

TC Abstract

I. Basic project data

• Country:	ECUADOR
• TC Name:	Closing Gaps VI and VII: teaching and learning throughout primary school
• TC Number:	EC-T1372
• Team Leader/Members:	Yyannu Cruz Aguayo (SCL/SCL), Team Leader; Norbert Shady (SCL/SCL); Alternate Team Leader; Vania Pizano (SCL/SCL); Sara Anne Ciner (SCL/SCL); and Nicola Dehnen (SCL/SCL)
• Taxonomy:	Client Support
• Date of TC Abstract:	21 Feb 2017
• Beneficiary:	Ecuador
• Executing Agency and contact name:	US-IDB - Yyannu Cruz Aguayo
• IDB Funding Requested:	\$2,500,000
• Local counterpart funding, if any:	\$0
• Disbursement period (which includes execution period):	36 months
• Types of consultants:	Firms
• Prepared by Unit:	Social Sector (SCL/SCL)
• Unit of Disbursement Responsibility:	Social Sector Departmen
• Included in Country Strategy:	No
• TC included in CPD (y / n):	No
• Strategic Alignment:	Social inclusion and equality

II. Objective and Justification

This TC will support the last stages of an innovative ongoing study in Ecuador, Closing Gaps. No study of teacher quality in a developing country is comparable in the rigorous design of its identification strategy, nor in its execution. The project's main objective is to better understand the learning process during elementary school, and to identify which of those characteristics and practices of teachers in the classroom are most successful in closing the learning gap between the poorest children and their better-off classmates. These effects can only be observed throughout time, and are the ones that provide the most meaningful evidence to inform policy. Hence, the Bank has been carrying out this unprecedented longitudinal study, about to enter its sixth year. In Closing Gaps, two cohorts of children entering kindergarten (in 2012 and 2013), totaling more than 24,000 students, were randomly assigned to different classrooms within 200 schools. Children from the 2012 cohort were then randomly reassigned to classrooms in 1st, 2nd, 3rd and 4th grade. In every grade, compliance with the assignment rule has been almost perfect.

This TC has two specific objectives: (i) to generate evidence on learning outcomes from the cohort of students and the effectiveness of teachers during the last two grades of elementary school; and (ii) to compare and analyze the results that have already been obtained throughout the project. This stage of Closing Gaps will be fundamental, as the data will be used to determine whether the effects of teacher quality on student learning are persistent in time during the entire elementary school cycle, and more importantly, to improve the understanding of how these effects interact differently with student learning from one year to the next during these extremely important formative years. The analysis of the results of this last phase will yield unparalleled information that the region has never had at its disposal before. Some of the questions that we will be able to answer include: Could a child assigned to an ineffective teacher in one year eventually catch up with a child that was assigned to an effective teacher that same year? Or would the child assigned to an effective teacher also learn more in all subsequent primary school years? Which different sequences of "effective" and "ineffective" teachers, during elementary school, matter more or less for a child's learning? To generate answers that could be applicable to the entire elementary school in general, and grade by grade in particular, it is necessary to obtain data of these last two years in elementary school (5th & 6th grade) of the children in the sample.

The project has significant and direct policy implications for Ecuador and other countries in the region, by providing rigorous evidence for the design of effective teacher selection and evaluation systems, targeted in-service teacher training programs, and for compensatory educational programs for disadvantaged children, among others. The first results of the project have been used in the design of an approved loan (EC-L1155), in the ongoing dialogue on early schooling and teaching quality with other countries of the region, and disseminated in a number of seminars and conferences. The results of the first year and a half of the project were published in a highly recognized peer reviewed journal in Economics (QJE), and a series of working papers with the rest of the results are currently in production.

Closing Gaps has already made an impressive contribution to our understanding of teaching and learning, collecting the highest quality, and unique, data to support a number of findings, including the following: (i) The impact of teachers on student learning is substantial: an outstanding teacher moves the average child from the 50th percentile to the 58th of the distribution of learning in a single grade; (ii) The impact of having a better teacher fades out over time if children go on to have less effective teachers; (iii) A better teacher in one year interacts in important ways with having a better teacher in the next year, and the effect of having an outstanding teacher three years in a row is roughly twice the magnitude of the sum of the individual effects for kindergarten, 1st, and 2nd grade. That is, “the whole is (much) greater than the sum of the parts,” (iv) The quality of the interactions that teachers have with children predicts the amount of learning that takes place in a classroom; (v) There are important and significant gaps in learning outcomes between children of high and low socioeconomic status, that are already apparent in kindergarten, and the first years of formal schooling do little to close them; (vi) In math, there are substantial differences in the test scores of boys and girls, and these increase as children progress through the school system; and (vii) Having a child with a serious behavioral difficulty in the classroom has an effect that is roughly half the magnitude (but of opposite sign) as having an outstanding, rather than an average, teacher. Student learning is an iterative process that takes place over a number of years, under multiple teachers and with different classmates.

The next two years of Closing Gaps complete the picture of how students best learn and which teachers are most and least effective in elementary school, the value of which cannot be overstated. Closing Gaps will build on findings that would benefit from further research in order to have significant and direct policy implications. Specifically, the project will gather data to address issues such as: (i) better teacher identification and recruitment, rewarding and in-service training; (ii) improve teacher quality to maximize individual children's exposure to multiple good teachers; (iii) policies that focus on improving interactions in the lowest grades; (iv) remedial policies targeted to poor or low-performing children; (v) providing answers to what is happening throughout the elementary school cycle in math learning; and (vi) appropriate policies to deal with very disruptive children. The data generated over the next two years will provide a comprehensive look at teaching and student learning through the entirety of the elementary school cycle, leading to integrated policies and interventions that take into account children's accumulated experiences over multiple years. For these reasons the Ministry of Education in Ecuador (MinEduc) and the IDB have decided to ensure that we follow these students until they complete primary school, and to continue bringing expertise from leading international experts in the field to complete this task.

III. Description of activities and outputs

1. Random assignment of the cohort of children to teachers in 5th and then on 6th grade, following the same protocol that was used for earlier grades (Output: two databases, one per grade).
2. Verification of random assignment (Output: two databases, one per grade).
3. Develop and pilot instruments (Outputs: a) two databases, b) final tests for both grades).
4. Application of end-of-grade tests in 5th and then on 6th grade, following the same protocol that was used for earlier grades (Outputs: two databases, one per grade).
5. Application of CLASS instrument which consists of in-class observation and filming of teachers to identify specific aspects of their teaching, not limited to the quality of teacher-student interactions (Output: two databases, one per grade).
6. An in-depth assessment of disruptive children. This would include a battery of tests applied to children themselves, and in-depth interviews with parents (or other guardians) and teachers (Output: database).
7. Research from the United States suggests that part of the explanation for the low performance of girls on math tests is related to girls' perceptions and beliefs (for example, that they are not good at math, or do not like math as a subject) as well as teacher stereotypes. We will collect data from girls and teachers to assess how well their own and their teachers' perceptions align with actual test performance (Output: database).
8. Data analysis to better understand the learning process during elementary school, and to identify which of those characteristics and practices of the teachers in the classroom are most successful in closing the learning gap between the poorest children and their better-off classmates (Output: 2 policy notes and 3 working papers).

Components

1. Component 1 - Randomization, verification and measurement of behavior and learning outcomes

Description: Each school year (2017-18 and 18-19) the original cohort will be randomly assigned to new teachers. The schools will be visited to verify compliance. A set of tests to measure learning outcomes will be

developed and piloted. Tests will be applied at the end of the school year, along with assessments of disruptive children and questionnaires to the parents. We will collect data from girls and teachers to assess how well their own and teachers' perceptions align with actual test performance.

Output: Databases (randomization, verification, piloting, tests, questionnaires and behavior assessments)

2. Filming, training, and analysis of classroom quality data

Description: In order to obtain a reliable measure of the quality of teaching, the project will film a full day of classes according to the classroom assessment scoring system (CLASS) observation protocol. These videos will be systematically edited and then coded following the standardized protocol to assign a numeric value to the overall level of the quality of the teaching and learning processes taking place in the classroom, which evidence has shown to have the greatest impact on child learning.

Output: Databases

3. Analysis and Dissemination

Description: This component will cover costs related to the data analysis needed for the production of policy briefs, academic papers, presentations, reports, etc., as well as the cost of dissemination activities. These products will be of free access, and will be disseminated through internal and external channels.

Output: policy notes and 3 working papers.

IV. Budget

Indicative Budget			
Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Randomization, verification and measurement of behavior and learning outcomes	\$ 1,930,000.00	\$ 0.00	\$ 1,930,000.00
Filming, training, and analysis of classroom quality data	\$ 420,000.00	\$ 0.00	\$ 420,000.00
Analysis and Dissemination	\$ 150,000.00	\$ 0.00	\$ 150,000.00

V. Executing agency and execution structure

This TC will be Bank executed by SCL/SCL's front office through a specialized team led by Yyannú Cruz Aguayo.

The Bank will procure the consulting services (individual consultants, consulting firms and non-consulting services) necessary to perform the analysis and data collection activities in accordance with the applicable Bank's policies and procedures. It is foreseen that a single-source procurement will take place as this TC requires to continue with activities that build up from previous work in Ecuador for the same longitudinal study. It is recommended to procure the firm consulting services from Habitus MillwardBrown S. A." ("Habitus") for data collection.

The activities programmed for this TC need to be carried out in strict adherence with the existing methodology that has been used for the past four years of the study, in which the Bank has also been the executing agency using the same executing structure. The Bank has thus developed a competitive advantage. Additionally, it is crucial that at this stage of the study, all the conditions remain constant in order to ensure statistically comparable results.

As for the consulting firm, throughout the past five years, Habitus has generated the optimal capacity to apply surveys and cognitive tests to our selected sample of students. Habitus has also acquired unique experience applying the Classroom Assessment Scoring System (CLASS), and until now they are the only firm in Ecuador that are trained and certified to apply this instrument following very strict and specific research protocols. Finally, Habitus has developed the institutional knowledge about the schools and students in the study, a crucial element to ensure an adequate follow up at this stage. Additionally, Habitus has worked to establish a good coordination with the MinEduc which allows them to perform the necessary

activities in a more efficient way. These elements justify the need for the single-source procurement of a firm with a proven record of expertise in technical fieldwork logistics and on collecting this type of information in several specific key areas of the country.

VI. Project Risks and issues

Specific implementation risks are considered low/medium for the three components. We identified common risks for the implementation of the project: First, the fieldwork may encounter delays to its completion. However, since it is an ongoing operation, we have experienced both internal and external shocks that allowed us to generate contingency protocols to overcome delays in the implementation of the activities. For example, on April 16th, 2016, a 7.8 earthquake hit Ecuador affecting 7% of the schools in the sample. A contingency protocol was implemented in the interest of ensuring that the randomization of students to their 4th grade classrooms would still begin on time with the start of the school year. The MinEduc and the IDB worked together to map out the zones that were affected and a special team was designated to review each and every school in the affected area. Thanks to these efforts, the delays in the activities were kept to a minimum. There is no way to fully anticipate the effects of possible aftershocks, so the best policy has been to try to identify the affected zones as soon as possible and collaborate closely with the MinEduc to generate a contingency plan. To help anticipate future unknowns, the schedule of activities already takes into account possible delays.

Another possible risk is that a few school principals/teachers/parents might not comply with the planned activities, including the random assignment, testing of students and filming. In those cases, the MinEduc has committed to mediate and correct any deviations from the plan. In the four years of the implementation of the project there has never been an extreme case where a stakeholder refused to participate. Dissemination activities to engage with the stakeholders are always held in coordination with the MinEduc prior the beginning of each school year.

Finally, Ecuador will hold presidential elections this year. Therefore it is also possible that there will be changes in leadership of key officials at MinEduc. However, Closing Gaps has become a flagship study for Ecuador and is considered highly relevant for the education policy makers; therefore current officials are establishing the necessary agreements so that the study can conclude as planned.

VII. Environmental and Social Classification

The ESG classification for this operation is []