

## TECHNICAL COOPERATION DOCUMENT

### I. Basic information

▪ Country/Region :	ECUADOR/CAN - Andean Group
▪ TC Name :	Teacher Professional Development Program and Pilot
▪ TC Number :	EC-T1351
▪ Team Leader/Members :	Yyannú Cruz Aguayo (team leader, SCL/SCL); Norbert Schady (co-team leader, SCL/SCL); Nicola Dehnen, Matias Martinez Von Der Fecht, Matias, Sara Ciner Schodt, Vania Pizano (SCL/SCL); and Mónica Lugo (LEG/SGO)
▪ Taxonomy:	Client Support
▪ Date of TC Abstract authorization:	November 22 <sup>nd</sup> , 2016
▪ Beneficiary:	Ecuador
▪ Executing Agency:	Inter-American Development Bank through the Social Sector (SCL/SCL)
▪ Donors providing funding:	Japan Special Fund
▪ IDB Funding Requested:	US\$ 500,000.00
▪ Local counterpart funding:	US\$ 100,000.00
▪ Disbursement period:	36 months (30 months execution)
▪ Required start date:	February, 2017
▪ Types of consultants:	Firm and individual consultants
▪ Prepared by Unit:	SCL/SCL
▪ Unit of Disbursement Responsibility:	SCL/SCL
▪ TC Included in Country Strategy:	No
▪ TC included in CPD:	No
▪ GCI-9 Sector Priority:	Social Policy for Equity and Productivity

### II. Objectives and Justification

- 2.1 The aftermath of the devastating April 2016 earthquake, combined with the ongoing financial crisis in Ecuador obligated the Government to reduce investments in certain sectors such as education increasing the need for assistance from partners like the IDB. Poor and disadvantaged children, those most detrimentally affected by the earthquake, are also those most hurt by cuts to education spending, and therefore most likely to benefit from the results of the project that this technical corporation proposes. The general objective of this TC is to assist the Ecuadorian Ministry of Education in improving the quality of basic education for all children, but especially those from poor and disadvantaged backgrounds.
- 2.2 The TC will achieve this by addressing one of the greatest challenges common to education systems of countries across Latin America and the world: how to improve the quality of in-service teachers in such a way as to directly improve student's learning outcomes. This operation builds on evidence generated by rigorous studies examining the impact of teacher quality on student learning outcomes, including the IDB's own groundbreaking longitudinal study, "Closing Gaps", which has further advanced the field of knowledge on the relationship between teaching practices and student learning. At a time when governments across Latin America and the Caribbean (LAC) are searching for effective professional development strategies to improve teacher quality, the outcome of this TC – an evidence-based, field-tested mentoring package for in-service teachers along with implementation guidelines – will

serve to not only inform policy in Ecuador but also to provide a concrete intervention specifically tailored for countries in the region.

- 2.3 The quality of an educational system depends in great part on the quality of its teachers. That said, in countries across Latin America, most teachers fall far short of their potential to transform children's lives, and to date policy makers and governments have lacked the knowledge and tools to support in-service teachers in a way that produces improved student learning. To this end, the specific objective of this TC is to develop and pilot an evidence-based teacher professional development program providing ongoing mentoring for in-service elementary school teachers to directly improve their pedagogical practices. The pilot is unique in that it gives teachers individualized and specific support to improve practices in their classrooms, to have more effective interactions with their students, and to make the most out of their day-to-day classroom experiences to maximize student learning in an ongoing mentorship context. Furthermore, there is no evidence to date of any evidence-based, practical ongoing professional development programs aimed at improving teacher quality anywhere in all of Latin America and the Caribbean, and in this sense our project fills an urgent need and introduces an innovative and proven method for achieving this goal.
- 2.4 The pilot will culminate in a stand-alone mentoring package with step-by-step implementation protocols and training materials that can be implemented in any country in the region including Ecuador. This package will serve as a model for other countries – including more developed countries – to identify and train teachers to successfully become excellent mentors providing individualized, practical and ongoing support to their peers to improve everyday practices in their classrooms and in turn improve student learning.
- 2.5 This TC offers a one-of-a-kind opportunity to pilot a high-quality and evidence-based yet scalable teacher professional development program promising to improve student outcomes not only in Ecuador but across the region. This program is based on important findings collected from the longitudinal “Closing Gaps” study. Closing Gaps has been collecting first-of-its-kind panel data on the relationship between teaching quality and children's learning in public elementary schools in Ecuador for nearly six years. It has identified some of the specific teacher characteristics and practices that allow young, disadvantaged children, who enter school with profound deficits in their cognitive development, to close their skills gaps and catch up to their better-off peers as they advance through primary school. It is these very skills that the mentoring pilot will work with teachers to improve in their day-to-day classroom practice.
- 2.6 Thus far, Closing Gaps has generated some key policy-relevant results that directly inform the design and content of the mentoring pilot. Some of these results are: (i) teachers have substantial impacts on children's learning outcomes (in math, language and executive function); (ii) teacher characteristics, on which much of the current selection, evaluation and compensation systems are based, account for very little of the variability in teachers' performance; (iii) other not commonly measured characteristics (including IQ and personality traits) are also poor predictors of teacher effectiveness; (iv) in contrast, teachers' classroom behaviors and practices are strongly associated with better learning outcomes; (v) all children benefit from a good teacher, with no distinction between girls and boys, or socioeconomic status, among others; and (vi) an effective teacher one year seems to also be effective in the subsequent year (both for the same subjects and across subjects); (vii) the effects of teachers in kindergarten, first and second grade have lasting impacts on children's learning outcomes.

2.7 The pilot's focus on teacher performance and school leadership complements the initiatives for improving quality that the Government of Ecuador has already begun and is considered pioneering in the LAC region. Therefore, this TC is consistent with the Update to the Institutional Strategy (UIS) 2010-2020 (AB-3008) and is aligned with the development challenge of "social inclusion and equality". The activities to be financed in this TC will complement efforts currently underway by the Ministry of Education and align closely with specific goals mentioned in the Country Strategy for Ecuador 2012-2017, which identifies social development as one of the main areas for Bank intervention. In addition, the TC is aligned with current priorities of the Government of Ecuador to improve the professional development of teachers and school directors, promoting leadership that helps to increase the efficiency and quality of the educational services that are provided.

### **III. Description of activities/components and budget**

3.1 **Component 1. Selection, development and adaptation of training materials for both mentors and teachers.** In partnership and close collaboration with leading experts from the University of Virginia, and in close communication with the Ministry of Education of Ecuador, the content and materials for the pilot will be fully developed and adapted to the Ecuadorian context, with applicability to a greater Latin American context. Materials will include mentor selection tools, full training sessions for mentors and introduction materials for teachers, week-to-week guides for mentor-teacher meetings, periodic retraining sessions, individualized materials for teachers, and supervision and administration materials.

3.2 Drawing on hundreds of hours of video footage from the Closing Gaps<sup>1</sup> database, our team has identified numerous "teachable moments" of more and less effective practices in elementary school Ecuadorian classrooms. Based on a similar successful resource in the U.S., these moments will be edited into 1-2 minute segments that will form part of the mentor's toolkit when working with teachers, and also serve as a contextually appropriate video "library" to help teachers learn to observe and identify good practices before examining their own.

3.3 Materials also include the development of the training course for mentors which includes PowerPoint presentations, individual and group guided activities, and a Manual with week-by-week yearlong curriculum to support mentors throughout the program cycle. Additional materials include initial introduction and familiarization training materials for teachers and guides to support their weekly activities, as well as monitoring and supervision materials for program administrators to make sure that both mentors and teachers are adhering faithfully to the program.

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<sup>1</sup> Closing Gaps has collected very rich data on teachers for over five years. In addition to standard information on years of experience, education, and contract status (tenured or not) the teachers were filmed teaching a class for an entire school day. These videos were coded to measure the interaction of teachers and students, using a protocol known as the Classroom Assessment Scoring System (CLASS, Pianta et al. 2007). The CLASS is a measure of a series of teacher behaviors that can collectively be described as "Responsive Teaching" (Hamre et al. 2014). The study also measured teacher IQ, personality, inhibitory control, and socio economic status during the teachers' formative years. For more information see: Maria Caridad Araujo, Pedro Carneiro, Yyannu Cruz-Aguayo, and Norbert Schady. 2016. "Teacher Quality and Learning Outcomes in Kindergarten". 2016. Quarterly Journal of Economics, Volume 131, Issue 3: 1415-1453

3.4 Final outputs from this component include: materials for training of mentors and for the mentoring program activities including power points, guided activities, individual session guides, video-based learning library, and supervision and feedback tools.

3.5 **Component 2. Execution of a full pilot to field-test, evaluate, and calibrate as necessary all mentoring program materials, processes, and activities.** The pilot is structured as a randomized control trial, and as such will provide valuable information on its effectiveness, as well as a measure of process learning and ongoing feedback to ensure the highest quality of program implementation, guaranteeing that it achieves its desired outcomes of faithful intervention implementation, exceptionally trained mentors, higher quality teacher practices, and improved student outcomes in the classroom. To this end, we will recruit and work with a final group of ten of the utmost qualified mentors and 50 in-service teachers over the course of a school year to undergo the mentoring program. This component will finance: 1) Selection and recruitment of both mentors and teacher participants; 2) Activities for executing the pilot including: training sessions for mentors, familiarization sessions for teachers, bi-weekly mentor-mentee sessions, feedback and learning sessions, and overall supervision and coordination of the pilot; 3) data collection and evaluation activities to measure the success of the program.

3.6 **Activity 1.** Randomized cluster sample selection and design and application of instruments to select a sample of 15 outstanding teachers. For the selection of participating schools in our pilot, we will use the following methodology:

**Step 1:** Collaborate with the Ministry of Education to acquire administrative information on all of the schools in a province in Ecuador that offer 1st grade in the highlands region. This information will include:

- a. What school district they are in.
- b. The number of 1st grade classes, and the number of students in these classes in the current academic year.
- c. Any information that is available on the teachers.
- d. Information on school infrastructure and other characteristics.
- e. GPS data on the schools.

**Step 2:** Construct clusters of schools that are geographically close to each other, so that a mentor will be able to visit a different one on each day to work with various teachers. This would be done as follows: for every school, we will select the closest (in distance) school, then the next closest school, and so on, within the same school district. We will do this until, if we were to remove the school with the largest number of teachers in that cluster, we would have 10 teachers.<sup>2</sup>

**Step 3:**

- a. We select the cluster pair with the highest value of a “closeness index”<sup>3</sup> (the two clusters that most resemble each other). All of the schools in these two clusters are now set aside. One is randomly assigned to “treated”, the other to “control”.
- b. We re-estimate the clusters and the closeness index. We select the next pair, set it aside, and designate one cluster in the pair to “treated”, the other to “control”.

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<sup>2</sup> Two notes on this: i) we do this with the GPS data, using distance; we will also calculate travel time using Google maps. We establish some arbitrary cut-off beyond which it is not reasonable to expect someone to be able to travel and return in the same day, and ii) each school will be included in many clusters—both the cluster that is centered around it, and the clusters that are centered around other schools.

<sup>3</sup> The index will be constructed using administrative data from the Ministry and from the Instituto Nacional de Evaluación Educativa (which includes results from standardized tests).

c. We continue iterations of this and stop the process when there are 100 schools in the treated and 100 in the control group.

3.7 We select 15 outstanding teachers (mentor candidates) from our randomized cluster sample of participating schools. To do so our team has completed an extensive literature review and engaged with various experts in the teaching quality field to compile a battery of tests to accurately identify candidates uniquely suited to be excellent mentors. From our sample of clusters described above (in the treated schools), we will evaluate all tenured teachers with the following tests: (i) a peer-nomination survey, (ii) the Big Five personality test, and (iii) an evaluation of Perceptions about Children. Based on the results of these tests, we will work with the University of Virginia's Teaching and Learning Center to develop a quality index to rank teachers based on their responses, and then offer the top 15 performers the opportunity to participate in a final screening evaluation before beginning their training as mentors.

3.9 The final screening will consist of a CLASS<sup>4</sup> Observer training and evaluation. This will allow us to select a final group of 10 mentors from the 15 finalist mentor candidates. Evidence from other applications of the mentorship professional development program suggest that teachers that can successfully undergo CLASS training and learn to observe and identify quality classroom practices using the CLASS lens are most likely to be highly competent and successful mentors<sup>5</sup>. We will conduct a week-long CLASS observer training for our 15 finalist mentor candidates, as a final screening before selecting the 10 most outstanding participants to undergo the mentor program training. At the end of the week-long CLASS training, the 15 participants will undergo a certification exam, which will allow them to be ranked by aptitude and ability and determine which are the most highly qualified to advance to the final stage of training. Once selected and trained, each mentor will be assigned to work with five teachers over the course of the pilot. Teachers will be randomly selected from the sample, and assigned to work with a mentor or to form part of a control group for later evaluation and comparison purposes.

3.8 Outputs for these activities are: a randomized cluster sample selection for the pilot, mentor selection instruments, dataset with the results of the application of the selection instruments and quality index ranking, the list of ten fully vetted and uniquely qualified mentor candidates prepared to undergo a final mentor training. Finally, a randomly generated list of 100 teachers (50 of whom will be assigned to work with the trained mentors as part of the pilot program and 50 of whom will form a control group).

3.11 **Activity 2. Mentor training.** During ten days preceding the start of the school year 2017-18, the 10 mentor finalists will receive a rigorous and practical training from the University of Virginia and IDB teams, in coordination with the Ministry of Education, to prepare them to work individually with teachers during the pilot. The training will emphasize content

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<sup>4</sup> The Classroom Assessment Scoring System (CLASS) is an observation instrument that assesses the quality of teacher-child interactions on three domains: Emotional Support, Classroom Organization, and Instructional Support. The CLASS measures a series of teacher behaviors which can collectively be described as "Responsive Teaching" (Hamre et al. 2014). A number of papers using US data have found that children exposed to teachers with better CLASS scores have higher learning gains, better self-regulation, and fewer behavioral problems (Howes et al. 2008 Mashburn et al. 2008.) Beyond its application in research, the CLASS has been used by many programs (for example, Head Start) as a tool for improving classroom interactions.

<sup>5</sup> Important references include Bierman, Domitrovich et al. (2008); Brown et al. (2010); Domitrovich et al. (2008); Downer et al. (2011, 2013); Hamre et al. (2012); Pianta et al. (2008); Raver et al. (2008); and Yoshikawa et al. (2013).

knowledge, participatory activities, simulations, step-by-step guides for working through difficult issues with teachers, and a number of real-life practice opportunities so that mentors assume their responsibilities not only fully prepared but confident in their abilities and comfortable working with teachers. The training is intense in both duration and content to ensure that the mentors reach their maximum potential in their work with teachers, key to the success of the program

- 3.12 The main output of this activity will be a final team of 10 highly trained best-of-the-best mentors ready to begin their work with teachers over the course of the pilot.
- 3.13 **Activity 3.** Implementation of the pilot. Throughout the implementation, we will collect preliminary effectiveness and feedback data and test and calibrate all mentoring materials, processes, and supervision system. During the implementation of the pilot, each mentor will eventually work full-time with five teachers throughout the school year, building a supportive and sustained relationship over time. Teachers and mentors will meet for 90 minutes every two weeks in structured mentoring sessions that include time for individualized strength-based feedback and reflection as well as specific teacher-developed strategies and action plans for moving forward. Teachers will be filmed once every two weeks during 30 minutes of their choosing. The video footage will then be reviewed each week by the mentor, who will develop reflective activities and discussion questions to support the teacher in recognizing and building on his or her strengths in the classroom. The teacher will leave each bi-weekly mentoring session empowered with new information to improve student engagement and learning, and an individualized action plan developed in collaboration with the mentor to be put in place for the following week. Mentors will be in close and ongoing contact with pilot managers from the IDB and the University of Virginia to make sure that they are supported in successfully engaging each week with teachers and faithfully implementing the curriculum. Teachers will be evaluated using the CLASS assessment tool to closely track and monitor their progress. Periodic process evaluations will be conducted monthly during the course of the pilot to measure fidelity of implementation and solicit feedback from mentors, teachers, and school administrators in the sample schools.
- 3.14 The final output of this activity and the component overall will be the first-of-its kind rigorous causal evidence on the effectiveness of improving teachers' classroom practices. This will be a field-tested teacher mentoring program 'package' of training and ongoing support materials, guided activities, implementation protocols, and supervision and evaluation guidelines ready to use in any Latin American context, including expansion on a national level in Ecuador.
- 3.15 All the resources of the TC will finance consultancy services (individuals and firms). Data collection activities and the corresponding analysis absorb most of the resources.
- 3.16 The TC execution will be under the supervision of a highly qualified team from the Social Sector Department SCL/SCL. The execution of this TC will be reviewed at least bimonthly by the Team Leader in coordination with the Ministry of Education. An annual report will be produced and presented to the MinEduc and findings will be presented on a final report at the end of the execution of the project.

### Indicative Results Matrix

<b>General Outcome:</b> Significantly improved teacher classroom interaction skills.					
<b>Indicators</b>	<b>Value</b>	<b>Baseline</b>	<b>Year</b>	<b>End of Pilot</b>	<b>Source of Information</b>
Number of teachers who improved classroom interaction skills	Number	0	2018	50	Number of teachers
Enumerators trained in Mentor selection instruments	Number	0	2017	80	Evaluation reports
In-service teachers evaluated as potential candidates to be mentors	Number	0	2017	600	Evaluation reports
Training courses developed to implement mentoring program across distinct Latin American contexts	Number	2	2017	3	Self-report (Monitoring reports)
Number of schools participating as models for ongoing mentoring services	Number	0	2017	50	Monitoring reports
Trained mentors	Number	0	2017	10	Evaluation Reports
Teachers receiving ongoing mentoring in improving their pedagogical practices	Number	0	2017	50	Evaluation Reports

3.17 The total amount requested for this TC is US\$500,000.00, and it will be financed by the Japan Special Fund (JSF). The MinEduc through its central and regional offices will provide in-kind resources for an estimated amount of US\$100,000 to enforce each step of the process: without these resources the project would not be viable. These include: (i) official communications for principals, teachers, school administrators and key stakeholders in the study; (ii) logistic and supervision activities necessary for fieldwork; (iii) key information from administrative data to form the teacher sample; and (iv) time and labor from the 10 selected teachers who will become full-time mentors.

### Indicative Budget (US\$)

<b>Activity/Component</b>	<b>IDB/Fund Funding</b>	<b>Counterpart Funding</b>	<b>Total Funding</b>
<b>Component 1</b>	<b>100,000.00</b>	<b>50,000.00</b>	<b>150,000.00</b>
Activity 1. Selection, development and adaptation of training and program materials for mentors and teachers	100,000.00	50,000.00	150,000.00
<b>Component 2</b>	<b>400,000.00</b>	<b>50,000.00</b>	<b>450,000.00</b>
Activity 1. Randomized cluster selection	125,000.00		
Activity 2. Mentor training	50,000.00		
Activity 3. Pilot implementation	225,000.00	50,000.00	
<b>Total</b>			<b>US\$ 600,000.00</b>

#### **IV. Executing agency and execution structure**

- 4.1 This TC will be Bank executed through the Social Sector Department (SCL/SCL), in close coordination with the MinEduc. One of the main reasons for the execution structure is that the Bank, synchronizing with the Ministry, has been developing various related activities that constitute the framework for the complex design and implementation of this pilot. In particular this is the case of the longitudinal study called Closing Gaps (Cerrando Brechas), a rigorous and intricate research project that looks at the impact of teaching quality on learning outcomes in Ecuador. The Bank has thus developed a competitive advantage (coupled with the support and active participation of the MinEduc) in the design and co execution of these activities. Secondly, this execution structure is also the best way to ensure an agile and steady implementation of the activities in a timely fashion since the Bank will contract individual consultants, consulting firms and non-consulting services in accordance with the Bank's procurement policies and procedures. This is particularly important given the current capacity that the research department at the MinEduc holds in terms of procurement activities. While the Bank will be in charge of contracting, the Bank will seek the technical input and collaboration of the MinEduc. As such, there has been and will be a significant benefit in terms of knowledge sharing and capacity building for the counterparts under this arrangement.

#### **V. Project Risks and issues**

- 5.1 Specific implementation risks are considered low for both components. The selection of the cohort can become challenging as uncertainty regarding the objectives of this TC could generate tensions and resistance from teachers and school directors. In order to mitigate this risk and ensure adequate participation, communication and knowledge sharing activities will be carried out prior to beginning of the mentoring pilot (through workshops organized by the Ministry and the Bank). Additionally, the methodology that will be used is based on standardized tests and evidence from other programs that have been implemented with similar objectives. This measurement will also help us to ensure transparency in the selection process.

#### **VI. Exceptions to Bank policy**

- 6.1 None.

#### **VII. Environmental and Social Classification**

- 7.1 The ESG classification for this TC is "C" according to the Environment and Safeguards Compliance Policy (OP-703). There are no potential negative environmental and/or social impacts associated with this TC anticipated ([See filters](#)).

Required Annexes:

- [Annex I – Government request](#)
- [Annex II – Terms of reference](#)
- [Annex III – Procurement plan](#)