What Is It About Communicating With Parents?

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1. Proposal Description

While there is increasing evidence that enhancing the communication between schools and parents significantly improves students' performance, less is known about what mechanisms drive those effects. Is it because, by providing parents with information about their children's effort, communication primarily alleviates the moral hazard problem between parents and children (Burztyn and Coff, 2008)? Or is it because parents have limited attention, and communication makes parenting "top of mind"?

This paper attempts to decompose the effects of communicating with parents into those two mechanisms. Specifically, we investigate whether informing parents about their children's attendance, lateness and assignment completion, improves students' outcomes above and beyond the effects of communication aimed at increasing awareness about those dimensions of children's effort.

The distinction matters: providing timely and accurate information about children's behavior requires integrated systems and customized communication, which can be quite costly, particularly in developing countries. Conversely, simply nudging to raise awareness does not require any information systems in place.

Our experiment has Math teachers fill in information about students' attendance, lateness and assignment completion, and then randomly assigns within classroom what information is conveyed to each parent over SMS. Parents in the control group receive no SMS; those in the *awareness* treatment group receive only general statements about the relevance of monitoring their child's behavior (e.g.: "Attending classes every day is important for Nina's grades"); and those in the *awareness + information* treatment group receive what the teacher informed about their child (e.g.: "Nina was absent less than 3 times in the previous 3 weeks"). The questions of interest are whether awareness

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alone improves student's attendance, grades, and drop-out rates, and to what extent adding pupil-level information further improves those outcomes.

2. Intervention, sample and outcomes

Communication interventions are randomly assigned at the school and student levels, within a sample of 223 Brazilian public schools, in order to estimate the impacts of each of those mechanisms on parental engagement and students' outcomes. The ninth grade is a crucial period in the school cycle of Brazilian schools: it is the last grade before high-school, and dropout rates are very high.

We will deliver content through sequences of text messages (SMS), alternating the dimensions of children's effort—attendance, lateness and assignments completion. The intervention's treatment arms are as follows:

1) [Awareness treatment] General statements about attendance, lateness and assignment completion (e.g. "attending school is important") – T1
2) [Awareness + information treatment] Child-level attendance, lateness and assignment completion – T2

Comparing T2 to T1 and T1 to control allows separating the effects of information and awareness.

There are two main concerns about how this design may potentially underplay the effects of information. The first is that parents may already have (to a reasonable extent) information about their child, such that the key piece of information missing is how to place their child relatively to his or her classmates. In fact, other studies often focus on relative behavior: e.g. Rogers and Feller (2016) inform parents about how their children's attendance fares relatively to his/her classroom modal attendance.

To deal with this concern, we pursue two strategies. First, we survey parents at baseline about their best guess for their child's attendance, lateness and assignment completion, so as to investigate heterogeneity of treatment effects by baseline accuracy (Annex 2). Second, for a subsample of schools, we add an alternative awareness + information treatment that conveys parents both with pupil- and classroom-level information, to test whether that treatment has additional effects.

3) [Awareness + relative information treatment] Child- and classroom-level attendance, lateness and assignment completion – T3

The second concern is contamination, or peer effects. While there is a concern that assigning different treatments within the same classroom may lead to contamination, we are less worried about it in this setting parents typically have no recurring interactions at this age – most of them no longer take their children to school, and parent-teacher meetings are rather infrequent in Brazilian public schools. However, peer effects may lead us to underestimate treatment effects.

To deal with this concern, our design varies the exposure to the different treatments across different subsamples of schools, allowing us to estimate spillovers. Randomization will be performed in two steps. First, schools will be randomly assigned to 4 different subsamples (A-D), determining the treatment arms each school will have access. Then, students will be randomized within class to each treatment arm:

A. Pure control – 25 schools
B. T1 + control – 25 schools
C. T1 + T2 + control – 100 schools
D. T1 + T2 + T3 + control – 50 schools

Subsample C allows separating the effects of information and awareness; subsamples A and B allow estimating spillover effects. Subsample D is meant to address the concern about relative vs. absolute child-level information.

In order to collect cellphones and information from parents in the control group, and also to control for the proportion of parents registered in the program, we will offer the control and the treatment group access to send school events through the platform. The design is summarized in figure 1.

Figure 1: Research Design

		Randomization at the school level			
		A - 25 Schools	B - 25 Schools	C - 100 Schools	D - 50 Schools
Randomization at the individual level (within classroom)	T1 - [Awareness treatment]		1/2 Class	1/3 Class	1/4 Class
	T2- [Awareness + information treatment]			1/3 Class	1/4 Class
	T3-[Awareness + relative information treatment]				1/4 Class
	Control (events)	All students	1/2 Class	1/3 Class	1/4 Class

A web-platform was created specifically to this project and was designed in a simple and intuitive way so schools could easily manage it. Treatment and control schools will have access to the event feature, allowing them to notify parents of two school events per month. Once the principal registers the event, the system will send two SMS notifications to parents: one week prior and one day prior to the event (annex figure A1). Math teachers from treatment schools will be oriented to fill in the platform every week with that week's dimension of students' behavior: attendance, lateness or assignment completion, as shown in figure 2 (Annex figure A2). Teachers will fill information regarding student behavior on each dimension considering the past three weeks.[1] The system requires teachers to fill in information for all students. .

Figure 2. School Platform

Attendance	Lateness	Assignment Completion
1 Did not miss any class	**1** Was not late for any class	**1** Completed all the assignments
2 Missed less then 3 classes	**2** Was late for less then 3 classes	**2** Completed more than half of the assignments
3 Missed 3 to 5 classes	**3** Was late 3 to 5 classes	**3** Completed less than half of the assignments
4 Missed more than 5 classes	**4** Was late for more than 5 classes	**4** Did no complete any of the assignments

Teachers and schools are not aware of their assignment, nor of parents' assignment. For treatment arm T3, the platform computes the class median once the teacher submits all students' information every week. As for treatment arm T1, although teacher will fill in child-level information every week, parents will only receive general information aimed at raising awareness about that dimension of children's effort.

Parents of all treatment arms only receive the text message if the teacher had completed the platform that week. This is true even for T1, in order to avoid confounding treatment effects with teachers' non-compliance. After teachers have filled the platform until Sunday of each week, parents will receive the following message on Tuesdays, according to their treatment status:

Figure 3: SMS examples

[1] Students have around 6 class of Mathematics per week.

	T1 (awareness)	T2 (awareness + information)	T3 (awareness +relative information)
Week 1	For a good school performance, it is important that Caroline doesn't miss school for no reason.	According to the information registered by the teacher in the system the past 3 weeks, Eric missed less than 3 classes.	In the past 3 weeks, Susanna missed a few classes less than 3 classes. In her class, most of the students didn't miss any class.
Week 2	Punctuality prevents Caroline from missing explanations given by the teacher that are not always in the books.	According to the information registered by the teacher in the system the past 3 weeks, Eric was late for more than 5 classes.	In the past 3 weeks, Susanna was late for more than 5 classes. In her class, most of the students were late for less than 3 classes.
Week 3	Completing the assignments is very important for Caroline to learn what was taught in class.	According to the information registered by the teacher in the past 3 weeks, Eric complete more than half of the assignments.	In the past 3 weeks, Susanna completed all the assignments. In her class, most of the students completed more than half of the assignments.

The content of the messages are simple and clear and messages across treatment arms were designed to have a similar length (number of characters). Each week teachers will receive a text message, reminding them which dimension they should fill in that week. Moreover, teachers who miss one week will receive an alert, emphasizing they did not fill the platform that week and encouraging them to fill in the following week. Principals will receive motivational messages, encouraging them to engage teachers in the program, as well as message alters, if the usage in the school is low.

The study relies on four main stakeholders, who will contribute to the success of the intervention: the São Paulo Secretariat of Education, the Regional Board of Education Directors, school principals and teachers. São Paulo is the most populous state in Brazil and it is divided in 91 Regional Boards of Education. Each Region has an Education Director. In this project, we will work with five Regional Boards of Education. Education Directors will play an import roll of engaging schools in the program.

The implementation of the intervention involves five steps. First, on April 14th we had a meeting with the five Education Directors, as well as the team of São Paulo Secretariat of Education to present the project. Second, on the following two weeks, Directors presented the project to their schools, inviting them to participate. Participation rate was 87%. Third, between May 9 and May 17 we had meetings with the school principals and Education Director, in each of the Regional Board of Education head offices, to explain the project and distribute the enrollment material and

instructions. Forth, the schools organized parental meetings, to explain the project and enroll parents in the program, collecting their cell-phone, as well as other information. Participation rate was XX%. For parents who did not attend the meeting, the material was sent home trough the student. Fifth, Math teachers had two weeks to register parents' information in the system. Schools and students were then randomized to treatments and control groups and teachers began to fill the platform on the week of June 13th. The school year in Brazil runs from February to December, with a winter break in July. Parents will be exposed to the program during 6 months of the academic year.

3. Outcomes

We will conduct surveys through automated voice calls (Interactive Voice Response, IVR) at the end of the intervention to collect self-reported parenting practices and parents' views about their children. We conducted a baseline survey through IVR on the week of June 16th, surveying parents about their demand for information, as well their previous knowledge about their kids (Annex 2). At the end of the project, we will be able to investigate if treatment effects are heterogeneous by the accuracy of prior knowledge about children's behavior and the ones by ex-ante demand for information about child-level behavior.

One interesting lesson from our 2015 pilot is that, at least among 6th grades, about 1/3 of participating families' children also have cell phones, which lead us to collect student's cell phones for this study. We were able to collect cell phones for 50% of the students. Among these families, we track students' views about themselves, their parents and their teachers.

At the end of the intervention, the São Paulo Education Secretariat will provide data on student attendance and grades in 2016 (per quarter), and enrollment in 2017. Moreover, the Secretariat implements an yearly standardized test to all schools in the state of São Paulo, SARESP (System of School Performance Evaluation of the State of São Paulo). All students in grades 1st, 3rd, 5th, 7th, 9th of primary school and the 3rd (final) year of high school are tested on their knowledge of Mathematics and Portuguese.

4. Timeline & Milestones

#	Milestone	Target Start Date	Target End Date
1.	Meeting with the Regional Board of Education Directors and the São Paulo Secretariat of Education to explain the project	Apr-14	Apr-14
2.	Regional Board of Education Directors meet with their schools principals to explain the project	Apr-18	Apr-27
3.	Schools register to participate in the program (trough an online form)	Apr-18	Apr-27
4.	Meeting with Education Directors and school principals in each of the 5 Regional Board of Education head office to explain the project and distribute the enrollment material	May-9	May-17
5.	Schools organize meeting with parents to explain the project and obtain their cellphone and consent	May-10	May-30
6.	Teacher uploads parental enrollment information through secure website	May-10	June-2
7.	Randomization	June-3	June-5
9.	Baseline phone survey implementation	June-13	June-24
10.	SMS content and nudges begin	July-4	-
11.	Endline phone surveys implementation	Dez-12	Dez-20
12.	SMS content and nudges end	Dez-20	-
13.	Impact Evaluation	Jan-30	Mar-31

REFERENCES

BURSZTYN, L. and COFFMAN, L. (2012) "The Schooling Decision: Family Preferences, Intergenerational Conflict, and Moral Hazard in the Brazilian Favelas", *Journal of Political Economy*, vol. 120(3), pages 359 - 397.

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ANNEX 1: SCHOOL PLATFORM

Figure A1 – Events

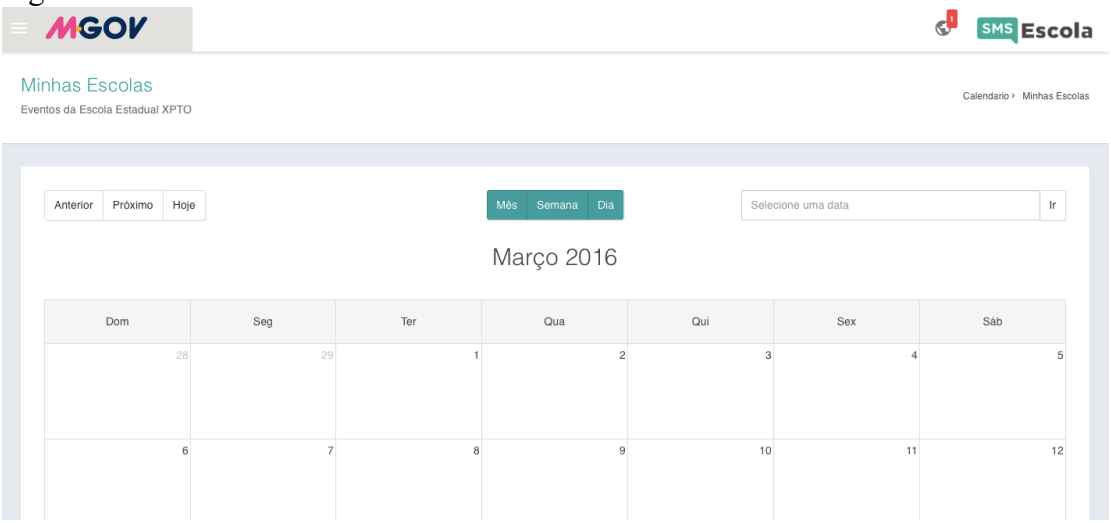
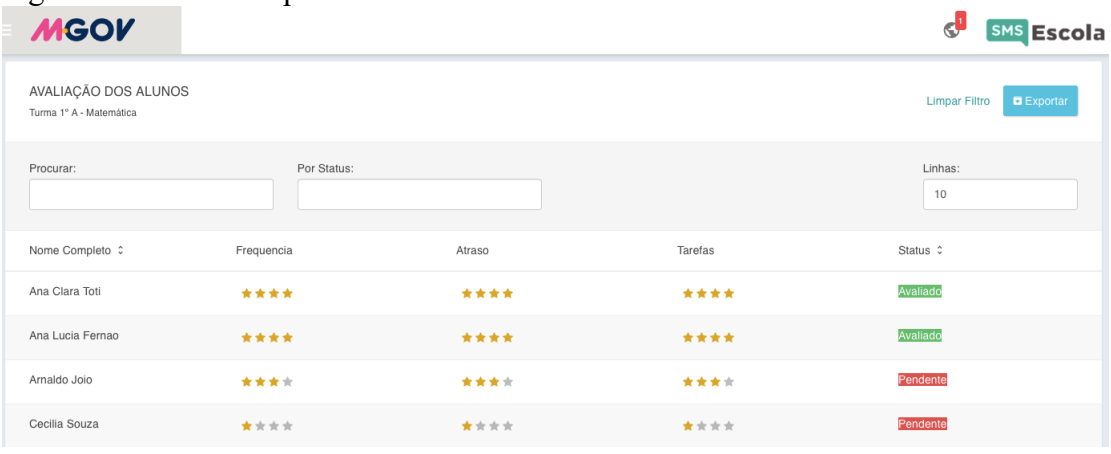


Figure A2: Teacher's platform



ANNEX 2: BASELINE SURVEY

Intro: "Thank you for participating in the SMS SCHOOL research. Answer the following questions by typing on your phone. This call is anonymous and free, and if you answer all the questions, you will receive R$5 bonus on your prepaid phone! It's only 11 questions. If you can take the survey now, type 1 or if you prefer to answer at another time, type 2. "

For each of the following questions, answer with your best guess.

1. Usually, how many times your child misses the math class, considering a three-week period? If never, type 0; is 1 to 2 times, type 1; is 3 to 5 times, type 2; if more than 5 times, type 3.

2. Usually, how many times your child is late for the math class, considering a three-week period? If never, type 0; is 1 to 2 times, type 1; is 3 to 5 times, type 2; if more than 5 times, type 3.

3. Usually, how many times your child does not complete the math assignments, considering a three-week period? If never or almost never, type 0; if rarely, type 1; if many times, type 2; if always, type 3.

4. Usually, how often your child disrespects the teacher and classmates in the math classes? If never or almost never, type 0; if rarely, type 1; if many times, type 2; if always, type 3.

5. Usually, how does you child perform in the math classes? If below average, type 1; if adequate, type 2; if good, type 3; if very good, type 4.

6. Now imagine that your child's school started a program to inform parents and guardians about their students' academics. For each of the following items, please answer what your interest in receiving the information would be. Number of absences in math classes? If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

7. Number of times your child was late for the math class. If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

8. Number of assignments completed for the math class. If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

9. Your child behavior in the math class. If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

10. Your child performance in the math class. If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

11. Activities that you could do at home with your child, to increase interaction between you two. If you would not be interested, type 0, if you would have some interest, type 1, or if you would be very interested, type 2.

Thank you for your answers. The bonus of R$5 will be available in your prepaid phone within 7 business days, and you receive an SMS when it is available!