure 7. Repetition by wealth for Speed school students



2.4. Educational Experiences and Aspirations

We explored the views and aspirations of all three groups of students and report the findings in Table 11. Not surprisingly, we did not find much difference in their educational experiences since this reflects their recent experiences in the public-school system. In the 2011 baseline study, we found that students from Speed Schools had worse school experiences prior to dropping out compared to students in Link or Government Schools during their previous academic year. By 2017, former Speed School students share similar educational experiences with non-Speed School students.

About 59% of Speed School students said they found lessons easy, compared to 80% and 69% of students in Government and Link Schools respectively. This means that fewer Speed School students found lessons easy compared to the other two groups. However, the fact that about 41% of former Speed School students said they do not find lessons easy to 20% of Government School students and 31% of Link Schools students, suggests that many do find the transition challenging. What is striking though is that, they are as determined to succeed as other students.

The problem of school drinking water and experiencing hunger at school are two problems highlighted by students in their last school experience (Figure 8). Students who have done all their formal education in Government Schools are more likely to feel tired and hungry at school than students who had attended Speed Schools – again suggesting that perhaps improvements in Speed School households wealth status coupled with a better understanding of their obligations in helping their students succeed in school may have made a difference (see Humphreys et al, 2017).

Table 11. Transition, continuation of education

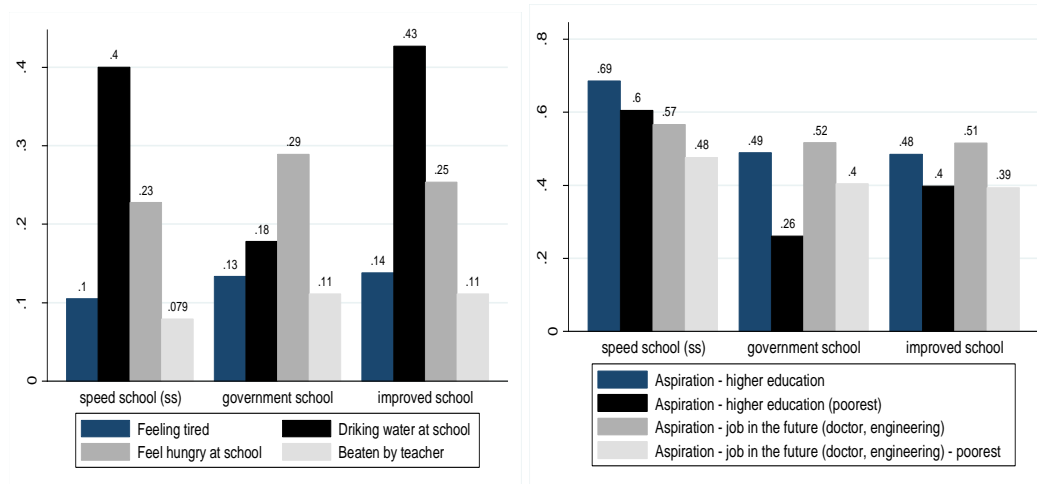
	Speed	Government	Link
Panel A - Questions on transition			
Feel comfortable asking questions and expressing ideas in class	0.91	0.93	0.91
Teacher when not understanding	0.96	0.94	0.95
Find mathematics lessons interesting	0.81	0.86	0.81
Panel B - Main reason that helped you to continue your education			
Confidence in my ability to learn	0.30	0.30	0.23
Support of my teacher	0.01	0.01	0.01
Support of my family	0.53	0.46	0.51
Pressure of my family	0.10	0.17	0.19
Enjoyment of learning	0.04	0.06	0.06
Find lessons easy	0.59	0.80	0.69
Try hard to learn/feel motivated in your lessons	0.94	0.94	0.93
Try hard to learn/feel motivated in your lessons for those who did not find lesson easy	0.88	0.86	0.88

Speed School students have grown in their confidence, (with government students slightly more confident), as much as other students, to ask teachers questions and express their ideas in class. We have much more evidence about the possible source of the confidence of Speed School students' from the findings of the pedagogy research. This research described how the Speed School pedagogy instils in students confidence in their capacity to learn (Akyeampong et al., 2016a).

Another striking result is the between-school type differences in aspirations concerning education prospects and jobs. About 69% of former Speed School students stated that they would like to carry on their education beyond grade 12 at post-secondary level, while only 49% students from Government Schools said they would like to carry on beyond grade 12. (see Figure 8). This is consistent with the earlier finding that Speed School students are more likely to persist (not drop out) to reach lower secondary.

Crucially, wealth is less of a barrier for having higher education expectations among former Speed School students who are now in public schools. The same cannot be said for students who have always attended Government Schools. The gap for the poorest student is 9% for Speed School students (= 69%-60%) and 23% for Government school students (=49%-26%).

Figure 8. School experience and education and work aspirations



3. Long-Term Impact of Speed School on Learning

An objective of this study was to understand the long-term impact of the Speed School program on the learning outcomes of students who had previously attended Speed Schools compared to others who had not. To address this objective, we compared the performance of former Speed School students with students from the Government and Link Schools using a numeracy and literacy test to assess which group had made the most progress since 2011.

3.1. Overview of learning outcomes

Using item-response-test (IRT)¹⁵ continuous scores, former Speed School students perform better (Figure 9 - the vertical line is further to the right). But, the results also show that IRT only works for Math (unimodal distribution) and not for Sidama and English scores where the graph for Speed School has two distinct modes (or bumps). For a robust analysis of learning gains, it was therefore better to use raw percentage correct answers or tercile distributions.

¹⁵ Item Response Theory Model (IRT) is used for modelling the relationship between the latent abilities of a group of subjects and the examination items used for measuring their abilities. In our context, IRT analysis calculates the probability with which students are able to answer a specific test question (for maths, English and Sidama separately) correctly. The probability is based on two factors: (i) the difficulty of the test question (given by number of students who answer it correctly); and (ii) the student's overall test scores (how many questions the student was able to answer). To obtain the continuous score. We follow a two-parameter logistic model (2PL model) where item responses are typically of the form yes or no, correct or incorrect, etc. Items are assumed to vary in discrimination and difficulty.

Figure 9. Learning scores distributions based on IRT (2PL)

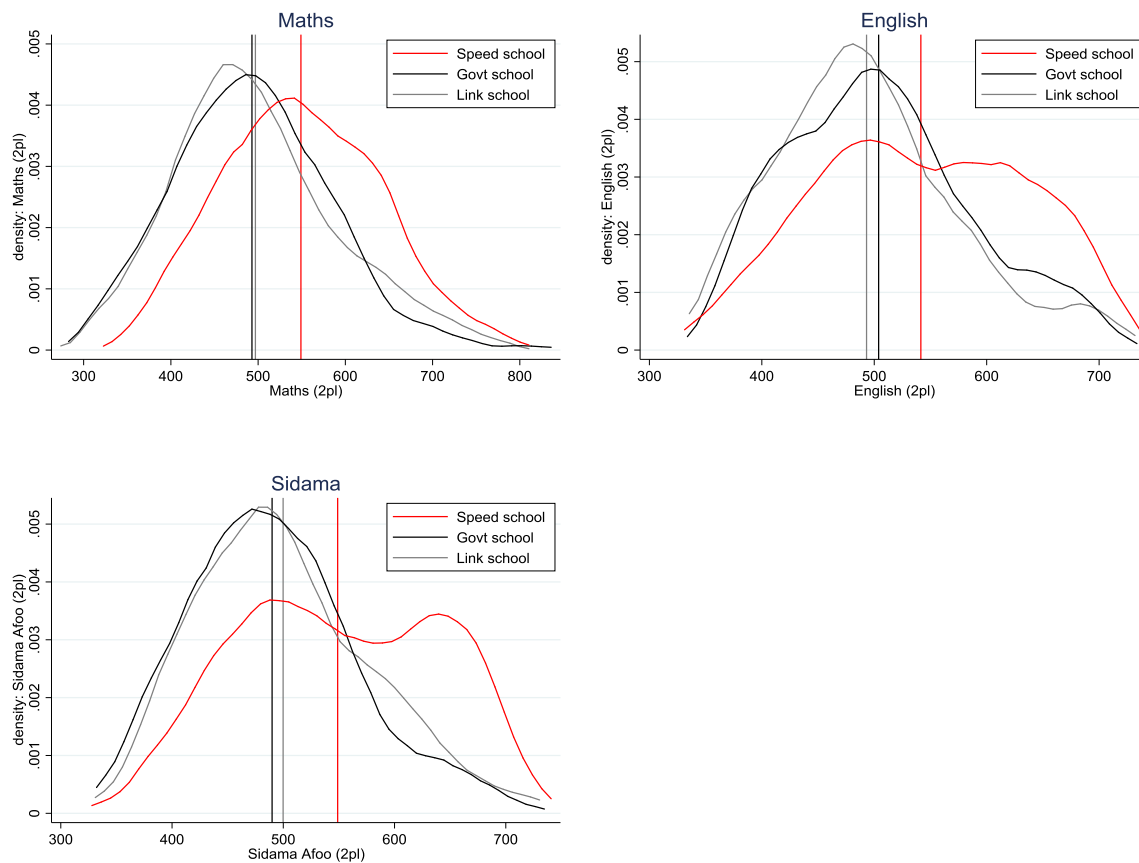


Table 12 shows that on average, the performance of former Speed School students is consistently better than Government and Link School students for all three subjects. For instance, Speed School students scored 10.4% (Math), 13.5% (Sidama) and 7.4% (English) more points than Government School students. All the differences are statistically significant. On average, Speed School students answer *correctly* between around 0.9-2.1 (or one and two) more questions than Government students for all the test items. This ability is statistically significant at the 1% level.

Table 12. Percentage of correct answers

School type	Math	Sidama	English
Speed	47.6	46.4	42.6
Government	37.2	32.9	35.1
Link	38.5	35.7	33.5

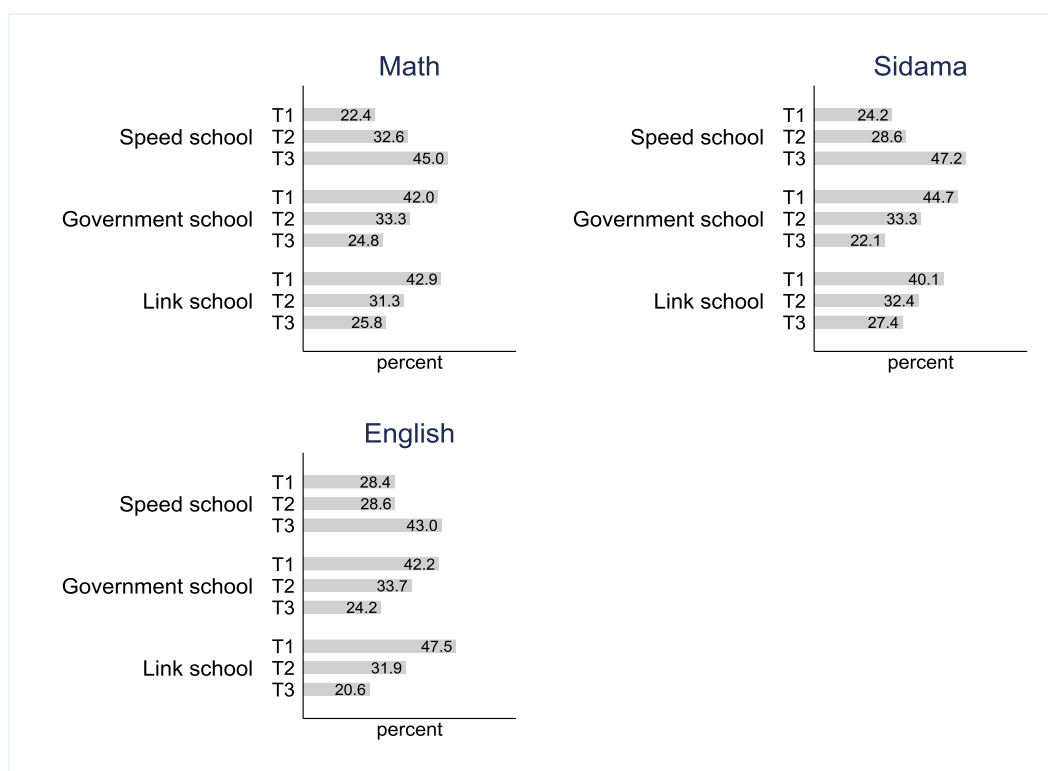
Not surprisingly, when we compared the correct answers of those who completed primary school against those who did not complete, we see that completers generally scored higher than non-completers. In effect, those who stay in school learn more. We also found that, *both Speed School completers and non-completers always scored higher than their Government School and Link School counterparts* (see Table 13).

Table 13. Percentage of correct answers by primary completion

School type	Math		Sidama		English	
	Not completed	Completed	Not completed	Completed	Not completed	Completed
	(1)	(2)	(3)	(4)	(5)	(6)
Speed	43.0	51.3	40.7	50.9	36.2	47.7
Government	34.4	43.4	30.9	37.3	32.1	42.0
Link	35.9	45.8	34.4	39.5	31.7	38.7

The better performance shown by Speed School students is also evident in figure 10 which shows learning scores in terms of terciles. For example, for math, only 22.4% of Speed School students are in the low achievers' category compared to 42% and 42.9% of Government School and Link School students respectively. About 45% of Speed School students are top achievers (top tercile), as compared to only 24.8% and 25.8% of Government and Link School students respectively, who reach the top level. Similar patterns are also evident for Sidama and English (Figure 10).

Figure 10. Terciles of learning score distributions by school type for those currently attending



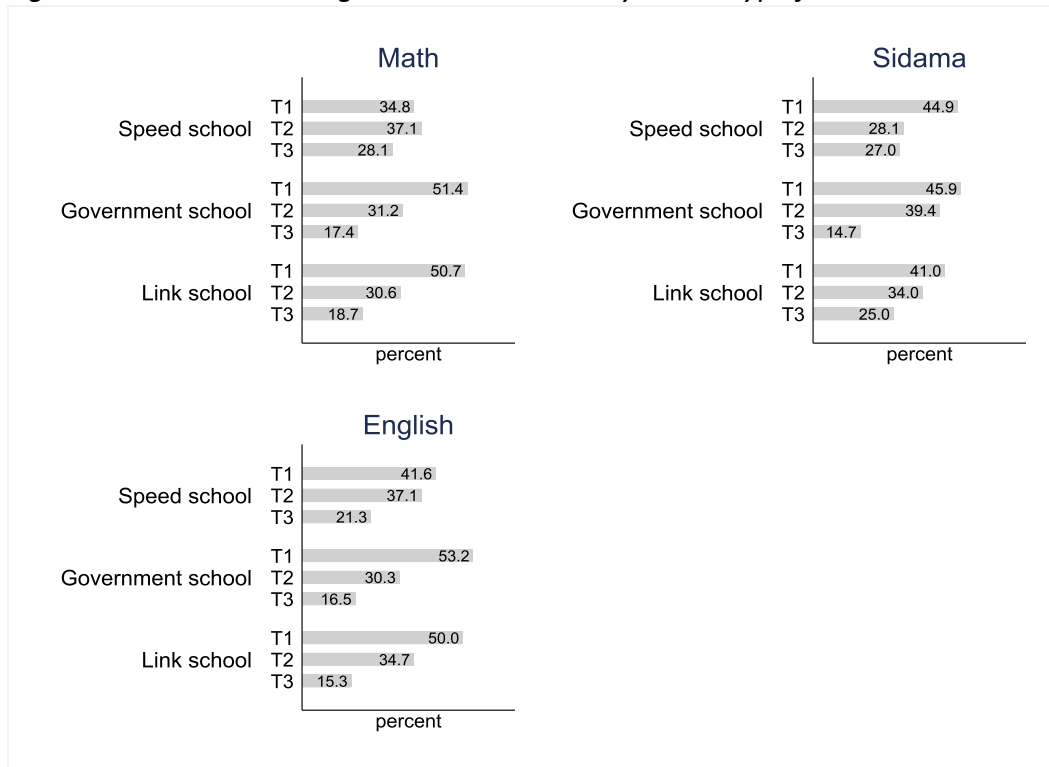
3.2 How do Dropouts Perform?

We decided to compare the performance of Speed School students who had dropped out with Government and Link School students who had also dropped out before reaching the end of primary school. Our aim was to explore whether former Speed School students who had dropped would outperform Government School students who had also dropped out. If the performance of former Speed School students who had dropped out was better, this would be further evidence of the lasting effect of the Speed School learning experience.

The data indicates that, Speed School dropouts still performed better than Government School and Link School students who had also dropped out. In effect, even if a former Speed School student has left school, they still reach higher scores than Government School and Link School students who had also dropped out (Figure 11). About 28.1% of dropouts who attended Speed School perform at the top tercile in the math test compared to 17.4% and 18.7% of Government and Link School students, respectively. *It is also striking that for Sidama test, the non-completers (drop out) from the Speed School group outperformed those from the other groups still attending.* It suggests that, learning in the local language transmits continues to have a lasting effect in terms of performance in Sidama, for former Speed School students who have dropped out compared with other students who are still in school - about 28.1% of former Speed School students who had dropped out, scored at the top tercile level in Math, whereas for Government and Link School students still attending, about 24.8% and 25.8% were able to score at the top tercile level in Math. All p-value of t-tests showed all these results to be statistically significant at the 1% level.

In summary, former Speed School students who did not complete primary education scored as well as Government and Link School students still attending – for math and Sidama, but not for English.

Figure 11. Terciles learning score distributions by school type for those who had dropout



How do we explain why Speed School students consistently do better even for those who did not complete primary education? The answer we think lies with the the Speed School pedagogy and the effect it is able to have in terms of ability to learn and securing the basics before the transition to government schools. From our study of the Speed School classroom, (see, Akyeampong et al., 2017a), we observed that Speed School students receive a solid foundation in their basic skills, *in addition to* greater learning skills and motivation. Thus, we would argue that even if the instruction they receive in government schools is of a lower quality, they are still better able and more motivated to learn on their own and with classmates (see Akyeampong et al., 2017b). In addition, one might expect that they become sort of “teacher’s pets,” being those students Government School teachers focus their attention on because they are more attentive, understand better, and probably more outgoing in the classroom. Our classroom observation study in Link Schools revealed that though the pedagogy is not as participatory as the Speed School pedagogy, nevertheless, Speed School students are able to make the most of opportunities to learn because of the confidence it has instilled in them to engage and contribute to classroom activity (Akyeampong et al., 2017b – study of the pedagogy in Link Schools). Equivalent arguments can be put forward by comparing the completed percentage of correct answers of Speed School to Government and Link School students (see columns 2, 4 and 6 for OLS estimates of percentage of correct answers, table 14).

3.3. Further Insights from Regression Analysis

We explored the percentage of correct answers for Math, Sidama and English using students from Government Schools as our reference point. That is, we measured learning outcomes of Speed School and Link School students against Government School students (Table 14). That is, we used students in Government Schools as the regression base category and measured the dummy for Link School and Speed School students against this base category. *Again we find that, former Speed School students perform better in the three subjects with respect to Government School students even if we include any controls.* In the full model (columns 3, 6 and 9) - Speed School students scores in math are about 9 times better than Government School students. For English their scores are about 6 times better and for Sidama about 12 times better than Government School students. What it means, for example is that for math, Speed School students scored nearly twice as many correct answers as Government School students (i.e. 8.63×20 test items = 1.72). Link School students, though, only do slightly better for Sidama and are worse performers in English than Government School students. Note that the effect is for percentage of correct answers. Because the number of questions for math is 20, and for Sidama and English is 12, the interpretation of the estimates suggests that, on average, Speed School students answer 1.72 (math), 1.51 (Sidama), 0.67 (English) *more questions correctly* than Government School students. In effect, Speed School students do much better in Sidama and math, and also perform better in English, though this effect is not as big. As table 14 shows, these better performances by Speed School students are statistically significant at the 1% level.

With regards to covariates coefficients (columns 3, 6 and 9 of Table 14), neither age nor living with parents are correlated to learning; *wealth at top two quartiles are important predictors (but mainly for math)*; female students do not perform as well as male students in math but gender estimates are marginally significant for Sidama and English; *domestic tasks are clearly a barrier for girls' learning and farm tasks for boys because of the direction of the interactions terms*; and, *as before, educational aspirations are very strong determinant of learning levels - Speed School students appear to have this in abundance.*

Table 14. OLS estimates for percentage of correct answers

	Math			Sidama			English		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	M0	M1	M2	M0	M1	M2	M0	M1	M2
Link school	1.249	-0.483	-0.241	2.670*	1.973**	2.299***	-1.785**	-2.632***	-2.319**
Speed school	10.335***	9.816***	8.626***	13.295***	13.158***	12.560***	7.282***	6.840***	5.594***
age		0.021	-0.004		-0.114	-0.092		0.106	0.160
# children (higher than 3)		0.844	0.664		-0.116	0.045		-0.329	-0.287
live with parents		5.011***	0.251		4.884*	3.930		2.787	-1.373
wealth Q2		0.711	0.425		-0.498	-0.464		-0.914	-1.158
wealth Q3		5.922***	4.715***		2.161**	1.495		1.281	0.119
wealth Q4		6.878***	4.807***		2.476*	1.247		2.639*	0.451
responsibility care - high		-0.913	-0.703		-1.410	-1.208		-2.264	-2.203
female		-7.717***	-7.072***		-4.086*	-3.271		-3.806**	-2.755*
responsibility care - high x female		3.642	2.999		3.612	2.967		4.379*	3.690
responsibility domestic task high		0.562	1.420		0.346	1.053		1.733	2.710*
responsibility domestic task high x female		-4.249***	-4.155***		-1.911	-2.143		-5.511***	-5.538***
responsibility farm task high		-2.276	-1.514		0.195	0.646		-0.463	0.510
responsibility farm task high x female		6.453***	5.813***		1.340	0.712		3.673***	2.520**
Education aspirations - high			6.411***			4.778***			7.298***
Woreda, Shebedino	1.366	-0.621	-0.927	3.045**	1.993*	2.018**	2.449*	1.766	1.324
Observations	1,589	1,576	1,535	1,589	1,576	1,535	1,589	1,576	1,535
R-squared	0.069	0.129	0.150	0.094	0.109	0.123	0.048	0.067	0.098

Notes: (1) See footnote in Table 7.

Significance levels: *** p<0.01, ** p<0.05, * p<0.1 based on school clustered standard errors.

4. Summary of Findings and Why former Speed School students do better

The longitudinal tracking of former Speed School students into public schools has produced some interesting evidence to suggest that many of Speed School students possess the capacity to do well after they transition into government public schools. On all our measures, whether on progression, dropout, completion or learning outcomes, we found that former Speed School students were ahead or doing better than a comparable group of Government School students.

Overall, the following emerge as important findings:

1. Of the 2011 Speed School students tracked, about 74.6% were still in school compared to 66.1% of tracked government school students who were still attending, and 60.5% of Link School students still attending. The 75% retention rate of Speed School students suggests that a majority of them had persisted in their education.
2. Former Speed School students are generally less likely to dropout compared to Government School students with whom they have had the same primary education. Government schools face different challenges from Speed Schools and provide education for most Ethiopian children. What this findings suggest is that the Speed School model may offer insights that can be useful in how government schools can maximise learning opportunities that reduce the risk of dropout.
3. Former Speed School students have higher aspiration to progress beyond primary education, and by the time they reach lower secondary, are less likely to drop out compared to Government School students.
4. The wealth status of the households of Speed School students had improved much more than the households of Government and Link School students. From 2011 to 2017, household assets of Speed School students improved by about 45%, and the average livestock increased by about 53%. For Government and Link School households' assets and average livestock stayed almost the same for the same period.
5. The wealth gap between the relatively 'rich' and 'poor' former Speed School students is narrower than it is for the other students, for both boys and girls, and appears to have had a positive knock-on effect on the educational performance of former Speed School students.
6. Next to lack of money to pay for schooling, starting a family is the second most important reason for some former Speed School students to drop out of government schools.

7. Former Speed School students view support from their family as an important factor in encouraging them to continue with their education – this is consistent with findings from the Self-Help-Group (SHG) study¹⁶. Although they do not find lessons in government schools easy, nevertheless, they are motivated to want to try harder to learn. Also striking are the major differences on issues around confidence in one’s own ability to learn, which students who attend Speed Schools rate higher than students who did not attend Speed Schools.
8. Domestic tasks are a barrier for girls’ learning and farm tasks for boys learning, whereas educational aspirations are very strong determinant of learning levels – Former Speed School students appear to have this in abundance.
9. Former Speed School students perform consistently better than Government School and Link School students for all three subjects – math, Sidama and English. Speed School students scored 10.4% (Math), 13.5% (Sidama) and 7.4% (English) more points than their Government School students counterparts. The differences are statistically significant. Former Speed School students answer *correctly* between one and two more questions than Government School students for all the test items. These results are statistically significant at the 1% level.
10. Former Speed School students who dropped out before completing primary education perform better than government school students who attended the same schools and had also dropped out. In effect, former Speed School student who dropped out of government school still reached higher scores than government school students who had also dropped out. This finding suggests that there are residual benefits of the Speed School program in terms of learning outcomes even for those who drop out before completing primary education.
11. Interestingly, former Speed School students who did not complete primary education scored as well as some Government and Link School students who are still attending school – for math and Sidama, but not for English.

4.1 What is the key to the success of Speed School Students?

A key question is, why do, on the whole, former Speed School students make better progress compared to a comparable group of students who have only attended public schools? This could be seen as surprising in that the students who are selected for Speed Schools are precisely those who had earlier, either failed to learn in Government Schools and dropped out, or who are from the demographic least likely to enroll because of their poor economic backgrounds. The fact that Speed School students are able to cover three years of the curriculum in just 10 months with a paraprofessional grade 10 graduate with no or little experience, and continue their education in Link Schools with highly teacher-centred instruction populated by many more students, compared to Speed School classrooms, makes their success even more remarkable, because quite clearly the odds are against them.

¹⁶ see Humphreys et al., 2017

We turn to the qualitative studies which accompanied this research for some possible explanations. In the Link School study¹⁷, we found that those who were given the most attention by Government School teachers were the most proficient and the quickest students, that is, those who have understood most from their previous schooling. By the time they get to grade four or five, most of Government School students who have attended the earlier grades have become lost¹⁸. By contrast, the participatory pedagogy of the Speed School program both encourages Speed School students to be active in lessons and enables them on the whole, to master the basic concepts of the first three grades of primary education. The inclusive pedagogy of the Speed schools therefore ensures that students have a solid understanding of the basic concepts, which puts them in a strong position to engage easily with the less-inclusive public-school pedagogy which is highly didactic and strongly teacher-centred.

The Speed School pedagogy emphasizes four important ingredients: the fact of emphasizing reading (four times as many hours than the formal classroom); the recognition that students can learn even if teachers aren't teaching directly, or student-centred instruction; an emphasis on continuous formative assessment, taking time for feedback and remediation; and integrated lesson delivery, featuring Activity-Based Learning methods that combine different academic subjects within single lessons and feature practical applications with personal skills development, we would suggest, are key to this success.

We would argue further, that the 'boost' former Speed School students receive from the Speed Schools does not only bring them up to the standard of their peers, but also gives them an advantage over the majority. Moreover, any cognitive advantage would be amplified since these students have been accustomed to an active involvement in lessons and therefore are more likely to have the confidence to participate fully – a phenomenon, witnessed in the research in Link School classrooms¹⁹. It would seem that, for most Speed School students, paradoxically, the one year in a Speed School provides greater grounds for success in the later grades of the Link Schools than do three full years in their earlier grades of conventional classrooms.

We do not think it is simply having an accelerated learning program which helps to achieve these results. However, there is something here which is more than methods. The Speed School approach has much in common with critical pedagogy in that it questions assumptions prevalent amongst people all over the world about who can and who cannot learn. The student the Speed School teachers are working with, are those who are usually assumed to be the least educable, from poor and often illiterate families and having come late to schooling or at least had their education disrupted. The Speed School teachers talked sometimes about slow learners, but this was not a euphemism: they seemed convinced that all the student could and would learn what was necessary to succeed within the curriculum. It seems that the Speed School Program in its training has been successful in getting its

¹⁷ See, Akyeampong et al., 2016b

¹⁸ See, Akyeampong et al., 2016b

¹⁹ Akyeampong et al., 2017

teachers to reconceptualise who can learn and why, and has given the teachers a structure and a set of practices that, with very little formal training, they could all use successfully²⁰

The whole experience over the ten months appears to create learners who are not only reflexive but autonomous and resilient, having learnt how to learn over the ten months of their immersion in the Speed School. In knowing how to process and make creative and intellectual use of new concepts learnt and how-to problem-solve and work collaboratively in groups, as depicted in the photos below. Speed School students are well set up to succeed in the contrasting classrooms and social environment of the Government Schools when they integrate.

For example, Speed School students learning through the group work format in their classrooms use questions to think about what they are doing in groups before they put forward their ideas and solutions to the whole class. Thus, questions answered by the groups of students become a way in which knowledge is shared, debated, constructed, and retained meaningfully.

Figure 12. Active group in Speed School classrooms promotes effective learning



Also, former Speed School students are able to associate concepts with materials and applications from the world around them, thus personalising the use of concrete materials in concept development. By constructing their own materials for most lessons, Speed School students learn to transfer new knowledge into different media, enabling visualisation and relating meaningfully and creatively to abstract concepts. The visible accumulation of learning materials created by the Speed School students over the ten months in classroom displays reflect back their successful learning and became a further resource in themselves reminding them, like summaries, of what has been learnt (see Figure 13). This is echoed in the importance attached to individuals' exercise books where their learning over time is recorded and assessed and turned to as reference material by teachers and students themselves.

²⁰ See Akyeampong et al., 2016

Figure 13. Speed School students create concrete and abstract materials for learning



4.2. What Explains Successful Transition into Government Schools?

The case study research conducted by Humphrey's et al., (2017) provides further insight into what may lie behind the superior performance of Speed School students after transition. In all four case-study sites that were studied, all former Speed School students reported that their Speed School experiences had been very positive, and for some, life-changing. Their praise for the Speed School was often contrasted with their current, less favourable learning experiences in the Link/Government schools and their experiences prior to Speed School, often in the same Link School.

The former Speed School students interviewed felt that they had learned how to learn, and that this, together with what they had learned in Speed School had made them better prepared to engage and do well when they make the transition to government schools.

The qualitative studies highlighted the following as key to the difference Speed School learning made that helped their learning in the Government Schools:

- Facilitator professionalism in attendance, punctuality and care for the individual;
- Strict but encouraging facilitator-student relations;
- Multi-lingual teaching, using some Amharic and English, but above all, the local language to ensure all students understand;
- Constant repetition and frequent revision until all understand;
- Participatory, interactive teaching methodology, involving practical activities, visual aids, group and pair work, songs, craft work;
- Focus on study skills and reading skills;
- Student encouragement, boosting their self-confidence and motivation with regard to their learning.

Thus, the inclusive pedagogy of the Speed Schools ensures that almost all the students have a solid understanding of the basic concepts, which puts them in a good position to engage well in Government School classrooms.

4.3 Lessons for the Speed School Program

For the Speed School program in Ethiopia, it would seem important for effort to go into providing additional support when Speed School students make the initial transition into Government Schools. This could take the form of one or two early visits to the Government Schools to follow-up on how former Speed School students are adjusting to their new learning environment. Already the program has made such changes. Some investment into supporting Government teachers, especially at the primary grade level, would it seem, make a big difference in terms of who continues in education. The program is already taking steps to support teachers which should help to improve even further the impact of the Speed School program over the long term.

There is good indication from the data that improved household wealth status transmits benefits to former Speed School students' education and that investing in programs that improve the livelihoods of the household can contribute to improvements in educational performance. Most accelerated learning programs do not include this dimension, which makes the Speed School program particularly unique. Although, our methods and analysis do not provide conclusive evidence that it is income from the Self-Help-Group which is responsible for asset and livestock improvement, it is reasonable to assume that this may be a contributory factor, since from 2011 to 2017, there has been an improvement in asset and livestock which coincides with significant improvements in educational performance of former Speed School students.

Although, the Self-Help Group initiative faces several challenges, as we have reported in the qualitative study of Self-Help-Groups, if these are fixed²¹, this can significantly improve the incomes of households. What is evident from the study of the mothers' Self-Help-Groups is its potential to impact attitudes and commitment to schooling. As noted in the Self-Help Group report:

In all four case-study sites Self-Help Group respondents reported that the groups helped to provide some income for them (in terms of savings or shares of seed money), even where the Self-help Group itself collapsed. Some of this income was reportedly spent on basic necessities, some of which supported student's schooling either directly (books, stationery), or indirectly (food, clothing). The Self-Help Group program was said to have started a culture of saving among some mothers who had either not considered saving before, or were unable to save before for financial reasons. The fact that their student's education was reportedly often a focus of discussions in mothers' Self-Help Group meetings, which provide a forum for discussing any difficulties at school, may also have a positive impact on their student's persistence and success in formal education. (p v).

²¹ See Humphreys et al., 2017

The Speed School program achieves its long-term impact because it takes a long-term view of the education of out-of-school students. However, the findings of this longitudinal study also show that, although Speed School students outperform a comparable group of students who have not attended Speed School, some still drop out or do not achieve at the expected level. The program should do more to draw Speed School teachers' attention to students who are underperforming, and therefore would be at greater of dropping out or underperforming after transition to Public Schools. Another approach is to use the program's monitoring and evaluation processes to track those who are struggling in school or facing problems at home for additional support. But, this will add to the costs of implementing the program. It would seem far more cost effective if, through in-service training, the key principles of the Speed School pedagogy are shared with public school teachers²².

Older student, as this study has shown, are at a greater risk of dropping out. This raises a challenge for the program as the out-of-school student population will inevitably include older students. One way to reduce older Speed School students' risk of dropping out, is to monitor the learning of older student who transition to Government Schools for early signs of slow progress, but this has cost implications for the program. Improvements can be achieved by ensuring that older Speed School students are placed in grades appropriate for their age – for example, ensure that a 12 or 13-year-old is not placed in grade 1 or 2, or placed at an age appropriate grade to start with, but is repeated several times. Another strategy would be provide skills-based vocational training for older former Speed School students for whom entry into formal primary education may not be ideal because of their age and family circumstances.

The core element of the Speed School program has three important components, inclusive pedagogy in the Speed School classroom; mothers' self-help-groups, and support for teachers in Government/Link Schools. The third component clearly needs strengthening. Ensuring that all three arms of the program receive equitable attention in terms of investment and support would go a long way to make the Speed School program achieve even greater long-term impact.

²² We had planned to investigate how government school teachers could adapt elements of the Speed School Pedagogy through case study analysis, but this was discontinued due to limitations of the budget for the research. As a result, we are unable to suggest the aspects of the pedagogy that government school teachers, who operate in large classes and limited resources, are able to adapt to improve their practice.

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Appendix 1: Additional results

Table A1. Propensity score matching estimates for the treatment: Speed school versus Government school

	Coef	Std Err	p-val	Odds ratio
<i>Panel A - access</i>				
Dropout	-0.078	0.037	0.037	0.925
<i>Panel B - learning (% of correct answers)</i>				
Math	9.962	1.556	0.000	
Sidama	12.889	1.758	0.000	
English	6.275	1.772	0.000	

Note: variables include are those as in model 1 (M1). See table 7.

Figure A1. Propensity scores overlap (Speed school versus Government school)

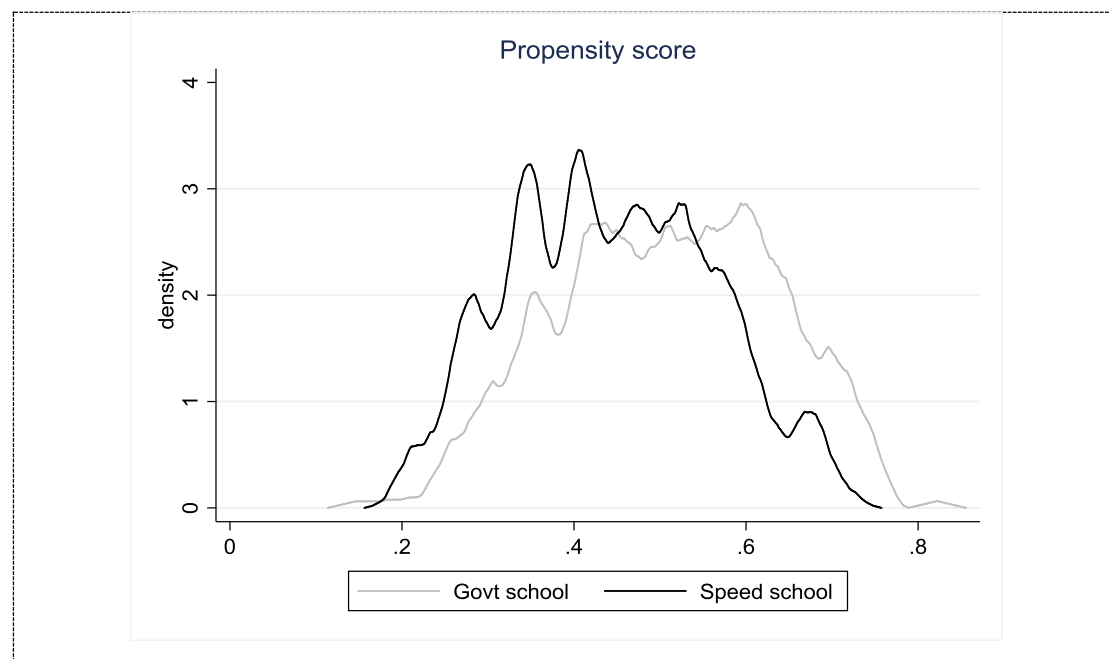


Table A2. Propensity score matching estimates for the treatment: Speed school versus Government school for sub-samples (above grade 5, 6, 7 and 8)

	At least grade 5	At least grade 6	At least grade 7	At least grade 8
<i>Panel A - dropout</i>				
OR	0.772	0.595	0.542	0.599
p-value	0.251	0.068	0.088	0.496
N	1,086	841	598	195
<i>Panel B - learning (% of correct answers)</i>				
Math	8.700	8.401	7.715	6.622
	0.000	0.000	0.000	0.024
Sidama	12.710	13.326	13.650	12.872
	0.000	0.000	0.000	0.000
English	6.218	6.320	5.341	3.563
	0.000	0.000	0.000	0.186

Note: variables include are those as in model 1 (M1). See table 7

Appendix 2: Child Background Questionnaire

Verbal Consent

- Thank you for collaborating with us. We worked for the Speed School Project back in 2012 and we are now following up children who attended the Speed Schools and other children as well.
- Our aim is to investigate what works best for these children as far as their schooling is concerned. But we cannot do this without your help. We are therefore asking you to take part in this study to help us understand how best to help children make the best of their education. But you do not have to take part if you do not want to.
- We would also like your child to do a short test for reading and numbers. Doing this test will not in any way affect what happens to them in school. We simply want to know how much they know and understand in reading and some basic mathematics. We will ask your child to do as best as he/she can.

Thank you for your cooperation

Tracking Information

Date of interview: (DD/MM/YY) Ethiopian Calendar	
Name of interviewer:	

Child ID number:	Pre-programmed
Name of Child (with grandfather's name):	Pre-programmed
Age of child (years old):	Pre-programmed
Gender of the child (1 = Male 2 =Female)	
School grade	

Household head's full name (with grandfather's name) _____

□□□□□ □□□□ □□ □□ (□□ □□□□□) _____

Woreda Pre-programmed: (1) Boricha / (2) Shebedino 1)□□□□/ (2) □□□□

Kebele: □□□ __Pre-programmed _____

Village: □□□□□ □□: __Pre-programmed _____

New Address:

Woreda: (1) Boricha / (2) Shebedino 1)□□□□/ (2) □□□□

Kebele: □□□ _____ Village: □□□□□ □□: _____

Telephone _____ GPS of homestead: _____

SECTION 1: Family Status:

1.1	Who looks after you most of the time at home? Enter number: □□□□ □□ □□□□ □□□□□□ □□□ □□□□□□□□ □□□□? □□ □□□□	
	01=Mother; 02=Father; 03=Grandparent; 04= Brother/Sister; 05=Aunt / Uncle or other relative; 06=Foster Parent; 07=no one (I look after the family) 01=□□□; 02=□□□; 03=□□□; 04=□□□/□□□□□□□□□□□□; 05=□□□□ (□□□□□□□□□□□□□□); 06= □□□ (□□□□□□□□□□□□□□□□)	
1.2	How many people live in the same house as you live in? □□□ □□□□□□□ □□ □□□ □□□ □□ □□□□?	
1.3	How many children (aged 5 to 16) live in the same house as you live in? □□□ □□□□□□□ □□ □□□ □□□ □□□□□ □ 5 □□□ 16 □□□□ □□□□ (□□□) □□□□?	
1.4	How many of these children are boys? □□□□ □□□□ □□□ □□□□ □□ □□□ □□□?	
1.5	How many of the boys go to school? □□ □□□ □□□□ □□□ □□□□□ □□□□?	
1.6	How many of the boys attended the Speed Schools? □□ □□□ □□□□ □□□ □□□ (□□□) □□□□□ □□□□□□□?	
1.7	How many of these children are girls? □□□□ □□□□ □□□ □□□ □□ □□□ □□□?	
1.8	How many of the girls go to school? □□ □□□ □□□ □□□ □□□□□ □□□□?	
1.9	How many of the girls attended the Speed Schools? □□ □□□ □□□ □□□ □□□ (□□□) □□□□□ □□□□□□□?	

SECTION 2: Household economic situation/□□□□□ □□□□□ □□□

2.1	What is the main source of income for the family? (enter one number for the MAIN source) □□□□□□ □□ □□□ □□□ □□□□ □□? (□□ □□□ □□□ □□ □□□□) 01=Agriculture; 02=Business; 03=Daily Labourer; 04=Regular Salaried Employment; 05=other (specify): 01=□□□□; 02=□□□; 03=□□□□□; 04=□□□□□□□□□□□□; 05=□□□□□□:	
2.2	Do you own this house or do you rent it? □□□ □□□□□□□ □□ □□□□□ □□ □□□ □□□□ □□? 01=Own; 02=Rent; 03=Other; 99=NK 01=□□□; 02=□□□□; 03=□□□□□□; 99=□□□□□	
2.3	How many rooms (excluding kitchen, toilet and bath room) does the household occupy? □□□ □□□□□□□ □□ □□□ □□□□ □□□(□□□/□□ □□□ □□□ □□ □□ □□□ □□□□□ □□□□□)	
2.4	What type of kitchen does the household use? □□□□ □□□□ □□□□□□ □□□□□□□ □□ □□□□ □□□/□□□□ □□□? No kitchen.....1 A room used for traditional kitchen inside the housing unit..... 2 A room used for traditional kitchen out side the housing unit.....3 A room used for modern kitchen inside the housing unit.....4 A room used for modern kitchen out side the housing unit.....5 other (specify).....6 □□□ □□ □□□□-----1	

2.9	<p>What is the primary type of oven (Mitad) used for baking Injera/bread?</p> <p>□□□□□ □□□□□/□□ □□□□□ □□ □□□□ □□□ □□ □□□□□□□□?</p> <p>Traditional mitad (oven) removable....1 □□□□ □□□ □□□□□ □□ □□□□□□□...1</p> <p>Traditional mitad (not removable).....2 □□□□ □□□ □□□□□ □□ □□□□□□...2</p> <p>Improved energy saving mitad (rural technology product).....3 □□□ □□□ □□□ (□□□)...2</p> <p>Electric mitad.....4 □□□□□□ □□□...4</p> <p>None.....5 □□□...5</p>	
2.10	<p>What type of toilet facilities does the household use?</p> <p>□□□□□□ □□□□□□□□ □□□ □□ □□ □□□□ □□</p> <p>Flush toilet (□□□ □□□□ □□□ □□□ □□)1 Pit latrine (□□□□□ □□□ □□)....2</p> <p>Bucket.(□□□/ □□).....3 Field /forest (□□/□□).....4</p> <p>Others(SPECIFY) □□ □□□□ ..5</p>	
2.11	<p>How much farm land do you own? _____ Size _____ unit</p> <p>□□□□ □□ □□□ □□□□ □□□ □□□□? □□□□ ----- □□□-----</p> <p>□□□□</p> <p>(Unit codes: 00=Do not own land (□□□□ □□□ □□□□) ; 01=Gasha (□□); 02=Hectare (□□□□) ; 03=Square Meter (□□□ □□□); 04=Gemed (□□□); 05=Timad (□□□); 06= Kert (□□□); 07=Kedema (□□□); 08=Massa (□□) ; 9=Other, Specify (□□ □□□□); 99=NK</p>	
2.12	<p>During the night, which of the following do you mainly use to give you light?</p> <p>□□□□ □□□ □□□□□□ □□ □□ □□□□□□□ □□□□□□ □□□□ □□</p> <p>01=light bulb; 02=kerosene lamps; 03=candles, 04=touch light; 05=firewood; 06=solar lamps</p> <p>01=□□□□□□□□□□□□; 02=□□□; 03=□□, 04=□□□□□□□□; 05=□□□□□/□□□; 06=□□□□□□□□□□□□□□</p>	
2.13	<p>How often does your family have enough food?</p> <p>□□ □□ □□□□ □□ □□□ □□□□□□</p> <p>01=everyday; 02=some days we go hungry; 03=most days we go hungry</p> <p>01=□□□□□□□□□□□□; 02=□□□□□□□□□□□□□□□□; 03=□□□□□□ □□□□ □□□□□□□□</p>	
2.14	<p>Compared to other families in your village/town do you think your family has:</p> <p>□□□ □□□□ □□□ □□□ □□□□ □□□□□ □□□□□ □□ □□□□□□ □□□ □□□□□</p> <p>□□ □□□□□□:</p> <p>01=more money; 02=the same money; 03=less money</p> <p>01=□□□□□□□□□□□□; 02=□□□□□□□□ □□□; 03=□□□□□□ □□□</p>	

SECTION 3A: Which of the following assets do you own (please give the number owned today) □□□□ □□□ □□□ □□□ □□□ □□□ □□□□□□ □□□□ □□□□ □□□ □□□□□□ □□□□ □□□ □□□ □□□□□□ □□□□ □□□ □□□

Asset/□□□□	Number owned today (put 0 if not owned)
1 Mobile telephone/□□□□□□□□□□ (□□□□)	
2 Radio tape recorder/□□□/□□□□□□□□	
3 TV/□□□□□	
4 Table/□□□□	
5 Bicycle/□□□□□	
6 Wristwatch/□□□/□□□□□□□□□	
7 Refrigerator/□□□	
8 Metal/Wood Bed/□□□ (□□□□□□ □□□ □□□□)	
9 Chair/□□□□	
10 Bench, stool/□□□□	
11. Motorbike/□□□ □□□□	

SECTION 3B: Which of the following livestock do you own (please give the number owned today)

Asset	Number owned today (put 0 if not owned)
1 Poultry/□□	
2. oxen, bulls, steers/□□□□□□□□□□□□	
3 Cow, heifer, calves/□□□□□□□□□□	
4 Goat/□□□	
5 Sheep/□□	
6 Donkey/□□□	
7 Horse/□□□	
8 Mule/□□□	
9. Camel/□□□	
10. Bee colony/□□□ □□□	

SECTION 2: EMPLOYMENT

	<p>2.1. During this school year, have you participated in any of the following work for others or your household for pay or internship</p> <p>□□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□/□</p> <p>00=No(Go to Next); 01=Yes (00=□□□□ 01=□□)</p>	<p>2.2. Do you receive payment for [WORK]?</p> <p>□□□□□□ □□□□□□ □□</p> <p>00=No 01=Yes (00=□□□ □ 01=□□)</p>	<p>2.3. How many hours do you spend working on [WORK] during normal school day?</p> <p>□□□□□□ □□□□□□ □□□□□□ □□□□□□ □□□□□□</p> <p>01=Less than 1 hour; 02=1-2 hours; 03=2-3 hours; 04=3-4 hours; 05=More than 4 hours</p> <p>00=□□□; 01=□ 1 □□□; 02=1-2 □□□; 03=2-3 □□□; 04=3-4 □□□; 05=□ 4 □□□ □□□</p>	<p>2.4. If attending school, does this work affect your learning?</p> <p>□□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □?</p> <p>00=No 01=Yes 88= not attending school (go to Q2.7) (00=□□□□ 01=□□)</p>	<p>2.5. Has your experience in school helped you in this work?</p> <p>□□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□ □□□□□□□□?</p> <p>00=No (go to Q2.7) 01=Yes (00=□□□□ 01=□□)</p>	<p>2.6. What skills learnt from school have helped you in your work?</p> <p>□□□□□□□□□□□□ □□□□□□□□□□/□□□□ □□□□□□□□□□□□□□ □□□□□?</p> <p>01=Reading; 02=Writing; 03=Mathematics; 04=English; 05=Problem solving skills; 06=Teamwork skills; 07=Leadership skills; 08=Public speaking skills; 09=Confidence; 10=Other (Specify)</p> <p>01=□□□□ 02=□□□□; 03=□□□□;; 04=□□□□□□; 05=□□□□ □□□□□ □□□□/□□□□ Problem solving skills; 06=□□□□□ □□□□□ □□□□/Teamwork skills; 07=□□□□□□ □□□□; 08=□□□□□ □□ □□□□□□ □□□□; 09=□□□□</p>	<p>2.7. How satisfied are you with your work?</p> <p>□□□□□□□□□□ □□□□□□□□?</p> <p>01=Very unsatisfied 02=Unsatisfied 03=Normal 04=Satisfied 05=Very Satisfied</p> <p>01=□□□□ □□□□ □□□□ 02=□□□□□ □□□□ 03=□□□□□□ 04=□□□□□ 05=□□□□ □□□□□</p>
--	--	--	---	--	---	--	---

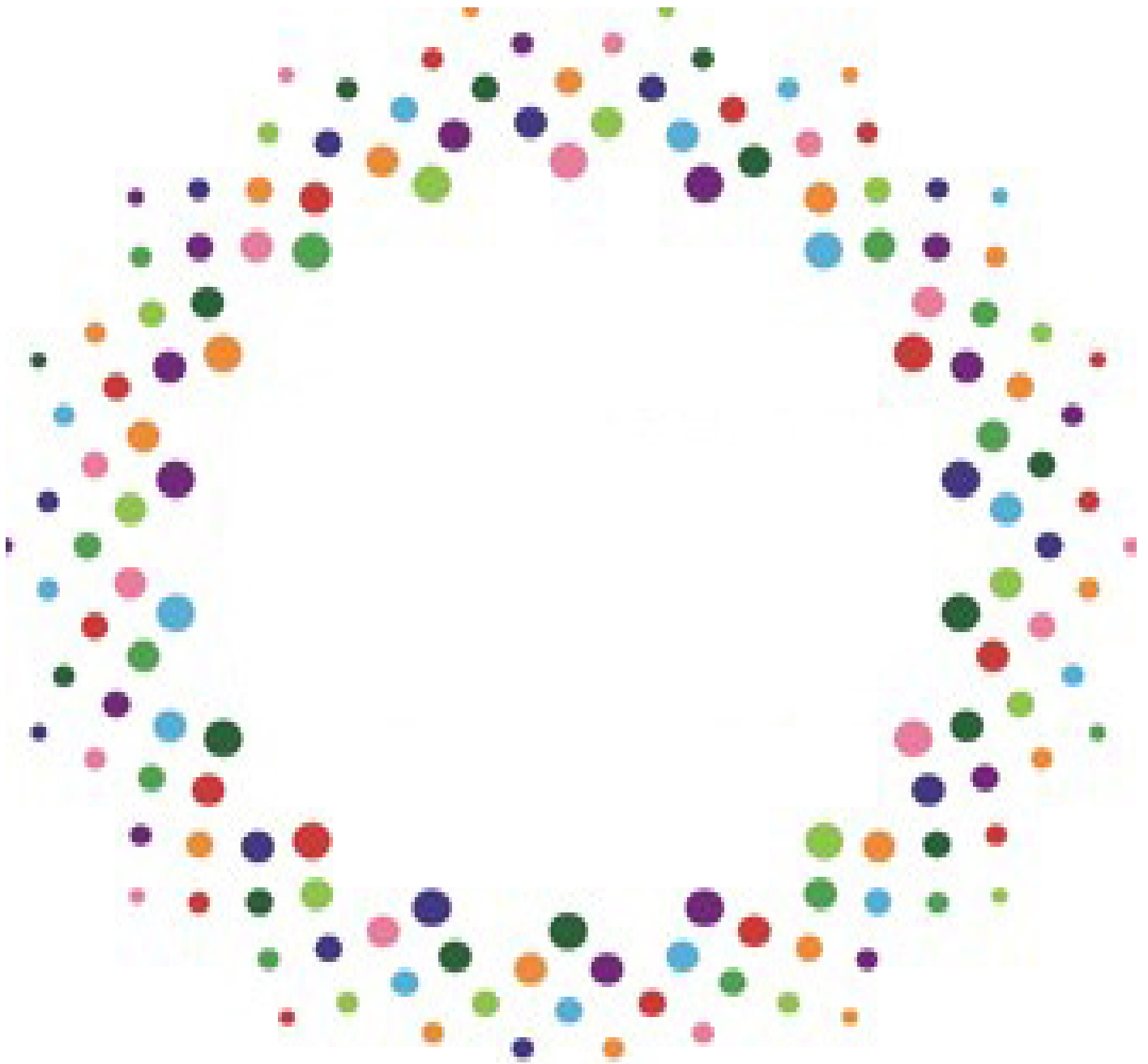
						□□□□□; 10=□□ (□□□□)	
Agricultural employment (including livestock and fishing- related activities) □□□□□□□□□□ (□□□□□ □□□□□□□□□□□□□□□□ □□□□□□)							
Non-agricultural employment (business, big or small) □□□□□□□□□□□□ (□□□□□□□□□□□□□□□)							
Employment on government or non-governmental organizations □□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□ □							
Casual, part-time, or temporary labour? □□□□□□□□□□□□□□□□ □□□							
Apprenticeship □□□□□□□							

SECTION 3: FAMILY RESPONSIBILITIES

	<p>3.1. Since 2012, have you performed any of the following family responsibilities? 2005□.□□□□□□□□□□ □□□□□□□□□□□□□□ □□□/□□□□□□/□?</p> <p>00=No (Go to Next); 01=Yes (00=□□□□ 01=□□)</p>	<p>3.2. How many hours do you spend working on [WORK] during normal school day? □□□□□ □□□□□□ □□□ □□ □□ □□ □□□ □□□ □□□□□</p> <p>00=None; 01=Less than 1 hour; 02=1-2 hours; 03=2-3 hours; 04=3-4 hours; 05=More than 4 hours</p> <p>00=□□□; 01=□ 1 □□□; 02=1-2 □□□ ;03=2-3 □□□; 04=3-4 □□□; 05=□ 4 □□□ □□□</p>
<p>Care for others (younger children, ill or disabled household members) □□□□□□□□□□(□□□□□□□□ □□□□□□□□□□□□□□□□□□ □□□□)</p>		
<p>Domestic tasks (Fetching water, cleaning, cooking, washing, shopping) □□□□□ (□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□)</p>		
<p>Tasks on the family farm not for pay □□□□□□□□□□□□□□□□□□</p>		
<p>Tasks on the family non-farm enterprises not for pay □□□□□□□□□□□□□□□□□□ □□□</p>		
<p>Other household activities that are not for pay □□□□□□□□ □□□□□□□□</p>		

<p>3.3.</p>	<p>Since 2012, have you started a family of your own? □ 2005 □.□□□□□□□□□□/□□□□□□□□□□□/□□□□□□/□□? 00=No(Go to Section 4); 01=Yes (00=□□□□ 01=□□)</p>	
<p>3.4.</p>	<p>How many children do you have?(Write the number below) □□□□□□□□□□/□?(□□□□□□□□□□)</p>	
<p>3.5.</p>	<p>Do you receive any help with childcare so that you may study or work? □□ □□□□□ □□□ □□□□□ □□□□□□ □□□ □□□□□□□□ □□□□□□ /□? 00=No; 01=Yes (00=□□□□ 01=□□)</p>	
<p>3.6.</p>	<p>If yes, who helps you take care of the children? □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□ /□? 01=Spouse; 02=Family member; 03=Friend; 04=Volunteer/member of childcare facility; 05=Other 01=□□□□/□□; 02=□□□□□□ □□□; 03=□□□; 04=□□ □□□□□□/member of childcare facility; 05=□□</p>	

01=Accountant 01=□□□□□□□□	11=Doctor 11=□□□□	21=Lecturer 21=□□□□□□□□ □□□□	31=Scientist 31=□□□□□□□	41=Veterinarian 41=□□□□□□□ □□□
02=Actor/actress 02=□□□□□/□□□□□□□	12=Domestic Worker 12=□□□□ □□□□	22=Market Trader/shop assistant 22=□□ □□□/□□□□ □□□□□□□	32=Singer 32=□□□□□/□□□□	
03=Artist 03=□□□□□□	13=Driver 13=□□□□	23=Mason/carpenter /thatcher 23=□□□□□/□□□□	33=Soldier 33=□□□□□	43=Secretary/Administrative assistant 43=□□□□□□□□ □□□□/□□□□
04=Other civil servants 04=□□□□□□□□ □□□□□	14=Engineer 14=□□□□□□□/□□□□□□□	24=Mechanic 24=□□□□□	34=Sportsman/woman 34=□□□□□□□	44=Religious leader/priest/sheikh 44= □□□□□□□□ □□/□□□/□□□
05=Computer operator 05=□□□□□□□□□ □□□□□	15=Farmer 15=□□□□ □□□□	25=Nurse 25=□□□□	35=Tailor 35=□□□□ □□	45=Manager /Management 45 = □□□□□□ □□□□□□□
06=Conductor 06=□□□□□□	16=Fireman/woman 16=□□□□□ □□□□ □□□□□	26=Painter/decorator 26=□□□□ □□/□□□□ □□□□□□□□	36=Taxi Driver 36=□□□□□ □□□□	46=Agricultural Extension Worker 46 = □□□□□□ □□□□□
07=Construction worker 07=□□□□□□ □□□□□	17=Fisherman 17=□□ □□□□□	27=Pilot 27=□□□□□	37=Teacher 37=□□□□□	47=Health Extension Worker 47= □□□□ □□□□□□□□ □□□□□
08=Cook 08=□□□□ □□□□□	18=Fulltime parent/Housewife 18=□□□□ □□□□□	28=Policeman/woman 28=□□□□	38=Trader/ businessman/woman 38=□□□□	48= Factory worker 48 = □□□□□□ □□□□□
09=Dentist 09=□□□□□ □□□□	19=Labourer 19=□□□□ □□□□□	29=Politician 29=□□□□□□	39=Traditional occupation 39=□□□□□ □□	49=Journalist 49 = □□□□□
10=District collector □□□□ □□□□□	20=Lawyer 20=□□□□/□□□	30=President/leader of country 30=□□□□□□□□/□□□□□□ □□	40=University Student/otherform of further education 40=□□□□□□□□ □□□□ /□□□□ □□□□□□	50= Other specify 50 = □□ □□□□□



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