

TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	DOMINICAN REPUBLIC/CID - Isthmus & DR
▪ TC Name:	AI Education
▪ TC Number:	DR-T1295
▪ Team Leader/Members:	NASLUND-HADLEY, EMMA INGRID (SCL/EDU) Team Leader; TAMAGNAN, MARIE EVANE (SCL/EDU) Alternate Team Leader; FORERO PEREZ MARIA ALEJANDRA (SCL/EDU); LANDAZURI-LEVEY, MARIA C. (LEG/SGO); OLIVARES GRETA (SCL/EDU)
▪ Taxonomy:	Client Support
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	05 Dec 2023
▪ Beneficiary:	Ministerio de Educación de la República Dominicana (MINERD)
▪ Executing Agency:	INTER-AMERICAN DEVELOPMENT BANK
▪ IDB funding requested:	US\$800,000.00
▪ Local counterpart funding:	US\$90,000.00 (In Kind)
▪ Disbursement period:	36 months
▪ Types of consultants:	Individuals; Firms
▪ Prepared by Unit:	SCL/EDU - Education
▪ Unit of Disbursement Responsibility:	SCL/EDU - Education
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Social inclusion and equality ; Productivity and innovation ; Persons with Disabilities; Environmental sustainability; Gender equality; Diversity

II. Objective and Justification

- 2.1 The general objective of the proposed TC is to enhance numeracy learning of low achieving secondary education students. The specific objectives are to: (i) develop and implement an AI education program for some 2,000 students in secondary education with low levels of mathematics achievement; (ii) conduct a rigorous evaluation of the effectiveness of AI education; and (iii) disseminate the results.
- 2.2 While discussions surrounding Artificial Intelligence (AI) in education tend to emphasize concerns about cheating and data privacy, it is imperative to recognize its potential to revolutionize the learning process. AI can serve as a powerful educational resource, facilitating personalized learning experiences, adaptive tutoring, and comprehensive data analysis, ultimately fostering a more inclusive and dynamic educational environment. By leveraging AI's capabilities, educators can tailor instructional approaches, cater to diverse learning needs, and instill critical 21st-century skills, thereby preparing students for the challenges of a rapidly evolving digital landscape.
- 2.3 Among the most interesting uses of AI is AI tutoring. In practice, tutoring has often widened learning gaps among different groups of students. Students from low socioeconomic status (SES) households often face barriers to accessing the same high-quality tutoring and educational resources as their more affluent peers. Limited financial resources may prevent low SES students from enrolling in costly private

tutoring programs or accessing specialized educational support services. Additionally, students from low SES households may attend schools in rural or underserved communities where it is hard or impossible to hire quality tutors. Although novel and yet not put to the test, AI tutoring has the potential to play a crucial role in leveling the playing field for low-income students by providing them with access to high-quality educational support and resources. The benefits of AI tutoring include: (i) personalized learning experiences tailored to the specific needs and learning styles of individual students. This individualized approach helps bridge learning gaps and addresses the diverse educational requirements of students, regardless of their socioeconomic status; (ii) AI tutoring platforms are often available round the clock, enabling students to access educational resources and assistance at any time; (iii) AI-powered tutoring platforms address the challenge of finding local tutors, making high-quality tutoring more accessible to students in rural and disperse contexts; and (iv) AI tutoring has the potential to facilitate remote learning, allowing students to access educational materials and tutoring sessions from the comfort of their homes or local community centers, reducing the need for expensive travel or additional logistical costs.

III. Description of Activities and Outputs

- 3.1 **Component I: AI Education Program Development** . The TC will finance the contracting of a firm that will help design an AI education program for some 2,000 secondary students from low SES households. The pilot will be designed for school-based implementation together with tutoring coordinators in each school who manage groups of students for a total of some 100 hours of tutoring.
- 3.2 **Component II: AI Education Program Implementation** . The objective of the component is to evaluate the cost-effectiveness of AI tutoring in mathematics in a low SES context in the Dominican Republic. The TC will finance the services of a consultancy firm for the implementation of a pilot in a group of schools offering secondary education, including contracting, training, and local transportation of some 100 tutor coordinators.
- 3.3 **Component III: Assessment of children’s mathematical abilities** . The objective of the component is to assess children’s mathematic abilities, perceptions of and sense of belonging in mathematics. The TC will finance consulting services from a firm to carry out a diagnostic assessment of all students to help develop their individualized learning plans.
- 3.4 **Component IV: Dissemination of findings** . The findings of the project will be disseminated through two videos, publications, a workshop in the Dominican Republic.
- 3.5 **Component V: IDB Supervision and Technical Assistance.** The TC will finance the travel of IDB staff to monitor program execution.

IV. Budget

Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
AI Education Program Development	US\$140,000.00	US\$50,000.00	US\$190,000.00
AI Education Program Implementation	US\$380,000.00	US\$20,000.00	US\$400,000.00
Assessment of children’s mathematical abilities	US\$220,000.00	US\$20,000.00	US\$240,000.00
Dissemination of findings	US\$20,000.00	US\$0.00	US\$20,000.00
IDB Supervision and Technical Assistance	US\$40,000.00	US\$0.00	US\$40,000.00
Total	US\$800,000.00	US\$90,000.00	US\$890,000.00

V. Executing Agency and Execution Structure

- 5.1 The TC will be executed by the Inter-American Development Bank (IDB) through the Education Division (SCL/EDU). As the executing agency of the TC, the Bank will be responsible for: (i) coordinating the actors involved in the activities of the initiative/project; (ii) identify the studies and technical work necessary to carry out the TC; (iii) select and contract consultants to provide the necessary services; (iv) supervise the consulting services to which the beneficiary provides technical inputs; and (v) manage the execution and provision of consulting services.
- 5.2 The Government has requested that the Bank execute the TC based on its long experience in conducting experimental evaluations in early childhood education. The justification is consistent with 2.2 (iii) of Appendix 10 of the Operational Guidelines for Technical Cooperation Products (as modified Annex 2 of GN-619-4) criteria for contracting by the Bank, which establishes that Bank execution is justified when it helps ensure independence. In this case, the credibility of the evaluation of a government program is enhanced when conducted by an impartial entity.

VI. Project Risks and Issues

- 6.1 The execution of a pilot based on an experimental design in a context such as the Dominican Republic presents logistical challenges. However, the IDB have many years of experience in working with schools in remote geographic areas, including the delivery of education technology programs in rural and urban marginalized schools. To mitigate risks associated to logistics, the project includes enough resources to ensure additional travel time for tutor coordinators when needed.

VII. Environmental and Social Aspects

- 7.1 This TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).