

## TC Document

### I. Basic Information for TC

▪ Country/Region:	BRAZIL
▪ TC Name:	Using Data, Technology, Training, and Behavioral Economics to Improve Efficiency in Education Spending in the Covid-induced Economic Recession in Brazil
▪ TC Number:	BR-T1466
▪ Team Leader/Members:	Elacqua, Gregory Michael (SCL/EDU) Team Leader; Duenas Herrera, Ximena (SCL/EDU) Alternate Team Leader; Blasco, Ivana (SCL/EDU); Cossi Fernandes, Joao Paulo (SCL/EDU); Holguin Madrinan, Alejandra (SCL/SCL); Maria Cristina Mac Dowell (IFD/FMM); Mendez Vargas, Carolina Patricia (SCL/EDU); Verissimo Da Silva, Carolina (LEG/SGO)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	N/A
▪ Date of TC Abstract authorization:	22 Sep 2020.
▪ Beneficiary:	Secretary of Education of Pernambuco <sup>1</sup>
▪ Executing Agency and contact name:	Instituto Superior De Educacao De Sao Paulo
▪ Donors providing funding:	Japan Special Fund Poverty Reduction Program(JPO)
▪ IDB Funding Requested:	US\$300,000.00
▪ Local counterpart funding, if any:	US\$35,000.00 (In-Kind)
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	April 15th, 2021
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	SCL/EDU-Education
▪ Unit of Disbursement Responsibility:	SCL/EDU-Education
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; Social inclusion and equality

### II. Objectives and Justification of the TC

- 2.1 The objective of the technical cooperation (TC) is to develop novel initiatives in public education spending management allowing governments to manage their education budgets more equitably and efficiently. These initiatives include: (i) a professional development module to equip policy makers and school leaders with practical skills in strategic fiscal management; and (ii) the use of behavioral strategies to encourage school leaders to make more efficient resource allocation decisions that benefit the most vulnerable schools and students.
- 2.2 **Background.** The COVID-19 pandemic has brought unprecedented disruption to the global economy. The International Monetary Fund projects the world economy to shrink 4.9 percent in 2020, which is far worse than the 2009 global financial crisis,

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<sup>1</sup> Middle and high school principals, teachers, and students in the state of Pernambuco, Brazil, in particular from vulnerable areas will also benefit from this TC. The state school network of Pernambuco has 1,052 middle and high schools, including indigenous, vocational, and full-time academic schools, including 600,000 students, over 1,000 school principals, and almost 40,000 teachers.

which resulted in a decline of GDP of 0.1 percent. As economic activity plunges due to social isolation and as unemployment rates rise rapidly, countries brace for budget shortfalls. Evidence from Brazil, for example, shows that federal tax revenues in April and May 2020 are, respectively, 28% and 33% lower than the same period of 2019.

- 2.3 The loss of government revenues due to COVID-19 and reallocation of resources towards healthcare-related spending will likely lead to significant cuts in funding for public education. In Brazil, recent simulations predict that the economic slowdown caused by the pandemic could lead to a decrease in education spending between 11% and 32% within the next two years (Afonso et al., 2020).
- 2.4 In federal countries like Brazil, the pandemic can affect not only the *level* of school funding, but also the *distribution* of education spending. Because education in federal countries is largely funded by local governments and because their ability to raise revenues depends on local wealth (e.g., level of economic development, property wealth, and income), it is possible that the impact of COVID-19 on education budgets varies between federated entities. International evidence suggests that economic downturns can increase the socioeconomic inequality in school funding in federated education systems. For example, during the 2009 financial crisis in the United States, wealthier school districts were able to increase local revenue at a faster rate than poorer districts, increasing inequality in education funding (Baker, 2014; Knight, 2017; Evans, Schwab, Wagner, 2019).
- 2.5 Evidence from recent literature suggests that coronavirus-related budget cuts to education may have serious implications for student learning. Research has shown that changes in per-pupil spending have a causal impact on student outcomes both in the short and long terms. Increases in education spending has been found to improve student achievement and attainment outcomes, especially for disadvantaged students (Card and Payne, 2002; Lafortune et al., 2016; Candelaria and Shores, 2019). A few studies have also found that increased funding has a positive impact on intergenerational mobility (Biasi, 2018) and adult outcomes such as wages and incidence of poverty (Jackson et al., 2015).
- 2.6 The current economic slowdown and increased demands for spending to cover the costs associated with the Covid-19 response (school hygiene, social distancing, technology and training for remote learning, targeted interventions for students falling behind) requires governments to make more efficient and equitable financial decisions to minimize the negative effects of revenue losses. Recent research has found that publishing and using school-level expenditure data is crucial to manage educational finance more efficiently and make more informed decisions (Roza, 2018). In the United States, for example, a new provision in *Every Student Succeeds Act* calls on states and school districts to publicly report spending by school.<sup>2</sup>

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<sup>2</sup> While there is a growing literature on the causal effects of increasing spending on educational outcomes (e.g., Jackson et al. 2015), there is a dearth of evidence on the impact of how schools spend money. To date, researchers have not had access to school-level expenditure data to conduct these analyses (Roza, 2019). However, there is some recent descriptive evidence in the United States (e.g. Roza, 2019) and Pernambuco (Elacqua et al., 2018) using these data. However, as the new trove of school-level spending data comes available, researchers will be able connect school spending and learning outcomes and policymakers will be able use what they learn to make more strategic spending decisions.

- 2.7 In the case of the State of Pernambuco (Pernambuco), which is one of the states with the lowest Human Development Index (HDI) in Brazil. The state school system has 1,052 middle and high schools—including 147 indigenous and 225 rural schools—with nearly 600,000 students and 40,000 teachers. Approximately 52% of the students in Pernambuco's state school system participate in *Bolsa Família*, Brazil's conditional cash transfer program that targets families below the poverty line. Data show that in recent years the state government of Pernambuco has not effectively targeted the most vulnerable schools and that the most inefficient schools have higher socioeconomic levels (Elacqua et al., 2019). The professional development module and behavioral strategies proposed in this Technical Cooperation can improve efficiency among these schools and free up resources that can be used towards the most disadvantaged areas in the state, including indigenous communities, rural areas, and villages in the semi-arid hinterlands known as the "sertao." In addition to requiring more resources to compensate for the vulnerable condition of their students, these disadvantaged areas also have higher operation and transportation costs. Efficiency gains can promote greater reallocation of resources towards these more vulnerable areas in Pernambuco.
- 2.8 It is in this context that the State of Pernambuco through the Secretary of Education, requested technical assistance from the IDB. It is worth noting that the IDB has been working with the Government of Pernambuco to build a more integrated system of school finance data. However, without proper training and a tool that gives easy visualization of these data, policy makers and school leaders are not able to use this information to allocate resources more equitably and efficiently. One of the goals of this project is to design a professional development module to improve the ability of policy makers in Pernambuco to consume and use the state's school cost system. Moreover, it is aimed to develop and introduce strategies based on behavioral economics into the cost monitoring system and professional development module aimed at encouraging schools to make more equitable and efficient resource allocation decisions.<sup>3</sup>
- 2.9 The IDB has developed several projects on improving the efficiency and equity of spending in Latin America (ATN/OC-15831-BR; ATN/OC-16230-RG; ATN/OC-15793-CO; CH-R1002, PE-R1002) and this TC contributes to the development of this agenda. The IDB has also developed an extensive work regarding innovation and processes improvements: (i) Education Management Information System (EMIS) (ATN/OC-16379-RG) and supported states and municipalities to apply the EMIS instrument and opportunities of improvement (ATN/OC-17659-BR), which includes management practices; (ii) Open Innovation (KIC), EDU supported education systems to identify problems which cannot or are hard to solve with regular initiatives and pilot innovations to solve those problems

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<sup>3</sup> Most financial decisions in Brazil happen at the municipal or state level, so those at the school level have little or no involvement. A first goal of the training is to engage principals on how resources are deployed from the states and municipalities to their schools so they can influence the needed changes to improve student outcomes. While school principals in Brazil do not control significant school-level budgets, they do play a key role in the allocation of schooling inputs. The main objective of the professional development module is to focus on increasing the productivity of the management of schooling inputs, such as teachers and school facilities, which represent between 60-90% of school budgets. See examples at <https://edunomicslab.org/>

(ATN/OC-17659-BR); (iii) CCLIP Social Spending Modernization Program in Brazil (BR-O0009) the operation prepared under the CCLIP is Paraná (BR-L1551), which one of the components is to improve processes and efficiency and will redesign and implement management systems; and (iv) in Ecuador, Peru, Pernambuco and Rio de Janeiro, IDB designed and implemented an innovative teacher and student allocation processes to improve equity and efficiency through (ATN/OC-16230-RG; ATN/OC-17399-RG, ATN/OC-16910-EC, ATN/OC-16325-PE, ATN/OC-16230-RG).

- 2.10 **Strategic Alignment.** The TC is consistent with the IDB Group's Second Update of the Institutional Strategy (UIS) (AB-3190-2) and aligned with the development challenge of productivity and innovation in the area of management tools and human capital development by providing training to public administrators and principals on methodologies to improve the productivity of spending. For example, the participants will learn how to more strategically drive resource allocation decisions to achieve desired outcomes and avoid unintended consequences that can negatively impact equity and efficiency. The training will also focus on how to understand the challenges of productivity and financial tradeoffs in an environment of budget restrictions. The TC is also aligned with the development challenge of social inclusion and equality by targeting the training for principals that work in schools that serve disadvantaged students. This TC is directly aligned with the operational area of emphasis of technology and innovation, by providing a management tool on school expenditures and strengthening digital skills development of policy makers and principals. Additionally, the TC is aligned with one of the strategic objectives defined in the IDB Group Country Strategy with Brazil (GN-2973) to improve management and the quality of spending and infrastructure in the health and education sectors, by improving SEEDs management processes and resources allocation and qualifying decision making through information systems. Moreover, the TC is consistent with the objectives of the Japan Special Fund Poverty Reduction Program (JPO) as it supports the provision education - a basic social service - for vulnerable groups, and productive activities such as technical skills training. Lastly, the TC is aligned with the eligible project types: (i) Support well-targeted poverty reduction and social development activities that respond directly to the needs of socially and/or economically disadvantaged people; and (ii) support capacity building of organizations working with low-income communities to provide sustainable solutions for poverty reduction set by the JPO.

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

- 3.1 **Component I: Professional development pilot and behavioral strategies to promote productive school spending (US\$255,000).** This component will finance the development and piloting of a professional development module and strategies based on behavioral economics to strengthen the ability of school principals in Pernambuco to use the state's school cost system to improve the productivity of spending and target resources towards the most vulnerable students. The professional development will equip school administrators with fiscal management skills to improve equity and efficiency of school finance systems. This professional development module consists of online training courses addressed to school principals and will be carried out as a pilot in Pernambuco. The professional development module will be designed in partnership between the Edunomics Lab in Georgetown University—which offers a Certificate in Education Finance for policy

makers in United States—and Instituto Superior de Educação de Sao Paulo (ISESP) in Brazil—which trains and certifies teachers and school principals in Brazil. This training pilot will be designed to be easily replicated in other states and municipalities in Brazil. The professional development module will be designed so that it may also be used in other countries and school systems interested in training policymakers and school leaders to improve productivity and equity in education spending.

- 3.2 The number of participants of the online training courses will be determined during the first year of execution of the TC. However, the pilot aims to include the greatest number of school principals in the online training courses. The selection criteria of the candidates that will participate in the training courses will be agreed between the Bank and the Secretary of Education of Pernambuco. In defining the selection criteria, the focus will be to target principals of schools with a high concentration of vulnerable students.
- 3.3 ISESP will hire consultants to adapt Georgetown’s Certificate in Education Finance (CEF) and provide training and certification to school leaders in Pernambuco<sup>4</sup>. They will also hire consultants to design and introduce strategies based on behavioral economics aimed at encouraging schools to make more efficient resource allocation decisions and focus resources in the most disadvantaged schools and students. This pilot could be of great interest to other states and municipalities in Brazil and other countries in the region. Thus, ensuring that an experienced organization like ISESP is involved in the design and implementation process will increase the probability of replicability in other school systems.
- 3.4 This component will also finance the design and introduction of strategies based on behavioral economics aimed at encouraging school leaders to make more efficient resource allocation decisions and focus resources in the most disadvantaged schools and students. These behavioral strategies will be based on social norm interventions (Allcott, 2011)—e.g. compare per-pupil spending of a school against more efficient peers—, social recognition nudges (Karlan and McConnell, 2013; Perez-Truglia & Troiano, 2018)—e.g. publicly recognize the effort of schools for improving efficiency in spending—, and use of non-financial incentives to reward good practices in public service delivery (Ashraf et al., 2014)—e.g. display symbolic rewards on the platform when schools perform more efficiently.
- 3.5 The outcomes for this component are: (i) a report on best practices of school finance monitoring; and (ii) the training module that incorporates behavioral strategies to improve resource allocation decisions. A short-term individual consultant to carry out the best practices study and a short-term individual consultant to support the logistics of the course and the adaptation of the training module to the State of Pernambuco context will be hired. Additionally, consulting firm services for the adaptation of the training module to the context of State of Pernambuco will be hired. These consultancies include the contracting of Georgetown University, a Non-Governmental Organization (NGO). This hiring is consistent with paragraph 3.17 of

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<sup>4</sup> Georgetown University created a professional development module on education spending management addressing in the context of the United States. For the development of the pilot addressed in component I, ISESP will hire the Edunomics Lab in Georgetown University to adapt this module to the context of Pernambuco.

GN-2350-15, which indicates that NGOs must meet unique conditions to support the preparation, administration, and implementation of projects.

- 3.6 **Component II: Evaluation and dissemination (US\$50,000).** This component will finance: (i) an evaluation of the effectiveness of the professional development module; (ii) an experimental evaluation (RCT) of the effect of the nudge strategies on efficiency measures at the school level in Pernambuco; (iii) a seminar in Brazil to disseminate results and showcase the use of monitoring cost systems for improving of equity and efficiency to state and municipal policymakers; and (iv) a regional seminar on how to develop school cost level systems and training programs, and promote more efficient school level spending decisions.
- 3.7 The outcomes for this component are: (i) a report that describes the experimental evaluation and the results; and (ii) two seminars (local and regional). Short-term individual consultants for the experimental evaluation and to support the logistics of the seminars will be hired.
- 3.8 **Other costs (US\$30,000).** This TC will also finance project management costs. These costs include contingency costs, training expenses, and costs-fees for monitoring, evaluation, and audit.
- 3.9 The total cost of this TC will be US\$335,000 and will be financed through a contribution of US\$300,000 from resources of the JPO<sup>5</sup> and a contribution (in-kind) of US\$35,000 from the local counterpart. The contribution in-kind will be provided by the Secretary of Education of Pernambuco and consist of the time that staff from its division of planning will invest in the design, adaptation, and logistics of the course to the context of the State. The time invested by school principals for the completion of the course is also considered within these costs.

#### Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Component 1: Professional development pilot and behavioral strategies to promote productive school spending	\$225,000	\$30,000	\$255,000
Component 2: Evaluation and dissemination	\$45,000	\$5,000	\$50,000
Project management	\$15,000	\$0	\$15,000
Contingency	\$5,000	\$0	\$5,000
Audit	\$10,000	\$0	\$10,000
Total	\$300,000	\$35,000	\$335,000

## IV. Executing agency and execution structure

<sup>5</sup> JPO has communicated the eligibility of this project on December 10<sup>th</sup>, 2020.

- 4.1 Instituto Superior de Educação de São Paulo (ISESP) (São Paulo, Brazil)<sup>6</sup> will be the executing agency of this TC as requested by the Secretaria de Educação de Pernambuco. The interventions financed through this TC are innovative pilots and ISESP is recommended for the execution based on their vast experience in education policy and leadership professional development. ISESP is a non-profit institute that offers teacher education programs as well as training and certification of school principals in Brazil. Besides generating and disseminating technical knowledge on training for school leaders, ISESP has vast experience since 2001 executing projects with the public (federal, state, and municipal) and private sectors. For instance, recently the ISESP executed projects related to teacher training with the government of Rio de Janeiro and the national system "S" of vocational education (e.g., Senai, Senac, Sesc), and school management training projects with the Unibanco Institute, a large Brazilian foundation that promotes education quality in Brazilian schools. They have also implemented projects with the municipality of Recife and Escola de Futuro on literacy training. In 2016, ISESP executed a project funded by Telefonica to train 100,000 teachers on how to introduce innovative practices in the classroom. Since 2017, ISESP has trained more than 150,000 education professionals in virtual and in-person settings. More recently, they developed training tools and executed 15 on-line classes for Unindustria, Universidad Corporativa, on using technology on subjects related to the New High School curriculum. ISESP's work on education has been recognized with numerous awards over the last 7 years, including the best education consultancy by Revista Educacao in 2019.
- 4.2 The responsibilities of ISESP include: (i) preparation of the implementation plan; (ii) financial administration, accounting, and preparation of disbursement requests; (iii) preparation of the procurement plan and procurement of consultancy services, including the selection and hiring of the external audit firm; (iv) monitoring of project activity progress; and (v) preparation of bi-annual monitoring reports.
- 4.3 ISESP will execute the TC in close coordination with the Education Division of the IDB and the Secretary of Education of Pernambuco. The IDB will be actively involved in the conceptualization and design of component 1 and 2 of the project because of its experience carrying out successful cost centers and behavioral interventions in education.
- 4.4 A partnership with Shimpei Taguchi, researcher at the Japan International Cooperation Agency (JICA) Ogata Research Institute, will be conducted to review training initiatives, innovative data visualization in education finance, and best practices in public education spending management in Japan that will be potentially included in the pilot in Pernambuco. Mr. Taguchi will also work closely with the team to provide advisory feedback throughout the project in the design of behavioral strategies to nudge school leaders and policy makers to make more equitable and efficient decisions. This collaboration will be carried out between the IDB, ISESP and JICA. A collaboration agreement will not be signed.

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<sup>6</sup> See more information here: <https://institutosingularidades.edu.br/>

- 4.5 **Procurement.** The activities to be carried out under this operation, including the activities that the project management costs are intended to cover by the executing agency via the hiring of consultants, have been included in the Procurement Plan (Annex IV) and will be executed in accordance with established private sector practices that are acceptable to the Bank.
- 4.6 **Exchange rate for justification of expenses.** For the purpose of determining the equivalence of expenses incurred in Local Currency, the agreed exchange rate shall be the exchange rate prevailing on the date of payment at which the Executing Agency makes the respective payments in favor of the contractor, supplier or beneficiary.
- 4.7 **Monitoring.** In order to monitor and evaluate, the executing agency must present to the Bank: (i) semi-annual progress reports, within thirty (30) days after the end of each calendar semester; and (ii) a final report, within six (6) months after completion of the last activity of the Project. The semiannual progress reports must include, among others, progress achieved based on the results matrix, the Procurement Plan and the Financial Plan, with a schedule of use of funds. In addition, the executing agency must submit a report of the Project's audited financial statements with a deadline of 120 days after the last disbursement date.

## **V. Major issues**

- 5.1 The risk associated with this operation is low and manageable. The main risk identified for the implementation is that governments may become concerned that school leaders will feel that they are being persuaded by the government to make spending decisions that may not be in their interest. Experiences from similar platforms in school districts in the United States and recent RCTs conducted by the Bank in Ecuador and Peru show that these concerns can be overcome through close collaboration with the Secretary of Education of Pernambuco and clear communication to all stakeholders of the objectives school level cost system. This risk will be mitigated through frequent (virtual) missions, technical assistance, and a strong team at ISESP, and IDB dedicated to the project. The specific systems to be developed and the specific goods to maximize will be determined in close collaboration with the Pernambuco government, attending to local needs. Moreover, the strong commitment of the government with the education sector will be a key factor in mitigating this low risk.

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

- 6.1 There are no exceptions to Bank Policies.

## **VII. Environmental and Social Strategy**

- 7.1 Given the characteristics of the project, no negative environmental or social risks are expected. Therefore, the classification of this operation according to environmental safeguards policy (OP-703) is "C".

### **Required Annexes:**

[Request from the Client - BR-T1466](#)

[Results Matrix - BR-T1466](#)



[Terms of Reference - BR-T1466](#)

[Procurement Plan - BR-T1466](#)