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SKILLS DEVELOPMENT SECTOR FRAMEWORK DOCUMENT

SOCIAL SECTOR

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This document was prepared by Maria Soledad Bos (SCL/EDU) and Graciana Rucci (SCL/LMK), under the supervision of Sabine Aubourg (SCL/EDU) and Carmen Pages (SCL/LMK), Division Chiefs, and Norbert Schady (SCL/SCL). The teams is grateful for the inputs received from Alvaro Altamirano (SCL/LMK), Nicole Amaral (SCL/LMK), Elena Arias Ortiz (SCL/EDU), Claire Bentata (SCL/LMK), Yyannu Cruz Aguayo (SCL/LMK), Eugenia de Diego (SCL/LMK), Jesus Duarte (SCL/EDU), Gregory Elacqua (SCL/EDU), Raquel Fernandez (SCL/EDU), Carolina Gonzalez Velosa (SCL/LMK), Diana Hincapie (SCL/EDU), Angela Lopez (SCL/EDU), Mercedes Mateo- Berganza (SCL/EDU), Emma Naslund Hadley (SCL/EDU), Rafael Novella (SCL/LMK), Carlos Ospino (SCL/LMK), Fernando Pavón (SCL/LMK), Maria Fernanda Prada (SCL/EDU), Laura Ripani (SCL/LMK), David Rosas (SCL/LMK), Adriana Viteri (SCL/EDU), Pablo Zoido (SCL/EDU), Marcelo Perez Alfaro (SCL/EDU), Montserrat Bustelo (SCL/GDI), Carmen Albertos (SCL/GDI), Carolina Martin (SCL/GDI), Matias Busso (RES/RES), Julian Cristia (RES/RES), Julian Messina (RES/RES), Juan Carlos Navarro (IFD/CTI), Mariel Sabra (DIS/CAR), Elena Heredero (LAB/DIS), Susana Cardenas (CSD/CCS), Bertha Briceno (KIC/KLD), Paula Castillo Martinez (DSP/DCO), Maria Cecilia Acevedo Villalobos (DSP/DCO), Cristina Simon (INO/IEN) and the comments received from colleagues of SCL/EDU and SCL/LMK. Ivana Blasco assisted in the production of the document. The authors want to thank for the comments received by various colleagues of the Bank and two external reviewers.

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ABBREVIATIONS

ADB	Asian Development Bank
CEDEFOP	European Centre for the Development of Vocational Training
CIMA	Centro de Información para la Mejora de los Aprendizajes
CNP	Comisión Nacional de Productividad
CTI	Competitiveness, Technology and Innovation Division
ECD	Early child development
ECLAC	Economic Commission for Latin American and the Caribbean
EDU	Education Division
FPS	Family Support Program
IDB	Inter-American Development Bank
IDBG	Inter-American Development Bank Group
ILO	International Labor Organization
INE	Infrastructure and Energy Sector
INT	Integration and Trade Sector
IPA	Innovation for Poverty Action
IPP	Inquiry- and Problem-Base Pedagogy
LAC	Latin America and the Caribbean
LMK	Labor Markets Division
NEET	Not in Education, Employment or Training
OECD	Organization for Economic Co-operation and Development
ORP	Office of Outreach and Partnerships
PIAAC	International assessment for Adult Competencies
SEA	Learning Assessment System
SDG	Sustainable Development Goal
SFD	Sector Framework Document
SIMS	Labor Markets and Social Security Information System
STRIVR	Sports Training in Virtual Reality
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
WEF	World Economic Forum

EXECUTIVE SUMMARY

Skills are developed throughout life, as specific skills are developed at different degrees of intensity and in different places at each phase of the life cycle. While people can learn at any stage of life, they do not learn the same things in the same way. Cognitive and socioemotional skills start developing early. Thus, investing in early childhood development can have a major impact on skills development and on preparing young children to enter school ready to learn. Developing academic skills in foundational subjects such as math and language is the focus during childhood, and mastering these basics is of paramount importance to ensure successful school trajectories. Adolescents must develop the cognitive and socioemotional skills that will allow them to become responsible, productive adults. However, adolescence is a challenging stage of life, particularly for skills development, as adolescents face multiple challenges to staying in school and steering clear of risky behaviors. For both youths and adults, the labor market is fundamental to the skills development process. On-the-job training and workplace learning help workers develop the specific skills that will open doors to higher education and the labor market, and boost productivity. This is particularly true in a fast-changing world, where updating skills is the key to workers' relevance and longevity. Also, skills acquisition has a cumulative and dynamic nature, and occurs in various places: home and early childhood centers during infancy; schools during childhood and adolescence; and universities, technical institutes, online platforms, and places of work during youth and adulthood. The emergence of COVID-19 significantly impacted education systems and skills development, as learners are forced to use technology for learning. COVID-19 challenged the capability of learning systems to provide quality services, particularly for disadvantaged groups, but it also opens the opportunity to advance hybrid learning combining digital and in person skills development. This Sector Framework Document (SFD) presents five challenges to skills development at five stages of life: infancy, childhood and preadolescence, adolescence, young adulthood, and adulthood.

The first challenge is for infants and young children to develop the cognitive, language, motor, and socioemotional skills that will allow them to enter school ready to learn. Experiences in the first years of life lay the foundations for brain development that affect individuals' potential to develop skills throughout life. Notably, in the countries of Latin America and the Caribbean (LAC), there are significant gaps in infants' and young children's cognitive and language development between more and less educated mothers, and between mothers of different socioeconomic status. At this age, skills are developed either at home or in early childhood centers and preschools. Among infants and young children that stay at home, information for parents on good parenting practices—added to access to key resources— is fundamental, while for those that attend centers and preschools the quality of adult-child interactions is key to have positive impacts.

The second challenge is for children and preadolescents to develop the basic cognitive and socioemotional skills that will allow them to keep learning. While the region has made great strides in increasing enrollment in primary and lower secondary school, enrollment gaps persist among some populations, including the indigenous, Afro-descendants, and people with disabilities. Importantly, even those children who are in school do not develop the basic cognitive skills that will enable them to keep acquiring more skills throughout schooling and life. Among school-aged children and adolescents, the most important determinant of learning in school is the quality of the teaching provided, including all the enabling inputs and the institutional setup that make teaching effective. Teachers are at center stage, and are best supported by high learning standards, and modern pedagogical approaches and learning materials, including the use of technology. Appropriate learning

spaces and adequate time to learn are also important. Teaching is enhanced by quality assurance mechanisms, clear and equitable financing rules, and effective information and management systems. The home environment and family are important factors that influence learning, policy decisions, and resource allocation. Parents' involvement in their children's education is also key—to support teachers, enhance student learning, and produce better skills.

The third challenge is for all students to graduate from secondary school with the intermediate cognitive, technical, and socioemotional skills that will allow them to keep learning throughout life, access high-quality jobs, and be good citizens. Only 60 percent of students in LAC graduate from secondary school and, of those, only 19 percent graduate with the minimum basic skills needed to succeed in future studies or jobs. Work, lack of interest, and economic problems are the main reasons why students drop out of school prematurely. Effective interventions to keep students in school, include, on the family side, decreasing the barriers to staying in school, providing helpful information to students and parents, and tackling economic barriers. On the school and community side, effective interventions include those that provide early detection of dropout risks, a supportive and safe environment, and flexible educational offerings. On the school side, it is also important to develop the right set of skills for graduates, balancing academic with technical and vocational offerings, to help graduates successfully transition to further studies or to the labor market. It is key to have qualified teachers and instructors that have specialized in their subjects, together with relevant and updated pedagogical approaches to secondary education.

The fourth challenge is for all young adults to be equipped with the advanced cognitive, technical, and socioemotional skills that will allow them to keep learning throughout life and be successful in the labor market. The coverage of postsecondary education in LAC expanded at a remarkably fast pace over the past two decades but remains low and unequitable overall. Young adults are not acquiring the skills necessary for success in the labor market. For young adults who continue studying, the focus is on providing access to and ensuring graduation from high-quality and relevant learning institutions, whether universities or technical institutes. To accomplish this, quality assurance mechanisms and private sector's involvement need to be strengthened to allow for the expansion of postsecondary education while preserving its quality and relevance, providing finance mechanisms that allow access to offerings, and transferability across and along learning pathways.

The fifth challenge is to provide the labor force with the skills needed to access and maintain quality jobs, by ensuring access to quality and relevant lifelong learning opportunities. Adults in LAC lack basic literacy, numeracy, and problem-solving skills, as well as digital and socioemotional skills. For adults, the goal is to ensure workers' access to good-quality and relevant learning opportunities tailored to skills gaps and promote stackable learning to access and maintain good-quality jobs. To accomplish this, quality and relevant assurance mechanisms need to be strengthened to support people to develop new skills, and to provide certification of the skills they already have; provide funding mechanisms, guidance, and flexible learning options; and transferability of skills across and along learning pathways.

The Skills Development SFD offers guidance on the IDBG's efforts to help LAC countries promote skills development and lifelong learning as a strategy to ensure that citizens can contribute productively to society, improve their well-being, and be good citizens. It proposes five lines of action: (i) ensure that individuals have equitable access to high-quality and relevant learning opportunities throughout life; (ii) strengthen quality and relevance assurance mechanisms; (iii) consolidate and develop better funding and cofunding mechanisms to the improve efficiency, effectiveness, and coverage of skills development opportunities; (iv) leverage the use of technology to increase access

and equity to skills development opportunities and to improve the efficiency of skills development systems; and (v) actively promote the generation and use of evidence to inform decisions on skills development.

I. THE SKILLS DEVELOPMENT SECTOR FRAMEWORK DOCUMENT IN THE CONTEXT OF EXISTING REGULATIONS, THE INSTITUTIONAL STRATEGY, AND INTERNATIONAL AGREEMENTS

1.1 The Skills Development Sector Framework Document aims to guide the work carried out by the Inter-American Development Bank Group (IDBG) alongside the countries of Latin America and the Caribbean (LAC) in the development of skills throughout the human life cycle, including academic and technical and vocational education and training (TVET) systems.[1] Specifically, this Sector Framework Document (SFD) covers: (i) formal (mandatory) preprimary, primary, and secondary education (ages 4-18); (ii) postsecondary education (at technical institutes and universities); and (iii) alternative education and training systems (e.g., certifications, adult education programs, workforce training, on-the-job learning).

1.2 This document has been prepared in accordance with the document "Strategies, Policies, Sector Framework and Guidelines at the IDB" (GN-2670-5), which stipulates the creation of the SFDs. In accordance with the provisions of this document, this SFD replaces the Education and Early Childhood Development SFD (GN-2708-5) and the Labor SFD (GN-2741-5) in matters related to skills development. The development of skills for entrepreneurship, innovation and scientific research is covered in the Innovation, Science and Technology SFD (GN-2791-8). Contributive pensions and labor markets are covered by the Labor SFD. The development of skills in the early years of life is covered by the Early Childhood Development SFD (GN-2966-2), and its main features are included in this document to present a complete life cycle of skills development.

1.3 This SFD is consistent with the Update to the Institutional Strategy: Development Solutions that Reignite Growth and Improves Lives (AB-3190-2), which identifies social exclusion, inequality, and low levels of productivity and innovation as development challenges in the region. It is also related to the Strategy on Social Policy for Equity and Productivity (GN-2588-4), which seeks to increase the Bank's effectiveness in promoting social policies that increase equality and productivity in the region. It is related to the following SFDs: Labor (GN-2741-7), Social Protection and Poverty (GN-2784-7), Gender and Diversity (GN-2800-8); Innovation, Science, and Technology (GN-2791-8); Integration and Trade (GN-2715-11); Climate Change (GN-2835-8); and is aligned with the Diversity Action Plan (GN-2531-17).

1.4 Of the United Nations' Sustainable Development Goals (SDGs) for the year 2030, this SFD relates primarily to: (i) SDG 4: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"; (ii) SDG 1: "End poverty in all its forms everywhere"; (iii) SDG 8: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all," because education and better skills enable access to better jobs and income and contribute to economic growth; (iv) SDG 5: "Achieve gender equality and empower all women and girls"; and (v) SDG 10: "Reduce inequality within and among countries," given this SFD's emphasis on developing skills among vulnerable and excluded populations and ensuring there are no differences in access to high quality skills development opportunities due to gender, ethnicity, race or the presence of disabilities.

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[1] This document is lead jointly by the Education and Labor Markets Divisions, with the participation of other departments of IDB, IDB Lab and IDB Invest.

1.5 The rest of the document is structured as follows. Section II briefly describes the challenges of skills development throughout the life cycle and relies on data processed by IDB's data portals: CIMA and SIMS. Section III presents evidence on the effectiveness of policies and programs to address the challenges identified in Section II. Section IV summarizes the lessons learned from the IDBG. Section V includes the lines of action to the IDBG in its support to the region to address the challenges identified in Section II.

II. Key Challenges to Enhancing Skills Development in the Region

2.1 **The world is changing dramatically and at an accelerated pace, setting in motion several trends that affect skills development.** These trends could be divided into those that affect the demand for skills (the fourth industrial revolution, climate change, overall population aging), the supply of skills (aging, migration, and diversity), and the technology of skill formation (changes in the paradigm of learning and teaching). The fourth industrial revolution brought about a decline in demand for routine-based occupations and tasks, paired with fast-growing demand for nonroutine ones, and the emergence of new occupations and human roles that require new skills. Climate change and the transition to a low-carbon and climate-resilient economy are also reshaping occupations demanding new tasks and skills. Longer life expectancy implies the need to keep people active for longer periods, through skills acquisition, as well as the emergence of new and varied occupations related to caring for the elderly. At the same time, the world is becoming highly globalized, with people living and working in different places and in diverse ways. Massive flows of migrants and refugees put pressure on learning systems to house migrant students, certify skills, and ensure that qualifications can be transferred across systems. Moreover, inequality in skill levels by gender, education, geographical area, race, ethnicity, socioeconomic, disability, and migration status exist, and in several cases is rising relative to the general population. The emergence of COVID-19 significantly impacted education systems and skills development as learners are forced to use technology for learning. These inequalities are paralleled by rising expectations and demands for better social services, resulting in massive protests throughout the region that put education, health, and pensions at the forefront of the political agenda.

2.2 **These global trends affecting skills development coexist with emerging changes in learning and teaching paradigms.** Throughout the LAC region, emerging trends that are changing these paradigms include a growing demand for quality education and increased attendance at secondary schools. Added to this is the rapid expansion and unbundling of higher education, and a large and growing menu of postsecondary learning options (universities, technical institutes, bootcamps, etc.). New providers are entering the field, and various stakeholders are playing increasingly strong roles—such as the productive sector in the provision of skills development, and civil society in the making of policy. Other key changes include the emergence of a skills-based labor market rather than one based on degrees; new developments in the neuroscience of how people learn; and the growing use of technology in skills development, not to mention in life and work.

2.3 **Skills development and continuous learning throughout life can contribute to sustainable economic growth, provide equal opportunities for everyone, and enhance social inclusion and mobility, ensuring that all people develop successful learning and labor trajectories.** Given the rapid changes in the skills valued by the labor market and global trends described, it is crucial to provide opportunities and encourage people to acquire and

update their skills throughout life. Lifelong learning not only enhances social inclusion, citizenship, quality of life, and individual development, but also increases productivity and human capital, leading to economic growth (Acemoglu and Autor, 2012). Skills, together with innovation, competitiveness, and firm incentives, are the main determinants of productivity (Busso et al., 2017). The quality of skills development is a key factor in countries' economic development (Hanushek and Woessmann, 2012; Barro, 2001) and in narrowing the skills gaps between students from different geographical, socioeconomic, racial, ethnic backgrounds, and genders (Reardon, 2013, 2011).

2.4 **Skills are developed throughout life, with specific skills developed at different degrees of intensity and in different places at each stage of life.** This document presents five challenges related to skills development in five stages of life: infancy, childhood and preadolescence, adolescence, young adulthood, and adulthood (Figure 1). While people can learn at any stage in life, specific skills are not exclusively attained at any given age/life stage, and their acquisition is cumulative and dynamic-, people do not learn the same things in the same way, or in the same place, as some skills are more malleable in certain moments of life cycle. The challenges and places where skills are developed vary. Cognitive and socioemotional skills start developing early. Thus, investing in early childhood development can have a major impact on skills development and on preparing young children to enter school ready to learn. Developing academic skills in foundational subjects such as math and language is the focus during childhood, and mastering these basics is of paramount importance to ensuring successful school trajectories. Young children must learn fundamental skills that will be the basis of their future learning and of the skills they will need in the labor market, either as entrepreneurs or employees. Adolescents should develop the cognitive and socioemotional skills that will allow them to become responsible, productive adults. Adolescence is a difficult stage of life. Youth face multiple challenges, ranging from avoiding dropping out of secondary school to ensuring the development of key academic skills to fostering the socioemotional skills needed to steer clear of risky behaviors. For both youth and adults, the labor market is fundamental to the skills development process. On-the-job training and workplace learning help develop specific skills that can help workers access higher education and labor markets and boost their productivity. Thus, while preparedness is important, the intensity and quality of the training received in the workplace is crucial. This is particularly true in a fast-changing world, where updating skills is the key to workers' relevance and longevity. Skills are also acquired in various places throughout life: family and early childhood centers during infancy; schools during childhood and adolescence; and universities, technical institutes, online platforms, and places of work during young adulthood and adulthood (Figure 2). Furthermore, learning trajectories are increasingly individualized, and people can take advantage of different ways and styles to learn and develop skills according to their needs and preferences.

2.5 **Education and learning systems in LAC face the challenges of developing relevant skills throughout life for all.** Even though the region offers examples of effective and innovative education and training policies and programs, there are many areas for improvement. Most schools are not able to deliver the right sets of learning content and skills for children and youth to stay in school and keep learning. Meanwhile, the provision of learning opportunities for young adults and adults is expanding, but without strong mechanisms to ensure their quality and relevance, or to foster continuous lifelong learning. New technologies offer new pathways for teaching and learning, improve systems' efficiency, and help make valuable labor market information readily available. But they must be introduced as part of a comprehensive,

systemwide plan that is carefully calibrated to meet policy objectives. Twenty-first century skills demand the application of contextually relevant learning curricula to enhance learners' durable and transversal skills and to encourage future participation in the labor market. The challenge is to rethink the whole landscape of skills development throughout the life cycle, including the ways learning is designed, provided, and monitored; the roles and tasks of instructors and learners; pedagogies and delivery; evaluation, quality, and relevance assurance mechanisms; funding; and system efficiency and effectiveness. The government has various roles to play in this new context, financing the delivery of learning and skills development opportunities; providing education and training services; regulating to ensure equity, quality, and relevance; and brokering partnerships to expand opportunities.

2.6 **This document pays special attention to the challenge of acquiring and certifying skills faced by population groups who have long been excluded or are lagging behind,** either because they are not receiving appropriate learning opportunities, or they are not acquiring adequate skills. It recognizes that all learners are equally competent and thus, skill development systems shall consider and adjust to the learners' diversity to ensure equal opportunities for all. The document considers the diversity of populations (persons with disabilities, indigenous peoples, Afro-descendants, LGBTIQ+) and aims to guarantee their specific challenges for skill acquisition are properly addressed. Developmental gaps observed during infancy persist through school and are magnified as skills gaps during the years of young adulthood and adulthood. Special emphasis must be placed on developing the foundational skills that allow children to continue learning, such as reading and math. And there are several specific challenges to consider, including those of young people who are not in school and do not have the skills to successfully move on to further studies or work; of adults who do not have the skills or have not certified their skills to succeed in the labor market; and of vulnerable populations (including indigenous, rural, and low socioeconomic status populations; Afro-descendants; people with disabilities; and migrants). This document seeks to quantify the gaps among these populations whenever possible, highlight international best practices for closing them, and present lines of action that are of particular relevance to those who are excluded or lagging behind.This document also aims to reveal the potential of diverse population to better develop specific skills and capacities that have a value in the labor market.

2.7 **For the purposes of this document, skills are defined as the innate or acquired capabilities, competencies, qualities, talents, and knowledge that characterize individuals and allow them to contribute productively to society, improve their well-being, and be good citizens** (Busso et al., 2017; Prada and Rucci, 2016). Skills are defined in three main groups:

(i) **Cognitive skills:** These are the core skills (like memory, executive function, and critical thinking, among others) used to think, read, learn, remember, reason, and pay attention. For the purposes of this document, this group also includes academic skills (knowledge of facts, concepts, procedures, and strategies related to general subjects like mathematics, reading, and science) and digital skills. Cognitive skills are classified as basic, intermediate, or advanced depending on their level of complexity.

(ii) **Socioemotional skills:** These are skills associated with an individual's personal qualities, attitudes, beliefs, personality traits, and behavior. They are also known in the literature as "soft skills," "behavioral skills," and "social skills."

(iii) **Technical skills:** These are *specific* work skills directly relevant to an occupation or job. Their definition therefore depends on the characterization of a job or occupation, the competency profile required for a certain job, and the tasks performed as part of the job.

A. Challenge 1: Ensure that infants and young children develop the cognitive, language, motor, and socioemotional skills that will allow them to enter school ready to learn

2.8 **Experiences in the first years of life lay the foundations for brain development, thus affecting the potential to develop skills throughout life.** Notably, in LAC countries there are significant gaps in infants' and young children's cognitive and language development between more and less educated mothers, and between mothers of different socioeconomic status. By the time children start school, the magnitude of these differences is substantial. For example, at 6 years of age, children from the poorest households in Ecuador, Nicaragua, and Peru have the language development of a 4-year-old. Children at this young age develop their skills through the care they receive both at home and in early childhood centers. For children who receive care at home, those who have access to educational materials and play activities show a higher level of cognitive and language development. Data from household surveys show that access to daycare and preschool has expanded considerably in most countries in the region. Nonetheless, there are disparities in access between urban and rural areas and across socioeconomic statuses. Furthermore, the quality of these early childhood services, especially the quality of interactions between children and the adults caring for them, is lagging in rural and otherwise poor neighborhoods. In many countries, caretakers are often not prepared for their role. The selection, training, support, and working conditions of early childhood service providers leave much room for improvement. For example, preschool teachers need far fewer requirements and qualifications and are paid less than teachers at the primary level and are not incorporated in national career pathways and education reforms in general. Other challenges relate to long days and heavy workloads, frequent transfers, very short contract terms, and a general lack of recognition. These conditions make even harder to attend the challenges of the diverse population (children with disabilities in the classroom). For a complete discussion on challenges at this age see the Early Childhood Development SFD (GN-2966-2).

B. Challenge 2: Ensure that children and preadolescents develop the basic cognitive and socioemotional skills that will allow them to keep learning

2.9 **While the region has made great strides in increasing enrollment in primary and lower secondary school, there continues to be enrollment gaps among some populations, including the indigenous, Afro-descendants, and people with disabilities.** Primary education among children 6 to 12 years old is almost universal: on average, 95 percent of them are in school.[2] This is true for both girls and boys, students from rural and urban areas, and those from different socioeconomic backgrounds in all countries in the region (Table 1). However, gaps persist for the indigenous, Afro-descendants, and children with disabilities. Data on indigenous and Afro-descendant students show that most are in primary school, but the gap is more pronounced in countries with small, scattered, and diverse indigenous populations, such as Brazil, Colombia, Costa Rica, and Venezuela, in part because of the difficulties in attending to hundreds of small and varied indigenous societies. The combination of being female and indigenous is associated with considerably lower school completion rates (Table 2). In Bolivia,

[2] Throughout the document, the data includes both public and private providers.

the primary school completion rate among indigenous women in rural areas is half the rate for nonindigenous men. Meanwhile, a review of eight LAC countries shows that school attendance among primary school age girls and boys with disabilities lags behind those without disabilities by at least 7 percentage points, with an average gap of 10 percentage points at the secondary school level. The average gap in secondary school completion among children with disabilities is similarly alarming, at 13 percentage points (Hincapie et al., 2019) (Table 3). Migration flows in the region are also affecting school attendance rates: 52 percent of migrant children are not in school (UNHCR, 2019).

2.10 **Most 12- to 14-year-olds are enrolled in lower secondary school, though many are still in primary school.** On average, 94 percent of preadolescents at this age are in school, and the differences in attendance across the rural-urban divide or socioeconomic backgrounds are not large. However, we see that many of these students are still in primary school: on average across LAC only 68 percent of 12 to 14-year-olds are in lower secondary and the rest are still in primary, and this gap is particularly prominent among poor and rural students (Table 4). Lagging the appropriate school level slows the process of acquiring the basic skills needed for a successful school trajectory and increases the chances of dropping out in higher secondary school (Rumberg and Lim, 2008).

2.11 **Even children who are in school do not necessarily develop the basic cognitive skills that will enable them to keep acquiring more skills throughout their schooling and life.** By third grade, 48 percent of LAC students have not mastered basic mathematics concepts and 40 percent do not have age-appropriate reading skills. The differences in the learning rates among and within countries in the region are large. For example, while 85 percent of Dominican Republic third graders do not achieve basic math proficiency, only 15 percent of Chilean third graders are in this category. Within countries, large gaps persist across socioeconomic backgrounds (Table 5): 25 percent of the richest students have not mastered basic mathematics concepts compared with 62 percent of the poorest. Lacking these basic cognitive skills is an obstacle to the acquisition of further skills and expands inequalities among student groups—and does so throughout their educational trajectory. By sixth grade, 47 percent of students still do not have the mathematical proficiency expected in this grade, and the gaps among students of different socioeconomic backgrounds persist. Among students whose mother tongue is not Spanish (likely to be indigenous), 60 percent are not proficient in math and 37 percent are not proficient in reading (Table 6). At the end of lower secondary, this lack of basic cognitive skills becomes strikingly prevalent in LAC, particularly compared with other world regions. On average across LAC, 51 percent of 15-year-olds have not reached the minimum proficiency level in reading, and 65 percent are not proficient in math, compared with 22 percent and 24 percent, respectively, among students in countries of the Organization for Economic Co-operation and Development (OECD). The differences among students of different socioeconomic backgrounds are pronounced: 72 percent of poor students are not proficient readers at the end of lower secondary, compared with 27 percent of rich students (Figure 3, Table 7). With school closures due to COVID-19, the region has launched emergency remote learning initiatives, but most with limited capacity, scarce digital content, limited teacher's skills for online teaching, and unequal access to devices and connectivity, particularly for the most vulnerable (Alvarez Marinelli et al., 2020). Students are expected to slide in learning, particularly those in early elementary school, with lower SES and with disabilities (Kuhfeld et al., 2020, McKinsey, 2020). Gender differences are noteworthy: girls outperform boys in reading, and boys outperform girls in math, with the only exception of Trinidad and Tobago (Table 8). Finally,

students in LAC also lack basic digital skills: Chile and Uruguay data shows that 55 and 60 percent of eighth graders do not have basic digital skills (Figure 4, Table 9).

2.12 **According to several standardized assessments, youth in LAC lag their peers in the OECD countries in the acquisition of socioemotional skills.** Emerging evidence suggests that social skills are low among youth in the region: about 40 percent of 15-year-old students in LAC cannot solve simple problems with limited collaboration, compared with 20 percent among the same age group in OECD countries (OECD, 2016). Also, surveyed students of this age perceive that other students in their school do not cooperate with one another (Figure ***5***). Furthermore, half of these surveyed students do not have a growth mindset, and instead believe that their intelligence is something about them that they ca not change very much (Figure 6). Believing that you can acquire skills (that is, having a growth mindset) is key to further developing skills throughout school and life. Even amid growing awareness and recognition of the importance of socioemotional skills, countries of the region have developed a few instruments to allow for regional or international comparisons of soft skills development during childhood and adolescence.

2.13 **Most often, children acquire their skills in school; but, in the region, key school inputs are of low quality and unequally distributed, while classroom instruction is outdated.** The quality of teaching in the region is low overall and is characterized by inadequate classroom practices and teachers that know little about the subjects they teach, particularly math (Araujo et al., 2016; Bruns and Luque, 2015; Elacqua et al., 2018a; Bruns and Luque, 2015). Also, there are large inequities in access to high-performing teachers between students from different socioeconomic backgrounds; disadvantaged students, particularly those in rural areas, are the most likely to attend schools with teachers who are inexperienced and have temporary contracts (Bertoni et al., 2018). Most educational systems in the region lack meritocratic teacher career paths and incentives that attract, prepare, and retain effective teachers (Elacqua et al., 2018a). Furthermore, pedagogical methods in the classrooms are outdated, characterized by drill, practice, and memorization (Näslund-Hadley at al., 2014; Bruns and Luque, 2015). Also, instruction lacks cultural adequacy for indigenous students (in Mexico 60 percent of preschool indigenous students receive bilingual and intercultural education (INEE 2018)). Most students attend school for just a few hours a day (Table 10). Learning spaces are inadequate and unequally distributed: almost 40 percent of students attend schools with insufficient access to water and sanitation, with large variations across countries and among different groups of students (Table 11, Table 12). Many schools do not provide the conditions (lighting, ventilation, temperature) appropriate for learning and supportive of new pedagogical approaches, and most are not accessible to students with disabilities (only 2 percent of schools in Peru have access ramps (Table 13)). Schools in the region are also very segregated; within schools most students have similar socioeconomic backgrounds (OECD, 2019; Figure 7).

2.14 **Access to technology in the region is expanding; however, there are still large gaps among disadvantaged populations.** On average, 70 percent of secondary student's access desktop computers and 50 percent laptops—close to the OECD average of 80 percent and 49 percent, respectively. However, most students in poor, disadvantaged, and remote areas still lack access to technology and connectivity, and thus cannot fully access platforms and technologies for learning (CIMA, 2019) (Table 14, Table 15). Schools that incorporate platforms with digital self-instructional resources and other technologies, such as videoconferencing or virtual laboratories, are increasingly linking the use of technology with their curriculum and classroom practices. However, most such schools are run by the private sector (60 percent),

and public schools need support to incorporate these tools (Arias Ortiz et al., 2019). There is also a large gap in how teachers use and leverage technology to effectively improve learning across schools (Arias Ortiz and Cristia, 2014). COVID-19 challenged the capability of education systems to provide quality services, particularly for disadvantaged groups. On average, 64% of households have access to a computer for schoolwork, but less than 30% of the most vulnerable households do so. Furthermore, fewer than 60% of secondary teachers have technical and pedagogical skills to integrate digital devices into instruction (CIMA, 2020a).

2.15 **The institutional arrangements vital to supporting classroom instruction are improving in the region but at widely varying rates across countries.** Quality assurance systems that monitor and evaluate students, teachers, and schools are becoming a more prevalent practice in the region. In recent decades, there has been an exponential increase in the number of countries that have developed monitoring and evaluation systems and are carrying out national, regional, and international student learning evaluations (Table 16, Table 17). Yet the education management and information systems in the region remain weak, leading to inefficiencies and lack of transparency in resource allocation: only 2 of 17 countries had information systems that functioned in a coordinated manner and provided effective and efficient information (Elacqua and Alves, 2014). Furthermore, these systems in the region are structured in institutional silos without a holistic vision, resulting in fragmented and isolated management practices that generate and disperse low-quality information and they have yet to take advantage of available digital tools. The systems also face challenges in data protection and privacy; they do not offer tools for strategic management and decision making; nor have a systematized process for managing school expenditures (Arias Ortiz et al., 2019). In terms of financing, large inefficiencies and inequalities can be found in public spending on education.

C. Challenge 3: Ensure that all students graduate from secondary school with the intermediate cognitive, technical, and socioemotional skills that allow them to keep learning throughout life, access high-quality jobs, and be good citizens

2.16 **Only 60 percent of students in LAC graduate from secondary school and only 19 percent graduate with the minimum basic skills needed to succeed in future studies or work.**[3] This "funnel effect" shows that as students move through their educational trajectory, fewer and fewer stay in school and even fewer continue to learn (Table 18). The results are particularly alarming for poor students. While only 37 percent of poor students graduate from secondary school, 79 percent of relatively wealthy students do so (Table 19). Among poorer students, only 6 percent of graduates have the minimum reading, math, and science skills needed to succeed in future studies or work, compared with 63 percent among richer students (Table 20). Similar gaps can be found between students in rural and urban areas and among indigenous students and Afro-descendants. Among Afro-descendants, 70 percent drop out of school without completing secondary school (World Bank, 2018). When graduation rates are disaggregated by gender, it becomes clear that females have higher graduation rates from secondary education (49 percent) than do males (37 percent) (Table 21). Students in the region also lack basic civic skills: 30 percent of students do not have basic civic knowledge (they are not familiar with concrete, explicit content and examples relating to the basic features of democracy) and

[3] In the Caribbean, 60 percent of students that finish secondary education pass the regional examinations allowing them to continue studying (CSEC, 2015). Lack of household data in the Caribbean hinders the analysis of graduation rates and skills (funnel effect) in the subregion.

50 percent do not show a sense of empathy toward their classmates.[4] On their views of peaceful coexistence, 58 percent of students think that if the authorities fail to act, citizens should get organized to punish criminals (Table 22, Table 23, Figure 8).

2.17 **Work, lack of interest, and economic problems are the main reasons for dropping out of school.** Among dropouts, 34 percent stop schooling because they are working, 20 percent because they have no interest in attending school (non-relevant content and not engaging teaching methods), and 16 percent due to financial problems. Among young women who do not attend school, 24 percent mention pregnancy or the need to do housework as the main cause. While 48 percent of young men mention work as the main reason for not studying, only 21 percent of young women report this as their main reason (Table 24). With COVID-19, it is estimated that dropout will be exacerbated; just in Central America it is estimated that 19 percent of students will not return to school (BID, forthcoming). Among indigenous populations, data from Colombia show that a large share of both males and females identify work as a reason for not attending school. Furthermore, lack of cultural pertinence also affects enrollment and retention among indigenous populations. Standardized curriculums prioritize language and Western mathematics to the detriment of other, equally important learning dimensions for indigenous people, such as their traditional forms of thinking and knowing, ethnomathematics, the existence of other civilization patterns, and other ways of understanding the relationship between humans and nature (Lopez, 2018). Afro-descendant students face challenges in continuing schooling, as their families often face obstacles in covering school-related expenses, including tuition, transportation, and school supplies (World Bank, 2019).

2.18 **Young people are particularly susceptible to engaging in certain risky behaviors that could affect their education, including crime and violence.** Risky behaviors tend to be prevalent among adolescents, increasing their probability of dropping out of school. Adolescents are at risk of engaging in risky sexual behavior due to a lack of support from school personnel or community members, as well as a lack of information, resources, and personal motivation to continue thriving—factors that often lead to teen pregnancy and dropping out of school (Näslund-Hadley and Binstock, 2010). Furthermore, young people may use substances such as alcohol, tobacco, and illegal drugs, which affects not only their education but also imposes additional costs to society (Cunningham et al., 2008). Homicide rates in LAC are higher among men between 15 and 29 years old compared to other age groups (UNDOC, 2017). Of particular concern, LGBTIQ+ youth seriously contemplate suicide at three times the rate of heterosexual youth and are five times more likely to have attempted suicide (CDC, 2016).

2.19 **Skills among secondary graduates are not only insufficient and unequal but also inadequate for meeting new social and labor demands.** Various studies report that employers in the region are unable to find trained employees that meet the new demands of the labor market (Manpower Group, 2015). Studies of LAC have documented a disconnect between the skills taught in school and those demanded by the labor market, and show that socioemotional skills are the most valued by employers, including critical thinking, communication and problem solving (Accenture, 2018 and Bassi et al., 2012). However, these skills are not systematically measured among students, making it difficult to track their

[4] For example, students who are bothered if a classmate falls and gets hurt, a classmate has nobody to play with, or gets bad grades.

development. Identifying skills mismatches is not an easy task due to the lack of relevant data. In contrast to the information that countries in the region have about labor supply, information about labor demand is very limited. Most countries in the region do not collect data that allow for the identification of mismatches at skill and occupational levels (González-Velosa and Peña, 2019).

2.20 **Secondary schools not only face similar problems as do primary and lower secondary schools (insufficient and unequally distributed key inputs and outdated pedagogies), but new challenges as well.** The development of skills among adolescents happens in school, specifically at the higher secondary level. But at this level of education, there is a shortage of specialized teachers with specific training in the subjects they teach, and their distribution is highly unequal. For example, in Chile, the percentage of public sector teachers in secondary schools, who are not specialized in the subject they teach, is 19 percent for language, 22 percent for math, and 55 percent for science. Depending on the subject, the lack of specialized teachers in Chile is between 13 percent and 50 percent greater in schools serving students of predominately low socioeconomic status than it is in schools serving students of high socioeconomic status (Bertoni et al., forthcoming). Curricula and pedagogical methods in secondary education are outdated and not necessarily linked to the skills demanded in the labor market. Twenty-first-century skills demand the application of contextually relevant secondary-level education and training curricula to enhance students' critical thinking skills and encourage their future participation in the labor market. Yet, the learning goals specified in the curricula of many education systems in the region continue to impose laundry-list learning on students. The problem is particularly pronounced in science and technology, where the list of curricula gets longer as new scientific issues emerge (Näslund-Hadley and Bando, 2015; Valverde and Näslund-Hadley, 2010). Curricula are generally developed without employers' involvement, leading to a mismatch between the skills emphasized by schools and those required to succeed in the labor market (Amaral et al., 2018; Sevilla, 2017).

2.21 **Students approaching the end of high school face an array of critical decisions regarding whether to pursue further studies or enter the labor market.** These choices are often made with imperfect information, despite their high level of complexity and long-lasting impact on individuals (Altonji et al., 2016; Hastings et al., 2013; Kirkebøen et al., 2016). Students from a lower socioeconomic status are more likely to be disinformed and have less mechanisms to overcome information imperfections (Castleman et al., 2015; Hastings et al., 2015; Bleemer and Zafar, 2018; Saavedra and Saavedra, 2011). Despite major improvements made in the region, current monitoring and evaluation systems rarely incorporate measures to capture the complexity of secondary education and the range of skills needed to successfully transition to the next level (Koretz, 2008; Di Gropello, 2006; Josephson et al., 2018). Compared to the primary level, quality measures for secondary education are more difficult to define, assess, and compare because they are more complex and heterogeneous and involve a higher number of subjects and teachers. Also, they involve a wider variety of skills needed to ensure successful transitions to the next level. Further, there are multiple definitions of the successful completion of this educational level: having a job with good career prospects or continuing on a desired pathway of further study (Di Gropello, 2006; Josephson et al., 2018; OECD, 2004).

D. Challenge 4: Ensure that all young adults are equipped with the advanced cognitive, technical, and socioemotional skills that will allow them to keep learning throughout their lives and be successful in the labor market

2.22 **The coverage of postsecondary education has grown in LAC but remains low overall, and inequitable**. Higher education in the region expanded at a remarkably fast pace in the past two decades, with average net enrollment almost doubling from an average of 16 percent in the late 1990s to 28 percent in 2018 (Figure 9). However, there are significant disparities between and within countries. Whereas the net enrollment of youths aged 18 to 23 in Chile and Argentina is close to 40 percent, it is less than 13 percent in countries like Honduras. Even in large countries such as Brazil and Mexico, only about one in four individuals between the ages of 18 and 23 attends a formal higher education institution. Among those enrolled in postsecondary education, 72 percent are enrolled in universities and 28 percent in technical and professional institutes (Ferreyra et al., 2017, Table 25, Table 26). In some countries, the proportion of technical and professional institutes in postsecondary education is much larger, for example, in Chile, Brazil, and Colombia, they enroll close to half of all students at this level (Table 25). Within countries, while on average 44 percent of relatively wealthy young adults are enrolled in some form of postsecondary education, only 13 percent of poorer young adults are. Insufficient academic readiness and lack of information and financial resources are among the main barriers to the enrollment of low-income students (Busso et al., 2017). The same discrepancies are found between urban areas, with an average enrollment rate of 30 percent, and rural areas, where it is 13 percent (Table 26). Indigenous people's rate of access to higher education is low and has not changed since 2000 (Schmelkes, 2011; Ferreyra et al., 2017). In Panama, 2 percent of the indigenous population (versus the national average of 13 percent) and 5 percent of African descendants completed a tertiary level or higher (Freire et al., 2018).

2.23 **Young adults are not acquiring the necessary skills to succeed in the labor market.** Employers indicate that vacancies are hard to fill mainly because of jobseekers' lack of experience and technical and soft skills (Novella et al., 2019; Manpower Group, 2015). According to the 2019 Enterprise Surveys, firms operating in LAC lead the ranks in identifying an inadequately educated workforce as a major constraint on their business, at 32 percent, a figure that's nearly twice as high as in Europe and Central Asia (19 percent). Covid-19 highlighted the lack of digital skills and their importance to learn and work from home (Madariaga et al., 2020). These constraints seem to be considerably worse for youth than for adult workers as reflected by key labor market indicators. Young workers are more likely to be unemployed (17 percent versus 6 percent), informal (67 percent versus 52 percent), or underemployed (9 percent versus 6 percent), and to have a considerably lower income than adults (Table 27,**Error! Reference source not found.** Table 28, Table 29). On average in LAC, 16 percent of young individuals between 18 and 24 years of age are not in education, employment, or training (NEET). These numbers are more alarming for those living in urban areas (21 percent, compared with 14 percent in rural areas), and for women (24 percent, compared with 8 percent for men). Many NEETs are not idle but instead perform productive activities at home, have a disability, or are actively looking for work (Novella et al., 2018) (Table 30).

2.24 **Public funding is usually allocated without considering costs or outcomes**. LAC has a diverse array of financing models for higher education: while some countries rely mostly on public funding and provide free tuition (e.g., Argentina), others rely more on private funding and charge higher entry fees (e.g., Colombia and Peru) (Busso et al., 2017). Public funding is usually allocated based primarily on historical trends, and funding formulas using inputs (number of

students or staff) without considering unit costs or outcomes. Thus, institutions are usually not rewarded for their efficiency (minimizing dropout levels) or performance (impact on graduates' learning or employment outcomes) (Busso et al., 2017). Private funding for higher education has expanded in the region. In Mexico, household expenditures on higher education increased dramatically in the past two decades, even among the poor (Székely and Mendoza, 2016). At the same time, the costs, measured by tuition and entry fees, have also been increasing. In Chile, for example, tuition increased 60 percent since the late 1990s and over 100 percent for some courses of study.

2.25 **Financial barriers may be limiting access to postsecondary learning opportunities.** Evidence from Chile shows that student loans can have a positive effect on enrollment as they effectively eliminate the income barrier to enrollment (Solís, 2017). In Mexico, research suggests that credit constraints may explain inequalities in access (Attanasio and Kaufmann, 2009). Finally, differences in current income can explain some of the gaps in higher education enrollment by income level in LAC (Alfonso, 2009).

2.26 **There has been a significant expansion and diversification of postsecondary offerings, including from universities, technical institutes, learning platforms, and workplaces.** The diversification in the supply of higher education opportunities, reflected in the number and types of degrees available, is among the drivers of enrollment growth in postsecondary education. COVID-19 exacerbated the demand of online learning; Udemy (2020) estimates 425% increase in enrollment in online courses, 55% more courses created, and 80% more usage from business and government. In Colombia, for instance, the number of postsecondary programs almost doubled, from 3,600 in 2001 to 6,279 in 2011 (Camacho et al., 2016). Importantly, technical and technological programs have expanded greatly. Enrollment in these programs increased from 435,000 to 3 million students between 2000 and 2013 in Argentina, Brazil, Chile, Colombia, and Mexico (Ferreyra et al., 2017). Currently, one out of four higher education students in LAC is enrolled in a technical or technological program. This increase was largely due to a surge in the number of private providers alongside an increase in different types of degrees. Enrollment in private and technical and professional institutes has also expanded, as a share of total enrollment, in most countries of the region. The share of higher education students enrolled in private institutions reached 46 percent in 2014. In Chile and Peru, the private gross enrollment rose, reaching 70 percent. In Colombia, the share of higher education students enrolled in private institutions is 34 percent—and Colombia is the only country where this rate has decreased (Table 31).

2.27 **The use of online learning platforms for higher education in the region is still limited; with COVID-19 there is an opportunity to further expand post-secondary online offerings**. New online offerings are being developed but are seldom accompanied by measures to ensure quality. The incorporation of cloud-based learning augmented and virtual reality, and mobile-based learning applications is modernizing the content delivery models available in LAC. While this offers new opportunities, it also presents new challenges for learners, employers, and policy makers who need the tools, criteria, and processes to assess and ensure the quality, relevance, and cost-effectiveness of learning modalities and content (ENQA, 2018). A recent study in LAC found that only 19 percent of higher education institutions in the region have a strong focus on online learning (OECD, 2017). The figures are only somewhat higher for TVET institutions, where the ratio of online to face-to-face courses amounts to slightly more than 30 percent on average (ILO, 2017). Furthermore, 75% of professors do not consider they are prepared to incorporate new digital technologies in their classrooms (CIMA, 2020b). Traditional

universities are lagging in the use of technology, even as new institutions that provide predominantly online offerings are proliferating (OECD, 2017). A concerning fact is a lack of quality assurance across these programs: only one-third of analyzed online learning programs in universities had been officially accredited by national authorities (OECD, 2017), and no information on accreditation was available for programs in TVET institutions (ILO, 2017). At the same time, traditionally excluded groups have greater access to education thanks to the advent of technology: 68 percent of universities report that e-learning has benefitted people living in rural areas, 53 percent benefits to women, 50 percent to low-income groups, and 38 percent to people with disabilities (OECD, 2017).

2.28 **There is much heterogeneity in the quality and relevance of postsecondary skills development options and weak quality and relevance assurance systems.** The rapid growth in supply and the subsequent increase in monitoring costs may have opened the door to subpar higher education institutions and programs. These challenges are compounded by a lack of institutional coordination of standards, qualifications, relevant curricula, and outdated information systems that do not allow proper decisions on postsecondary learning options. Many higher education institutions, particularly TVET institutes, in the region lack the mechanisms to ensure the quality of instruction, and quality standards are minimal and particularly weak for private providers. Employers often cite the low quality and limited relevance of courses provided through the system (Busso et al., 2017; UNESCO, 2017; CNP, 2018).[5] Although there are, on average, positive wage returns for higher-education degrees, there are significant variations in the returns across institutions and careers. Evidence for Colombia and Chile shows that programs with low performance and net negative returns coexist with programs with large, positive returns (González et al., 2015; Rodríguez et al., 2016). Of more significant concern are the number of students who may be experiencing net losses in their investment in their higher education. In Colombia, 20 percent of university graduates and 59 percent of graduates from technical programs are encountering negative net returns. Possible causes include the lack of academic readiness among students entering the labor market as well as the lack of relevance and quality of many programs (Busso et al., 2017). Many countries have instituted mechanisms to enable the continuity of studies between technical education at the upper secondary and tertiary levels, as well as through the university level, but efforts have been isolated, programmatic and not systemwide or lacked buy-in and failed to be adopted across the larger ecosystem (CNP, 2018; UNESCO, 2017; Amaral et al., 2018).

E. Challenge 5: Provide the labor force with the relevant skills needed to access and maintain quality jobs, by ensuring access to quality and relevant lifelong learning opportunities

2.29 **Adults in LAC lack basic literacy, numeracy, and problem-solving skills.** On average, 56 percent of adults in the region simultaneously perform poorly in both literacy and numeracy. The four LAC countries participating in the Programme for the International Assessment of Adult Competencies (PIAAC)-OECD assessments—that is, Chile, Ecuador, Mexico, and Peru—performed well below OECD countries and rank at the bottom among 39 participating countries. The results are generally the worst among older adults (55-65 years versus 25–34 years), those with lower educational attainment (upper secondary versus tertiary), and those

[5] There are exceptions: Brazil's Sistema S is cited as a model in the region for the relevance and quality of its courses, owing to their competency-based focus, modularity, and close relationship with industry (UNESCO, 2017).

whose parents have relatively low educational attainment levels (at least one parent attained tertiary vs no parent with upper secondary) (Table 32)**.** Gender differences in literacy were significant only in Chile, where men achieved higher scores; but they were significant in numeracy, with higher scores for men in all four countries (Figure 10, Table 33).

2.30 **In addition to basic skills, adults in LAC lack the digital and socioemotional skills that are in high demand in the labor market.** In the region, the demand for advanced digital skills increased because of expanding occupations in the digital economy (Amaral et al., 2019). Socioemotional skills have also been identified as the most important hiring requirement by 51 percent of firms and are found to enable people to better adapt to a rapidly changing labor market (Bassi et al., 2012; Crespi at al., 2014; Cunningham et al., 2008; Alvarado et al., 2019a). At the same time, 42 percent of employers stated that the largest gap for applicants corresponds to these kind of skills (Cunningham and Villaseñor, 2016). At the basic level, Ecuador (33 percent), Mexico (39 percent), and Peru (44 percent) present a very large proportion of adults without prior computer experience or very poor information and communications technology skills (OECD, 2019), a situation which is generally found to be more pronounced in older-age cohorts: for LAC, the usage of digital technologies declines 2 percent with each additional year of age (UNESCO, 2017). The situation is even worse for diverse populations. In Ecuador, El Salvador, and most countries of the Caribbean, persons with disabilities are less than half as likely to use the internet than people without disabilities (Figure 11). The situation is even more stark for indigenous peoples, for example, in Chile and Bolivia they have access to computers less than half as often as non-indigenous persons. COVID-19 underlines the lack of digital skill and deteriorates employability for vulnerable groups (Madariaga et al., 2020). This panorama poses barriers to adults' opportunities in the labor market and to lifelong learning (Windisch, 2015; Githens, 2007).

2.31 **Low levels of skills at the adult level are exacerbated by changes brought by the fourth industrial revolution.** Analysis of labor market transitions indicates that manual labor tasks that are easily automated have dropped in LAC at the same time as manual and service occupations that cannot be easily automated have increased in several countries (Amaral et al., 2019). Roles and tasks in these occupations are changing and professionals must acquire the skills needed (Banerjee and Duflo, 2019; Alvarado et al., 2019b). Given the trends in technology and changes in occupations, it is critical to guide workers whose occupational groups are in decline into new occupations and provide them with the in-demand skills needed to do so (Amaral et al. 2019; Ospino, 2019; OECD, 2019).

2.32 **Individuals with relatively low levels of education have lower rates of participation in the labor market and access to formal employment.** Only 65 percent of individuals with a low level of education (up to 8 years) participate in the labor market, while this figure is 82 percent among those with 14 years of education or more (Figure 12).[6] In the case of unemployment, unlike OECD country trends, unemployment in LAC generally is highest among adult workers with a secondary education.[7] Compared to those with higher levels of education, adults with lower levels of education are more likely to engage in informal work in all the region's countries (73 percent of workers with 0–8 years of education are in informal jobs versus 30 percent for those with 14 years of education or more).[8]

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[6] The increase in labor market participation congruent with higher levels of educational attainment, however, does not hold true in all countries of the region.

[7] There are exceptions: Peru and Suriname have higher unemployment rates among the less educated.

[8] While in Peru 96 percent of low-educated workers are informal and 50 percent of the most educated are formal, in Uruguay, 40 percent of informal workers are in the low-educated group and 5 percent in the highly educated group.

2.33 **Indigenous people and Afro-descendants have lower returns on educational investment than do their white and/or mestizo peers in LA.** In Panama, Afro-descendant workers who have completed primary school earn on average 18 percent more than white and/or mestizo workers, but by the time they complete university, they earn 11 percent less. In Brazil, the earning gap tends to be more pronounced for Afro-Brazilians working in high-skilled, high-paying jobs. This association between educational attainment and widening wage gaps suggests that the returns of increasing educational levels are held back by other factors, like job segregation or wage discrimination (Freire et al., 2018).

2.34 **There is also significant educational and labor segregation in LAC.** After entering the labor market, women tend to be segregated into traditionally female sectors: almost 30 percent of women work in industries associated with care (only 6 percent of workers in these sectors are men). Even within the same professional activity, men and women perform different tasks and use different skills, and their professional progression differs due to barriers that restrict women's access to top positions in company hierarchies. The gender-based distribution of occupations is largely the product of segregation in the educational system. Women account for 60 percent of graduates from tertiary and university programs, but they represent only 30 percent of science, technology, engineering, and mathematics graduates. In the Caribbean, data shows that gender based educational and occupational segregation has remained almost constant over time, despite working women's education levels increasing (Schimanski et al., 2018). Furthermore, evidence from countries in the region show that women use less digital and Internet devices (Bustelo et al., 2019). Furthermore, the employment rate among people with disabilities is on average 18 percentage points lower than for people without disabilities (Berlinski et al., forthcoming).

2.35 **Intraregional migration has increased in LAC, requiring skills certification and jobs in receiving countries.** Since 2015, 3.5 million migrants from Venezuela crossed to other LAC countries, and the United Nations projects that by the end of 2020 there will be 7.5 million Venezuelans living abroad. Among these migrants, 66 percent are either unemployed or working informally. In Venezuela prior departure, 64 percent of these migrants used to be either formal employees, business owners or civil servants. This shows that displacement has a negative impact on the access of skilled workers to the labor market (UNHCR, 2019). Haiti, Nicaragua, and the Northern Triangle countries of Central America are also significant sources of migrants in the region.

2.36 **Limited time to learn and financial constraints are key barriers for adults to develop skills.** With 94 percent of adults in the region working full time (SIMS, circa 2018) and having family responsibilities (women allocate more than 60 percent of their time toward unpaid work with limited options for childcare), time is a crucial deterrent to engaging in formal learning[9] (ECLAC et al., 2019; Canelas and Salazar, 2014; Campaña et al., 2018). Even though, while working, people acquire experience and on-the-job skills, these are generally not recognized. At the same time, regardless of high investments in public training institutions, less than 15 percent of employed workers access training provided by or funded through them (Busso et al., 2017), and informal workers and small firms having much lower participation rates (De Mendoza et al., 2013; Hanni, 2019).[10] Financial assistance to individuals to pursue vocational training is still

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[9] Based on PIACC, barriers to participation include lack of time due to work (29 percent) or family reasons (16 percent), lack of financial resources (16 percent), inconvenient time or location of the learning opportunity (12 percent), and lack of employer's support (7 percent).

[10] Payroll taxes are often channeled to finance national training institutions, constituting 90 percent of their funding and are on average above 0.3 percent of the gross domestic product (GDP) (Hanni, 2019).

scarce and lagging behind options for the financing of academic education (Amaral et al., 2018; Chacaltana et al., 2015; González et al., 2016). Cofunding mechanisms are still not systematized in the training landscape; schemes like competitive training funds or cofunded workplace learning generally have low coverage (ILO, 2017).[11]

III. Evidence on the Effectiveness of Skills Development Policies and Programs

3.1 **The main drivers of learning and skills acquisition can be grouped into three main categories**: (i) inputs (teachers and instructors, curriculum, pedagogies, learning spaces, and materials/equipment); (ii) institutions and rules (quality and relevance assurance, finance, and information); and (iii) home environments and communities. Regarding inputs, the most important are high-quality interactions between the learner and the teacher, instructors, or tutors, guided by learning standards, delivered through modern and adequate pedagogies with the relevant content, and supported by appropriate learning materials, including technology, in a suitable learning space. Regarding the institutions and rules, successful skills development systems carry out effectively three key functions in line with the country's specific institutional arrangements: (i) ensuring the quality and relevance of the system, promoting its continuous improvement and involvement of the private sector; (ii) providing proper financing to carry out skills development programs; and (iii) information to decide on policy and resources allocation, as well as to feed quality and relevance assurance mechanisms. Regarding the home environment, the family's educational level and socioeconomic status, parental support, as well as the health and nutrition of learners determine a great part of skills acquisition and they also influence policy decisions and resource allocation, particularly in the early years and through schooling. This section will present the evidence around these categories relevant for skills development at each stage of life.

A. Interventions and policies to promote the development of cognitive, language, motor, and socioemotional skills among infants and young children to help them enter school ready to learn

3.2 **At early ages, skills are developed either at home or in early childhood centers and preschools.** Among infants and young children that stay at home in the early years, information for parents on good parenting practices—added to access to key resources— is fundamental to the development of adequate cognitive, language, motor, and socioemotional skills. Early childhood education services that target families, such as home visits, have been shown to have large and positive impacts on cognition and language in the short term. However, the medium- and long-term results are mixed, and evidence is still scarce (Baker-Henningham and Lopez-Boo, 2010; Grantham-McGregor and Smith, 2016). For those young children in early childhood centers and preschools, it is important to ensure that they have access to good-quality services, and to tackle inequalities. The expansion of preschool in LAC has been shown to have a positive impact on students' educational attainment, academic progress, and cumulative years of schooling, as well as on the likelihood of their attaining a higher level of education, finding employment, and having a higher income (Berlinski et al., 2009; Bastos et al., 2017, Reynolds et al., 2018). The quality of adult-child interactions in childcare and preschool programs is key

[11] There are promising cofunding initiatives in the region, like the recently implemented competitive training funds in Barbados, Panama, Trinidad and Tobago, and Jamaica and a matching grant in the Bahamas.

for these programs to have positive impacts on children's development, including improved language, executive function, and mathematics outcomes (Leyva et al., 2015; Araujo et al., 2016, 2018). Peru and Chile have incorporated classroom-based support for preschool teachers, with positive results for adult-child interactions, teachers' use of time, and language outcomes in kindergarten (Alfonso and Zoido, 2018; Yoshikawa et al., 2015). Early childhood services are particularly important for children from disadvantaged families, whose home environments tend to be less stimulating for learning. For a complete discussion of effective interventions, refer to the Early Childhood Development SFD (GN-2966-2).

B. Interventions and policies to foster basic cognitive and socioemotional skills among children and preadolescents to help them continue learning throughout school and life

3.3 **Among school-aged children and adolescents, the most important determinant of learning in schools is the quality of instruction, and the enabling inputs and institutional setup that improve this quality.** Teachers are at center stage, best supported by high learning standards and modern pedagogical approaches and learning materials, including the use of technology. Appropriate learning spaces and adequate time to learn are also important. Teaching is enhanced by quality assurance mechanisms, clear and equitable financing rules, and effective information and management systems. Home environments and family influences are also important factors that influence learning, policy decisions, and resource allocation. Parents' involvement in their children's education is key to support teachers, enhance student learning, and produce better skills.

3.4 **Teachers are the most important determinant of student learning inside the school.** Implementing policies to attract, prepare, and retain effective teachers is key to improve learning. Growing research suggests that teachers matter a great deal to students' achievement—and it is what teachers know and do in classrooms every day, as opposed to their certification and years of experience, that determines their effectiveness (Araujo et al., 2016; Rockoff, 2004). To attract the best candidates to the field, competitive pay and the promise of opportunities achievable through a meritocratic career path are helpful (Silva Filho, 2016; Behrman et al., 2016; Britton and Propper, 2016; Estrada, 2019; Brutti and Sanchez Torres, 2017). It is then important to select and assign teachers through a competitive process, and to prepare them with relevant induction and training. Best practices include requiring that candidates have classroom experience in preservice teacher education programs, implementing a competitive teacher hiring process, and offering induction programs for new teachers (Boyd et al., 2009; Darling-Hammond, 2006; Goldhaber at al., 2017; Jacob et al., 2016, Glazerman et al., 2010; Rockoff, 2008). Once they are in schools, teachers must then be retained and motivated to perform. To this end, education systems can provide career opportunities linked to performance, professional development (including via mentoring) based on teacher needs, the support of qualified principals and school leaders, and monetary and nonmonetary incentives to work in hard-to-staff schools (Cruz-Aguayo et al., 2020; Taut and Sun, 2014; Springer et al., 2014; Grissom and Loeb, 2011; Elacqua et al., 2019a; Bertoni et al., 2018; Glazerman et al., 2013; Clotfelter et al., 2008). It is important that policy makers actively engage with teachers' unions to get buy in and advance these policies.

3.5 **High learning standards and pertinent pedagogical approaches are important to improve teachers' effectiveness.** High-performing education systems present fewer topics per grade but go into them in greater depth. Teachers in these systems focus on helping students master key concepts, and emphasize both knowing and doing, integrating content and practice to

ensure that students understand how facts and information relate to larger concepts. Learning standards built on this approach place a greater emphasis on conceptual connections and problem solving than on the memorization of facts. Experimental research from LAC indicates that it is possible to improve learning and close learning gaps by training teachers in the use of an inquiry- and problem-based pedagogical (IPP) approach. Furthermore, IPP works well in bilingual settings, helping to close learning gaps among students from diverse language groups (Bando el at., 2019; IPA, 2019). Evidence shows that bilingual and bilingual intercultural education can improve learning outcomes, particularly for indigenous students (Bando et al., 2019; IPA, forthcoming), however more research on effective strategies for these students is needed. The teacher plays a critical role in IPP, assisting with important elements of explicit instruction and scaffolding (Hmelo-Silver, 2007; Edelson, 2001). These pedagogical approaches should be accompanied by adequate learning materials (Glewwe et al., 2011). Some developed countries are starting to include coding in preschool to develop the basis for computational thinking needed in school and at the workplace (Kong and Abelson, 2019); however, more evidence is needed on the impact of these skills in the early grades.

3.6 **The use of technology in the classroom improves learning when it is guided.** The use of technology resources is "guided" when it follows clear learning objectives and is accompanied by software and teacher training aligned with these objectives, thus enhancing student learning (Arias Ortiz and Cristia, 2014). Rigorous evaluations in developing countries show that adaptive learning platforms and platforms that introduce gamification features improve learning in math and language (Araya et al., 2019; Carrillo et al., 2010). ConectaIdeas in Chile is an example of an innovative guided use program, aimed at improving math learning among fourth-grade students by practicing math exercises on an online platform employing an array of gamification strategies. Students participating in this program for one academic year improved their math learning by 50 percent compared with students that did not receive the program (Araya et al., 2019). Developing relevant and timely evidence on the use of technology and information in skills development is crucial to expand its use effectively.

3.7 **To foster learning, it is important to provide access to safe, healthy, sustainable, resilient, and accessible schools.** Schools should provide learning spaces that accommodate modern pedagogical practices and that are age appropriate. They should provide with good conditions for learning (in terms of lighting, ventilation, temperature, and acoustics), proper internet access, accessible for people with disabilities, and appropriately equipped (Barret et al., 2018; Glewwe et al., 2011; Glewwe and Muralidharan, 2016; Baker et al., 2002; IDB, 2018). Furthermore, learning is better in schools with proper sanitary conditions and access to public services (electricity and telephone services, drinking water, sanitation, and an adequate number of restrooms) as well as the availability of academic resources (libraries, science labs, etc.) (Cuesta et al., 2016; Duarte et al., 2017). Given the trends in climate change and increased recurrence of natural disasters, it is key to build sustainable and resilient schools that mitigate the effects of construction on the environment and provide a safe location for students, teachers, and the community.

3.8 **Extending the length of the school day has positive effects on academic results, particularly for low-income students.** Research has identified that longer school days can have a positive impact on student learning and on other academic results such as dropout and grade repetition (Hincapié, 2016; Pires and Urzúa, 2011; García et al., 2013). The literature highlights that these effects are largest in the poorest schools and in rural areas, thus improving equity (Hincapié, 2016; Bellei, 2009; Cooper, 2010). Moreover, extending school days could

have other benefits, such as freeing time for parents to work for more hours, or mitigating the negative impacts of students being exposed to risks. However, the effects are small, and implementing this at scale might not be cost-effective (Alfaro at al., 2015). Given that extending the school day has bigger effects among the poorest schools and students, it could be targeted to disadvantaged students and schools.

3.9 **Quality assurance systems with clear learning standards and testing for students and teachers—and tied to feedback, rewards, and sanctions—improve learning.** Quality assurance systems are an effective mechanism to monitor the activity of schools, teachers, and principals and improve performance. This type of system includes setting standards, aligning the curriculum with these standards, implementing evaluations and disseminating their results, making schools accountable, and penalizing schools that consistently perform poorly, while rewarding those that perform well (Figlio and Loeb, 2011). The aim is to increase school supervision by parents and the government to improve their performance (Jacob, 2005). The most recent studies emphasize the importance of quality assurance systems to provide support to schools that underperform and enable them to comply with student learning standards (Jaimovich, 2016). Growing evidence on the effects of accountability reforms on student performance, schools, and teacher behavior, suggests that underperforming schools respond to accountability pressures and improve their student performance (Allen and Burgess, 2012; Rockoff and Turner, 2008; Jacob, 2005). Additionally, research finds that underperforming schools change their educational and teaching practices and policies significantly when faced with accountability mechanisms (Elacqua et al., 2019a; Rouse et al., 2013). Nevertheless, there is evidence that policies can induce schools to adopt inappropriate strategies, such as switching groups of students taking tests (Cullen and Reback, 2006), narrowing the curriculum (Hannaway and Hamilton, 2008), teaching to the test (Borko and Eliot, 1999), and cheating (Jacob, 2005).

3.10 **Financing formulas and the allocation of resources can improve the equity and efficiency of the education system.** Several studies have demonstrated that how money is invested, both in terms of the specific inputs as well as the incentives and operating rules that govern the system, is as important as the absolute amount of resources invested. A study on the effect of court-mandated school finance reforms in the United States found that changes in the funding formulas had a positive impact on long-run results (years of education, wages, and incidence of adult poverty), especially for low-income students (Card and Payne, 2002; Jackson et al., 2015). Weighted student funding formulas for individual schools in the Netherlands and provincial-level funding formulas that employ equality and equity principles in Ontario, Canada, directed significant amounts of additional funds to primary schools serving disadvantaged students (Ladd and Fiske, 2009). Chile's weighted per-pupil funding formula also led to the narrowing of the achievement gap between socioeconomic groups (Murnane et al., 2016; Mizala and Torche, 2013). A high percentage of students in LAC are enrolled in private schools and the proportion has increased rapidly. However, few countries in the region have implemented effective policies to regulate private schools (Elacqua et al., 2018b). Financing policies tied to regulation of the quality of education provided (concession schools in Colombia) and that take into account family and school background characteristics (the SEP Law in Chile) have a positive impact on student performance and equity (Ladd and Fiske, 2009; Murnane et al., 2016; Valenzuela et al., 2013; Bonilla, 2012).

3.11 **Effective information management systems can improve the efficiency and allocation of resources.** These can: (i) increase the availability of timely high-quality information for management; (ii) save time on administrative tasks carried out manually and inefficiently; and (iii) save costs. The use of technology can save both time and costs, particularly in routine administrative tasks, while also improving the quality of processes and the information generated (Arias Ortiz at al., 2019). Evidence about the benefits of incorporating technology to improve management processes is still quite limited and recent (Allovue, 2019). Some examples in LAC illustrate the benefits of an efficient education management information system. In Uruguay and the state of Espíritu Santo in Brazil, student attendance verification transitioned from paper to the use of mobile phone applications, improving the quality, reliability, and timeliness of the data. Digitalization of other processes like teacher management, grading, and management of school repairs has proven to have similar benefits. El Salvador and Uruguay have increased the frequency with which absenteeism is monitored, achieving a significant reduction in dropouts. Finally, the availability of budget execution information at the school level in Pernambuco (Brazil) allowed the identification of idle resources and closer monitoring of the use of resources (Elacqua et al., 2019b).

3.12 **Parents' involvement in their children's education is key to producing better student learning outcomes.** The family's educational level and socioeconomic status affects the availability of resources to stimulate learning. Socioeconomically vulnerable households tend to have fewer of these resources, with negative consequences for the poorest children's learning trajectories (Lareau, 2011; Woessmann, 2003, 2004; Kirsch et al., 2002). Parents can help children with their schoolwork, motivate them to learn, enroll them early in the education system, and encourage them to complete their education. Many children who grow up in poor households receive limited stimulation and this is extremely important for all dimensions of development: cognitive, linguistic and communicational, socioemotional, motor and physical, etc. (Hart and Risley, 1995). Additionally, due to a lack of information about the benefits of preschool, many parents, particularly from the lowest socioeconomic status, do not enroll their children in this level (Schady, 2012; Lareau, 2000). At the same time, they do not encourage their children to remain in school, preferring that they begin to work at an early age to supplement the family income (Cardoso and Verner, 2006). Greater parental involvement in teacher management is effective in reducing teacher absenteeism and improving student performance (Duflo et al., 2015; Jimenez and Sawada, 1999). Parent's cultural values and beliefs influence skills development in the home and are particularly relevant in indigenous communities (Knauer et al., 2018).

C. Interventions and policies to ensure that all students graduate from secondary school with the cognitive, technical, and socioemotional skills required to keep learning, access high-quality jobs, and be good citizens

3.13 **When students reach higher secondary education, two key goals come into focus**: that students stay in school until graduation, and that that they acquire relevant skills to successfully transition to further studies or work. To ensure graduation, effective interventions that focus on the student and family include decreasing the barriers to staying in school. At the school and community level, effective interventions include those that provide early detection of dropout risks, a supportive and safe environment for learning, and flexible educational offerings. It is important that both academic and TVET schools foster the skills required for graduates' successful transition to further studies or the labor market. In this regard, it is key to have

qualified teachers that are specialized in their subject, together with relevant and updated pedagogical approaches for secondary education.

3.14 **On the individual and family side, effective interventions to decrease dropout are those that decrease the barriers to attend school.** Interventions that strengthen family support by providing adequate information about the benefits of graduation (e.g., job opportunities, income increase) have been seen to promote enrollment, academic performance, and retention both in secondary and postsecondary schools (Jensen, 2010; Rogers and Feller, 2018; Bonilla et al., 2015; Avitabile and de Hoyos, 2015). However, in order to have an impact on enrollment, they must combine information about both expected returns and funding mechanisms (Busso et al., 2017). Incentives to overcome the economic barriers to schooling (conditional cash transfers and scholarships) have had positive effects on student retention rates in Mexico, Colombia, and Chile. These programs helped reduce dropout rates significantly, with the greatest effects among the most poor and vulnerable populations, including women and young people from rural areas (Gaiger Silveira et al., 2014; Riccio et al., 2013; Attanasio et al., 2010; Rodríguez-Planas, 2010).

3.15 **On the community and school side, effective interventions to decrease dropout include detecting early the risks of dropout, providing a safe school environment and flexible offerings.** Early detection systems have been shown to reduce school dropouts, as they provide the opportunity to take timely action to encourage students to stay in school (Frazelle and Nagel, 2015). Evidence from the United States shows that these early detection systems can be enhanced with the use of artificial intelligence (Chung and Lee, 2018). Additionally, it is important to provide a supportive and safe environment in school for students to feel motivated and to reduce their likelihood of dropping out, particularly for certain groups that might face bullying and harassment in school (LGBTQ+ Afro-descendants, students with disabilities, and indigenous students). Mentoring programs that allow for academic and personal support through one-to-one coaching have reduced dropout rates (Sinclair et al., 1998, 2005; Banerjee et al., 2007). Interventions such as learning programs based on youths' preferences and the needs of the job market can prepare young people to transition to their first job successfully, thus, changing students' perceptions of schooling. Experimental analysis finds that students assigned to effective teachers in the early grades are more likely to finish high school and attend college (Chetty et al., 2014). Increasing the flexibility of educational offerings is also critical to promote students' completion of their secondary education. Policy makers could consider building on lessons learned from flexible programs with personalized advice components (such as coaching/mentoring relationships) to improve graduation rates (Simpson, 2002; Wilkins and Bost, 2016; De Witte et al., 2013). Countries can also build on the growing momentum of education institutions in LAC that are deploying e-learning and modular pathways that allow for ubiquitous learning environments (ILO, 2017) in which self-paced instruments cater to user-specific learning requirements, thus increasing students' motivation and retention (Samaniego et al., 2012).

3.16 **On the school side, it is also important to develop the right set of skills for graduates to successfully transition to further studies or the labor market.** In this regard, it is key to have qualified teachers that are specialized in the subject they teach, and who utilize relevant and updated pedagogical approaches. Qualified, specialist teachers are most effective in improving learning outcomes among secondary students. Measures of teacher qualifications that are subject specific are particularly consistent in predicting teacher effectiveness. For example, subject-specific teacher degrees, certifications, or coursework usually predict greater classroom

learning, especially in mathematics in the higher grades (Betts et al., 2003; Clotfelter et al., 2010; Goldhaber and Brewer, 2000). Relevant and updated pedagogical approaches to secondary education are key to foster skills that prepare graduates for further studies or the labor market. Problem-based learning is more effective than passive, memory-based learning to prepare students for today's labor market (Yew and Goh, 2016; Bando et al., 2019). In problem-based pedagogy, students solve real-life problems or answer questions by critically analyzing and making use of available information and data to come up with solutions. In learning by doing, they develop skills that are relevant to the workplace and higher education (Cheng et al., 2008; Kaldi et al., 2011; Mioduser and Betzer, 2007). Evidence from the Caribbean shows the importance of developing instruments that measure school and teacher effectiveness beyond traditional skills like math and reading, and measure its effectiveness on socioemotional skills, youth risky behaviors, educational attainment, and labor market productivity (Jackson, 2018; Beuermann and Jackson, 2019; Beuermann et al., 2019; Jackson et al., 2020). The evidence available for providing quality secondary education and decreasing drop out is limited, and more is needed on what makes teachers, curriculums, and pedagogical approaches effective at this education level, particularly in LAC.

3.17 **The development of socioemotional skills is also key among secondary graduates; these improve school engagement and academic and work performance.** Developing these skills allows individuals to self-regulate; to be more empathetic, resilient, and persevering; to better adapt to changes; to be more self-confident; and to have higher expectations about the future. Increasing evidence associates the socioemotional development of individuals with school engagement, and academic and work performance (Duckworth and Seligman, 2005; Duckworth et al., 2007; Durlak et al., 2011; Heckman and Kautz, 2013; OECD, 2015), as well as with other positive effects on individual and collective well-being, such as better health, and a reduction of violent and criminal behaviors (Case and Deaton, 2017; Durlak et al., 2011; Heckman and Kautz, 2012; Heckman and Rubinstein, 2001; Herrera et al., 2015; OECD, 2015). Socioemotional skills can be mainstreamed into the existing curriculum or developed through extracurricular activities, for example, music, sports, entrepreneurship, citizenship, or digital programs (Mateo Diaz and Rucci, 2019). These skills are developed throughout life, although childhood and adolescence are windows of opportunity for brain development that make investments cost-effective (Belfield et al., 2015; Jones et al., 2015; OECD, 2015). Innovative approaches to develop socioemotional skills and more data and evidence on effective interventions are needed.

3.18 **Toward the last years of secondary education, many countries offer TVET programs with requirements that ensure relevance and quality.** Well-recognized systems establish qualifications frameworks that help organize TVET standards, promoting transparency, comparability, and permeability and allowing for critical industry involvement in the definition of these standards. Also important is that assessments of learning outcomes be based on the evaluation of skills and knowledge acquired through practical demonstrations on the job or in simulated work environments (ILO, 2017; Aba Anane, 2013; UNESCO, 2013; ENQA-VET, 2009); that teachers of technical subjects have spent time working in the industry as practitioners, but have sufficient pedagogical training to be effective teachers (Florez and Jayaram, 2016; UNESCO, 2013); and that TVET institutions can provide access to relevant infrastructure and specialized equipment (UNESCO, 2014; Di Gropello, 2006). Workplace practice and dual and apprenticeship programs have proven effective in developing technical skills. Secondary dual education that combine classroom instruction and work experience with skills certified and recognized by industry, lower and shorten the duration of youth

unemployment), and achieve better job placement results than other types of technical education (Quintini et al., 2007, Winkelmann, 1996). Apprenticeship programs not only improve occupation-specific skills but are also effective in developing socioemotional skills (Rose, 2004; Halpern, 2009).

D. Interventions and policies to ensure access to and graduation of quality and relevant postsecondary learning opportunities to equip young adults with the advanced cognitive, technical, and socioemotional skills needed to keep learning throughout life and be successful in the labor market

3.19 Among young adults, for the purpose of this document, two distinctive ways to acquire skills are distinguished: continue studying (in universities and technical institutes) and dedicating most of the time to it or devote most of the time to work and other responsibilities (having or not graduated from secondary). This section on young adults will focus on how to foster skills among those who continue studying, while the development of skills of those that are already in the labor market will be discussed in the next section, together with adults, focusing on how to develop catching up opportunities to attenuate skills deficits along life. For young adults who continue studying, the objective is to provide access and ensure graduation from high-quality and relevant learning institutions, both universities and technical institutes. To do so, the focus is on strengthening quality assurance mechanisms to allow for the expansion of postsecondary education, while preserving quality and relevance, providing finance mechanisms that allow access to offerings, and ensuring permeability across and along learning pathways.

3.20 **Quality and relevance assurance mechanisms of postsecondary learning opportunities are key to increasing access while maintaining quality.** The rapid expansion and diversification of postsecondary skills development programs is unlikely to come to a halt given the positive social returns perceived by policy makers as well as the aspirations of a new generation of secondary graduates. In this context, quality assurance mechanisms are critical to allow for the expansion of supply while preserving quality and relevance and should be included in the institutional set up of each country. Evidence from Colombia shows that quality assurance systems are an accurate signal of quality, with accredited programs having greater value-added in terms of learning (Camacho et al., 2016). Most countries have quality assurance systems based on licensing and quality accreditation processes. The initial licensing stage is compulsory and aims to ensure that higher-education institutions and programs meet the minimum standards necessary for operation. Aspects such as the provision of infrastructure and proof of financial solvency are usually taken into consideration. Accreditation decisions typically rely on peer review and self-assessment processes that consider inputs such as teachers' educational attainment, curricula, and number of students as well as outcomes such as graduation, learning and employability. Lessons learned in developed countries highlight the importance of enforceable incentives for accreditation and quality follow-up and improvement, making higher-education providers more accountable for the quality of their performance. Finally, transparency and independence are essential preconditions when strengthening a quality assurance system by increasing the consequences of non-accreditation. Transparency protocols should require accreditation agencies to publish their recommendations. Rules to avoid conflicts of interest between accreditation agencies and higher-education providers should be established (Busso et al., 2019).

3.21 **Modular and stackable courses integrated in congruent qualification frameworks provide quality and relevant signals to stakeholders in making effective skills development decisions.** Amid competing offers of varying degrees of quality and relevance, as well as information asymmetries about skills development programs, it is difficult for learners to make optimal decisions (ILO, 2017; Cerda et al., 2017; Sunkel et al., 2012). Evidence suggests that modular courses and flexible training provision enable learners to combine educational offerings across providers and subjects, in order to receive a formal qualification within the relevant qualification framework (Accenture, 2018; Desjardin, 2017). Accordingly, successful skills development systems are aligned to such qualification frameworks and offer programs that focus on either providing modular occupational training in line with a national qualification framework or providing learners with specific technical and socioemotional skills to enable them to be lifelong learners (ILO, 2019; OECD, 2019). Nevertheless, agile and flexible mechanisms to keep qualifications continuously updated within these frameworks to assure relevance is a challenge nowadays and could present a trade-off in quality assurance. While qualifications frameworks are incipient in LAC, many countries with advanced TVET ecosystems are implementing programs in line with their qualification schemes for up-skilling and reskilling of people in vulnerable groups.[12]

3.22 **A skills development system that allows for the timely anticipation of skills complements relevant skill-learning policies and interventions.** As technology evolves, and labor markets become more dynamic, the skills that are in high demand shift, and there will be increasing demand for skills complementary to technology, including digital, high-level cognitive, and socioemotional skills (Dutz et al., 2018). To ensure that all workers can obtain these skills, successful skills development systems have in place continuous feedback loops between stakeholders at all levels to identify private sector needs and translate these into curricula (Amaral et al., 2017; WEF, 2017; ILO, 2017). Coaching, mentoring, and access to age-appropriate and timely information about the education and career trajectories available to young adults are critical to increasing de facto permeability.

3.23 **Aligning skills development to a country's growth strategy and the demands of productive sectors improves the relevance of the skills being developed.** To properly align the supply and demand of skills, it is important to involve industries and other social partners in the identification of skills needed, curricula design, and provision of learning (OECD, 2019; Amaral et al., 2017). Ongoing collaboration supports the continuous adaptation of curricula to labor market demands. Many developed countries have ensured employers' participation in skills development through the establishment of sector bodies or organizations that represent industries, as part of their institutional arrangements. In countries like the United Kingdom, sector skills councils ensure training quality by setting occupational standards and developing curricula and assessment methodologies, among other functions.

3.24 **Sectoral training and workplace training help match the demand and supply of skills and boosts productivity.** Evidence in LAC shows a mismatch between the type of postsecondary degrees offered and those in demand by the productive sector. Links with the labor market can exist in the context of education with a marked vocational emphasis, as well as in general education. The effectiveness of technical education depends directly on linking training to

[12] For instance, the individualized occupational training programs for adult learners in Belgium, *Individuele Beroepsopleiding*, or the TVET reform in New Zealand.

demand for labor, and the returns largely depend on graduates' capacity to find work in the occupation for which they trained (Neuman and Ziderman, 1999; Eichhorst et al., 2012). The literature on developed countries also shows that employers' investment in human capital boosts their productivity, along with that of their employees (Bassanini et al., 2005; Percival et al., 2013; Colombo and Stanca, 2014; Dostie, 2014; Konings and Vanormelingen, 2015). Career pathway models combine classroom training, work experience, and credential attainment to move workers through a set of jobs and occupations within sectors (Fein, 2012). In the United States, rigorous studies show that sectoral training can significantly raise the earnings of the working poor (Holzer, 2014). Partnerships between employers and community colleges ensure that training is well targeted to the needs of employers, who commit to hiring. This is usually done in sectors that are growing and offer good-paying jobs for postsecondary graduates below the tertiary level. Recent experimental evidence shows significantly positive impact of sector training interventions on different sectors and targeted specific populations (Autor et al., 2019) and more evidence is needed in LAC. Even though incipient in LAC, sector-based skills interventions are developing, including Jamaica, Trinidad and Tobago, Bahamas, and Peru.

3.25 **Apprenticeship programs have been adopted by several countries around the world as a way of promoting structured learning in a skilled occupation,** while earning a living stipend. Apprenticeships have proven successful in helping youth improve their skills and employability. They are a good way to further learning and up- or reskill young adults that need to transform their skills to adapt to the new labor market and find good job opportunities. Apprenticeships ease the school-to-work transition, increase the probability of finding a job in the future, lower the probability of unemployment, and shorten durations of unemployment (Fazio et al., 2016; Novella and Perez-Davila, 2017). However, results regarding job turnover, the transferability of skills to other firms, and the match between skills and occupation are ambiguous. Firms recoup investment costs, a rise in productivity benefits both firms and society. While costs are higher among firms introducing training plans for the first time, moderate subsidies can help to cover these costs and influence the number of apprentices' vacancies. While the implementation of apprenticeships in the region is potentially beneficial, especially if the lessons learned from other countries are integrated, there is a need to generate more evidence regarding their effectiveness.

3.26 **Training programs that place young people in jobs have had positive results in LAC. Impact evaluations in the region show that the effects are maintained in the long run**. One possible explanation is that most of the programs evaluated in the region have incorporated some of the elements the literature considers successful: participation of private suppliers, demand-driven programs, a significant guidance and/or labor intermediation component, a strong emphasis on on-the-job training, and financial incentives for employers and beneficiaries (González-Velosa et al., 2012; ILO, 2017; Berniell and de la Mata, 2016). Other elements that international literature suggests are necessary to enhance the effectiveness of these programs include: (i) ensuring the quality of both classroom and on-the-job training; (ii) incorporating modules for developing socioemotional skills (Heckman and Kautz, 2012; OECD, 2015); and (iii) integrating training programs for vulnerable groups into the wider lifelong training system. Meta-analysis of the region also indicates that training programs tend to yield better results when they last for longer than four months and when they take place during periods of rapid economic growth and low levels of unemployment (Card et al., 2015).

3.27 **Affirmative action policies have been implemented with positive results in some countries in the region, most notably in Brazil, Colombia, and Uruguay, to grant access to Afro-descendant student**s (Feres Junior et al., 2015). As of 2015, in Brazil 80 percent of state universities and 100 percent of federal institutions had adopted quotas for Afro-descendants, students who had attended public high schools, low-income students from public schools, and low-income indigenous, brown, and black students. In addition to a reserved quota for underrepresented students, affirmative action policies have also included funding opportunities for tertiary education, institutional scholarships, and grants for low-income Afro-descendants (Freire et al., 2018).

3.28 **Mechanisms to assure permeability across and along learning pathways allow students to develop successful learning trajectories**. To allow learners to access and move across different pathways and systems, and to validate learning outcomes acquired in another system or in nonformal/informal settings, improves permeability. Successful education and training systems make use of different frameworks and tools: qualifications frameworks can help standardize vertical and horizontal pathways through formal education tracks, both technical and academic. This is especially critical for young people who have chosen TVET tracks, and for whom progression on to tertiary TVET or academic higher education is necessary for career progression. Facilitating permeability and portability across these tracks also helps to combat perceptions of technical tracks as “second choice” (CEDEFOP, 2012). Additionally, it has become a growing practice to use learning content and achievement analytics to certify skills mastery and provide learners with portable qualification repositories or portfolios, which can help people transition fluidly between work and education (Tuomi, 2018; Luckin et al., 2016; Porayska-Pomsta, 2015).

3.29 **Supply-side subsidies linked to performance have proven effective in improving both quality and relevance.** Supply-side subsidies include two main categories: competitive funds and performance contracts. Competitive funds incentivize quality in higher education by making institutions and programs compete for funding, and have been effective in encouraging universities to plan strategically and undertake rigorous projects to improve quality and relevance (Salmi, 2013), develop innovative practices, and incentivize the participation of specific population groups (De Diego et al., 2017; Salmi and Hauptman, 2006; ADB, 2014). Examples of competitive funds can be seen in the United States to improve labor market transitions for youth: California and Massachusetts TVET institutions may apply for public grants managed through a competitive fund if they invest in updating curricula, incorporating new technologies, or developing new vocational programs in line with skills demand. Performance contracts are regulatory agreements in which governments and institutions set mutual performance-based objectives: institutions commit to fulfill several national objectives in exchange for access to additional funding (Salmi and Hauptman, 2006; Daugherty et al., 2013). Typically, the agreements set out overall institutional strategies to attain specific targets related to teaching, research, and other activities, and have the virtue of providing flexibility to institutions in their choice of targets for improvement (Strehl et al., 2007). Although performance contracts have been used by several European countries (Denmark, Finland, France, Spain) and some U.S. states, LAC has little experience with these types of contracts.

3.30 **Demand-side financing instruments, either scholarships or student loans, can also be effective in promoting access.** Scholarships assigned on needs based can increase equity in access by reducing the cost of schooling (Dynarski and Scott Clayton, 2013). Merit based scholarships can motivate students to better prepare for college and improve college readiness,

academic performance and degree attainment (Page and Scott-Clayton, 2016; Dynarski and Scott Clayton, 2013). However, they should be carefully designed to create incentives for good student outcomes and avoid concentrating financial risks and unaffordable debt among students (Busso et al., 2017). Student loans consistently have positive impact on enrollment (Rau et al., 2013; Melguizo et al., 2016) and can promote student effort and distribute costs across individuals and society but should not imply an excessive exposure of risk among borrowers. Income contingent loans linked to a learner's ability to repay, are an interesting alternative for which there is positive evidence (Busso et al., 2017; Chapman, 2016). Finally, demand-side financing instruments will only boost quality if students can make informed choices and most providers are incentivized to compete for resources. However, these conditions are often absent in LAC; such resources rarely represent a large share of institutional budgets and misinformation about academic and labor market outcomes is prevalent (Busso, 2017). Demand-side subsidies can also have a positive impact on enrollment among low-income students, for whom financial barriers may be limiting access to higher education. Differences in current income can explain some of the gaps in enrollment by income level in LAC (Alfonso, 2009). In Mexico, research suggests that credit constraints may explain inequalities in access (Attanasio and Kaufmann, 2009). Evidence from Chile shows that loans have a casual positive effect on the probability of enrollment (Solís, 2017). The region could benefit from more evidence on how financing rules can improve access, efficiency, and equity.

E. Interventions and policies to provide the labor force with the relevant skills needed to access and maintain quality jobs

3.31 **Adults are already in the labor market, dedicating most of their time to work and personal responsibilities, but with different educational attainment and different combinations of skills**. Independent of how they acquired their skills, there are two distinct groups of people in terms of skills needs: those who need upskilling or reskilling, but have a skills base to draw upon, and those who have severe skills deficits that make lifelong learning costlier and more difficult. For adults, the goal is ensuring access to quality and relevant learning opportunities tailored to their skills gaps and promoting cumulative learning to help to access and maintain quality jobs. To accomplish this, the focus is on developing high-quality, modular-based learning and relevant supply targeted to the skills gaps of the adult population; certifying skills that people already have; providing funding mechanisms, guidance, and flexible learning options that allow access to learning opportunities; and assuring permeability across and along learning pathways.

3.32 **Agile and performance-based quality and relevance standards are key.** It is vital to integrate skills certification and new modular learning pathways into the universal quality assurance considerations of the skills development ecosystem, including the evaluation of learning interventions on an outcome basis[13] (Cunha and Heckman, 2007; Abadzi, 2016). Experience from several European countries also shows promising trends for the connection of qualifications obtained outside the formal education system with official qualification standards (CEDEFOP, 2019a). Equally crucial is to have in place mechanisms that can respond to and

[13] Outcome measurement entails defining the final objective of the training (labor market outcomes, trainees and employer's satisfaction, etc.) in advance and implementing appropriate instruments for an effective monitoring and evaluation system (see for instance, the Program and Learner Support System in Ireland).

adapt to the fast pace of changing market needs (Amaral et al., 2017), but this remains a big challenge.

3.33 **Certification of workplace-acquired skills can provide positive returns.** With the advent of technology, it has become a common practice to use learning or competency assessments to certify skills mastery and provide learners with portable qualification certificates, including digital badges and stackable credentials (Tuomi, 2018; Luckin et al., 2016; Porayska-Pomsta, 2015). Independent of how and where people acquire skills, a certification that is based on a skills assessment that takes place in a real or simulated workplace environment, having the individual perform tasks to test the mastery of certain skills according to industrial occupational standards, enables that person to validate her competence. Recent evidence finds positive returns in terms of employability, wages, and job stability, especially in certain occupations and industry sectors (Gittleman et al., 2018; Kleiner and Krueger, 2013; Koumenta and Pagliero, 2018). Certification has strong potential to open access to quality jobs, particularly to certain populations, including migrants and low-skilled workers, and more innovative approaches and evidence is needed.

3.34 **Nanodegrees and modular pathways are increasingly seen as adequate learning options for learners demanding flexible solutions.** They are integrated in learner portfolios that allow for the consolidation of newly acquired skills and the recognition of prior learning (OECD, 2019; Accenture, 2018). Increasingly, governments provide adult learners with online self-service courses on career progress and learning alternatives combined with artificial intelligence (AI)-driven skills assessments (CEDEFOP, 2019b). Access to internet is a necessary condition to take advantage of these learning options. Many of these allow for the creation of individual skills and qualification portfolios that are validated by regulating authorities and can be administered and shared by the learner in order to prove the advertised qualifications (ILO, 2019; OECD, 2019). [14] With COVID-19, nanodegrees and certifications have been widely and successfully used in developed countries (Aguerrevere et al., 2020).

3.35 **Tailored skills development interventions designed and implemented according to skills profile and productive sector needs are crucial to smooth the workforce transition.** Industry associations and organized labor, working together as social partners, have traditionally played central roles in training efforts in several European countries by setting standards, providing training, and cofinancing skills development interventions (McKinsey, 2018). The linkage between a firm's needs, skill gaps, and course contents, jointly with high-quality delivery, is at the core of the strong positive effects of training on firm productivity and wages, especially when up- or reskilling is needed (Amaral et al., 2017; Prada et al., 2019; Konings and Vanormelingen, 2015; Abadzi, 2016). More evidence from the region is needed on interventions and policies to develop skills among adults.

3.36 **Socioemotional skills can be developed in the workplace.** Evidence shows that socioemotional skills are malleable in adults whereas cognitive skills reach stability faster (Borghans et al., 2008; Specht et al., 2011). The literature suggests that the workplace is an ideal environment for adults to develop socioemotional skills (Cunningham and Villaseñor, 2016; Berniell et al., 2016; Prada et al., 2019; De Grip and Sauermann, 2013). Labor markets reward high levels of noncognitive skills with wage premiums and positive returns on labor productivity and other labor market indicators (Deming, 2018; Edin et al., 2017). Also, it is important to

[14] In some cases, integrated platforms link the indicated qualifications to vacancies by using matching engines.

encourage women to acquire the right skills to achieve greater influence in the creation and use of technology and be prepared to use basic (such as information and communications technology) and advanced (such as artificial intelligence or robotics) technologies, as well as to cultivate socioemotional skills such as creativity, problem-solving, empathy, and adaptation (Bustelo et al., 2019). For elder adults, evidence finds that intergenerational learning can improve socioemotional skills. Older adults benefit from interactions with children and young adults. Reading or computer activities with children, and training in library services can improve organizational and memory skills, self-efficacy, and confidence, and health outcomes (Carlson et al., 2008; Barron et al., 2009; Gualano et al., 2018; Gamliel and Gabay, 2014; Hernández and González, 2008). Innovative approaches to develop socioemotional skills during adulthood and more data and evidence on effective interventions are crucial for the region.

3.37 **The extension of apprenticeships to adults allows them to learn while earning.** The useful duration of a technical skill today is only about five years in the absence of upskilling (Bersin, 2016). This makes midcareer training particularly important in an environment of rapid technological change that transforms the content of jobs, and the jobs themselves.[15] Apprenticeship models can be used to reskill the adult population and are often complemented by pre-apprenticeship programs to prepare groups from different populations who may need to strengthen their basic and soft skills to meet the qualifications of entering an apprenticeship. Evidence further suggests that workplace training has positive effects on firm productivity and wages (Konings and Vanormelingen, 2015; Dearden et al., 2006) and that continued guidance, coaching, and practice sessions as part of the learning are beneficial (De Grip and Sauermann, 2013; Prada et al., 2019). Equally, bootcamps have been identified as promising models to contribute to resolving the challenges of digital re- and upskilling efficiently and cost-effectively. Compared with traditional education, bootcamps offer high-quality technical training updated to technological dynamics, relevant to the market, and affordable. Bootcamps also seem promising for incorporating people lacking strong technical backgrounds into technology jobs. Remarkably, over half of bootcamp graduates in the US have not held positions as developers prior to attending a bootcamp, yet they are also successful at getting technology jobs shortly after they finish bootcamp training. (Cathles and Navarro, 2019).

3.38 **TVET programs have allowed migrants to access jobs and validate skills.** In OECD countries, adult vocational training for migrants is free or subsidized in 70 percent of cities and part of the requalification packages offered. Shortening vocational training duration can be important for people who cannot afford to live on apprentice wages for long. Several countries allow adult apprentices with relevant work experience to finish faster than the standard duration or allow them to obtain a vocational qualification without mandatory training if they can demonstrate their skills. Counseling and especial incentives for firms to hire migrant apprentices have been also implemented in developed countries (IDB, 2019).

3.39 **Blended and technological tools are progressively being used for learning, but evidence of their effectiveness is still sparse.** Immersive technologies like virtual and augmented reality are increasingly being used by companies to train employees in simulated work environments, especially for the development of technical and socioemotional skills (e.g., see

[15] Against this backdrop, Busso and Messina (2019) find that training programs for displaced workers display nonnegligible effects on employment and wages and provide a potentially viable route for reskilling workers.

STRIVR, Stanford Virtual Human Interaction Lab). These instruments allow for experiential learning and hands-on problem solving and are especially well suited to adult learners, whose brain plasticity decreases over time and for whom retaining information through merely listening and reading becomes more difficult (Brown et al., 2014). Due to the recent nature of these measures, evidence on their effectiveness is only just emerging (Chen et al., 2018; World Bank, 2018).The evidence suggests that technology can contribute to individualize learning by taking advantage of talents and adjusting to each person and that it improves efficiency and coverage by offering more flexible and more cost-effective, training modalities for those who need flexibility in learning (Escueta et al., 2017; Bulman and Fairlie, 2016), and can reduce energy consumption and carbon emissions due to reduced travel demands (Versteijlen at al., 2017).

3.40 **For disadvantaged adults, targeted high-quality information and individualized advice and guidance encourage higher and more inclusive participation in skills development.** Whereas some decades ago, training programs for adults (and young adults) with low educational attainment used to primarily focus on basic (technical) skills development in classroom settings (Myers and de Brouecker, 2006), current approaches recognize the effectiveness of informal (Cho and Kim, 2016) and work-based learning (Prada et al., 2019; UNESCO, 2019) and thus emphasize holistic designs with a stronger focus on soft skills and citizenship (OECD, 2019). Successful examples combine the potential of data and technology for properly identifying and targeting vulnerable and diverse groups and providing tailored advice to this at-risk population.[16] The pairing of outreach campaigns on training benefits with endorsements from local community stakeholders, as well as training multipliers from the same identified vulnerable group to serve as advisors for all matters related to skills development are promising (OECD, 2019).[17] Bridge programs provided by workforce intermediaries can serve as on-ramps to gainful employment perspectives and often deliver training on critical skills targeted at the respective beneficiary group coupled with cohort mentoring support services, orientation elements, and job readiness programs (De Grip and Sauermann, 2013; Windisch, 2015; Estrada, 2019). Other approaches apply modular course delivery or mobile learning centers to remove time, access, and affordability barriers (OECD, 2019; UNESCO, 2019). Modularizing learning into stackable credentials (a sequence of credentials leading to more advanced qualifications) is also central for the recognition of work-based and nonformal learning enables individuals with low educational attainment to validate their skills and qualifications across systems and to reenter education (CEDEFOP, 2019b; Dortch, 2014). Canada, Germany, and New Zealand adjusted financial incentive structures, income support, and emergency stipends to the needs of beneficiary groups, paying attention to dependency structures, repayment horizons, and installment structures (Myers et al., 2006).

3.41 **Providing incentives to employers to invest in training can promote effective and strategic resource allocation.** Financial incentives can encourage employers to financially contribute to the cost of training (Ziderman, 2016; Johanson, 2009; De Diego et al., 2017; De Mendoza et al., 2013). Competitive funds have been shown to be best in responding to a fast-changing labor market (Johanson, 2009; De Diego et al., 2017). Through these financial schemes, governments have a certain degree of control over the content of training and the achievement of results, since a set of conditions has to be met to be eligible for funding

[16] See NYITOK Open Adult Learning initiative in Hungary, and the ReBOOT platform in Ireland (OECD, 2019).
[17] In France, Germany, and the United Kingdom.

(Bassanini et al., 2005; Uhder, 2017; De Diego et al., 2017). Also, employers play a critical role, leading the design of training proposals (De Diego et al., 2017; Ziderman, 2016). Most long-running competitive funds such as the Skills Development Fund in Singapore or the Going Pro Talent Fund in the United States prioritize certifiable, transferable training for priority groups and sectors. Employers' contributions to training supply are also prevalent in successful skills systems; firms typically pay for the on-the-job portion of training while the government pays for classroom learning and individuals accept lower wages in exchange for training (Amaral et al., 2017; De Mendoza et al., 2013). Cofunding practices can also take other forms. For example, employers complement training providers' resources by funding equipment and materials. Providers also engage with employers through income-generating activities, like renting equipment or by selling the goods and services produced by trainees (Uhder, 2017; Ziderman, 2016). Cost-reimbursement schemes have been successful in Malaysia and Singapore (Uhder, 2017; Johanson, 2009) and tax-exemption schemes have been used in France, Canada, and Chile.[18] Evaluations of the different financial schemes are uncommon but, in all cases, well-functioning financial schemes are associated with results-based funding and the establishment of monitoring and tracking mechanisms (Uhder, 2017; Bassanini et al., 2005).

IV. LESSONS LEARNED FROM THE IDBG'S EXPERIENCE IN SKILLS DEVELOPMENT

4.1 **The Bank contributes to the development of skills in the region through knowledge products, financing, and technical assistance.** This section presents lessons learned from a review of operations from the IDB, IDB Lab, and IDB Invest.[19] The Bank's experience in interventions that aim to promote the development of skills in infants and young children is discussed in the SFD on ECD and is presented here only briefly.

A. Technical lessons

4.2 **Developing skills in young children and school-aged children requires clearly defined standards, guidance, and training of caregivers and teachers.** For example, community staff and teachers with large content and/or pedagogical gaps can benefit from scripted lessons to improve their classroom practice and structured curricula and activity guides. For Family Support Programs (FPSs) to be effective, they require close guidance with family members to work with them on changing their day-to-day practices and incorporating more stimulation and learning activities. The importance of strengthening arrangements for supervising and supporting FPS personnel is a common lesson in the implementation of these programs. Strengthening the skills of teachers through continuous professional development practices and training is key for the improvement of educational quality. The operational experience underlines the importance of in-service training and routine educational practices. Continuous professional development practices have had positive results on skills development in Costa Rica, Paraguay, and Peru, among other countries. Some examples of effective strategies for continuous professional development include group training sessions for teachers from the same school or

[18] The administration of these schemes tends to be less costly, but they seem to fail at aligning training with national strategies and skills demand (Bassanini et al., 2005; Ziderman, 2016; Uhder, 2017).

[19] The lessons learned were phrased in a positive way but includes the review of positive and negative experiences.

same district, and continuous and constructive feedback in-classroom along with a monitoring of progress.[20]

4.3 **The active involvement of parents and communities contributes to the development of the socioemotional skills of children.** Communities and parents are relevant actors in the teaching and learning of children's socioemotional skills. Programs developed in partnership with parent organizations and in spaces other than the classroom generate greater skills development. In Mexico and Guatemala, parents and communities have been key actors in the management of schools, alongside the principal and the faculty. Parent organizations' involvement improves teacher performance and student retention rates.[21]

4.4 **Lessons learned from the use of technology in learning show the importance of strong support to instructors who need to be flexible and open to adaptations.** Lessons learned from Plan Ceibal in Uruguay show that countries introducing technology for learning should consider the following sequential steps: (i) implement technological infrastructure and make connectivity accessible; (ii) provide access to relevant educational resources; and (iii) support teachers and students in the use of technology in the classroom. Innovative skills development systems make use of different formats and mechanisms that allow large-scale digital tools and content to be offered, without incurring excessive costs. The Plan Ceibal has promoted payment agreements by usage levels. The Adaptive Mathematics Platform is available to all students and teachers in the education system, but licenses are paid based on the number of users. Program managers promote the design of flexible and demand-oriented training financing mechanisms, given their greater adaptability to the needs and dynamics of the different sectors. Technology also enables a more efficient allocation of teachers: the use of information and monitoring tools to supervise remote teachers and to define teacher-student ratios paired with teacher profiles based on individual pedagogical strengths and affinities allow a match of remote teachers to schools and student populations.[22]

4.5 **Technology also provides new opportunities to inform skills development options and monitoring.** New data sources provided by new technologies can provide timely and affordable information on the changing skill requirements, the transferability of skills, and prospective analyses, allowing the creation of a modern information management system that nurtures decision making regarding learning options and labor policies. Likewise, identifying in advance what the market requires is an essential condition for individuals to access successful learning and work trajectories and to guide the acquisition of new skills, upskilling, or reskilling (Amaral et al., 2018). Technology also brings opportunities to evaluate learning outcomes to introduce continuous improvements in program designs.

4.6 **Adequate assessments promote access, learning, and graduation rates.** Barriers to learning need to be identified and overcome, and it is recommended that learning systems use learner profiling and referral systems to identify their characteristics, degree of vulnerability and skills gaps to provide the intensity of the support required, and the suitable type of instruction. This makes it possible to point beneficiaries toward relevant services that are the most cost-effective. Attracting women and youth from low-income backgrounds is a challenge due to

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[20] BL-L1018, CO-L1010, GU-L1023, PN-T1154, PE-L1062.
[21] GU-L1023, ME-L1171.
[22] CH-L1138, ME-L1114. UR-L1093, UR-L1141, UR-T1143.

their lack of interest or inability to participate. Evidence from the region suggests the importance of robust awareness, communication, and motivational campaigns among different target groups; training methodologies and tools adapted to meet the demands of students and sensitive to gender, ethnicity, race, and disability; different packages to learn according to needs; and flexible training delivery compatible with the target population and environment.[23]

4.7 **Involving the private sector in skills development programs improves the relevance of the skills developed and improves labor outcomes.** The success of training programs for youth and adults depends strongly on employers' continuous and committed involvement in skills development, including skills identification, learning environments and delivery, and evaluation. Interactions between employers and trainers should involve adequate supervision, especially when they involve young people. Experience in Jamaica highlights that TVET should be aimed at training and connecting young people with specific employment opportunities, and at offering them the necessary skills to adapt to new circumstances. To improve the effectiveness of training, it must be complemented by job placement and intermediation services focused on the target population. Competitive schemes for training allow private sector leadership in the design of training programs and guarantee the relevance of the training offered. The experiences of Barbados, Trinidad and Tobago, and Peru indicate that the involvement of the private sector allows the development of training interventions that are in line with real needs, boosting labor productivity.[24] In various countries of LAC, sectoral skills councils have served as successful coordination mechanisms, fostering positive interactions between the public and private sectors. The councils have had a preeminent role in identifying employers' skill needs, aligning the content to fill those demands, and supervising the services provided by trainers. Innovative quality assurance mechanisms successful in labor insertion and occupational changes have been developed under public-private partnerships. For example, the Finishing Schools model of Uruguay develops cofinanced training tailored to the needs of potential investors and companies. Finally, public-private models can be good solutions for improving the construction, operations, and maintenance of schools.[25]

4.8 **In the last years, the IDBG has been working with private universities through the support of IDB Invest, and this work highlights the importance of increasing financing, involving the private sector in determining skills needs and strengthening quality assurance mechanisms.** A review of two operations supported by IDB Invest shows that: (i) providing financing to high-quality private sector educational institutions can foster competition and indirectly catalyze systemic improvements in a country's educational offerings; (ii) the private sector is in the best position to understand the needs of the labor market and offer training programs designed to fill these needs in a timely way; (iii) not all private sector institutions offer a high quality education so care must be taken to partner only with the best institutions with accreditations from reputable organizations; and (iv) it is common for private sector educational

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[23] BO-L1051, BO-T1256, BO-T1310, AR-L1302, RG-T2607, IDB Lab.
[24] PE-L1227, BA-L1016, CH-L1138, TT-T1058.
[25] AR-L1302, AR-T1099, BA-L1016, BH-L1037, BO-L1051, BO-T1256, BO-T1310, CH-L1095, CH-L1138, CH-L1138, HA0017, JA-L1005, JA-L1079, PE-T1302, PE-T1382, PR-L1066, RG-T2607, UR-L1050, PE-L1227, PR-L1066, TT-T1058, UR-L1060.

institutions to have weak corporate governance giving IDB Invest an role in strengthening these practices and improving bankability.[26]

B. Strategic and operational lessons

4.9 **Interinstitutional coordination is essential to ensure the implementation of skills development programs.** Skills development programs for young children and for adults seem to require greater coordination among a wide variety of actors, involving greater complexity in execution. The coordination and dialogue can be strengthened through the generation of mechanisms that reinforce cross-sectoral links, such as the case of the Education and Labor Council of Chile. Alternatively, a high-level champion or body capable of aligning the efforts of all the actors involved and with enough political support to carry forward the sector's agenda could foster dialogue and facilitate the sustainability of the skills programs or the political reforms advanced. Experience also shows the importance of promoting buy-in through the exchanges of best practices and experiences from other countries. Alignment with national plans, high-level policies, and high-priority areas has also helped mitigate political uncertainty and promoted the sustainability of programs.[27]

4.10 **Promote actions aimed at fostering information on program results through the establishment of monitoring and management information systems.** The actions of the IDBG indicate the importance of strengthening capacity to measure the results of programs, specifically, the processing and verification of data and documents to avoid delays in implementation and facilitate monitoring. For example, the Employment Support Program in Bolivia overcame the challenges faced by the poor quality of information included in the ministry's systems, as well as by the absence of interconnection of databases, by hiring an external unit that followed through surveys conducted by a neutral interlocutor. On the other hand, in Uruguay, the Online Learning Assessment System (SEA) the Ceibal Plan is a good example of strengthening internal information delivery practices to ensure continuous improvement, analysis, and the development of diagnoses. Specifically, the SEA monitors teaching and learning process in schools. In some countries, education management information systems could help mitigate the lack of information on educational quality and inform policies for skills development.[28]

4.11 **Build strong and committed public and private partners.** Strong and effective partnerships can facilitate project success. But both well-resourced and under-resourced partners can present challenges. Lessons learned suggest developing tools to assess partners before building alliances and to monitor partners, coordinate closely with all partners, develop awareness programs to sensitize different partners, and establish incentives for teachers and instructors. Other recommendations include ensuring flexibility to adjust to changing expectations and objectives; using train-the-trainer and skill certification programs to strengthen partners' capacity; and setting up sustainability plans and guides to institutionalize new practices and innovations adopted.

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[26] IDB Invest: Universidad de las Americas Loan Ecuador (11949-07), Texas Tech University Costa Rica Campus Building (12274-01); and PPP Educativa 2 Uruguay (12340-01).

[27] CH-L1095, CH-L1138, CH-T1179, JA-L1073, JA-L1078, BA0009/ BA-L1016, UR-L1093.

[28] BO-L1051, JA-L1005, ME-L1171, UR-L1141.

4.12 **Joint work with other areas of the Bank strengthens this interagency work, generates economies of scale, and promotes better results**. EDU and LMK have been collaborating with other areas of the IDBG to achieve better coordination of lifelong learning systems. These collaborations include: (i) IDB Lab: exploring innovations in teaching and learning; (ii) IDB Invest and ORP: strengthening private sector and non for profit delivery of skills formation and leveraging resources; (iii) INE: developing better social infrastructure; (iv) CTI: supporting development of digital skills and skills needed for firms growth; (v) INT: fostering skills development in growing and global sectors and services; (vi) Climate Change: developing skills needed to expand climate friendly industries and transition to green jobs, financing resource-efficient and climate-resilient schools and including climate change in curriculum, learning' material and teacher learning.

4.13 **Importance of knowledge generation for sector dialogue and technical support.** In recent years, the Bank has established itself as one of the main generators of knowledge and a provider of technical assistance for the sector in the region. The IDBG has several publications on skills development and has recently launched "There", an Initiative on 21 Century Skills, and a multidonor TVET Fund, constituting a combination of thematic knowledge at the regional level and a deepening of various topics at the country level. This knowledge, in combination with the effort to conduct rigorous impact evaluations, allows feedback into the design of new policies and programs, with technical dialogue and involvement that reaches well beyond the countries with which it has loan programs.

V. LINES OF ACTION FOR THE IDBG'S WORK IN PROMOTING SKILLS DEVELOPMENT

5.1 **This SFD proposes that the IDBG's activities focus on helping LAC in the development of skills and the promotion of lifelong learning as a strategy to equip people with the skills needed to contribute productively to society, improve their well-being, and be good citizens.** Based on the diagnosis presented in Section II, in the review of the evidence in Section III, and in the lessons outlined in Section IV, five lines of action are proposed, as a reference for the work of the IDBG, which should be contextualized to the reality of each country and the institutional arrangements for the delivery of learning opportunities. To the extent that there are overlaps with other SFDs, the lines of action proposed below will be consistent with those stipulated in those SFDs, with the understanding that most of the challenges in skills development must be addressed in a comprehensive and multidisciplinary manner.

A. Line of action 1: Ensure access to high-quality and relevant learning opportunities throughout life

5.2 **Skills development requires high-quality interactions between the learner and the teacher, instructors, or tutors, guided by learning standards and delivered through modern and adequate pedagogies with relevant content, and supported by appropriate learning materials in a suitable learning space.** The IDBG will help countries expand access to high-quality and relevant learning opportunities for all by attracting, training, and motivating high-quality teachers/instructors/tutors. It will support the development of relevant and culturally appropriate curriculums and effective, culturally sensitive pedagogies and teaching methodologies adapted to different learning needs, including the specific needs of the diverse population (i.e. persons with disabilities, indigenous peoples). In that line, it will support inclusive education approaches and inclusive classrooms by promoting the use of a variety of instruction formats, inputs to ensure access to content, and application of universal design for learning. It

will also support bilingual and intercultural education for indigenous peoples. It will support the development of high-quality, sustainable, resilient, and accessible learning spaces and adequate and culturally appropriate learning materials and equipment. It will promote the development of girls' skills in science, technology, engineering, and mathematics to increase women's participation in science careers. It will also encourage women to acquire the right skills to achieve greater influence in the creation and use of technology, as well as to cultivate socioemotional skills such as creativity, problem-solving, empathy, and adaptation that will empower them to access non-traditional and managerial positions in the labor market.

5.3 The IDBG will support the expansion of internet in the region to enable access to learning and teaching opportunities. For people with disabilities, the IDBG will support the use of technology to provide access to learning opportunities adapted to specific learning needs. The IDBG will also work to attract the participation of employers and private providers of skills development opportunities, including alternative methods of instruction and skills development, aided by technology. The IDBG will support the development of socioemotional and digital skills throughout life and it will work in mainstreaming the development of these skills into the existing curriculum and develop alternative pathways to developing these skills, for example, through extracurricular activities and bootcamps.

5.4 **Given the impact of COVID-19 in learning and labor markets,** the IDBG will work on blended learning packages, nano-certifications, mentoring, and coaching to assure people learn the skills that enable transferability across jobs, including digital and socioemotional skills and focusing specially on vulnerable people. It will also promote hybrid learning combining at home and in person learning, supporting the development and use of learning platforms, digital content and resources, training teachers for better online teaching, and expanding access to devices and connectivity, particularly for the most vulnerable. It will also work in guaranteeing proper sanitary conditions in schools so that students can safely return to the classroom.

5.5 **To tackle the large percentage of adolescents that drop out of school without finishing secondary education**, the IDBG will work to: (i) decrease the barriers to staying in school, including strengthening family support and providing financial support (through conditional cash transfers and scholarships); (ii) design and implement early detection systems; (iii) provide safe school environments and flexible learning offerings; and (iv) promote secondary education completion among boys to reduce the gender gap in graduation, particularly for Caribbean countries.

5.6 **Given the rapid change of skills demanded by the labor market and longer work lives, the IDBG will work in promoting lifelong learning as a strategy to ensure that all people are equipped with the skills needed to be part of society, be productive, and ensure a good quality of life**. To ensure that young adults and adults have access to learning opportunities needed to gain entry and maintain quality jobs, the IDBG will work to: (i) assess and mitigate barriers to access and participate in skills development opportunities; (ii) develop learning packages tailored to learners' needs and potentials, aligned with skill demands; (iii) certify skills and help create individual skill portfolios; (iv) orient and guide people toward lifelong learning; and (v) promote cofunding mechanisms to expand learning opportunities.

B. Line of action 2: Strengthen quality and relevance assurance mechanisms

5.7 **Quality and relevance assurance mechanisms are vital for guaranteeing the high quality and relevance of learning opportunities and promoting their continuous improvement**.

Throughout the schooling years, the IDBG will work with countries in developing quality assurance mechanisms that effectively monitor the activities of schools, teachers, and principals and improve learning: establishing clear learning standards that guide curriculum development, teaching, learning materials, and student and teacher's evaluation. Toward the end of secondary education, and throughout postsecondary and adult training, quality and relevance assurance systems can support the identification of skills needs and channel inputs of employers and experts into learning offerings. The IDBG will work to: (i) build skills development strategies aligned with economic strategies; strengthen mechanisms to identify productive sectors' needs considering the transition to a low carbon and climate resilient economy; (ii) develop channels to involve employers in skills development systems; (iii) recognize existing skills and develop learning plans that build on skills gaps; (iv) promote learning in the workplace; and (v) provide adequate learning environments, and adequate instructors and delivery mechanisms.

5.8 **Quality assurance mechanisms for postsecondary learning opportunities are also key to increasing access while maintaining quality**. The IDBG will work with countries to strengthen tools and mechanisms to allow for the expansion of postsecondary institutions and programs while guaranteeing their quality and relevance and promoting their continuous improvement. The observed expansion of post-secondary online learning that comes from COVID-19 will benefit from strong quality assurance mechanisms.

5.9 **Information guides decision making, improves resource allocation, and is essential for quality and relevance assurance mechanisms**. Throughout schooling, effective education management information systems can be used to improve the efficiency and equity of resource allocation. The IDBG will work to increase the availability of timely high-quality information to manage and allocate key inputs; monitor performance of students, teachers, and schools; and inform parents and school communities. Toward the end of secondary and throughout postsecondary education and adult learning trajectories, information is used by students and workers to inform decisions on career, skills, and learning. The IDBG will work to: (i) design and implement information and management systems; (ii) develop mechanisms to identify skills demands, taking advantage of different data sources and current technologies to guide people, providers, and resources; and (iii) develop quality control tools and mechanisms to curate and regulate providers and learning packages and follow up on learning and labor market outcomes.

C. Line of action 3: Consolidate and develop better funding and cofunding mechanisms to improve the efficiency, effectiveness, and coverage of skills development opportunities

5.10 **Financing rules can improve the equity and efficiency of skills development systems**. The IDBG will work with countries in designing and implementing funding formulas and mechanisms that improve the equity and efficiency of resource distribution. In the design of the financing mechanisms, special attention will be paid to ensure the financing of the implementation of inclusive and bilingual and intercultural education in a sustainable manner. It will also work in leveraging private resources for skills development through public-private partnerships, particularly for the design, construction, and maintenance of infrastructure. For postsecondary skills development and adult learning, the IDBG will work in promoting cofinancing incentives to leverage access, promote participation, and improve quality and relevance of learning opportunities.

D. Line of action 4: Leverage the use of technology to increase equitable access to skills development opportunities and improve the efficiency of skill development systems

5.11 **The IDBG will work with countries in fostering the digital transformation of learning environments at all levels (schools, training institutes, and higher-education institutions) in two main areas:** (i) teaching and learning; and (ii) management and decision making. Technology for teaching and learning includes technology and digital tools to support the teacher/instructor such as adaptive learning platforms, digital science labs, and knowledge-sharing platforms and to ensure equal access to curricular content and skills acquisition by persons with disabilities and other diverse population. The IDBG will support efforts to digitize existing information into management systems that provide real-time information for efficient and data-based decision making. At the same time, the IDBG will work in developing new systems and platforms to teach and learn using technology from any space and at any stage of the life cycle. To expand these students-based education and training systems require that countries: (i) support the development of online learning platforms such as virtual classrooms, blended learning, and online courses with mentoring and tutoring, while strengthening quality assurance mechanisms; (ii) develop the necessary infrastructure to certify and track individual learning paths, using new technologies such as blockchain; and (iii) develop a framework on digital skills for teachers and learners and measurement tools to track the acquisition of these skills. The IDBG will work with the public and private sector and civil society to promote the use of data and Artificial Intelligence to improve the quality and efficiency of skill development services and to support countries in LAC to build capacity to ensure a transparent and ethical use of algorithms for decision making.

E. Line of action 5: Actively promote the generation and use of evidence-based decision making in skills development

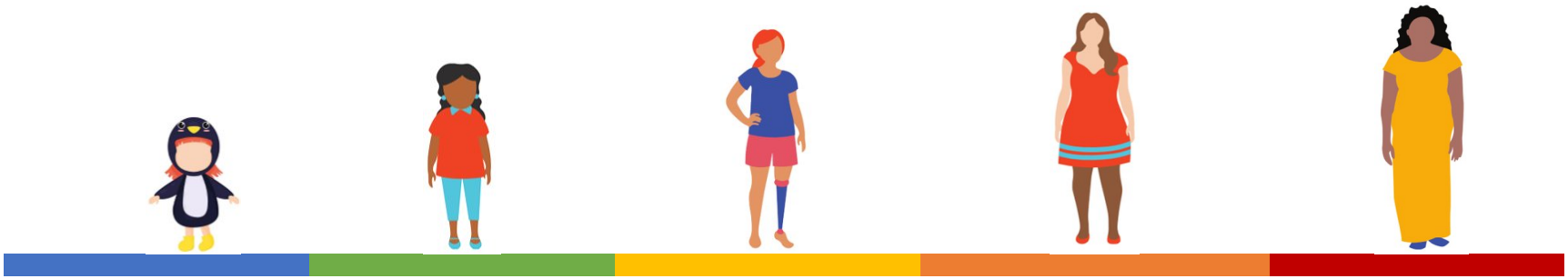
5.12 **Evidence on what works in skills development is important to improve the effectiveness and relevance of policies and programs, for sector dialogue, and for the provision of appropriate technical support to countries.** The IDBG will support governments, researchers, and civil society to produce rigorous evidence, taking advantage of new technologies and big data to generate different kinds of evidence, including on the impact of skills interventions on different population groups, with disaggregated data by gender and sexual orientation, ethnicity, race and presence of disabilities. Given the importance of innovation and experimentation in producing effective and scalable policies for the region, reinforced by COVID-19, the IDBG will seek to promote an innovation ecosystem that supports the development of ideas and innovations in civil society; brings in the private sector, public sector, and universities to work together; leverages resources for testing and evaluating ideas; and motivates governments to adopt effective innovations and scale them up. The IDBG will continue fostering strategic partnerships with academia, technology firms, developed countries, and other donors to leverage resources, generate evidence, and develop innovative and quality solutions for countries in LAC.

5.13 **In line with the previous lines of action, the IDBG will seek to increase knowledge about the effectiveness of the policies and programs it supports.** To do this, it will analyze the operation, cost-effectiveness, and impact of emblematic projects. At the same time, the IDBG will develop a knowledge agenda on a series of relevant topics for which there is little evidence as mentioned in section III. Among these issues, the following can be mentioned: effective interventions to develop socioemotional skills; teaching and learning pedagogies to make

learning opportunities effective for all type of learners; strategies to decrease dropouts from secondary school; involvement of productive sector in learning (TVET, upskilling and reskilling); effective strategies to increase access to quality postsecondary education; inclusive, intercultural and bilingual education and that provide gender equalizing opportunities; the use of technology and information in skills development (including the ethical use of big data and artificial intelligence); financing rules to improve access, efficiency and equity; blended learning, assessments, profiling and skills certification. The impact and policy implications of COVID-19 will be covered transversally in this research agenda.

(I) FIGURES

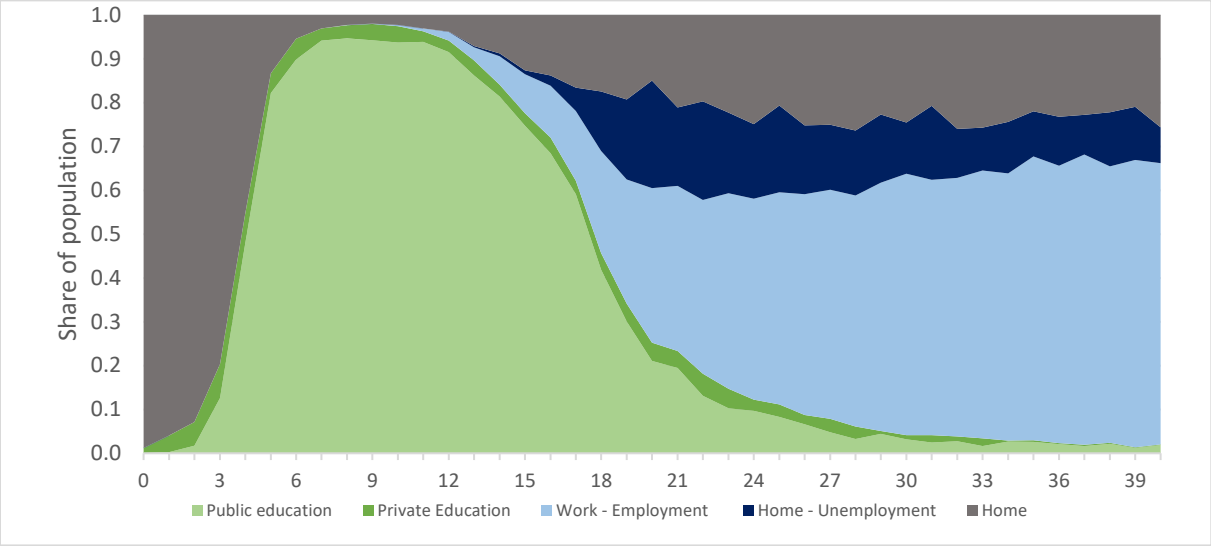
Figure 1. Skills development throughout life



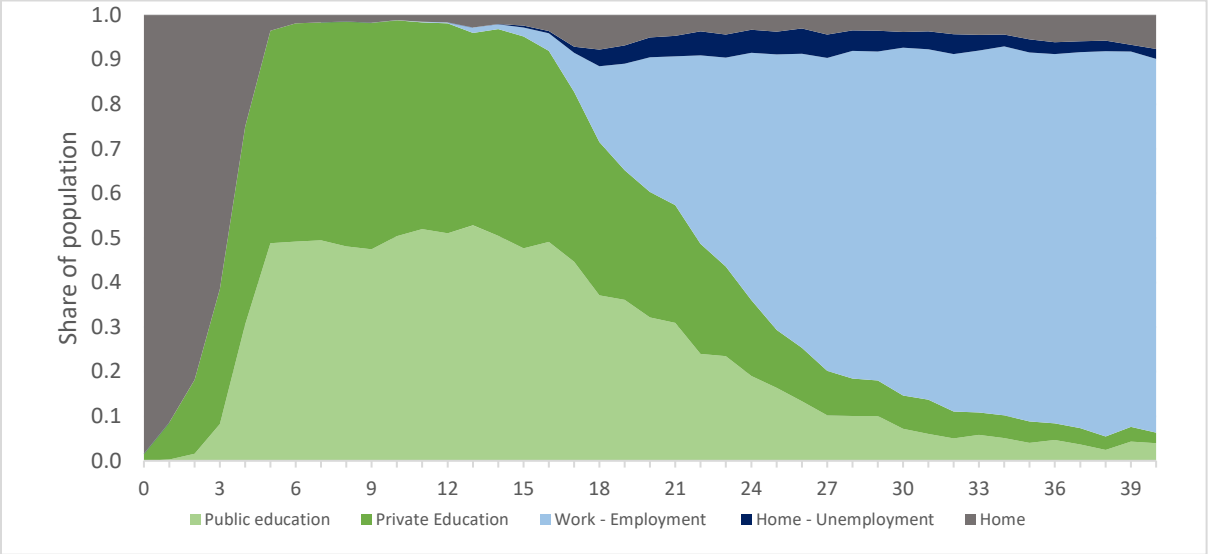
	INFANTS AND YOUNG CHILDREN	CHILDREN AND PRE-ADOLESCENTS	ADOLESCENTS	YOUNG ADULTS	ADULTS
CHALLENGE					
WHAT?	Cognitive, language, motor and socioemotional skills	Basic cognitive and socioemotional skills	Intermediate cognitive, technical and socioemotional skills	Advanced cognitive, technical and socioemotional skills	Skills for work
FOR WHAT?	To enter school ready to learn	To keep learning	To keep learning throughout life, access high quality jobs and be good citizens	To keep learning throughout life and be successful in the labor market	To access and maintain quality jobs
WHERE?	Families and early childhood centers	School (primary and lower secondary)	Secondary school	Post-secondary institutions: universities, technical institutes and e-learning platforms	Work, e-learning platforms, universities and technical institutes
DIAGNOSTIC	Significant gaps in levels of cognitive and language development when entering school	Low basic cognitive skills to keep acquiring more skills throughout schooling and life	High dropout rates without graduation Work, lack of interest and economic problems are the main reasons for dropping out of school prematurely	The coverage of post-secondary education expanded but remains low and inequitable and young adults are not acquiring the necessary skills to succeed in the labor market.	Lack of basic literacy, numeracy and problem-solving skills, as well as digital and socioemotional skills
EVIDENCE	At home care: information for parents on good parenting practices added to access to key resources. At centres: access to good quality services and tackling inequalities	The most important determinant of learning in school is teaching and all the enabling inputs and institutional set up that makes teaching more effective.	Effective interventions include decreasing barriers to staying in school (information to students and parents and tackling economic barriers); early detection of dropout risks, supportive and safe environment and flexible educational offering; make school more engaging; and develop the right set of skills for graduates	Strengthening quality assurance mechanisms and private sector's involvement to allow for the expansion of post-secondary education while preserving quality and assuring relevance. Providing finance mechanisms that allow access to offerings, and transferability across and along learning pathways.	Strengthening quality and relevant assurance mechanisms to develop new skills, and the certification of skills people already have, providing funding mechanisms, guidance and flexible learning options that allow access to learning opportunities, and assuring transferability across and along learning pathways.

Figure 2. Environment by age and income quintile, Latin American and Caribbean, Circa 2017 y 2018

1 Quintile



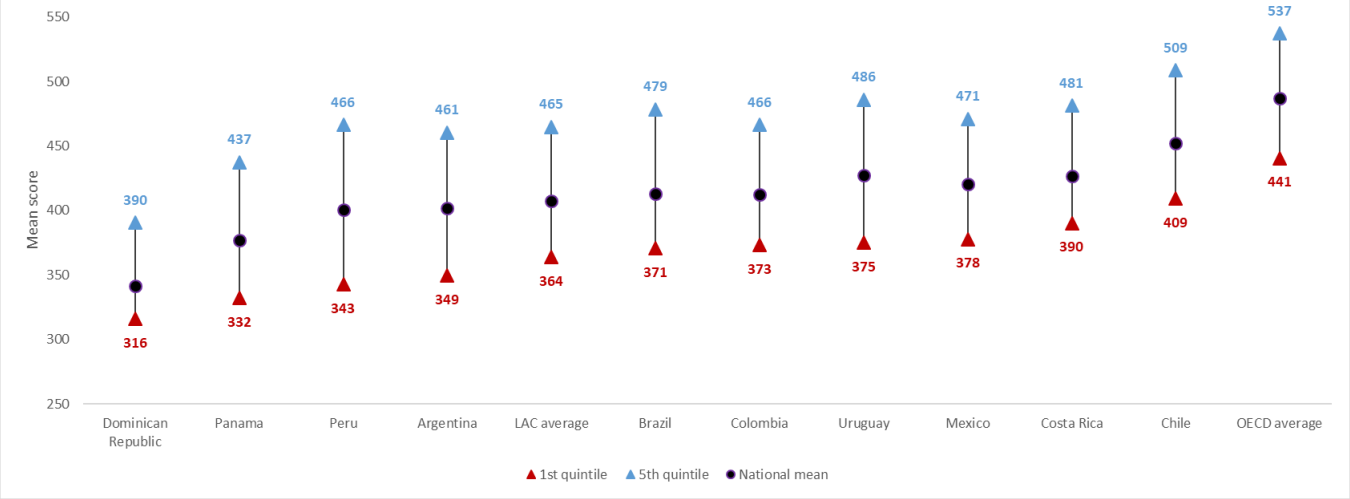
5 Quintile



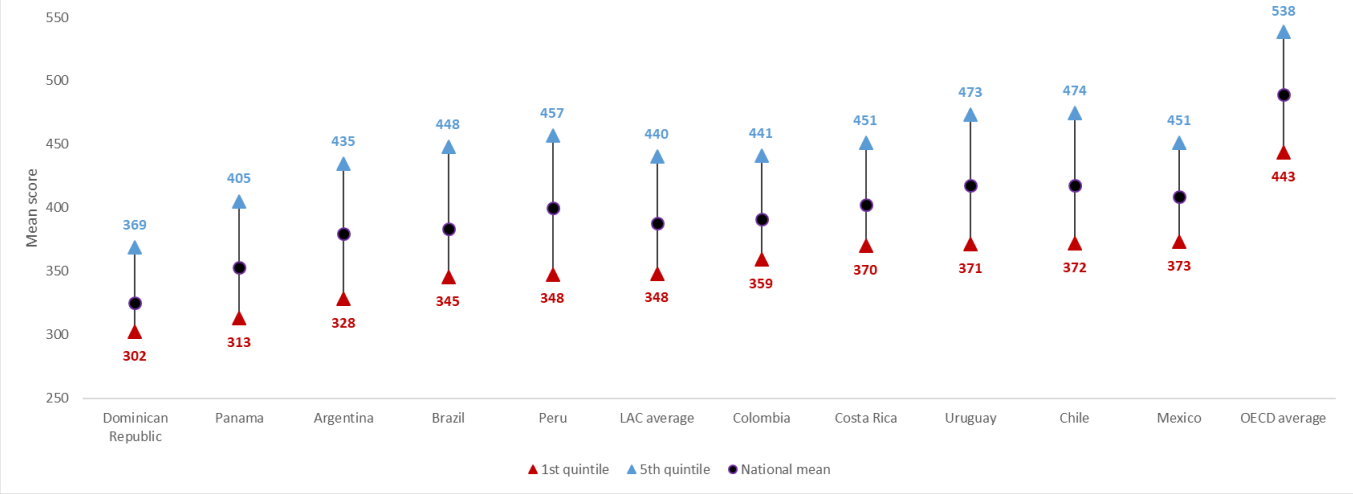
Source: Authors' calculations based on household surveys.
Note: LAC regional average was calculated as the unweighted mean of the country-level shares using last year with available data (2017–2018). Only countries with information regarding public and private education were included. Those countries are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Guatemala, Honduras, El Salvador, Mexico, Peru, Surinam and Uruguay. Information for ages 0–4 only includes information for Argentina, Costa Rica, Honduras and Uruguay. The share was computed as follows: each individual was considered to be "at home" if she was not enrolled in any educational institution, was not working, and was not looking for a job; she was considered "in school" if she was enrolled in any educational institution, she was considered at work if she was not enrolled in any educational institution and was working, and "at home unemployed" if she was not enrolled in any educational institution, not working, and actively looking for a job.

Figure 3. Difference in PISA score by socioeconomic level, LAC vs OECD

Mean score in reading by socioeconomic level, PISA 2018.

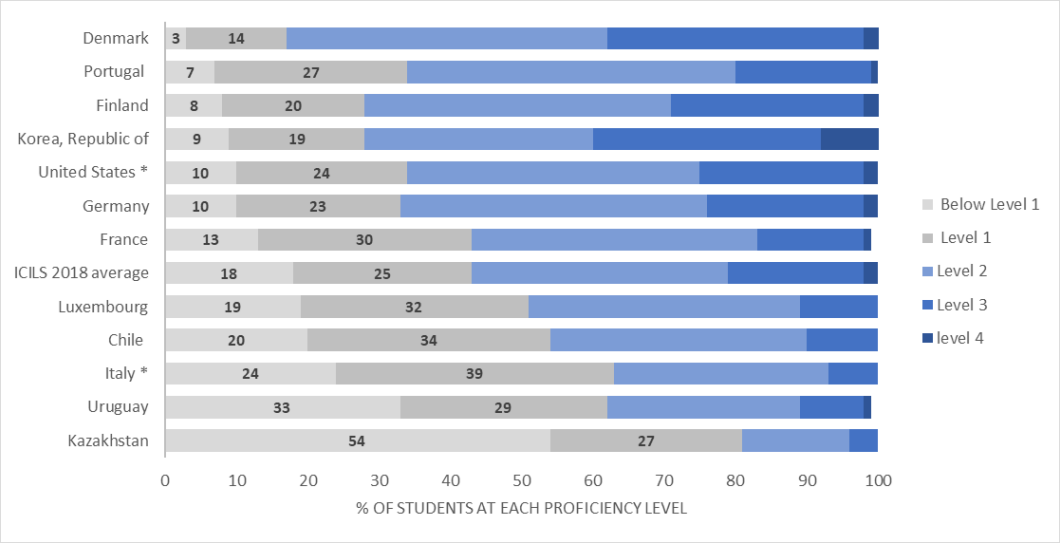


Mean score in math by socioeconomic level, PISA 2018.



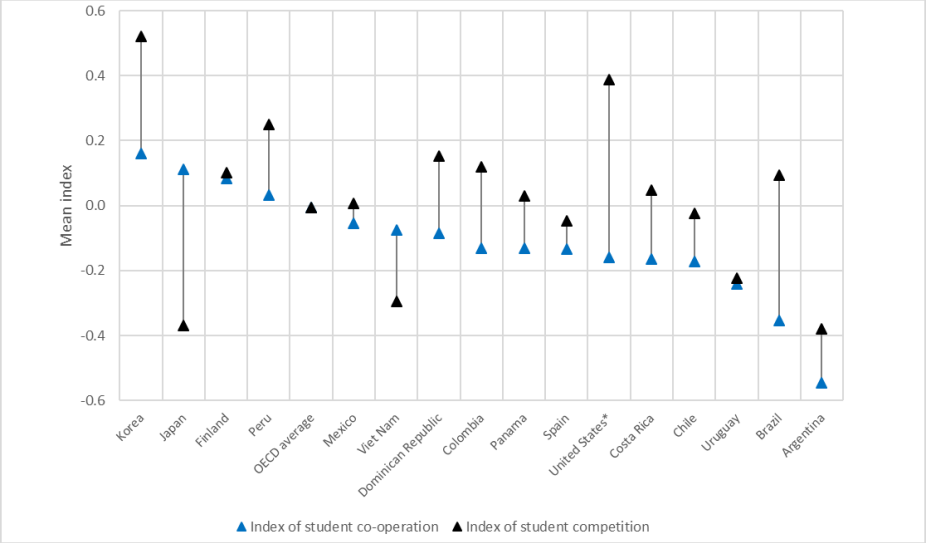
Source: CIMA (2018) based on data from PISA (2018).

Figure 4. ICT development at each proficiency level across countries



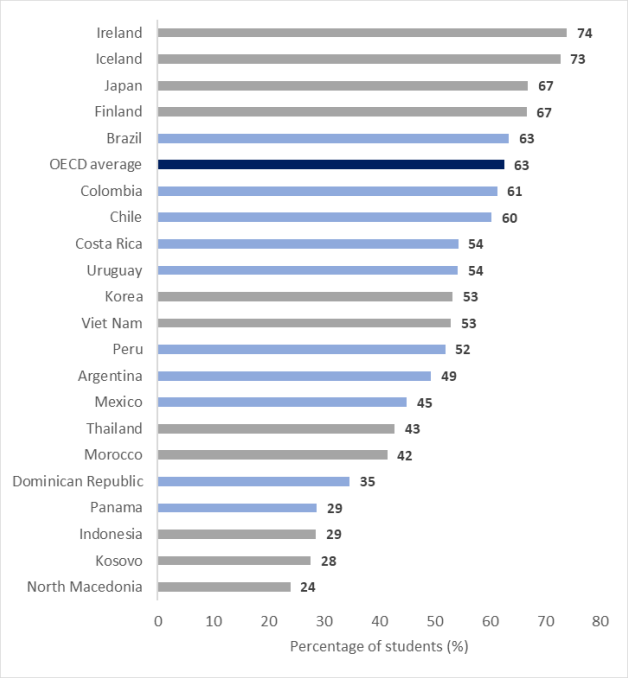
Source: IEA, ICILS (2018). Fraillon, J., Ainley, J., Schulz, W., Friedman, T. & Duckworth, D. (2019). ICCS 2018 Preparing for life in a digital world. IEA International Computer and Information Literacy Study 2018 International Report. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Retrieved from https://www.iea.nl/index.php/publications/study-reports/preparing-life-digital-world .
Note: Student's scores on the computer and information literacy (CIL) scale. In Chile and Uruguay, most of the students scored below level 2. They have undeveloped (students may be able to execute some simple commands) or basic/functional (students demonstrate functional working knowledge of computers as tools) proficiency level. Italy applied the test at the beginning of the school year and the United States did not meet sample participation requirements. ICT development index (IDI) score and country rank data relate to 2017. The IDI is a composite index that incorporates 11 different indicators relating to ICT readiness (infrastructure, access), ICT usage (individuals using the internet), and proxy indicators of ICT skills (adult literacy, secondary and tertiary enrollment).

Figure 5. Student co-operation and competition, PISA 2018



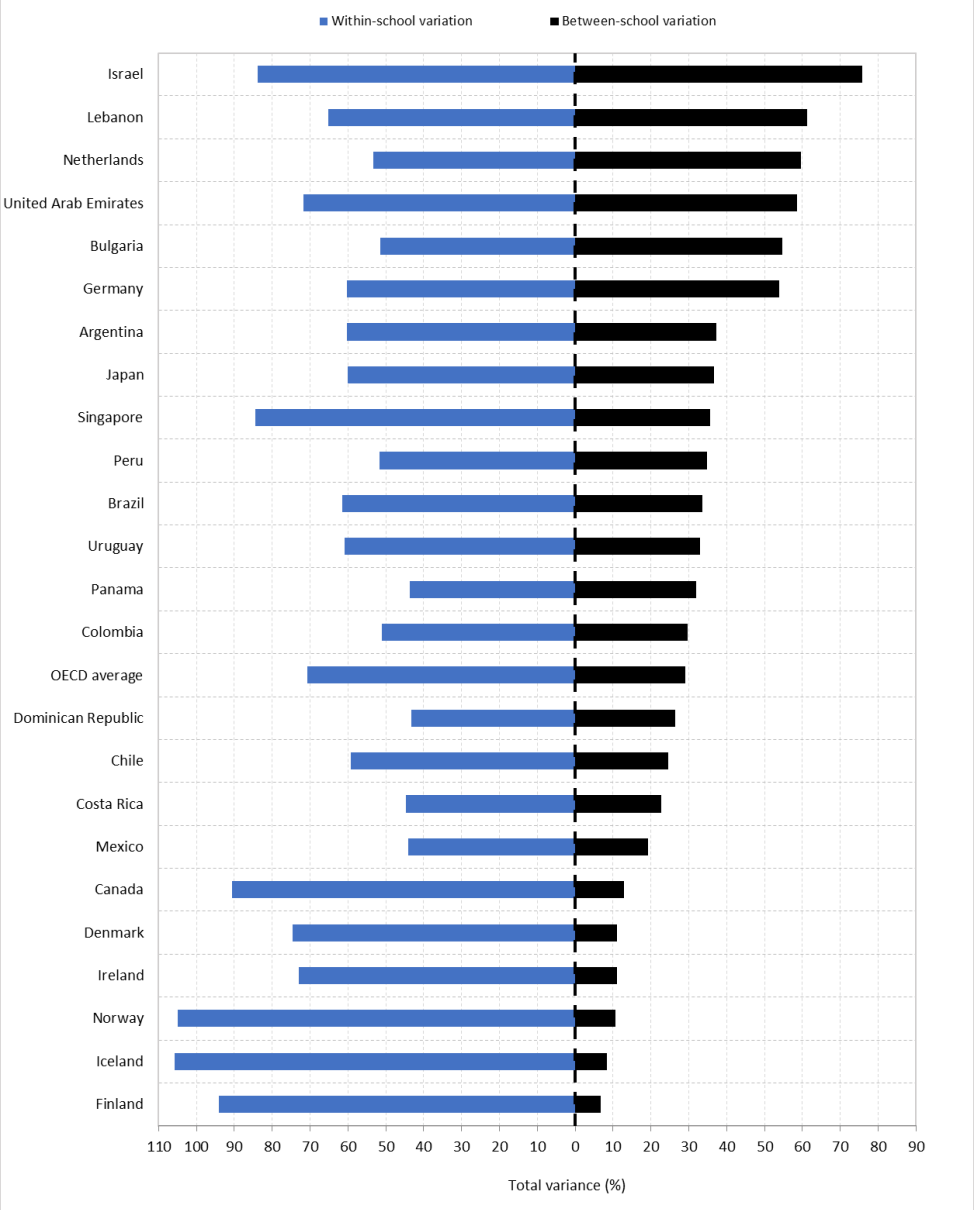
Source: OECD, PISA 2018 Database. Figure III.14.1
Note: Based on students' reports, positive values in this index mean that students perceive that other students at the school co-operate with each other to a greater extent than the average student in OECD countries. Positive values in this index mean that students perceive that other students at the school co-operate/compete with each other to a greater extent than the average student in OECD countries.

Figure 6. Growth mindset, PISA-2018



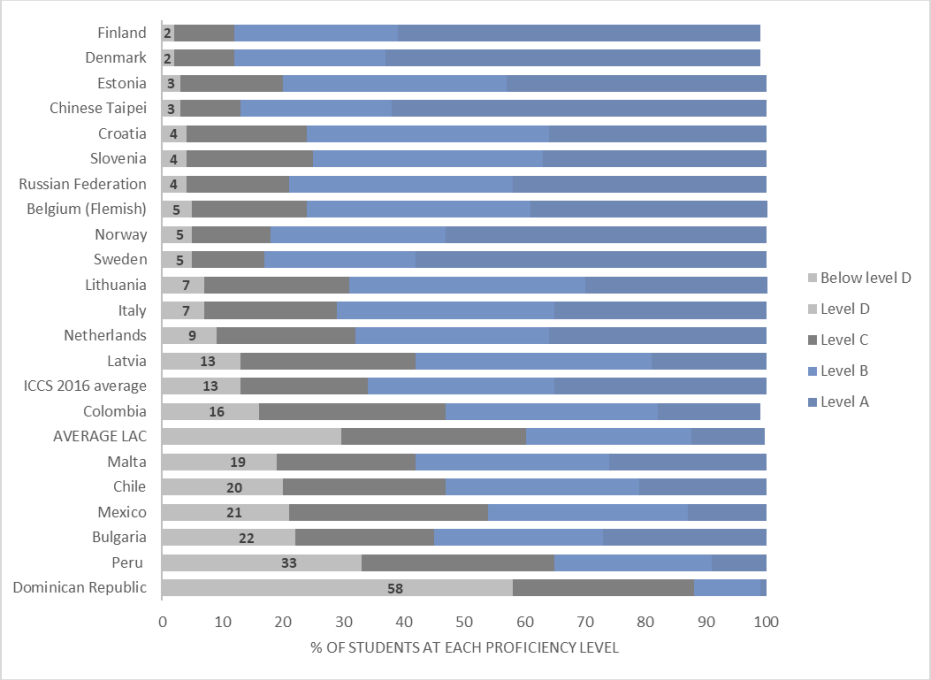
Source: OECD, PISA 2018 Database. Figure III.14.1
Note: Percentage of students who disagreed or strongly disagreed with the statement: “Your intelligence is something about you”. A majority of students in LA countries (51%) agreed with the fixed mindset statement “Your intelligence is something about you that you can’t change very much”, and in the Dominican Republic (65%) and Panama (71%) these percentages are higher than most of the countries. Countries and economies are ranked in descending order of the percentage of students who disagreed or strongly disagreed with the statement.

Figure 7. Variation in reading performance between and within schools



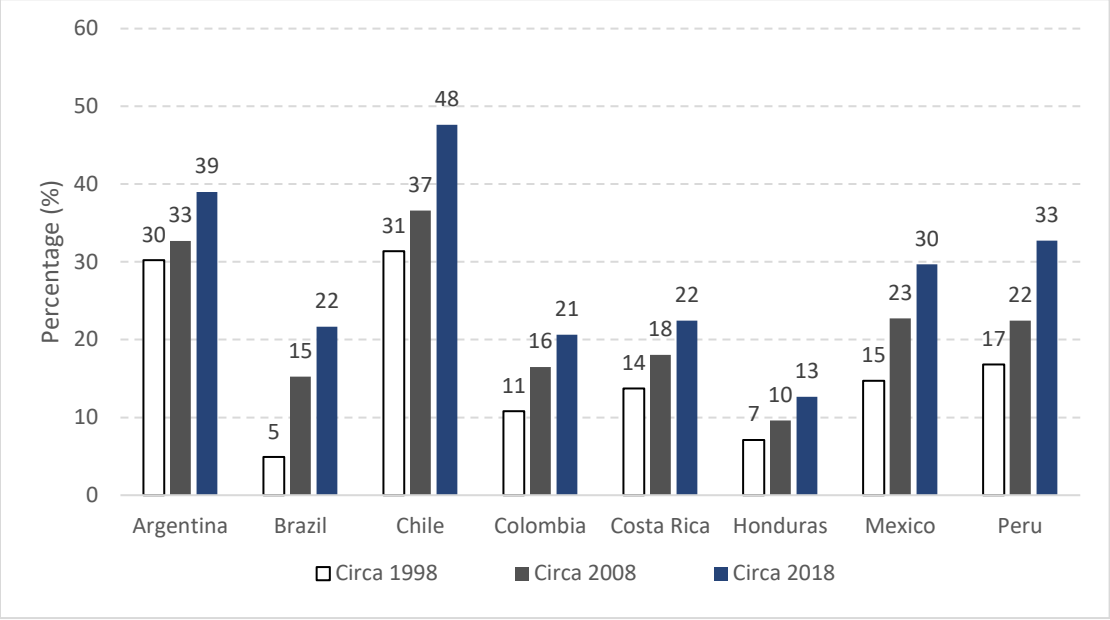
Source: OECD, PISA 2018 Database, Table II.B1.4.1; Figure II.4.1.
Note: All analyses are restricted to schools with the modal ISCED level for 15-year-old students. Countries and economies are ranked in descending order of the between-school variation in reading performance, as a percentage of the total variation in performance across OECD countries. Countries are ordered according the between-school variation.

Figure 8. Percentage of students at each proficiency level of civic knowledge



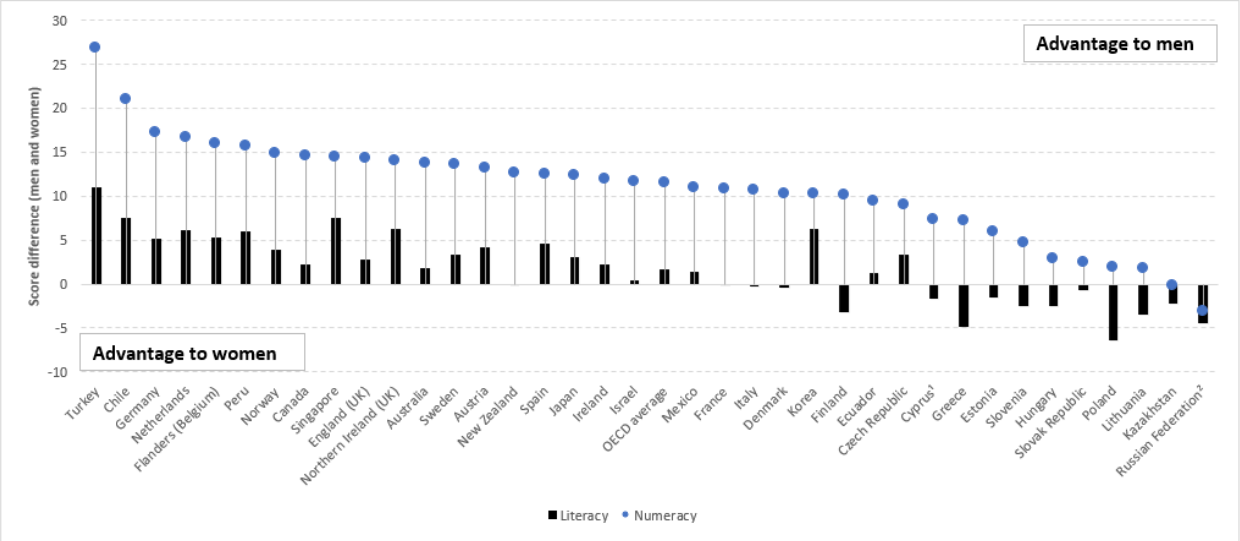
Source: IEA, ICCS (2016). Schulz, W., Ainley, J., Fraillon, J., Losito, B., Agrusti, G. & Friedam, T. (2017). IEA International Civic and Citizenship Education Study 2016 International Report. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Retrieved from https://www.iea.nl/publications/study-reports/international-reports-iea-studies/becoming-citizens-changing-world.
Note: Students who achieve proficiency at level D demonstrate familiarity with concrete, explicit content and examples relating to the basic features of democracy. They recognize that all people are equal before the law.

Figure 9. Net Enrollment Rates in Higher Education (percent) people ages 18 - 23, Circa 1998, 2008 and 2018



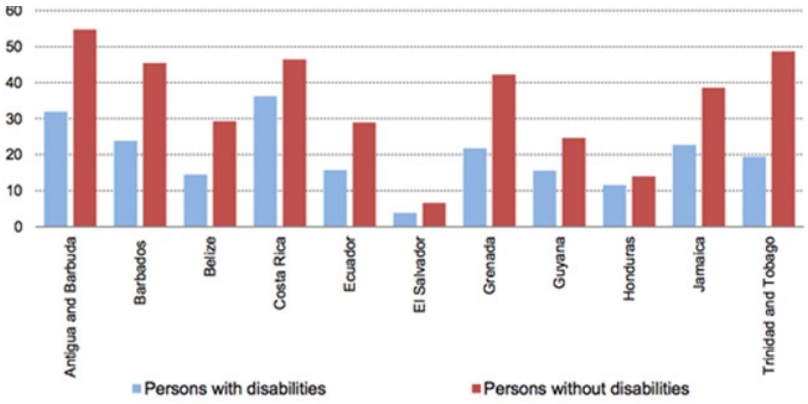
Source: IDB harmonized household surveys.

Figure 10. Percentage of adults scoring at or below proficiency level 1 in literacy or numeracy, by gender



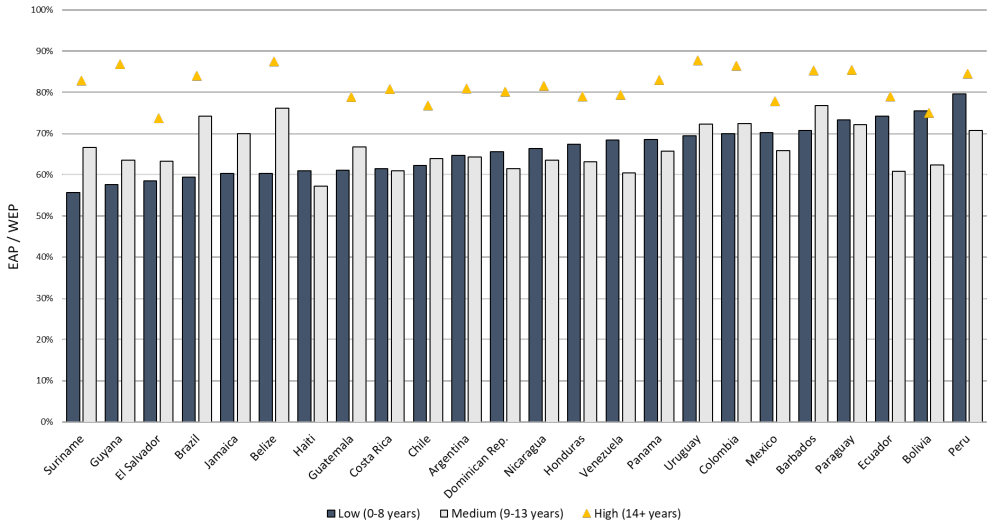
Source: Survey of Adult Skills (PIAAC) (2012, 2015, 2018), Tables Annex Skills Matter 2019 – Chapter, Table A3.1 (L).
Note: The sample for the Russian Federation does not include the population of the Moscow municipal area. More detailed information can be found in the Technical Report of the Survey of Adult Skills, Third Edition (OECD, 2019). The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island.

Figure 11 Latin America and the Caribbean: use of internet by disability status (age-standardized percentages)



Source: Economic Commission for Latin America and the Caribbean based on special tabulations of census data from: Antigua and Barbuda (2011); Barbados (2010); Belize (2010); Costa Rica (2011); Ecuador (2010); El Salvador (2007); Grenada (2011); Guyana (2012); Honduras (2013); Jamaica (2011); Trinidad and Tobago (2011).
[a] For Honduras and El Salvador, the census inquires about having an email account. This variable used as a proxy for using Internet. This proxy likely underestimates the percentage of persons who use Internet, as those with an email account most probably use Internet, but not all those who use Internet have an email account.

Figure 12. Labor participation rates: by schooling levels



Source: Labor Markets Information System (SIMS). Circa 2018.

(II) TABLES

Table 1. Net attendance rate to primary education, Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban
Argentina	96.8	96.6	97.1	96.9	96.9	96.7	96.7	97.4		96.8
Bahamas										
Barbados	90.2	92.0	88.3							
Belize										
Bolivia	98.1	98.0	98.2						98.2	98.0
Brazil	97.3	97.3	97.2	97.0	97.6	97.4	96.8	93.6	97.6	97.2
Chile	91.8	91.9	91.8	91.9	91.0	92.7	90.3	93.8	92.9	91.7
Colombia	96.1	95.6	96.7	96.2	94.8	96.4	98.0	96.4	96.7	95.9
Costa Rica	99.3	99.3	99.3	98.8	99.1	99.4	100.0	100.0	99.2	99.3
Dominica Republic	92.7	94.3	91.0	93.2	89.9	94.4	93.2	93.2	91.9	92.9
Ecuador	96.9	97.0	96.8	95.9	97.0	97.9	96.8	97.5	97.0	96.8
El Salvador	96.7	96.8	96.6	94.1	96.0	98.5	97.9	99.5	95.0	97.9
Guatemala	94.3	95.5	93.1	92.7	92.1	96.1	96.3	98.3	93.0	96.0
Guyana	91.2	89.9	92.6	91.7	91.0	92.4	90.3	90.1	91.0	91.9
Haiti										
Honduras	92.6	92.4	92.8	92.9	92.5	92.8	95.4	90.3	92.1	93.0
Jamaica	85.0	83.6	86.6						85.5	84.6
Mexico	95.7	95.5	95.9	95.2	95.7	95.9	95.7	96.5	95.6	95.7
Nicaragua	75.7	76.5	75.0	72.2	74.4	79.6	77.7	74.0	71.6	79.3
Panama	96.6	97.1	96.1	96.7	97.6	97.4	96.8	92.4	96.6	96.6
Paraguay	98.3	98.5	98.0	96.9	98.3	99.3	99.0	99.3	97.1	99.2
Peru	94.9	94.6	95.2	93.6	95.4	96.2	96.4	95.4	95.6	94.6
Surinam	95.0	96.4	93.4	95.4	94.8	95.0	93.1	94.3		
Trinidad and Tobago	91.8	92.6	91.1						93.3	90.6
Uruguay	98.8	98.7	99.0	99.1	98.9	98.0	99.1	98.6	99.3	98.7
Venezuela										
LAC average	**94.7**	**94.8**	**94.5**	**93.9**	**94.1**	**95.3**	**95.0**	**94.5**	**94.1**	**95.1**

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Barbados - SLC (2016) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Jamaica SLC (2015) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Trinidad & Tobago SLC (2014) Uruguay - ECH (2018).Note: Percentage of people aged between 6 - 11 that had completed 0 - 5 years of education and reported to be attending school.

Table 2. Completion rate of primary education, Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban	Indigenous	Afro
Argentina	97.7	97.0	98.4	96.3	97.8	98.3	98.0	98.8		97.7		
Bahamas												
Barbados	97.2	97.0	97.5									
Belize												
Bolivia	98.1	97.7	98.6						97.5	98.3	98.0	
Brazil	87.7	84.9	90.6	77.4	82.8	88.6	90.7	95.3	79.5	89.2	81.4	85.3
Chile	98.7	98.5	98.9	98.2	98.5	99.0	99.2	99.4	98.6	98.7		
Colombia	94.2	92.4	96.3	90.4	92.8	97.6	97.5	97.4	90.8	95.5		
Costa Rica	95.4	94.9	95.8	94.1	93.9	96.4	97.0	97.0	95.6	95.2		
Dominican Republic	93.2	90.0	96.6	94.6	92.9	92.4	92.5	93.2	86.7	94.5		
Ecuador	97.9	98.1	97.7	98.4	96.5	98.4	98.6	99.1	97.1	98.4	97.7	93.5
El Salvador	90.7	90.4	90.9	84.8	88.8	91.1	94.3	96.7	85.8	94.1		
Guatemala	83.2	83.7	82.6	79.3	75.5	79.9	88.4	95.9	78.3	88.7	73.0	
Guyana												
Haiti												
Honduras	89.0	87.2	90.9	78.0	83.0	92.7	95.9	98.4	83.4	94.6		
Jamaica	95.7	94.6	97.3						96.8	94.7	91.8	91.5
Mexico	97.6	97.1	98.1	95.4	97.4	98.2	98.9	99.5	96.4	98.1		
Nicaragua	78.9	72.4	86.2	73.1	71.0	85.7	79.6	90.5	66.7	88.8		
Panama	97.5	97.4	97.7	94.5	97.5	99.1	99.4	99.9	94.8	99.0	98	
Paraguay	93.0	92.0	94.2	88.8	90.5	94.0	96.2	97.0	90.2	94.8		
Peru	96.3	96.2	96.3	93.9	96.7	97.7	98.2	99.1	95.2	96.7	98	95.8
Surinam	91.6	90.7	92.5	91.3	93.5	95.3	93.4	97.1			85.4	86.0
Trinidad and Tobago	87.9	85.8	89.8								86.3	89.5
Uruguay	97.9	97.5	98.4	97.1	97.9	97.9	99.1	99.6	99.0	97.7		
Venezuela												
LAC average	**93.3**	**92.2**	**94.5**	**89.7**	**91.0**	**94.2**	**95.1**	**97.3**	**90.1**	**95.3**		

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Barbados - SLC (2016) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Jamaica SLC (2015) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Trinidad & Tobago SLC (2014) Uruguay - ECH (2018).Note: Percentage of the cohort of students aged between 3 - 5 years older than the theoric graduation age that has completed primary education.

Table 3. Attendance and completion rates and disability status and age

Census Data															
Country	Year	Attendance Rates, Ages 6-11						Attendance Rates, Ages 12-17				Completion Rates, Ages 25-34			
		Female			Male			Female		Male		Female		Male	
		No Disability	With Disability	Gap	No Disability	With Disability	Gap	No Disability	With Disability	No Disability	With Disability	No Disability	With Disability	No Disability	With Disability
Brasil	2010	97.5	96.5	1.0	97.2	94.9	2.3	89.8	89.1	89.6	87.3	54.5	46.8	46.5	40.5
Costa Rica	2011	94.1	96.9	-2.8	94.4	94.4	0.0	84.5	84.1	83	78.3	46.1	42.3	40.9	34.3
Dominican Republic	2010	96.3	86.4	9.9	95.0	80.6	14.4	88.1	81.1	86.5	71.1	50.8	45.8	37.7	30.9
Ecuador	2010	97.1	84.0	13.1	96.8	81.6	15.2	83.2	66.6	83.7	64.2	49.4	28.9	48	27.6
Mexico	2010	97.1	82.7	14.4	96.8	82.6	14.2	79.9	63.5	79	60.5	38.5	19.7	38.6	18.2
Panama	2010	97.5	93.2	4.3	97.3	94.8	2.5	88.4	84.8	88.2	82.1	58.4	49	49.1	37.8
Trinidad and Tobago	2011	98.4	84.0	14.4	98.1	80.0	18.1	91.6	75.8	89	68.1	81.5	56.7	75.7	51.6
Uruguay	2011	99.3	97.5	1.8	99.2	97.6	1.6	87	81.6	81.2	74	44	29.4	34.1	21.9
Average (8 countries)		97.2	90.2	7.0	96.9	88.3	8.5	86.6	78.3	85.0	73.2	52.9	39.8	46.3	32.9

Source: Berlinski et al. 2019.

Household Surveys								
		Attendance Rates, Ages 6-11				Attendance Rates, Ages 12-17			
		Female		Male		Female		Male	
Country	Year	No Disability	With Disability	No Disability	With Disability	No Disability	With Disability	No Disability	With Disability
BOL	2017	98.6	83.8	98.0	88.2	96.2	91.3	95.5	86.3
CHL	2017	99.4	98.1	98.5	97.6	97.2	96.0	97.5	96.0
CRI	2017	99.3	96.8	99.1	93.4	93.7	77.2	91.9	82.0
MEX	2016	99.5	89.6	99.3	88.2	85.4	63.0	84.8	64.9

Source: Hincapie, D., S. Duryea, and I. Hincapie. 2019. “Education for All: Advancing Disability Inclusion in Latin America and the Caribbean” Policy Brief No. IDB-PB-299. Washington, DC, United States: Inter-American Development Bank.
Note: Students who are on vacation during the week of the survey but are enrolled in school are coded as attending school. The following household surveys were analyzed: Bolivia - Encuesta de Hogares 2017; Chile - CASEN 2017; Costa Rica - Encuesta nacional de Hogares 2017; Mexico - Encuesta nacional de ingresos y Gastos de los Hogares 2016.

Table 4. Net attendance rate to low-secondary education, Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban
Argentina	69.2	68.8	69.5	64.4	69.3	68.1	74.2	73.5		69.2
Bahamas										
Barbados										
Belize										
Bolivia	70.6	69.5	71.8						65.6	73.5
Brazil	75.4	72.0	79.1	65.5	74.1	79.1	81.3	72.1	67.2	77.2
Chile	80.5	80.4	80.6	79.1	80.6	82.3	79.2	82.6	81.7	80.3
Colombia	61.7	56.5	67.8	49.8	60.5	67.6	73.3	76.2	54.0	64.7
Costa Rica	67.5	67.3	67.7	58.9	63.1	74.2	71.4	81.3	65.7	68.3
Dominica Republic	65.4	62.7	68.3	62.1	65.2	66.6	68.0	78.1	61.4	66.4
Ecuador	82.9	80.9	84.7	76.1	83.8	88.0	84.5	88.4	79.0	85.2
El Salvador	51.3	49.8	52.8	38.8	48.9	53.6	59.7	72.0	43.3	57.4
Guatemala	33.4	32.8	34.0	19.0	23.8	37.3	43.3	62.7	25.0	46.6
Guyana	80.8	81.0	80.5	78.8	80.5	81.0	80.3	84.6	80.5	81.8
Haiti										
Honduras	48.7	44.7	52.9	28.1	44.6	52.5	70.6	67.9	35.9	62.6
Jamaica										
Mexico	84.5	84.1	85.0	79.1	84.4	87.1	87.6	88.1	81.3	85.7
Nicaragua	48.2	42.2	54.5	33.2	46.7	47.9	48.5	68.6	31.4	60.7
Panama	83.2	82.3	84.2	71.9	87.3	88.0	89.2	89.3	78.4	86.4
Paraguay	64.8	61.6	68.2	55.0	59.1	65.7	78.2	79.5	61.7	67.1
Peru	77.8	77.4	78.2	70.1	78.4	79.9	82.2	89.1	70.7	80.6
Surinam	55.8	44.1	65.9	51.6	54.6	60.4	73.4	64.7		
Trinidad and Tobago	69.1	61.9	75.8						70.4	67.9
Uruguay	80.5	78.2	82.8	75.5	80.2	83.2	84.9	90.9	81.3	80.3
Venezuela										
LAC average	**67.5**	**65.1**	**69.9**	**58.7**	**65.8**	**70.1**	**73.9**	**78.3**	**62.6**	**71.9**

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Barbados - SLC (2016) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Jamaica SLC (2015) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Trinidad & Tobago SLC (2014) Uruguay - ECH (2018).Note: Percentage of students aged 12 - 14 attending school and had completed from 6 to 8 years of schooling.

Table 5. Percentage of children who are low performers (below level 2) in mathematics and reading, TERCE 3rd grade

Mathematics

Countries	Total	Men	Women	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	39.00	41.91	36.08	38.63	42.04	44.83	22.36	47.16	51.45	38.68	26.70	23.07
Brazil	37.46	41.49	33.29	35.68	48.42	42.46	14.80	60.45	46.00	32.48	28.07	9.74
Chile	15.36	15.87	14.83	14.49	23.19	20.69	10.81	22.89	20.61	14.44	7.57	7.25
Colombia	47.99	49.50	46.52	40.99	66.62	54.37	27.12	74.14	62.62	52.17	31.18	16.27
Costa Rica	23.14	23.96	22.26	23.20	19.76	24.75	3.04	31.64	29.88	25.97	16.84	9.87
Dominican Republic	84.78	86.17	83.47	84.08	86.55	88.01	66.88	91.40	89.54	86.91	83.89	69.46
Ecuador	47.84	48.47	47.09	46.23	52.89	51.83	33.75	64.95	58.01	48.30	41.56	26.22
Guatemala	60.15	58.98	61.43	38.94	71.70	67.31	20.88	77.57	74.46	67.31	51.06	29.87
Honduras	55.67	54.82	56.54	50.55	58.77	58.96	24.79	62.14	66.29	54.76	50.99	35.33
Mexico	30.32	32.15	28.44	25.59	44.64	32.65	7.82	48.50	36.43	30.88	20.09	12.35
Nicaragua	68.00	67.24	68.72	62.18	72.32	72.27	49.11	73.58	75.32	72.47	62.93	47.70
Panama	60.14	61.46	58.73	46.44	73.39	65.49	26.66	83.05	70.36	64.76	53.36	27.77
Paraguay	66.51	66.64	66.38	62.03	71.71	71.89	44.36	76.97	72.03	72.96	65.86	39.20
Peru	39.59	37.68	41.72	31.62	69.26	46.60	16.27	60.90	53.26	39.41	27.05	15.83
Uruguay	31.92	34.15	29.48	31.74	35.49	37.09	9.19	55.67	34.72	33.96	15.32	12.64
LAC average	**47.19**	**48.03**	**46.33**			**51.94**	**25.19**	**62.07**	**56.06**	**49.03**	**38.83**	**25.50**

Reading

Countries	Total	Men	Women	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	38.46	43.66	33.28	37.47	46.72	44.22	22.05	49.78	49.26	36.21	30.25	20.27
Brazil	33.70	39.85	27.13	32.07	43.79	38.58	11.62	51.35	41.85	31.39	24.88	10.17
Chile	10.00	12.55	7.30	9.63	13.36	13.90	6.66	14.15	11.58	10.06	5.95	3.98
Colombia	32.15	36.05	28.33	25.28	50.39	36.42	18.18	58.78	41.58	30.49	15.69	9.09
Costa Rica	17.61	20.56	14.46	17.56	20.10	18.75	3.37	24.41	22.89	19.69	12.66	8.12
Dominican Republic	74.11	77.79	70.70	73.33	76.10	77.50	55.37	82.76	80.51	73.86	74.44	56.74
Ecuador	38.06	38.83	37.14	36.68	42.37	41.94	24.33	54.05	49.05	39.81	32.35	14.58
Guatemala	46.07	47.56	44.45	25.05	57.52	52.80	9.14	64.78	57.23	51.58	38.09	17.95
Honduras	45.70	47.65	43.75	36.55	51.22	48.65	17.86	53.29	52.43	50.65	41.56	25.17
Mexico	33.05	36.28	29.77	28.33	47.33	35.83	6.11	52.91	35.75	34.62	25.67	13.17
Nicaragua	56.18	57.33	55.08	46.90	63.13	61.27	33.72	67.53	66.18	59.17	50.37	34.06
Panama	48.92	53.27	44.47	33.69	63.65	54.23	15.44	70.98	55.85	48.66	42.28	20.22
Paraguay	57.39	60.64	53.89	46.71	69.88	63.36	32.96	73.78	66.80	64.04	49.41	30.78
Peru	32.36	33.13	31.49	24.30	62.38	38.74	11.14	52.90	44.62	33.81	19.87	12.48
Uruguay	28.56	31.05	25.77	28.13	36.98	33.08	8.66	49.23	32.23	30.46	15.23	11.28
LAC average	**39.49**	**42.41**	**36.47**			**43.95**	**18.44**	**54.71**	**47.19**	**40.97**	**31.91**	**19.20**

Source: CIMA (2013). TERCE (2013).
Note: The minimum proficiency level corresponds to Level 2 in TERCE.

Table 6. Percentage of children who are low performers (below level 2) in mathematics and reading, TERCE 6th grade

Mathematics

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Lengua	NoLengua
Argentina	36.85	39.29	34.51	35.60	46.87	42.30	19.78	51.83	40.19	36.45	29.50	20.47	35.59	60.04
Brazil	39.84	42.74	36.77	37.69	58.47	43.57	16.49	59.64	50.76	41.87	28.19	20.20	40.49	41.64
Chile	16.22	15.80	16.63	15.21	24.66	21.90	12.22	23.39	20.08	16.00	13.04	5.39	15.77	31.91
Colombia	42.24	46.80	38.28	38.56	57.31	44.93	26.00	59.00	43.95	47.46	38.84	19.97	41.95	56.61
Costa Rica	29.92	31.52	28.39	29.66	41.52	31.66	7.47	44.21	39.16	29.64	23.83	12.40	29.69	17.88
Dominican Republic	80.06	81.78	78.34	78.39	84.69	81.86	68.02	88.29	85.70	84.15	76.76	65.08	79.87	79.36
Ecuador	44.81	45.66	44.05	42.64	51.23	48.09	31.64	65.64	52.92	45.20	38.28	22.65	44.12	54.87
Guatemala	56.38	60.28	52.62	43.01	65.21	62.50	25.96	75.51	61.85	59.94	53.08	32.65	55.72	65.92
Honduras	62.10	65.01	59.27	57.58	65.03	65.75	32.26	67.87	66.93	66.49	63.15	44.53	60.37	81.17
Mexico	23.04	23.75	22.37	19.65	34.22	24.77	6.17	36.28	27.86	24.18	15.96	6.09	21.53	42.66
Nicaragua	70.97	72.60	69.06	64.63	77.75	75.54	52.82	82.41	78.07	73.61	67.81	51.73	69.80	84.81
Panama	67.52	66.15	68.95	59.51	76.53	72.27	36.65	84.70	80.76	66.89	61.25	42.87	65.14	81.70
Paraguay	69.31	69.91	68.73	63.56	76.97	75.10	46.75	81.11	80.05	74.28	66.59	44.87	56.32	72.43
Peru	37.74	42.91	32.70	30.60	70.76	43.34	18.68	60.61	48.63	39.83	26.25	16.67	35.24	65.80
Uruguay	26.09	28.89	23.14	26.50	15.53	29.51	6.47	41.44	31.66	22.23	18.71	10.41	25.02	31.75
LAC average	**46.87**	**48.87**	**44.92**			**50.87**	**27.16**	**61.46**	**53.90**	**48.55**	**41.42**	**27.73**	**45.11**	**57.90**

Reading

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Lengua	NoLengua
Argentina	16.75	12.15	21.15	15.16	29.46	20.23	5.82	25.50	17.48	17.19	11.79	9.33	16.49	41.34
Brazil	10.99	8.11	13.99	9.94	20.18	12.42	2.09	23.39	11.43	10.09	3.51	2.94	10.89	25.98
Chile	4.85	3.37	6.30	4.60	6.90	6.13	3.95	6.30	6.19	4.14	4.98	1.22	4.76	7.99
Colombia	9.69	8.65	10.60	8.32	15.34	10.59	4.30	14.14	10.11	13.77	6.89	2.17	9.27	31.21
Costa Rica	4.50	3.51	5.45	4.28	14.30	4.77	0.98	9.28	5.16	2.73	3.53	1.25	4.18	29.51
Dominican Republic	37.81	33.72	41.90	33.71	49.25	38.88	30.64	51.40	43.42	40.57	31.73	21.19	36.31	59.40
Ecuador	20.77	20.79	20.75	19.08	25.77	23.72	8.90	41.97	26.09	19.96	11.63	4.94	19.92	44.97
Guatemala	20.49	20.51	20.47	9.78	27.56	24.00	3.04	36.75	27.69	20.43	14.14	4.95	19.94	28.88
Honduras	25.17	24.03	26.27	17.91	29.88	27.63	5.10	34.17	31.01	23.93	21.37	6.71	23.18	41.38
Mexico	9.59	9.37	9.81	6.46	19.92	10.44	1.32	22.24	12.04	8.50	3.83	0.99	8.18	34.33
Nicaragua	25.61	24.70	26.67	18.25	33.48	29.24	11.20	43.07	30.04	22.38	21.59	12.16	24.93	46.42
Panama	25.82	22.91	28.93	15.42	37.44	28.92	5.55	53.65	27.92	21.19	13.17	6.93	21.43	56.39
Paraguay	33.84	30.77	36.83	20.38	51.98	39.84	10.52	59.54	43.69	39.83	21.25	9.41	14.85	39.29
Peru	18.40	20.41	16.44	11.11	52.14	22.63	3.97	42.03	23.28	15.68	7.92	3.77	15.34	53.20
Uruguay	11.29	10.33	12.28	11.31	10.76	12.76	2.88	17.61	16.73	5.61	7.06	4.70	11.43	13.76
LAC average	**18.37**	**16.89**	**19.86**			**20.81**	**6.68**	**32.07**	**22.15**	**17.73**	**12.29**	**6.18**	**16.08**	**36.94**

Science

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Lengua	NoLengua
Argentina	40.07	37.64	42.42	38.93	49.29	46.39	20.29	54.83	43.58	41.80	34.66	21.12	39.18	50.54
Brazil	37.23	36.68	37.81	36.04	47.56	40.55	16.44	49.76	44.93	38.33	31.69	17.31	37.20	40.76
Chile	22.79	20.29	25.27	22.17	28.07	31.88	16.41	29.56	27.40	22.94	19.26	10.86	22.22	38.33
Colombia	27.61	27.72	27.52	25.90	34.62	29.59	15.66	37.67	31.52	29.00	21.35	13.71	26.97	55.49
Costa Rica	18.82	18.83	18.80	18.66	25.76	20.00	3.58	30.76	21.88	16.55	14.40	9.24	18.01	40.66
Dominican Republic	64.65	62.63	66.67	62.29	71.23	66.50	52.34	78.88	75.19	64.11	63.34	41.32	63.49	82.02
Ecuador	38.50	38.57	38.44	37.23	42.24	42.04	24.27	53.48	48.22	38.68	31.89	19.70	37.65	60.88
Guatemala	44.50	45.94	43.11	30.11	54.00	50.62	14.05	64.14	56.28	41.45	41.09	21.32	43.78	54.48
Honduras	50.10	48.05	52.10	42.04	55.32	53.28	24.03	55.09	61.42	52.04	48.77	29.64	48.45	71.04
Mexico	26.99	25.28	28.61	22.94	40.32	28.81	9.18	41.86	31.87	28.88	18.99	9.09	24.89	54.84
Nicaragua	49.59	49.98	49.14	43.80	55.80	53.94	32.37	65.66	52.95	47.94	44.46	30.71	47.25	71.33
Panama	48.94	45.41	52.61	37.40	61.93	53.30	20.63	74.06	56.59	45.25	36.91	22.19	44.24	80.20
Paraguay	59.33	56.88	61.63	52.35	68.65	65.26	36.24	72.84	71.79	63.95	53.12	32.80	46.22	61.88
Peru	38.09	38.01	38.18	31.69	67.62	43.21	20.66	62.93	44.97	37.68	26.81	18.05	34.89	72.71
Uruguay	32.84	32.44	33.26	33.38	18.91	36.86	9.80	53.27	43.62	23.69	20.48	14.55	31.27	41.00
LAC average	**40.00**	**38.96**	**41.04**			**44.15**	**21.06**	**54.99**	**47.48**	**39.49**	**33.81**	**20.77**	**37.71**	**58.41**

Source: CIMA (2013). TERCE (2013).
Note: The minimum proficiency level corresponds to Level 2 in TERCE.

Table 7. Percentage of children who are low performers (below level 2) in mathematics, reading and science, PISA

Mathematics

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	68.97	72.79	65.04	67.58	90.08	79.37	47.34	90.11	80.46	71.60	58.86	42.19
Brazil	68.09	70.17	66.02	67.07	87.87	75.71	24.86	85.97	79.52	71.21	62.81	38.21
Chile	51.91	53.78	50.09	50.10	76.50	65.76	43.36	74.34	58.93	52.95	46.70	24.13
Colombia	65.39	70.27	60.31	63.08	80.60	72.02	35.23	80.91	77.24	66.37	60.11	39.68
Costa Rica	60.00	64.51	55.37	55.82	75.26	65.48	25.72	77.69	70.23	65.37	52.65	33.33
Dominican Republic	90.56	90.85	90.26	89.13	97.69	93.91	73.04	97.66	95.85	93.68	90.24	74.26
Mexico	56.25	58.99	53.26	51.44	78.78	57.85	42.99	74.73	62.81	56.11	51.22	35.03
Panama	81.18	83.01	79.32	79.81	92.08	88.16	53.53	95.03	89.01	86.02	78.30	56.57
Peru	60.34	63.57	57.23	53.51	76.92	67.96	37.14	86.04	72.42	59.94	50.75	32.20
Uruguay	50.71	52.40	48.86	50.11	62.39	56.06	22.37	73.68	61.12	53.78	42.72	24.04
LAC average	65.34	68.03	62.58	62.76	81.82	72.23	40.56	83.62	74.76	67.70	59.44	39.96
OECD average	23.98	24.01	23.93	23.24	34.77	25.73	16.83	40.08	28.63	22.64	16.54	10.07

Reading

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	52.12	49.43	54.88	50.34	80.14	63.79	28.19	75.60	64.23	53.14	38.90	26.99
Brazil	49.95	44.35	55.56	48.77	75.36	56.90	11.30	68.35	58.59	51.36	43.46	24.88
Chile	31.72	26.84	36.48	29.78	53.87	42.91	24.36	48.90	35.29	31.47	27.91	12.31
Colombia	49.90	48.01	51.88	46.89	70.43	56.36	20.61	69.18	61.98	48.40	42.60	26.59
Costa Rica	41.96	38.72	45.29	36.91	60.43	46.83	11.55	61.43	51.99	44.63	33.46	17.64
Dominican Republic	79.06	74.30	83.85	76.69	91.55	83.47	56.23	91.83	86.17	80.94	78.30	56.25
Mexico	44.69	41.70	47.94	38.60	73.29	46.50	29.60	67.72	49.53	43.32	39.13	22.77
Panama	64.31	61.32	67.35	60.93	84.38	71.52	34.23	84.76	74.00	66.01	58.72	36.27
Peru	54.31	51.05	57.44	46.61	73.12	62.27	30.21	82.37	65.64	53.20	44.61	25.44
Uruguay	41.88	36.77	47.45	41.21	54.95	46.61	16.88	65.33	51.30	40.33	33.86	18.59
LAC average	50.99	47.25	54.81	47.67	71.75	57.71	26.32	71.55	59.87	51.28	44.10	26.77
OECD average	22.03	17.04	26.95	21.07	32.85	23.37	15.67	36.35	25.85	20.74	15.03	9.81

Science

Countries	Total	Women	Men	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	53.49	55.53	51.39	51.70	79.75	64.32	30.97	78.00	63.97	55.73	41.04	27.22
Brazil	55.39	55.03	55.75	54.14	80.87	62.79	13.78	73.92	66.09	57.91	49.01	26.47
Chile	35.34	35.22	35.47	33.60	55.77	47.67	27.56	54.08	40.35	36.35	30.52	13.80
Colombia	50.37	53.44	47.17	47.81	67.75	56.71	21.69	66.21	62.29	51.63	43.31	27.77
Costa Rica	47.84	50.29	45.34	43.18	64.86	53.29	13.78	68.45	59.59	51.72	38.06	20.45
Dominican Republic	84.83	83.81	85.87	82.77	95.33	89.02	62.94	95.55	91.39	87.51	84.29	63.71
Mexico	46.81	48.62	44.84	41.35	72.38	48.23	34.59	67.14	52.50	47.54	42.53	25.39
Panama	71.29	71.53	71.03	68.62	86.31	78.54	39.82	88.53	79.92	74.58	66.66	44.72
Peru	54.49	57.08	51.99	47.40	71.71	62.19	31.05	81.08	66.15	53.72	45.29	26.00
Uruguay	43.88	44.20	43.52	43.39	53.25	48.68	18.44	67.27	53.54	43.83	35.39	20.52
LAC average	54.37	55.47	53.24	51.40	72.80	61.14	29.46	74.02	63.58	56.05	47.61	29.60
OECD average	21.97	20.77	23.16	21.13	31.43	23.22	15.55	37.14	26.19	20.63	14.86	9.26

Source: CIMA (2018). PISA (2018).
Note: The minimum proficiency level corresponds to Level 2 in PISA. Reading proficiency (level 2 and above) means that students are able to identify the main idea in a text of moderate length, find information based on explicit, though sometimes complex, criteria, and reflect on the purpose and form of texts when explicitly directed to do so. Mathematics proficiency (level 2 and above) means that students can interpret and recognize, without direct instructions, how a (simple) situation can be represented mathematically (e.g. comparing the total distance across two alternative routes,or converting prices into a different currency). Science proficiency (level 2 and above) these students can recognize the correct explanation for familiar scientific phenomena and can use such knowledge to identify, in simple cases, whether a conclusion is valid based on the data provided.

Table 8. Gender differences in Reading and Math (PISA 2018, 2015)

Country	Gender disparities in minimum achievement (Parity index[1] for girls, compared to boys)	
	Reading (2018)[3]	Mathematics (2018)[3]
	Parity index[1]	Parity index
Argentina	1.11	0.78
Brazil	1.2	0.88
Chile	1.13	0.93
Colombia	1.07	0.75
Costa Rica	1.11	0.8
Dominican Republic	1.37	0.94
Ecuador	1.09	0.71
Guatemala	1.15	0.84
Honduras	1.11	0.66
Mexico	1.11	0.88
Panama	1.16	0.82
Paraguay	1.12	0.56
Peru	1.13	0.85
Uruguay	1.17	0.93
OECD average	1.12	0.99

1. Values of the parity index below 1 indicate a disparity in favour of the second group (boys, or advantaged students). Values of the parity index above 1 indicate a disparity in favour of the first group (girls, or disadvantaged

3.Ecuador, Guatemala, Honduras, Paraguay: data refer to 2017 and were collected as part of the PISA for Development assessment.

Source: OECD, PISA 2018 Database

Country	Gender disparities in minimum	
	Reading (2015)	Mathematics (2015
	Points difference in favor of girls	Points difference in favor of girls
Trinidad and Tobago	51	18

Source: OECD, PISA 2015 Database

Table 9. Country averages for computer and information literacy (CIL), ICT development index score, and percent of students at each proficiency level across countries

Countries	Average CIL score	ICT development index (IDI) of students score (and country rank)	Below Level 1	Level 1	Level 2	Level 3	level 4
Kazakhstan	395	6.79	54	27	15	4	0
Uruguay	450	7.16	33	29	27	9	1
Italy *	461	7.04	24	39	30	7	0
Chile	476	6.57	20	34	36	10	0
Luxembourg	482	8.47	19	32	38	11	0
ICILS 2018 average	496		18	25	36	19	2
France	499	8.24	13	30	40	15	1
Germany	518	8.39	10	23	43	22	2
United States *	519	8.18	10	24	41	23	2
Korea, Republic of	542	8.85	9	19	32	32	9
Finland	531	7.88	8	20	43	27	3
Portugal	516	7.13	7	27	46	19	1
Denmark	553	8.71	3	14	45	36	3

Source: IEA, ICILS (2018). Fraillon, J., Ainley, J., Schulz, W., Friedman, T. & Duckworth, D. (2019). ICCS 2018 Preparing for life in a digital world. IEA International Computer and Information Literacy Study 2018 International Report. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Retrieved from https://www.iea.nl/index.php/publications/study-reports/preparing-life-digital-world

Note: Student's scores on the computer and information literacy (CIL) scale. In Chile and Uruguay, most of the students scored below level 2. They have undeveloped (students may be able to execute some simple commands) or basic/functional (students demonstrate functional working knowledge of computers as tools) proficiency level. Italy applied the test at the beginning of the school year and the United States did not meet sample participation requirements. ICT development index (IDI) score and country rank data relate to 2017. The IDI is a composite index that incorporates 11 different indicators relating to ICT readiness (infrastructure, access), ICT usage (individuals using the internet), and proxy indicators of ICT skills (adult literacy, secondary and tertiary enrollment).

Table 10. Compulsory and intended instruction time, by age

Countries	hours of instruction in primary and secondary education (up to age 14)	source
Denmark	9 760	b
Chile	9 542	b
Ecuador	9 333	a
Honduras	9 000	a
Portugal	8 991	b
Hong Kong (China)	8 838	c
Israel	8 767	b
Greece	8 744	b
France	8 680	b
United Arab Emirates	8 677	c
Argentina	8 640	c
Italy	8 340	b
Canada	8 307	b
Mexico	8 300	b
Ireland	8 296	b
Luxembourg	8 079	b
Malta	8 006	c
Spain	7 878	b
Belgium (Fl.)	7 812	b
Zambia	7 800	a
Guatemala	7 680	a
Peru	7 650	c
Chinese Taipei	7 630	c
Slovenia	7 559	b
Cyprus	7 454	c
Paraguay	7 448	a
Germany	7 348	b
Kazakhstan	7 344	c
Japan	7 260	b
Turkey	7 211	b
Dominican Republic	7 120	c
Singapore	7 061	c
Thailand	7 000	c
Norway	6 982	b
Slovak Republic	6 933	b
FYROM	6 816	c
Iceland	6 777	b
Hungary	6 665	b
Cambodia	6 650	a
Uruguay	6 535	c
Korea	6 410	b
Macao (China)	6 341	c
Poland	5 902	b
Georgia	5 886	c
Finland	5 768	b
Montenegro	5 670	c
Senegal	5 670	a
Bulgaria	5 661	c
Estonia	5 609	b
Croatia	5 329	c
Lithuania	5 313	c

Source: a) PISA-D system-level data collection in 2017. b) Education at a Glance: OECD Indicators, 2016 Edition (OECD, 2016). c) PISA system-level data collection in 2016.
Note: Number of hours per year for 5-15-year-olds in public institutions. Estimated instruction time per age, as the allocation of instruction time across multiple grades is flexible.

Table 11. Percentage of students with access to water in their primary school, TERCE 2013

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	94.93	97.47	72.26	94.55	96.00	90.71	94.54	96.01	98.83	98.76
Brazil	94.82	96.44	80.35	94.04	100.00	88.57	91.52	96.35	98.05	98.73
Chile	98.82	99.79	90.79	97.81	99.54	94.70	99.89	99.96	99.87	99.48
Colombia	82.11	88.22	57.13	80.65	90.99	71.93	79.88	83.08	87.65	89.65
Costa Rica	98.78	99.05	86.96	98.69	100.00	97.35	97.87	98.76	99.75	100.00
Dominican Republic	81.25	81.68	80.06	79.10	95.16	84.09	76.42	82.21	81.15	81.63
Ecuador	91.53	92.85	87.12	90.85	94.39	80.79	89.25	93.51	96.74	96.48
Guatemala	79.73	98.06	67.87	75.83	99.02	64.45	72.21	80.31	84.59	95.81
Honduras	83.38	85.95	81.61	81.31	100.00	72.13	82.75	88.30	88.17	94.81
Mexico	87.84	94.77	65.02	86.60	100.00	64.95	85.15	91.93	96.28	99.07
Nicaragua	75.03	87.89	60.02	71.15	90.57	56.40	66.88	78.34	81.38	91.82
Panama	81.28	100.00	60.89	78.38	100.00	50.96	77.67	89.17	94.70	98.14
Paraguay	93.26	98.85	85.66	91.89	98.56	82.73	93.01	91.47	98.57	98.35
Peru	84.50	93.07	44.63	80.24	98.99	60.81	76.87	85.93	96.55	98.81
Uruguay	99.34	99.65	91.78	99.62	97.82	99.74	99.53	99.58	98.72	99.37
LAC average	88.44			86.71	97.40	77.36	85.56	90.33	93.40	96.06

Source: CIMA (2013). TERCE (2013)
Note: Number of primary students with access to water in the education center they attend divides by the total number of students in the sample.

Table 12. Percentage of students with access to bathrooms in good condition in their primary school, TERCE

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	84.59	86.59	66.60	78.86	100.00	74.09	81.14	85.45	89.60	92.40
Brazil	85.96	88.16	66.29	83.83	100.00	75.18	80.21	88.54	92.61	95.34
Chile	96.81	97.59	90.35	93.14	99.41	94.15	95.76	97.65	97.45	98.76
Colombia	82.20	88.27	57.37	79.82	96.68	73.29	81.17	82.69	87.36	87.72
Costa Rica	85.99	85.82	93.35	84.89	100.00	83.09	79.77	86.52	87.96	92.55
Dominican Republic	90.67	92.25	86.33	89.24	100.00	89.18	86.50	91.30	92.13	94.00
Ecuador	78.27	76.04	85.76	73.56	98.00	73.98	75.82	76.10	76.10	88.80
Guatemala	73.10	87.93	63.40	67.80	99.13	54.93	64.84	78.55	78.56	90.61
Honduras	67.01	69.97	64.96	62.88	100.00	51.19	60.16	71.12	73.18	84.73
Mexico	72.35	76.64	58.23	69.53	100.00	59.29	67.97	71.40	76.47	88.03
Nicaragua	47.48	58.17	35.13	36.85	90.38	26.49	37.08	46.67	51.36	74.97
Panama	76.51	82.76	69.71	72.88	100.00	56.66	76.12	79.00	78.83	94.38
Paraguay	74.81	79.94	67.85	69.05	97.14	64.23	69.35	68.29	81.05	88.19
Peru	74.37	81.11	42.79	67.30	98.37	57.98	70.75	73.82	77.86	91.23
Uruguay	76.14	75.75	85.77	72.18	97.82	67.61	71.95	75.57	83.52	91.02
LAC average	77.75			73.45	98.46	66.76	73.24	78.18	81.60	90.18

Source: CIMA (2013). TERCE (2013)
Note: Number of primary students with access to bathrooms in good condition in the education center they attend divides by the total number of students in the sample.

Table 13. Percentage of school with ramps for disability access and circulation

	Panel A. Mexico			
	Preschool	Primary	Secondary	Special
Answer	-1	-2	-3	-4
Yes	10.4	14.2	17.3	30.5
No	89.6	85.8	82.7	69.5
	Panel B. Perú (Bathrooms for Children)			
	Preschool	Primary	Secondary	Special
Answer	-5	-6	-7	-8
Yes	1.4	0.8	1.5	15.4
No	98.6	99.2	98.5	84.6
	Panel C. Perú (Bathrooms for Adults)			
	Preschool	Primary	Secondary	Special
Answer	-9	-10	-11	-12
Yes	1	1.4	3.1	12.5
No	99	98.7	96.9	87.5
	Panel D. Argentina (Bathrooms for Adults and Children)			
Answer	-13			
Yes	12.7			
No	87.3			

Source: Hincapie, D., S. Duryea, and I. Hincapie. 2019. "Education for All: Advancing Disability Inclusion in Latin America and the Caribbean" Policy Brief No. IDB-PB-299. Washington, DC, United States: Inter-American Development Bank.
Note: The unit of observation is the school.

Table 14. Percentage of students with access to a desktop computer, laptop computer and tablet, PISA 2015

Desktop computer

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Brazil	64.86	65.18	60.72	65.43	66.74	52.59	61.88	68.23	68.93	70.06
Chile	81.48	81.68	75.89	78.64	83.06	73.41	82.77	81.42	83.12	86.46
Colombia	70.37	72.81	60.38	64.80	90.25	54.47	62.02	70.61	76.89	86.37
Costa Rica	63.87	66.65	52.71	65.38	53.12	50.95	56.26	66.31	68.56	76.25
Dominican Republic	56.93	59.32	46.07	55.48	63.51	35.26	52.18	60.67	63.12	70.94
Mexico	70.67	74.59	51.27	68.92	82.75	48.63	65.41	72.36	79.85	86.85
Peru	79.86	82.81	71.22	77.44	85.24	66.24	76.53	83.32	85.36	87.78
Uruguay	79.68	79.78	77.69	78.87	83.71	66.18	77.84	82.22	84.28	86.46
LAC average	70.96			69.37	76.05	55.97	66.86	73.14	76.26	81.40
OECD average	80.53	81.25	78.76	81.02	77.13	78.34	80.74	80.70	81.06	81.89

Laptop computer

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Brazil	34.93	34.96	34.18	35.64	32.51	27.56	32.33	35.42	37.37	40.08
Chile	46.82	46.91	52.05	57.44	41.18	45.90	49.58	49.66	47.22	41.15
Colombia	68.01	68.55	68.42	75.74	43.69	64.65	69.60	71.88	72.54	61.60
Costa Rica	53.56	53.56	51.75	53.91	51.10	49.96	53.26	54.95	55.75	53.55
Dominican Republic	34.43	35.55	26.80	34.21	34.52	19.64	27.75	37.32	39.96	44.75
Mexico	34.12	35.40	28.01	33.62	37.54	19.09	28.94	34.30	41.94	46.31
Peru	49.66	49.66	49.50	54.26	39.72	47.15	51.38	50.05	51.55	48.19
Uruguay	80.21	79.56	92.76	84.03	61.18	80.46	83.32	82.97	81.00	73.50
LAC average	50.22			53.61	42.68	44.30	49.52	52.07	53.42	51.14
OECD average	49.19	47.64	52.82	48.01	48.90	48.27	49.88	49.80	48.97	49.01

Tablet

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Brazil	21.06	20.62	20.41	20.89	20.28	15.18	17.27	19.68	23.91	26.79
Chile	22.79	22.49	26.99	25.90	20.69	21.26	21.25	24.00	24.40	22.50
Colombia	30.89	32.86	24.30	31.11	31.51	22.53	28.39	33.36	33.24	36.26
Costa Rica	26.05	27.13	19.58	26.45	23.21	18.37	22.03	26.80	28.38	34.04
Dominican Republic	34.47	35.67	25.72	34.48	34.27	16.92	30.08	39.34	41.57	42.10
Mexico	21.10	22.30	15.52	20.50	25.28	10.94	18.68	20.84	25.03	29.94
Peru	14.91	14.67	15.38	14.03	17.10	8.49	12.58	15.85	17.40	19.95
Uruguay	29.71	29.50	33.86	30.56	25.62	22.23	31.33	33.61	31.61	29.05
LAC average	25.12			25.49	24.75	16.99	22.70	26.68	28.19	30.08
OECD average	31.66	31.07	33.88	30.76	32.80	31.45	31.92	31.87	31.42	31.51

Source: CMA (2015). PISA (2015)
Note: Students with access to a desktop computer in the education center they attend divided by the total number of students in the sample

Table 15. Percentage of students with access to internet in their primary school, TERCE 2013

Countries	Total	Urban	Rural	Public	Private	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Argentina	71.52	73.57	53.17	62.77	95.44	48.75	65.74	67.02	79.23	82.77
Brazil	96.17	99.31	68.14	95.59	100.00	86.36	95.61	98.43	99.74	99.78
Chile	97.01	99.05	80.16	93.78	99.31	91.00	97.80	98.54	97.65	99.15
Colombia	93.27	97.77	74.84	92.65	97.01	86.87	93.72	95.59	95.70	94.32
Costa Rica	95.64	95.77	89.77	95.30	100.00	89.78	95.09	96.41	97.08	99.75
Dominican Republic	55.44	61.31	39.18	51.92	78.25	46.05	46.97	53.10	54.96	74.34
Ecuador	70.79	74.22	59.30	66.74	87.73	51.50	64.94	65.01	78.55	91.61
Guatemala	28.36	57.46	9.53	15.32	92.86	5.05	11.29	21.10	30.67	69.59
Honduras	24.49	45.65	10.70	16.96	82.98	8.84	17.25	21.32	24.84	50.62
Mexico	69.05	85.01	16.45	65.89	100.00	28.32	58.90	68.40	89.16	97.00
Nicaragua	31.55	53.24	6.47	26.63	51.40	9.14	20.24	32.68	38.11	51.89
Panama	61.90	75.90	46.66	56.89	94.29	38.01	55.83	62.60	72.97	79.54
Paraguay	24.25	38.74	4.55	13.29	66.67	5.05	10.31	17.46	27.86	56.37
Peru	70.86	85.61	2.17	65.83	87.95	35.11	58.61	75.38	86.71	92.71
Uruguay	99.45	99.60	95.88	99.35	100.00	99.09	99.56	99.30	99.63	99.84
LAC average	65.98			61.26	88.93	48.60	59.46	64.82	71.52	82.62

Source: CIMA (2013). TERCE (2013)
Note: Number of primary students with access to electricity in the education center they attend divides by the total number of students in the sample.

Table 16. International and Regional Learning Assessment in Latin America and the Caribbean

International Learning Assessment	International Agency	Previous cycles	Last round	Countries and economies	LAC countries	LAC countries	Frequency of data collection	Target population and sample
PISA (Programme for International Student Assessment)	OECD	2000, 2003, 2006, 2009, 2012, 2015	2018	72	10	Argentina, Brazil, Colombia, Chile, Costa Rica, Mexico, Dominican Republic, Peru, Trinidad and Tobago, Uruguay	Every 3 years	15-year-old students enrolled in an educational institution at Grade 7 or higher
PISA for Development (Programme for International Student Assessment)	OECD	2017	2017	7	4	Ecuador, Guatemala, Honduras and Paraguay	Once	15-year-old students enrolled in an educational institution at Grade 7 or higher
PIAAC (Programme for the International Assessment of Adult Competencies)	OECD	Round 1 (2008-2013), Round 2 (2012-2016), Round 3 (2016-2019)	2012	40	3	Ecuador, Mexico and Peru	Every 10 years	Non-institutionalized individuals ages 16 to 65.
TALIS (Teaching and Learning International Survey)	OECD	2008, 2013	2018	48	5	Brazil, Chile, Colombia, CABA (Argentina) and Mexico	Every 5 years	Middle-school teachers and their principals
PIRLS (Progress in International Reading Literacy Study)	IEA	2001, 2006, 2011	2016	61	3	Argentina, Chile, Buenos Aires, Trinidad and Tobago	Every 5 years	Grade representing 4 years of formal schooling
TIMMS (Trends in International Mathematics and Science Study)	IEA	1995, 1999, 2003, 2007, 2011	2015	64	2	Argentina, Chile and Buenos Aires	Every 4 years	Grades representing 4 and 8 years of formal schooling
ICCS (International Civic and Citizenship Education Study)	IEA	2009	2016	24	4	Colombia, Dominican Republic, Mexico and Peru	Every 7 years	Students enrolled in the eighth grade, provided that the average age of students in this grade was 13.5 years or above at time of this study.
ICILS, International Computer and Information Literacy Study	IEA	2013	2018	21	2	Chile and Uruguay	Every 5 years	Eighth year of schooling is Grade 8, provided that the average age of students in this grade is 13.5 years or above.
TERCE (Third Regional Comparative and Explanatory Study)	UNESCO/LLECE	1997, 2006	2013	16	15	Argentina, Brazil, Colombia, Chile, Costa Rica, Ecuador, Guatemala, Honduras Mexico, Nicaragua, Panama, Paraguay, Dominican Republic, Peru, Uruguay and Mexican State of Nuevo Leon	Irregular	Students in the third and sixth grades in the participating entities.
CSEC (Caribbean Secondary Education Certificate)	Caribbean Examinations Council (CXC)	1972-2019	2019	16	16	Anguilla, Antigua and Barbuda, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St	Annual	The CSEC is offered to students 16 and older who have reached the end of secondary education and registered to take the examination
EGRA (Early Grade Reading Assessment)	USAID	2008	2014	60	2	Nicaragua and Peru	Irregular	2nd, 3rd, 4th, 6th Graders
STEP Skills Measurement Household Survey	World Bank	First-wave countries: 2011–2013, Second-wave countries: 2012–2014, Third-wave countries: 2015–2017	2017	15	2	Bolivia and Colombia	Irregular	Individual level: adults aged 15 to 64 (in respective country) Household level: households in urban and rural areas (country-dependent)

Source: Suter, Smith, Denman, Suter, Larry, Smith, Emma, and Denman, Brian D. The SAGE Handbook of Comparative Studies in Education. 1st. ed. 2019. Web. Chapter 32: Building Learning Assessment Systems in Latin America and the Caribbean - Adriana Viteri and Pablo Zoido.
Note: This table was updated with the most recent information about international and regional assessments in LAC.

Table 17. National Learning Assessment in Latin America and the Caribbean, in primary and secondary education

No.	Country	Agency or evaluation unit	Current National Assessment (*original names*)	Frequency of data collection	Target population	Assessment domain(s)	Contextual questionnaires	Sample design
1	Argentina	Secretary of Educational Evaluation	*Aprender* *Since 2016*	Annual	Primary students: 3rd and 6th grades. Secondary students: 2nd or 3rd year and 5th or 6th year	Mathematics and Reading for all levels and Social and Natural Science for upper secondary.	Yes	Census all levels, except 2nd or 3rd of secondary
2	Bahamas	Ministry of Education of the Bahamas	*Grade Level Assessment Test (GLAT)* *Since 1984*	Annual	Primary students: 3rd and 6th grades	Reading, Math, Science, Social science and Health	No	Census
3	Barbados	Ministry of Education, Science, Technological and Vocational Training	*Barbados Secondary Schools' Entrance Examination (BSEE)* *Since 1959*	Annual	Primary students: 6th grade	Math, English and Essay	No	Census
4	Belize	Ministry of Education, Youth, Sports and Culture	*Primary School Examinations (PSE)* *Since 2000*	Annual	Primary students: 8th grade (standard -6)	Math, English, Social Studies and Science	No	Census
5	Brazil	National Institute for Educational Research and Studies (INEP)	*ANEB* *Prova Brasil (before)* *Since 1995*	Every 2 years	Primary students: 5th and 9th grades	Reading, Math and Portuguese	Yes	Census for all public schools and students attending the last year of primary (ISCED 1) and lower secondary (ISCED 2) levels
6	Chile	Agency for Quality Education	*SIMCE* *Since 1988*	SIMCE 2, 4 and II medio: annual. SIMCE 6 and 8: every 2 years.	Primary students: 2nd, 4th, 6th and 8th grades Secondary students: 2nd or 3rd year	Language and Communication, Math Natural Science; History, Geography, Citizenship and English.	Yes	Census and representative sample in SIMCE 2.
7	Colombia	Colombian Institute for the Promotion of Higher Education (ICFES)	*Pruebas SABER* *Since 1991*	Saber 3, 5 and 9: annual. Saber 11: annual	Primary students of the 3rd, 5th, 9th and 11th grades.	Saber 3, 5 and 9: Language and Math Saber 11: Language, Math, Social and Natural Sciences, Citizenship and English.	Yes	Census
8	Costa Rica	Ministry of Public Education	*Pruebas nacionales diagnósticas (before)* *Now: Pruebas FARO*	Every 3 years	Primary students: 2nd and 3rd grades Secondary students: 3rd year	Lenguaje, ciencias sociales, ciencias y matemáticas	No	Representative samples

No.	Country	Agency or evaluation unit	Current National Assessment (*original names*)	Frequency of data collection	Target population	Assessment domain(s)	Contextual questionnaires	Sample design
9	Ecuador	National Institute for Education Assessment (INEVAL)	*Prueba SER estudiante: since 2008* *SER bachiller: since 2011*	Every year	Basic General Education students of the 4th, 7th and 10th grades.	Language, Math, Social and Natural Science.	Yes	Representative samples
10	El Salvador	Ministry of Education	*Prueba de Aprendizaje y Aptitudes para Egresados de Educación Media (PAES)* *Since 1997*	Every year	Secondary students of the last year	Language, Math, Social and Natural Science.	No	Census
11	Guatemala	Directorate of Evaluation and Educational Research (DIGEDUCA), Ministry of Education	*Evaluación Nacional* *Since 2005*	Annual	Primary students of the 3rd and 6th grades.	Reading and Math	Yes	Census and representative samples
12	Honduras	Ministry of Education	*ERA (Evaluación de Rendimiento Académico)* Since 1997	Annual	Primary students from 1st to 9th grades	Language and Math	No	Representative samples
13	Jamaica	Ministry of Education	*Primary Exit Profile (PEP)* *Before GSAT (Grade Six Achievement Test)* *Since 1998*	Annual	Primary students of the last year	Language, Social Science and Math.	No	Representative samples
14	México	National Institute for Educational Assessment and Evaluation (INEE)	*EXCALE (Examen de la Calidad del Logro Educativo)* *Since 2005*	Every 4 years	Preschool students: 3rd grade Primary students: 6th grade. Secondary students: 3rd year.	Spanish (Language and Communication), Math, Citizenship and Ethics, and Natural Sciences.	Yes	Representative samples
14	México	National Institute for Educational Assessment and Evaluation (INEE)	*ENLACE (Evaluación Nacional de Logros Académicos en Centros Escolares*) *Since 2006*	Annual	Primary students: 3rd and 6th grade Secondary students: from 1st to 3rd year.	Spanish (Language and Communication) and Math	Yes	Census
14	México	National Institute for Educational Assessment and Evaluation (INEE)	*Planea (Plan Nacional para la Evaluación de los Aprendizajes)* *Since 2015*	Annual	Primary students: 3rd and 6th grade Secondary students: from 1st to 3rd year.	Spanish (Language and Communication) and Math	Yes	Census
15	Nicaragua	Ministry of Education	*Evaluación Nacional del Rendimiento Académico* *Since 2005*	2002 y 2006	Primary students of the 3rd and 6th grades.	Language and Math	No	Representative samples
116	Panama	Ministry of Education	*SINECA (Sistema Nacional de Evaluación de la Calidad de los Aprendizajes)*	2005, 2006 y 2008	Primary students: 3rd, 6th, 9th and 12th grades.	3, 6 y 9: Lenguaje, matemáticas, ciencias naturales y ciencias sociales	Yes	Representative samples

No.	Country	Agency or evaluation unit	Current National Assessment (*original names*)	Frequency of data collection	Target population	Assessment domain(s)	Contextual questionnaires	Sample design
			Since 2005			12: Lenguaje, matemáticas e inglés		
17	Paraguay	Ministry of Education and Culture	*SNEPE (Sistema Nacional de Evaluación del Proceso Educativo)*	2006	Secondary students: 2nd year.	Language, Math and Basic Sciences	Yes	Representative samples
18	Peru	Unit for Measuring Educational Quality, Ministry of Education	*ECE (Evaluación Censal de Estudiantes)* Since 2007	Annual	Primary students: 2nd grade and 4th for bilingual intercultural education Secondary students: 2nd year.	Reading, Writing and Math.	Yes	Census (2do y 4to)
19	Peru	Unit for Measuring Educational Quality, Ministry of Education	*Evaluación Nacional (EN)*	Every three years. The last assessment was in 2013.	Primary students of 6th grades.	Reading, Writing, Math and Citizenship.	Yes	Representative samples
20	Dominican Republic	Ministry of Education	*Evaluación Diagnóstica Since 2010*	Every 3 years	Primary students of the 3rd and 6th grades.	Math, Language; Social and Natural Science.	No	Representative samples
21	Dominican Republic	Ministry of Education	*Pruebas nacionales Since 2013*	Annual since 2013	Secondary students: 2nd year.	Math, Language; Social and Natural Science.	No	Representative samples
22	Trinidad and Tobago	Ministry of Education	*SEA (Secondary Entrance Assessment) Before 2005*	Annual	Primary students of the last year	Language and Math	No	Census
23	Uruguay	National Administration of Public Education (ANEP)	*SEA (Sistema de Evaluación de Aprendizajes) Since 2007*	Annual	Primary students: 3rd, 4th, 5th and 6th grades.	Reading, Math and Sciences.	Yes	Census for school with connectivity

Source: Arias Ortiz at al forthcoming
Note: This table was updated with the most recent information about international and regional assessments in LAC.

Table 18. The educational trajectory of children and young people for Latin America and the Caribbean countries. Funnel effect estimations for all students

EDUCATIONAL TRAJECTORY OF CHILDREN AND YOUNG PEOPLE (TOTAL)	Attend pre-primary education	Not attend pre-primary education	Attend primary education and achieve minimum learning	Attend primary education and do not achieve minimum learning	Do not attend primary education	Complete primary education and achieve minimum learning	Complete primary but do not achieve minimum learning	Do not complete primary school	Attend secondary education and achieve minimum learning	Attend secondary education but do not achieve minimum learning	Do not attend secondary education	Complete secondary education and achieve minimum learning	Complete secondary education but do not achieve minimum learning	Do not complete secondary education
INDICATORS	*Net attendance rate: pre-primary education*	*% Non- net attendance rate: pre-primary education*	*Proportion of children attending primary and achieving minimum proficiency in mathematics*	*Proportion of children attending primary and not achieving minimum proficiency in mathematics*	*Proportion of children not attending primary*	*Proportion of children completing primary and achieving minimum proficiency in mathematics*	*Proportion of children completing primary and not achieving minimum proficiency in mathematics*	*Proportion of children not completing primary*	*Proportion of young people attending lower secondary and achieving minimum proficiency in mathematics*	*Proportion of young people attending lower secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not attending lower secondary*	*Proportion of young people completing secondary and achieving minimum proficiency in mathematics*	*Proportion of young people completing secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not completing secondary*
Argentina	82	18	58	37	6	62	36	2	21	48	31	22	48	31
Bahamas														19
Barbados								2						
Belice					7									
Bolivia	53	47			3			2			29			20
Brazil	79	21	60	36	3	53	35	12	22	53	25	20	47	33
Chile	88	12	78	14	8	83	16	1	41	40	19	44	43	13
Colombia	63	37	50	46	3	54	40	6	21	41	38	23	46	31
Costa Rica	61	39	76	23	1	67	29	5	25	42	33	22	37	41
Dominican Republic			51	47	3	54	44	2	24	59	17	21	51	27
Ecuador	52	48			4			9			49			58
El Salvador			38	57	6	36	47	17	4	30	67	4	34	62
Guatemala					9						67			
Guyana														
Haiti	52	48	42	52	6	34	55	11	8	41	51	5	30	65
Honduras														13
Jamaica	85	15	67	29	4	75	23	2	37	48	16	23	30	47
Mexico			30	64	6	23	56	21			52			42
Nicaragua			38	58	3	32	66	2	18	66	17	13	49	37
Panama			33	65	2	29	64	7	5	59	35	5	58	37
Paraguay	77	23	58	38	4	60	36	4	26	51	22	28	55	17
Peru	60	40	14	79	7	19	75	7	6	59	35	6	57	37
Suriname	69	31			5			8			44			62
Trinidad and Tobago					8			12	33	36	31	37	40	23
Uruguay	94	6	67	32	1	72	26	2	38	42	20	20	22	57
LATIN AMERICA AND THE CARIBBEAN	**70**	**30**	**51**	**45**	**5**	**50**	**43**	**7**	**22**	**48**	**35**	**20**	**43**	**35**

Source: Authors' calculations based on TERCE 3rd and 6th grade results. Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Panamá, Peru and Uruguay with PISA (2018); Trinidad and Tobago with PISA (2015) and Ecuador, Guatemala, Honduras and Paraguay with PISA for Development. CIMA (2019) for attendance (pre-primary, primary and secondary education) and completion rates (primary and secondary education).
Note: Proportion of children (a) enrolled in primary, (b) completing primary, (c) enrolled in lower secondary, (d) completing secondary, and achieving minimum proficiency in mathematics, measured at the 3rd grade level, end of primary (6th grade level), lower secondary, and approximate end of secondary, respectively. If the adjusted indicator reaches 100%, all children will complete secondary education and learn at a sufficient level, which is the objective of SDG's target 4.1 (UIS, 2019). The enrollment, attendance and completion rates correspond to the TERCE/PISA year study, in some cases, learning indicators were adjusting with the data available.

Table 19. The educational trajectory of children and young people for Latin America and the Caribbean countries. Funnel effect estimations for students in 1st. Quintile

EDUCATIONAL TRAJECTORY OF CHILDREN AND YOUNG PEOPLE (1ST QUINTILE)	Attend pre-primary education	Not attend pre-primary education	Attend primary education and achieve minimum learning	Attend primary education and do not achieve minimum learning	Do not attend primary education	Complete primary education and achieve minimum learning	Complete primary but do not achieve minimum learning	Do not complete primary school	Attend secondary education and achieve minimum learning	Attend secondary education but do not achieve minimum learning	Do not attend secondary education	Complete secondary education and achieve minimum learning	Complete secondary education but do not achieve minimum learning	Do not complete secondary education
INDICATORS	*Net attendance rate: pre-primary education*	*% Non- net attendance rate: pre-primary education*	*Proportion of children attending primary and achieving minimum proficiency in mathematics*	*Proportion of children attending primary and not achieving minimum proficiency in mathematics*	*Proportion of children not attending primary*	*Proportion of children completing primary and achieving minimum proficiency in mathematics*	*Proportion of children completing primary and not achieving minimum proficiency in mathematics*	*Proportion of children not completing primary*	*Proportion of young people attending lower secondary and achieving minimum proficiency in mathematics*	*Proportion of young people attending lower secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not attending lower secondary*	*Proportion of young people completing secondary and achieving minimum proficiency in mathematics*	*Proportion of young people completing secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not completing secondary*
Argentina	81	19	51	46	3	46	50	4	6	58	36	5	47	48
Bahamas														
Barbados														
Belice														
Bolivia														
Brazil	74	26	38	59	3	31	46	23	9	56	35	6	39	55
Chile	85	15	71	21	8	75	23	2	20	59	21	20	59	21
Colombia	50	50	25	71	4	37	53	10	10	40	50	9	37	54
Costa Rica	75	25	68	31	1	53	42	6	13	46	41	7	26	66
Dominican Republic			34	62	4	34	65	2	11	65	24	8	48	43
Ecuador	43	57			6			15			61			82
El Salvador			21	72	7	19	60	21	0	18	81	0	5	95
Guatemala	68	32			8						81			
Guyana														
Haiti	52	48	35	58	7	25	53	22	2	26	72	0	6	94
Honduras														0
Jamaica	79	21	49	46	5	61	35	5	20	59	21	8	25	67
Mexico			19	53	28	13	60	27			67			70
Nicaragua			16	80	3	14	80	6	4	68	28	2	38	60
Panama			22	75	3	17	72	11	1	53	45	1	24	76
Paraguay	63	37	37	57	6	37	57	6	10	60	30	8	50	41
Peru	52	48	8	85	7	11	84	5	1	61	38	1	51	48
Suriname	76	24			5			9			48			60
Trinidad and Tobago														
Uruguay	94	6	44	55	1	57	40	3	20	56	25	3	9	88
LATIN AMERICA AND THE CARIBBEAN	**68**	**32**	**36**	**58**	**6**	**35**	**55**	**10**	**7**	**45**	**45**	**6**	**33**	**63**

Source: Authors' calculations based on TERCE 3rd and 6th grade results. Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Panamá, Peru and Uruguay with PISA (2018); Trinidad and Tobago with PISA (2015) and Ecuador, Guatemala, Honduras and Paraguay with PISA for Development. CIMA (2019) for attendance (pre-primary, primary and secondary education) and completion rates (primary and secondary education).
Note: Proportion of children (a) enrolled in primary, (b) completing primary, (c) enrolled in lower secondary, (d) completing secondary, and achieving minimum proficiency in mathematics, measured at the 3rd grade level, end of primary (6th grade level), lower secondary, and approximate end of secondary, respectively. If the adjusted indicator reaches 100%, all children will complete secondary education and learn at a sufficient level, which is the objective of SDG's target 4.1 (UIS, 2019). The enrollment, attendance and completion rates correspond to the TERCE/PISA year study, in some cases, learning indicators were adjusting with the data available.

Table 20. The educational trajectory of children and young people for Latin America and the Caribbean countries. Funnel effect estimations for students in 5th. Quintile

EDUCATIONAL TRAJECTORY OF CHILDREN AND YOUNG PEOPLE (5th QUINTILE)	Attend pre-primary education	Not attend pre-primary education	Attend primary education and achieve minimum learning	Attend primary education and do not achieve minimum learning	Do not attend primary education	Complete primary education and achieve minimum learning	Complete primary but do not achieve minimum learning	Do not complete primary school	Attend secondary education and achieve minimum learning	Attend secondary education but do not achieve minimum learning	Do not attend secondary education	Complete secondary education and achieve minimum learning	Complete secondary education but do not achieve minimum learning	Do not complete secondary education
INDICATORS	*Net attendance rate: pre-primary education*	*% Non- net attendance rate: pre-primary education*	*Proportion of children attending primary and achieving minimum proficiency in mathematics*	*Proportion of children attending primary and not achieving minimum proficiency in mathematics*	*Proportion of children not attending primary*	*Proportion of children completing primary and achieving minimum proficiency in mathematics*	*Proportion of children completing primary and not achieving minimum proficiency in mathematics*	*Proportion of children not completing primary*	*Proportion of young people attending lower secondary and achieving minimum proficiency in mathematics*	*Proportion of young people attending lower secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not attending lower secondary*	*Proportion of young people completing secondary and achieving minimum proficiency in mathematics*	*Proportion of young people completing secondary and not achieving minimum proficiency in mathematics*	*Proportion of young people not completing secondary*
Argentina	94	6	75	22	3	79	20	1	42	31	27	52	38	9
Bahamas														
Barbados														
Belice														
Bolivia														0
Brazil	90	10	85	9	6	76	19	5	45	28	28	54	34	12
Chile	91	9	87	7	6	94	5	1	63	20	17	72	23	5
Colombia	78	22	81	16	4	78	19	3	46	30	24	53	35	11
Costa Rica	88	12	90	10	0	85	12	3	54	27	19	57	28	15
Dominican Republic			72	26	2	77	22	1	49	39	12	50	39	11
Ecuador	71	29			0			3			28			29
El Salvador			69	29	2	65	31	4	19	44	37	17	38	45
Guatemala	68	32			10						37			
Guyana					0									
Haiti	59	41	58	32	10	55	44	2	25	42	32	24	39	37
Honduras					0									0
Jamaica	88	12	85	12	3	93	6	1	57	31	12	53	29	18
Mexico			39	35	26	44	47	10			31			33
Nicaragua			67	26	8	57	43	0	39	50	11	39	51	9
Panama			60	39	1	53	44	3	18	62	20	19	67	14
Paraguay	79	21	80	15	5	83	17	1	60	29	11	65	31	5
Peru	75	25	28	65	7	33	61	7	20	58	22	19	54	28
Suriname	66	34			6			3			35			51
Trinidad and Tobago														
Uruguay	98	2	86	12	1	89	10	0	69	22	9	60	19	21
LATIN AMERICA AND THE CARIBBEAN (2	**80**	**20**	**71**	**24**	**6**	**71**	**27**	**3**	**35**	**32**	**23**	**45**	**38**	**21**

Source: Authors' calculations based on TERCE 3rd and 6th grade results. Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Panamá, Peru and Uruguay with PISA (2018); Trinidad and Tobago with PISA (2015) and Ecuador, Guatemala, Honduras and Paraguay with PISA for Development. CIMA (2019) for attendance (pre-primary, primary and secondary education) and completion rates (primary and secondary education).
Note: Proportion of children (a) enrolled in primary, (b) completing primary, (c) enrolled in lower secondary, (d) completing secondary, and achieving minimum proficiency in mathematics, measured at the 3rd grade level, end of primary (6th grade level), lower secondary, and approximate end of secondary, respectively. If the adjusted indicator reaches 100%, all children would complete secondary education and learn at a sufficient level, which is the objective of SDG's target 4.1 (UIS, 2019). The enrollment, attendance and completion rates correspond to the TERCE/PISA year study, in some cases, learning indicators were adjusting with the data available.

Table 21. Completion rate of secondary education, Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban	Indigenous	Afro
Argentina	69	63	76	52	60	65	83	91		69		
Bahamas												
Barbados	96	94	98									
Belice												
Bolivia	80	80	79						60	84	71	
Brazil	67	62	73	45	52	62	75	88	48	70	48	62
Chile	87	84	89	79	85	87	90	95	80	88	84	
Colombia	69	65	73	46	57	68	81	89	45	75		
Costa Rica	59	53	65	34	43	55	71	85	57	60		
Dominica Republic	63	55	71	52	51	62	71	72	50	66		
Ecuador	73	72	73	57	62	70	80	89	57	79	53	62
El Salvador	42	41	43	18	29	36	53	71	26	53		
Guatemala	27	27	26	5	15	15	26	55	15	40	21	
Guyana												
Haiti												
Honduras	35	32	39	6	17	27	41	63	19	46		
Jamaica	79	80	78	67	78	75	79	94	72	84		
Mexico	58	56	60	33	50	53	63	82	41	63		
Nicaragua	44	36	50	30	29	39	47	67	24	58		
Panama	66	61	70	40	50	67	76	91	48	72	65	
Paraguay	63	60	66	24	43	60	74	86	44	72		
Peru	83	84	82	59	78	82	90	95	62	87	86	
Surinam	38	29	48	40	39	25	45	49			15	29
Trinidad and Tobago	77	75	80						77	77		
Uruguay	43	37	49	12	28	43	59	79	26	46	38	23
Venezuela												
LAC average	**63**	**59**	**66**	**39**	**48**	**55**	**67**	**80**	**47**	**68**	**54**	**44**

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Barbados - SLC (2016) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Jamaica SLC (2015) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Trinidad & Tobago SLC (2014) Uruguay - ECH (2018).Note: Percentage of the cohort of students aged between 3 - 5 years older than the theoric graduation age that has completed secondary education. *Corresponds to the average value from 2016 to 2018

Table 22. Civic knowledge and students' views on peaceful coexistence, ICCS 2009 and 2016

		Peace is only achieved through dialogue and negotiation			To achieve peace, the means justify the end			If the authorities fail to act, the citizens should organize themselves to punish criminals			Hitting is justified punishment when someone commits a crime against my family		
Countries	**Civic knowledge**	**2009**	**2016**	**Difference**	**2009**	**2016**	**Difference**	**2009**	**2016**	**Difference**	**2009**	**2016**	**Difference**
Chile	482	80	68	-12	68	61	-7	61	65	4	54	49	-5
Colombia	482	88	80	-8	64	60	-4	48	41	-7	38	26	-12
Dominican Republic	381	70	64	-6	69	65	-4	66	67	1	53	43	-10
Mexico	467	77	78	1	68	71	3	60	56	-4	42	37	-5
Peru	438	--	70		--	65		--	61		--	43	
Latin American average	450		72			65			58			40	

Source: IEA, ICCS (2009 - 2016). Schulz, W., Ainley, J., Cox, C. & Friedam, T. (2018). ICCS 2016 Young people's views of government, peaceful coexistence, and diversity in five Latin American countries. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Retrieved from https://link.springer.com/book/10.1007/978-3-319-95393-9
Note: -- No comparable data available.

Table 23. Civic knowledge and students' sense of empathy with classmates, ICCS 2016

Countries	**A classmate falls and gests huts**	**A classmate gets beaten up**	**A classmate gets unfairly reprimanded**	**A classmate gets unfairly punished**	**A classmate gets something stolen from him/her**	**A classmate gets ridiculed**	**A classmate insultated**	**A classmate looks very sad**	**A classmate gets bad grades**	**A classmate has nobody to play with**	**There is a fight between classmates**	**Average scale scores indicating students's semse of empathy**
Chile	60	75	61	66	75	67	67	75	42	65	65	48
Colombia	74	77	68	74	79	67	70	76	52	67	73	50
Dominican Republic	88	78	74	78	79	75	77	83	74	76	76	52
Mexico	71	75	71	73	72	72	69	75	43	67	60	49
Peru	83	83	70	75	78	72	72	78	59	68	76	51
Latin American average	75	78	69	73	77	71	71	78	54	69	70	50

Source: IEA, ICCS (2009 - 2016). Schulz, W., Ainley, J., Cox, C. & Friedam, T. (2018). ICCS 2016 Young people's views of government, peaceful coexistence, and diversity in five Latin American countries. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Retrieved from https://link.springer.com/book/10.1007/978-3-319-95393-9
Note: Percentages of students who said it would bother them if the following situations happened at school.

Table 24. Main dropout reason, Circa 2018 - 9 countries

Countries and reasons	Total	Men	Women	1st quintile	5th quintile	Rural	Urban
Chile							
%population	11.9	14.1	9.6	18.8	4.1	18.9	11
Lack of interest	9.7	13.1	4.7	9.2	17.0	11.5	9
Financial problems	8.1	9.6	6.0	7.1	4.3	5.1	9
Work	41.9	54.6	22.8	33.9	53.9	49.3	40
Domestic chores / Pregnancy	18.6	3.3	41.8	27.3	8.9	14.0	20
Family or health issues	6.1	6.1	6.1	6.6	2.7	7.0	6
Other reason	15.5	13.4	18.7	15.9	13.2	13.1	16
Costa Rica							
%population	41.7	46.2	36.7	56.3	21.7	48.6	43
Lack of interest	26.2	34.7	14.3	21.9	42.3	25.7	24
Financial problems	11.0	8.3	14.7	15.7	4.2	12.9	9
Work	38.6	48.2	25.0	23.0	45.9	34.6	37
Domestic chores / Pregnancy	16.7	0.0	40.2	28.0	0.0	19.5	14
Family or health issues	7.2	8.3	5.5	10.7	7.6	6.9	7
Other reason	0.0	0.0	0.0	0.0	0.0	0.0	0
Dominican Republic							
%population	30.5	37.3	23.5	41.8	21.4	42.7	28
Lack of interest	43.4	50.2	32.5	41.7	44.5	38.8	45
Financial problems	0.7	1.2	0.0	0.0	2.6	0.0	1
Work	17.7	24.4	6.9	9.5	20.2	23.0	16
Domestic chores / Pregnancy	0.0	0.0	0.0	0.0	0.0	0.0	0
Family or health issues	18.2	5.1	39.2	27.4	9.2	16.6	19
Other reason	8.0	8.3	7.6	7.2	9.2	11.0	7
Ecuador							
%population	22.0	23.1	40.2	33.2	9.1	36.3	16
Lack of interest	18.9	21.8	9.3	21.9	4.6	18.0	20
Financial problems	19.2	19.1	28.9	24.7	11.6	25.3	14
Work	33.4	46.8	27.2	22.0	33.0	34.0	33
Domestic chores / Pregnancy	18.1	0.3	22.0	18.1	30.1	14.0	22
Family or health issues	5.6	5.1	5.3	5.6	2.8	5.2	6
Other reason	4.6	7.0	6.8	7.4	18.0	3.1	6
Honduras							
%population	60.8	64.8	56.5	93.0	31.2	79.1	48
Lack of interest	22.9	26.3	18.8	17.1	25.1	23.0	23
Financial problems	27.9	25.6	30.7	45.4	9.3	31.6	24
Work	25.8	39.6	8.9	11.7	46.9	21.9	30
Domestic chores / Pregnancy	12.8	0.8	27.5	14.3	5.2	12.4	13
Family or health issues	3.7	2.5	5.1	5.0	1.2	4.2	3
Other reason	6.8	5.0	9.0	6.3	11.9	6.8	7
Nicaragua							
%population	67.5	72.3	63.0	83.2	45.5	82.6	56
Lack of interest	18.9	18.7	19.1	19.0	20.8	18.3	20
Financial problems	11.5	10.2	12.8	15.3	7.3	9.9	13
Work	42.5	66.1	16.7	29.2	52.8	41.5	44
Domestic chores / Pregnancy	20.0	0.0	41.9	27.4	13.2	23.0	17
Family or health issues	0.6	0.2	1.0	1.0	1.0	0.7	0
Other reason	4.6	3.0	6.4	7.5	2.0	5.8	3
Peru							
%population	38.8	42.3	36.6	57.5	22.5	61.1	35
Lack of interest	6.7	8.4	7.3	9.0	4.8	10.7	5
Financial problems	21.2	21.8	22.2	25.8	18.8	22.3	21
Work	39.4	51.6	34.5	21.5	59.3	28.2	43
Domestic chores / Pregnancy	13.1	2.1	10.6	20.4	4.5	16.4	12
Family or health issues	8.8	4.3	10.1	11.4	6.7	10.8	8
Other reason	10.8	11.8	15.3	12.0	6.0	11.7	11
Paraguay							
%population	35.6	39.7	31.3	70.7	11.5	59.6	23
Lack of interest	13.9	17.5	9.3	4.3	13.4	12.0	17
Financial problems	29.7	25.3	35.3	49.5	7.6	38.1	18
Work	34.1	42.0	24.0	23.2	49.9	26.5	44
Domestic chores / Pregnancy	0.4	0.0	0.9	0.0	0.0	0.7	0
Family or health issues	17.8	11.6	25.9	18.1	21.1	17.8	18
Other reason	4.1	3.7	4.6	4.9	8.0	4.9	3
El Salvador							
%population	55.8	56.9	54.8	80.0	28.7	72.9	45
Lack of interest	20.2	19.9	20.5	23.2	17.5	21.9	18
Financial problems	17.1	17.7	16.5	11.1	22.2	13.5	21
Work	38.6	55.8	22.1	29.3	53.1	35.6	42
Domestic chores / Pregnancy	17.8	1.1	33.7	24.9	5.2	21.6	14
Family or health issues	1.9	2.2	1.7	2.1	1.4	1.5	2
Other reason	2.2	2.4	2.1	4.2	0.3	3.4	1
Average 9 countries							
%population	40.5	44.1	39.1	59.4	21.7	55.7	34
Lack of interest	20.1	23.4	15.1	18.6	21.1	20.0	20
Financial problems	16.3	15.4	18.6	21.6	9.8	17.6	14
Work	34.7	47.7	20.9	22.6	46.1	32.7	37
Domestic chores / Pregnancy	13.1	0.9	24.3	17.8	7.4	13.5	12
Family or health issues	7.8	5.0	11.1	9.8	5.9	7.9	8
Other reason	6	6	8	7	8	7	6

Source: IDB Harmonized Household Surveys. The circa was made using: Chile - CASEN (2017) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Honduras - EPHPM - (2018) Nicaragua ECH (2014) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017).
Note: Main dropout reason of a cohort of adolescents aged between 3 -5 years older than the theoric graduation ages secondary education.

Table 25. Enrollment share of university and nonacademic institutions, Latin America and the Caribbean, Circa 2000 and 2013

	Circa 2000		Circa 2013	
	University	Nonacademic	University	Nonacademic
Dominican Republic	96	4	97	3
Panama	95	5	94	6
Uruguay	85	15	86	14
Argentina	75	25	67	33
Chile	66	34	53	47
Peru	60	40	71	29
Brazil	59	41	51	49
Colombia	80	20	58	42
Average 8 countries	**77**	**23**	**72**	**28**

Source: Ferreyra, et al., 2017

Table 26. Net Enrollment Rates in Higher Education (percent) people ages 18 - 23, Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban
Argentina	39	33	45	24	28	36	50	59		39
Bahamas										
Barbados	23	16	29							
Belice										
Bolivia	39	37	41						8	46
Brazil	22	19	25	7	9	14	19	38	7	24
Chile	48	45	50	44	46	45	46	63	38	49
Colombia	21	19	22	7	12	18	26	42	7	24
Costa Rica	22	19	26	9	13	20	27	47	17	24
Dominica Republic	27	17	36	16	22	25	31	38	19	28
Ecuador	27	24	31	15	19	23	30	50	13	33
El Salvador	18	17	20	5	9	13	23	42	7	26
Guatemala	8	8	8	1	2	3	5	25	3	14
Guyana										
Haiti										
Honduras	13	11	14	0	3	8	15	33	3	20
Jamaica	18	15	22						9	26
Mexico	30	29	31	13	22	26	33	51	15	34
Nicaragua	13	11	15	7	8	10	13	26	5	19
Panama	33	26	40	14	21	37	38	58	19	39
Paraguay	25	22	28	9	12	23	30	42	14	31
Peru	33	31	34	18	27	30	37	49	19	36
Surinam	25	18	32	21	24	19	30	32		
Trinidad and Tobago	16	12	20						15	17
Uruguay	27	21	34	7	18	28	38	58	19	29
Venezuela										
Promedio ALC	**25**	**21**	**29**	**13**	**17**	**22**	**29**	**44**	**13**	**29**

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Barbados - SLC (2016) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Jamaica SLC (2015) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Trinidad & Tobago SLC (2014) Uruguay - ECH (2018).

Table 27. Underemployment rates: Age, gender, and ethnicity

Country	Age - groups		Men			Women			Indigenous people (15-65)	Non - Indigenous people (15-65)	Total (15-64)
	Young people (15-24 years)	Adults (25-64 years)	Young people (15-24 years)	Adults (25-64 years)	Men (15-64)	Young people (15-24 years)	Adults (25-64 years)	Women (15-64)			
Dominican Rep.	2%	3%	1%	2%	2%	3%	4%	4%			3%
Belize	2%	2%	2%	1%	1%	3%	3%	3%	1%	1%	2%
Venezuela	2%	1%	2%	1%	1%	3%	2%	2%			2%
Bolivia	3%	2%	3%	1%	2%	4%	2%	3%	1%	1%	2%
Trinidad & Tobago	3%	3%	4%	3%	3%	3%	4%	4%	3%	3%	3%
Peru	4%	3%	4%	3%	3%	4%	3%	3%	3%	2%	3%
Jamaica	4%	4%	4%	3%	3%	4%	6%	6%			4%
Barbados	4%	3%	3%	3%	3%	5%	3%	4%			3%
Bahamas	4%	2%	2%	3%	3%	7%	2%	3%			3%
Guatemala	7%	6%	5%	4%	4%	10%	9%	9%	3%	4%	6%
El Salvador	8%	6%	7%	5%	6%	8%	8%	8%			7%
Brazil	9%	6%	8%	4%	5%	10%	7%	8%	4%	3%	6%
Haiti	9%	12%	10%	12%	11%	7%	13%	12%			12%
Colombia	9%	6%	7%	4%	4%	12%	9%	10%			7%
Paraguay	10%	8%	8%	7%	7%	14%	11%	12%			9%
Guyana	11%	9%	10%	7%	8%	12%	13%	13%	7%	4%	10%
Suriname	13%	12%	13%	12%	12%	13%	13%	13%	8%	7%	13%
Chile	14%	9%	11%	6%	6%	17%	12%	13%	6%	6%	9%
Costa Rica	14%	12%	12%	9%	10%	17%	16%	16%			12%
Uruguay	15%	8%	15%	7%	8%	15%	9%	10%	9%	6%	9%
Ecuador	16%	11%	16%	10%	11%	15%	14%	14%	8%	8%	12%
Argentina	18%	12%	17%	9%	10%	21%	16%	16%			13%
Honduras	19%	16%	17%	12%	13%	23%	22%	22%			17%
Total	9%	6%	8%	5%	5%	10%	8%	8%	4.3%	4.1%	7%

Source: Labor Markets Information System (SIMS). Circa 2018.

Table 28. Formality rates: by gender, age groups, and ethnicity

Country	Men			Women			Total youth (15-24)	Total adults (25-64)	Indigenous people (15-65)	Non - Indigenous people (15-65)	Total
	Young people (15-24 years)	Adults (25-64 years)	Men (15-64)	Young people (15-24 years)	Adults (25-64 years)	Women (15-64)					
Haiti	4%	11%	9%	4%	5%	5%	4%	9%			8%
Honduras	23%	36%	16%	24%	32%	19%	11%	20%			17%
Guatemala	43%	41%	20%	59%	53%	19%	13%	22%	7%	26%	20%
Nicaragua	40%	55%	21%	44%	57%	27%	16%	26%			23%
Bolivia	7%	24%	22%	5%	21%	19%	6%	23%	13%	24%	20%
Paraguay	14%	27%	24%	17%	26%	24%	15%	27%			24%
Peru	20%	34%	25%	27%	27%	19%	14%	23%	15%	26%	22%
El Salvador	14%	23%	31%	12%	21%	27%	23%	31%			29%
Mexico	13%	24%	33%	24%	28%	30%	23%	34%			32%
Dominican Rep.	34%	38%	37%	48%	46%	46%	38%	41%			41%
Venezuela	30%	39%	38%	41%	52%	51%	33%	44%			43%
Colombia	25%	42%	39%	31%	41%	39%	28%	41%			39%
Guyana	10%	19%	41%	14%	21%	54%	49%	45%	49%	44%	46%
Ecuador	26%	45%	41%	30%	44%	42%	27%	44%	22%	45%	42%
Suriname	28%	47%	45%	43%	63%	61%	32%	54%	54%	50%	51%
Argentina	32%	53%	50%	34%	52%	50%	33%	52%			50%
Panama	15%	27%	53%	13%	20%	55%	42%	56%			54%
Brazil	50%	65%	63%	54%	67%	65%	52%	66%	58%	71%	64%
Chile	66%	73%	72%	61%	69%	69%	64%	71%	64%	71%	70%
Bahamas	87%	73%	75%	86%	87%	87%	87%	80%			81%
Uruguay	62%	78%	76%	68%	81%	79%	64%	79%	67%	78%	77%
Costa Rica	63%	78%	76%	65%	67%	66%	63%	73%			72%
Total	31%	48%	45%	35%	48%	46%	33%	48%	51%	48%	46%

Source: Labor Markets Information System (SIMS). Circa 2018.

Table 29. Monthly labor income for main occupation (2011 PPP dollars): age, gender, and ethnicity

Country	Age - groups		Men			Women			Indigenous people (15-65)	Non - Indigenous people (15-65)	Total (15-64)
	Young people (15-24 years)	Adults (25-64 years)	Young people (15-24 years)	Adults (25-64 years)	Men (15-64)	Young people (15-24 years)	Adults (25-64 years)	Women (15-64)			
Honduras	296	404	295	421	389	301	377	363			379
Jamaica	280	480	274	486	450	290	476	456			453
Guatemala	372	518	407	556	520	300	446	414	309	591	483
Nicaragua	301	567	314	627	541	271	481	441			502
Peru	326	599	371	739	676	270	441	414	419	765	554
El Salvador	439	624	458	688	641	405	545	525			591
Mexico	308	628	333	733	653	267	485	449			568
Bolivia	377	717	446	842	776	271	554	513	498	6235	663
Venezuela	571	734	596	811	778	518	626	614			712
Colombia	442	745	449	795	738	432	675	640			697
Dominican Rep.	493	753	520	846	784	442	630	603			709
Ecuador	474	760	480	824	774	460	661	640	514	709	723
Paraguay	479	842	487	977	866	464	653	617			765
Brazil	434	923	450	1021	936	412	799	747	643	734	853
Trinidad & Tobago	702	1010	724	1078	1033	669	914	886	965	637	972
Barbados	666	1024	691	1057	1024	636	990	963			994
Argentina	596	1063	659	1206	1132	497	894	852			1006
Uruguay	506	1075	534	1229	1132	462	895	848	727	1009	1003
Costa Rica	676	1129	685	1193	1121	660	1036	993			1070
Chile	661	1211	694	1358	1287	612	1027	990	873	1103	1156
Panama	651	1213	694	1302	1194	572	1095	1024			1123
Bahamas	896	1815	945	1904	1720	826	1729	1604			1663
Total	409	802	433	897	818	372	678	634	627	1473	740

Source: Labor Markets Information System (SIMS). Circa 2018.

Table 30. Percentage of people aged 18 - 24 Not in Education, Employment, or Training (NEET), Circa 2018

Countries	Total	Men	Women	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	Rural	Urban
Argentina	13	9	16	20	16	12	6	5		13
Bahamas										
Barbados										
Belice										
Bolivia	10	3	17						12	9
Brazil	14	10	19	22	23	12	6	6	24	12
Chile	13	9	16	19	15	12	8	6	15	12
Colombia	14	6	22	23	19	15	7	5	21	12
Costa Rica	11	6	17	20	15	10	6	3	15	10
Dominica Republic	17	11	23	25	21	16	12	10	19	16
Ecuador	15	7	24	18	19	16	12	8	15	15
El Salvador	22	10	33	35	28	21	14	9	29	17
Guatemala	26	6	45	42	32	27	22	12	32	19
Guyana	31	22	40	46	30	33	26	25	34	23
Haiti										
Honduras	24	9	40	38	27	23	22	14	29	21
Jamaica										
Mexico	15	4	25	24	19	14	10	6	20	13
Nicaragua	23	6	39	32	29	24	16	11	28	18
Panama	10	4	17	17	15	10	6	2	15	9
Paraguay	14	6	24	23	21	12	10	6	20	11
Peru	16	12	20	21	19	16	13	10	16	16
Surinam	10	6	14	13	13	10	5	3		
Trinidad and Tobago										
Uruguay	11	8	13	20	12	8	4	4	13	10
Venezuela										
LAC average	16	8	24	25	21	16	11	8	21	14

Source: CIMA (2018). The circa was made using: Argentina - EPHC* (2018) Bolivia - ECH (2018) Brazil - PNADC (2018) Chile - CASEN (2017) Colombia - GEIH (2018) Costa Rica - ENAHO (2018) Ecuador - ENEMDU (2018) El Salvador - EHPM (2018) Guatemala - ENEI (2017) Guyana - LFS (2017) Honduras - EPHPM - (2018) Mexico - ENIGH (2018) Nicaragua ECH (2014) Panama - EHPM (2018) Paraguay - EPH (2017) Peru - ENAHO (2018) Dominican Republic - ENCFT (2017), Surinam - SLC (2017), Uruguay - ECH (2018).

Table 31. Private Gross Enrollment Rate in Higher Education (percent), Circa 2003 and 2014

Countries	Circa 2003	Circa 2014
Argentina	21	22
Brazil	71	47
Chile	49	69
Colombia	45	34
Costa Rica	65	67
Honduras	20	35
Mexico	27	31
Peru	39	66
Average 8 countries	**42**	**46**

Source: IDB harmonized household surveys.
Note: The baseline year for Mexico is 2004, for Brazil 2001, and for Peru 1998. For Chile, the comparison year is 2013.

Table 32. Difference in literacy scores between contrast categories, by socio-demographic characteristics, PIAAC 2018

Countries	Age	Immigrant and language background	Educational attainment	Parents' educational attainment
	Difference between youngest (25-34) and oldest (55-65) adults	*Difference between native born/native language and foreign born/foreign language*	*Difference between adults with tertiary and lower than upper secondary*	*Difference between adults with at least one parent who attained tertiary and neither parent who attained upper secondary*
Australia	-10.9	-39.6	47.5	17.9
Austria	-24.6	-35.0	42.0	20.2
Canada	-10.7	-34.3	62.0	19.9
Chile	**-19.5**	**c**	**60.5**	**23.1**
Czech Republic	-14.3	-5.8	50.2	18.8
Denmark	-22.2	-46.1	46.6	17.9
England (UK)	-4.0	-37.8	44.8	29.6
Estonia	-14.6	-17.1	40.7	13.4
Finland	-37.6	-52.6	44.4	20.2
Flanders (Belgium)	-19.6	-50.7	52.4	18.3
France	-18.2	-36.1	53.9	20.3
Germany	-26.8	-30.5	54.8	22.7
Greece	8.3	-20.7	30.6	26.2
Hungary	-14.4	c	59.3	29.4
Ireland	-6.7	-31.4	52.6	19.5
Israel	-21.6	-16.4	56.3	35.4
Italy	-11.8	-31.7	39.1	20.9
Japan	-23.0	c	40.9	10.8
Korea	-19.5	-56.3	46.4	11.7
Lithuania	-6.5	-11.6	33.5	16.2
Mexico	**-18.9**	**c**	**42.0**	**18.3**
Netherlands	-24.2	-44.6	50.2	15.0
New Zealand	-11.3	-33.2	46.0	18.5
Northern Ireland (UK)	-5.2	-34.4	49.0	21.1
Norway	-22.1	-46.7	40.3	19.1
Poland	-6.5	c	56.3	24.3
Slovak Republic	1.1	1.4	43.8	24.8
Slovenia	-17.6	-16.0	50.4	23.3
Spain	-23.8	-36.9	46.5	16.7
Sweden	-17.5	-56.7	51.6	16.1
Turkey	-19.9	c	39.1	14.4
United States 2017	-9.1	-24.2	59.6	27.4
OECD average	**-15.5**	**-28.3**	**48.1**	**20.4**
Cyprus[1]	-1.4	-27.2	31.5	13.5
Ecuador	**-8.2**	**c**	**37.9**	**24.2**
Kazakhstan	7.4	-9.4	15.6	18.0
Peru	**-6.6**	**c**	**54.7**	**28.7**
Singapore	-21.5	-21.8	91.2	20.3

Source: Survey of Adult Skills (PIAAC) (2012, 2015, 2018). Tables Annex Skills Matter 2019 - Chapter 3.
Note: Differences are based on a regression model and take account of differences associated with the following variables: age, gender, education, immigration and language background and parents' educational attainment. Only the score-point differences between two contrast categories are shown, which is useful for showing the relative significance of each socio-demographic variable vis-a-vis observed score-point differences. Differences for the Russian Federation are missing due to the lack of language variables.

Table 33. Mean literacy and numeracy proficiency, by gender, and score difference between men and women. PIAAC 2018

	Literacy				Numeracy			
	Men	Women	Difference between men and women		Men	Women	Difference between men and women	
	Mean score	Mean score	Dif.	p-value	Mean score	Mean score	Dif.	p-value
Australia	281.3	279.5	1.8	0.246	274.5	260.8	13.7	0.000
Austria	271.5	267.4	4.1	0.002	281.7	268.5	13.2	0.000
Canada	274.6	272.3	2.3	0.059	272.7	258.2	14.6	0.000
Chile	**223.9**	**216.4**	**7.6**	**0.001**	**216.6**	**195.6**	**21.0**	**0.000**
Czech Republic	275.7	272.3	3.4	0.042	280.2	271.2	9.0	0.000
Denmark	270.6	271.0	-0.4	0.754	283.4	273.1	10.3	0.000
England (UK)	274.0	271.2	2.8	0.122	269.0	254.7	14.3	0.000
Estonia	275.1	276.6	-1.6	0.207	276.2	270.3	6.0	0.000
Finland	286.0	289.1	-3.2	0.074	287.3	277.1	10.2	0.000
Flanders (Belgium)	278.1	272.8	5.3	0.000	288.3	272.3	16.0	0.000
France	262.0	262.2	-0.2	0.861	259.7	248.9	10.8	0.000
Germany	272.3	267.2	5.1	0.001	280.3	263.0	17.3	0.000
Greece	251.4	256.3	-4.8	0.010	255.5	248.3	7.2	0.001
Hungary	262.7	265.2	-2.5	0.069	273.6	270.8	2.8	0.074
Ireland	267.7	265.4	2.3	0.091	261.7	249.8	11.9	0.000
Israel	255.4	255.0	0.4	0.793	257.0	245.3	11.7	0.000
Italy	250.4	250.6	-0.3	0.887	252.5	241.8	10.7	0.000
Japan	297.8	294.7	3.1	0.021	294.3	282.0	12.3	0.000
Korea	275.7	269.4	6.3	0.000	268.6	258.3	10.3	0.000
Lithuania	265.0	268.5	-3.5	0.028	268.1	266.4	1.8	0.332
Mexico	**222.3**	**220.9**	**1.5**	**0.288**	**215.8**	**204.9**	**10.9**	**0.000**
Netherlands	287.1	280.9	6.1	0.000	288.7	271.9	16.7	0.000
New Zealand	280.7	280.7	0.0	0.984	277.7	265.0	12.6	0.000
Northern Ireland (UK)	271.9	265.6	6.3	0.001	266.3	252.3	14.1	0.000
Norway	280.3	276.4	3.9	0.008	285.6	270.7	14.8	0.000
Poland	263.7	270.1	-6.4	0.000	260.7	258.8	1.9	0.174
Slovak Republic	273.5	274.2	-0.8	0.512	277.0	274.6	2.4	0.074
Slovenia	255.2	257.7	-2.5	0.077	259.9	255.1	4.7	0.008
Spain	254.1	249.4	4.7	0.002	252.0	239.5	12.5	0.000
Sweden	280.9	277.5	3.3	0.054	285.7	272.2	13.6	0.000
Turkey	232.0	220.9	11.1	0.000	232.6	205.7	26.9	0.000
United States 2017	270.3	271.4	-1.1	0.549	258.8	251.2	7.6	0.001
OECD average	267.0	265.3	1.7	0.000	267.7	256.2	11.5	0.000
Cyprus[1]	268.0	269.6	-1.6	0.296	268.5	261.2	7.3	0.000
Ecuador	**197.0**	**195.8**	**1.2**	**0.465**	**189.5**	**180.1**	**9.4**	**0.000**
Kazakhstan	248.0	250.2	-2.2	0.097	247.0	247.2	-0.2	0.886
Peru	**198.6**	**192.6**	**6.1**	**0.000**	**186.3**	**170.6**	**15.7**	**0.000**
Russian Federation[2]	272.9	277.4	-4.5	0.038	268.3	271.4	-3.1	0.241
Singapore	261.4	253.9	7.5	0.000	264.7	250.3	14.5	0.000

Source: Survey of Adult Skills (PIAAC) (2012, 2015, 2018), Tables Annex Skills Matter 2019 - Chapter 3. Table A3.8 (L) and Table A3.8 (N).
Note: The information in this document with reference to “Cyprus” relates to the southern part of the Island.

REFERENCES

Aba Anane, C. (2013). Competency based training: Quality delivery for technical and vocational education and training (TVET) institutions. *Educational Research International 2*(2), 117-127.

Abadzi, H. (2016). Training 21st-Century Workers: Facts, Fiction and Memory Illusions. *International Review of Education* 62(3), 253-278.

Accenture (2018). It's learning. Just not as we know it. How to accelerate skills acquisition in the age of intelligent technologies. Available at https://www.accenture.com/_acnmedia/thought-leadership-assets/pdf/accenture-education-and-technology-skills-research.pdf (accessed in December 2019)

Acemoglu, D. & Autor, D. (2012). What Does Human Capital Do? A Review of Goldin and Katz's The Race between Education and Technology. *Journal of Economic Literature 50*(2), 426–463.

Aguerrevere, G., Amaral, N., Bentata, C. and Rucci, G. (2020). Desarrollo de habilidades para el mercado laboral en el contexto de la COVID-19, Serie Políticas Sociales en respuesta al Coronavirus, Inter-American Development Bank.

Alfaro, P., Evans, D., & Holland, P. A. (2015). Extending the School Day in Latin America and the Caribbean. Policy Research Working Paper 7309, Impact Evaluation series. Washington, D.C.: World Bank Group.

Alfonso, M. & Zoido, P. (2018). ¿Listos para aprender? Beneficios de una educación inicial de calidad para estudiantes desfavorecidos en Perú. Presentation at the Inter-American Development Bank. Unpublished document.

Alfonso, M. (2009). Credit Constraints and the Demand for Higher Education in Latin America. Education Division Working Paper No.3. Washington, D.C.: Inter-American Development Bank.

Allen, R., & Burgess, S. (2012). *How should we treat under-performing schools?: a regression discontinuity analysis of school inspections in England*. Bristol: CMPO.

Allovue (2019). Market Study of Education Management and Information System Software for Latin American Countries. Consultancy report elaborated for the Inter-American Development Bank. Unpublished document.

Altonji, JG., Kahn, LB & Speer, JD. (2016). Cashier or Consultant? Entry Labor Market Conditions, Field of Study, and Career Success. *Journal of Labor Economics 34 S1*. S361-S401.

Alvarado, A. Novella, R., Rosas-Shady, D. & González-Velosa, C. (2019a). Survey of working skills (ENHAT) 2017-2018: Causes and consequences of the skill gap in Peru. Mimeo. Washington, D.C.: Inter-American Development Bank.

Alvarado, A., Novella, R., Rosas-Shady, D. & González-Velosa, C. (2019b). Encuesta de Habilidades al Trabajo (ENHAT) 2017-2018: Causas y consecuencias de la brecha de habilidades en Perú, IDB Technical Note IDB-TN-1652. Washington, D.C.: Inter-American Development Bank

Álvarez Marinelli, H., Arias Ortiz, E., Bergamaschi, A., López Sánchez, A., Noli, A., Ortiz Guerrero, M., Pérez-Alfaro, M., Rieble-Aubourg, S., Rivera, M., Scannone, R., Vásquez M. and Viteri A. (2020) La educación en tiempos del coronavirus: Los sistemas educativos de América Latina y el Caribe ante COVID-19. Washington, DC: Inter-American Development Bank

Amaral, N, Azuara, O., González, S., Ospino, C., Pages, C., Rucci, G. & Torres, J. (2019). What are the most in-demand occupations and emerging skills in the region? Monograph. Washington D.C.: Inter-American Development Bank.

Amaral, N., Fieldsend, G., Prada, M. & Rucci, G. (2017). Building Better Skills Systems for Productivity and Growth. IDB Technical Note IDB-TN-1328. Washington, D.C.: Inter-American Development Bank

Araujo, M., Carneiro, P., Cruz-Aguayo, Y. & Schady, N. (2016). Teacher Quality and Learning Outcomes in Kindergarten. *The Quarterly Journal of Economics 131* (3*).* 1415-53.

Araujo, MC., Dormal, M. & Schady, N. (2018). Child Care Quality and Child Development. *The Journal of Human Resources (online).* March 2, 2018

Araya, R., Arias Ortiz, E., Bottan, N. & Cristia, J. (2019). Does Gamification in Education Work?: Experimental Evidence from Chile. IDB Working Paper Series IDB-WP-982. Washington, D.C.: Inter-American Development Bank

Arias Ortiz, E. & Cristia, J. (2014). The IDB and technology in education: how to promote effective programs? IDB Technical Note IDB-TN-670. Washington, D.C.: Inter-American Development Bank

Arias Ortiz, E., Eusebio, J., Pérez Alfaro, M., Vásquez & M., Zoido, P. (2019). From paper to the cloud. Guiding the digital transformation of Education Management and Information Systems (SIGED). IDB Technical Note IDB-TN-1660. Washington, D.C.: Inter-American Development Bank

Arias Ortiz, E., Pombo, C., Vásquez, M. (2019). ¿Cómo son las escuelas de la era digital? Brochure. Washington D.C.: Inter-American Development Bank.

Asian Development Bank (2014). Innovative Strategies in TVET for Accelerated Human Resource Development in Asia. Mandaluyong City, Philippines. Asian Development Bank.

Attanasio, O., Fitzsimons, E., Gomez, A., Gutierrez, M., Meghir, C. & Mesnard, A. (2010). Children's schooling and work in the presence of a conditional cash transfer program in rural Colombia. *Economic development and cultural change 58*(2*).* 181-210.

Attanasio, O. & Kaufmann, K. (2009). Educational Choices, Subjective Expectations, and Credit Constraints. NBER Working Paper 15087, Cambridge, MA: National Bureau of Economic Research.

Autor, D., Anran, L. & Notowidigdo, M. (2019). Preparing for the Future of Work. Available at https://www.povertyactionlab.org/sites/default/files/documents/work-of-the-future-literature-review-4.2.19.pdf (accessed in November 2019)

Avitabile, C. & De Hoyos, R. (2015). The Heterogeneous Effect of Information on Student Performance: Evidence from a Randomized Control Trial in Mexico. World Bank Policy Research Working Paper 7422. Washington, D.C: World Bank Group.

Baker, J. A., Davis, S. M., Dilly, L. J. & Lacey, C. (2002). Promoting resilience and competence with at-risk students: Prevention strategies that work. Paper presented at the annual meeting of the National Association of School Psychologists. Chicago. Unpublished document.

Baker-Henningham, H. & Lopez-Boo, F. (2010). Early Childhood Stimulation Interventions in Developing Countries: A comprehensive literature review. IDB Working Paper Series IDB-WP-213. Washington, D.C.: Inter-American Development Bank

Bando, R., Näslund-Hadley, E. & Gertler, P. (2019). Effect of Inquiry and Problem Based Pedagogy on Learning: Evidence from 10 Field Experiments in Four Countries. NBER Working Paper 26280. Cambridge, MA: National Bureau of Economic Research.

Banerjee, A. V., Cole, S., Duflo, E. & Linden, L. (2007). Remedying education: Evidence from two randomized experiments in India. *The Quarterly Journal of Economics 122*(3). 1235-1264.

Banerjee, A. V. & Duflo, E. (2019). *Good Economics for Hard Times*. London: Penguin Books Limited.

Barret, N. & Harris D. (2018). The Effects of a Positive Behavior Interventions and Supports (PBIS) Data Platform on Student Academic and Disciplinary Outcomes. Available at https://educationresearchalliancenola.org/files/publications/Barrett-Harris-Technical-Report-Final.pdf (accessed in December 2019)

Barro, R, J. (2001). Human Capital and Growth. *American Economic Review 91* (2). 12-17.

Barron, J., Tan, E., Yu, Q., Song, M; McGill, S. & Fried, L. (2009). Potential for intensive volunteering to promote the health of older adults in fair health. *Journal of Urban Health 86*. 641–653.

Bassanini, A., Booth, A., Brunello, G., De Paola, M. & Leuven, E. (2005). Workplace Training in Europe. IZA Discussion Paper 1640. Bonn, Germany: IZA Institute for Labor Economics

Bassi, M., Busso, M., Urzua, S. & Vargas, J. (2012). *Disconnected: Skills, Education and Employment in Latin America*. Washington D.C: Inter-American Development Bank.

Bastos, P., Bottan, N. L. & Cristia, J. (2017). Access to Preprimary Education and Progression in Primary School: Evidence from Rural Guatemala. *Economic Development and Cultural Change. 65*(3). 521-547.

Behrman, J., Tincani, M., Todd, P. & Wolpin, K. (2016). Teacher Quality in Public and Private Schools under a Voucher System: The Case of Chile. *Journal of Labor Economics 34(2).* 319-62.

Belfield, C., Bowden, A., Klapp, A., Levin, H., Shand, R. & Zander, S. (2015). The Economic Value of Social and Emotional Learning. *Journal of Benefit-Cost Analysis 6(3).* 508-544.

Bellei, C. (2009). Does lengthening the school day increase students' academic achievement? Results from a natural experiment in Chile. *Economics of Education Review 28(5).* 629-640.

Berlinski, S., Duryea, S. and Pérez Vicent, S.(2020). Prevalence and Correlates of Disability in Latin America and the Caribbean: Evidence from 8 National Censuses, IDB working paper (forthcoming). Washington, D.C.: Inter-American Development Bank.

Berlinski, S., Galiani, S. & Gertler, P. (2009). The Effect of Pre-primary Education on Primary School Performance. *Journal of Public Economic 93(1-2)*. 219-234.

Berniell, L., Dolores de la Mata, R., Camacho, A., Barrera-Osorio, F., Fernando Álvarez, P. & Vargas, J. (2016). *Más habilidades para el trabajo y la vida: los aportes de la familia, la escuela, el entorno y el mundo laboral*. Bogotá: CAF.

Bersin, J. (2016). Predictions for 2017: Everything is becoming digital. Bersin by Deloitte Research Report. Available at https://www2.deloitte.com/content/dam/Deloitte/at/Documents/about-deloitte/predictions-for-2017-final.pdf (accessed in December 2019)

Bertoni, E., S. Calvacanti, G. Elacqua, L. Marotta, M. Martinez, C. Mendez, V. Montalva. S. Olsen & H. Santos. (forthcoming). ¿Escasez de docentes en Latinoamérica: ¿Como se puede medir y que políticas están implementando los países para resolverlo? IDB Technical Note (forthcoming). Washington, D.C.: Inter-American Development Bank

Bertoni, E., Elacqua, G., Jaimovich, A., Rodríguez, J. & Santos, H. (2018). Teacher Policies, Incentives, and Labor Markets in Chile, Colombia, and Peru: Implications for Equality. IDB Working Paper Series IDB-WP-945. Washington, D.C.: Inter-American Development Bank

Betts, J., Zau, A. & Rice, L. (2003). *Determinants of Student Achievement: New Evidence from San Diego*. San Francisco: Public Policy Institute of California.

Beuermann, D., & Jackson, C. (2019). The Short and Long-Run Effects of Attending the Schools that Parents Prefer. NBER Working Paper 24920, Cambridge, MA: National Bureau of Economic Research. *Journal of Human Resources* (forthcoming).

Beuermann, D., Jackson, C., Navarro-Sola, L., & Pardo, F. (2019). What is a Good school, and Can Parents Tell? Evidence on the Multidimensionality of School Output. NBER Working Paper 25342, Cambridge, MA: National Bureau of Economic Research.

BID (forthcoming). El contagio educativo. Los costos del COVID-19 en los sistemas educativos de America Latina y el Caribe. Washington, DC: Inter-American Development Bank

Bleemer, Z. & Zafar, B. (2018). Intended College Attendance: Evidence from an Experiment on College Returns and Costs. *Journal of Public Economics 157*. 184-211.

Bonilla, L., Bottan, N. & Ham, A. (2015). Information Policies and Higher Education Choices: Experimental Evidence from Colombia. *Journal of Behavioral and Experimental Economics 83*. 101468.

Bonilla, J. (2011). Contracting Out Public Schools for Academic Achievement: Evidence from Colombia. São Paulo: Universidade de São Paulo. Departmento de Economia. Unpublished document.

Borghans, L., Meijers, H. & Weel, B. T. (2008). The role of noncognitive skills in explaining cognitive test scores. *Economic inquiry*, *46*(1). 2-12.

Borko, H. & Elliott, R. (1999). Hands-on pedagogy versus hands-off accountability. Tensions between competing commitments for exemplary mathematics teachers in Kentucky. *Phi Delta Kappan 80(5).* 394-400.

Boyd, D., Grossman, P., Lankford, H., Loeb, S. & Wyckoff, S. (2009). Teacher Preparation and Student Achievement. *Educational Evaluation and Policy Analysis 31*. 416-440.

Britton, J. & Propper, C. (2016). Teacher Pay and School Productivity: Exploiting Wage Regulation. *Journal of Public Economics 133*. 75-89.

Brown, P., Roediger H. & McDaniel, M. (2014). *Make It Stick – The Science of Successful Learning*. Cambridge, MA: Harvard University Press.

Bruns, B. & Luque, J. (2015). *Profesores excelentes: cómo mejorar el aprendizaje en América Latina y el Caribe*. Washington, D.C.: World Bank Group.

Brutti, Z. & Sánchez, F. (2017). Does Better Teacher Selection Lead to Better Students? Evidence from a Large Scale Reform in Colombia. CEDE Document 2017-11. Bogotá: Centro de Estudios sobre Desarrollo Económico (CEDE).

Bulman, G. & Fairlie, R. (2016). Technology and Education: Computers, Software, and the Internet. NBER Working Paper 22237.Cambridge, MA: National Bureau of Economic Research.

Busso, M.& Messina, J. (2019). Adult training: what do we know? Mimeo. Washington, D.C.: Inter-American Development Bank.

Bustelo, M., Suaya, A. & Viollaz, M. (2019). Cómo será el mercado laboral para las mujeres. Monograph. Washington D.C.: Inter-American Development Bank.

Busso, M., Cristia, J., Hincapié, D., Messina, J., Ripani, L. (2017). *Aprender mejor: políticas públicas para el desarrollo de habilidades.* Washington D.C.: Inter-American Development Bank.

Camacho, A., Messina, J. & Uribe, J. (2016). The Expansion of Higher Education in Colombia: Bad Students or Bad Programs? IDB Discussion Paper IDB-DP-452. Washington, D.C.: Inter-American Development Bank

Campaña, J., Giménez-Nadal, J. & Molina, J. (2018). Gender Norms and the Gendered Distribution of Total Work in Latin American Households. *Feminist Economics 24(1)*. 35-62

Canelas, C. & Salazar, S. (2014). Gender and Ethnic Inequalities in LAC Countries. *IZA Journal of Labor & Development 3(18).* 1–15.

Card, D. & Payne, A. (2002). School finance reform, the distribution of school spending, and the distribution of student test scores. *Journal of public economics 83(1).* 49-82.

Card, D., Kluve, J. & Weber, A. (2015). What works? A meta-analysis of recent active labor market program evaluations. NBER Working Paper 21431. Cambridge, MA: National Bureau of Economic Research.

Cardoso, A.R. & Verner, D. (2006). School dropout and push-out factors in Brazil: the role of early parenthood, child labor, and poverty. World Bank Discussion Paper 2515. Washington D.C. World Bank Group.

Carlson, M., Saczynski, J., Rebok, G., Seeman, T., Glass, T., McGill, S. & Fried, L. (2008). Exploring the effects of an "everyday" activity program on executive function and memory in older adults: Experience Corps. *The Gerontologist 48(6).* 793-801.

Carrillo, P., Onofa, M. & Ponce, J. (2010). Information Technology and Student Achievement: Evidence from a Randomized Experiment in Ecuador. IDB Working Paper Series IDB-WP-223. Washington, D.C.: Inter-American Development Bank

Case, A., & Deaton, A. (2017). Mortality and morbidity in the 21st century. *Brookings papers on economic activity 2017(1)*, 397-476.

Castleman, B. & Lindsay, C., (2015). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization 115(C)*. 144-160.

Cathles, A. & Navarro, J. (2019). Disrupting Talent: the emergence of coding boot camps and the future of digital skills. Monograph. Washington, D.C.: Inter-American Development Bank.

CDC. (2016). Sexual Identity, Sex of Sexual Contacts, and Health-Risk Behaviors Among Students in Grades 9-12: Youth Risk Behavior Surveillance. Atlanta, GA: U.S. Department of Health and Human Services

CEDEFOP (2012). Permeable education and training systems: reducing barriers and increasing opportunity. CEDEFOP Briefing Note 9072. Luxembourg: CEDEFOP.

CEDEFOP (2019a). The changing nature and role of vocational education and training in Europe. CEDEFOP Research Paper 70. Luxembourg: CEDEFOP.

CEDEFOP (2019b). Not just new jobs: digital innovation supports careers. CEDEFOP Briefing Note 9143. Luxembourg: CEDEFOP.

Cerda, C., Huete-Nahuel, J., Molina-Sandoval, D., Ruminot-Martel, E. & Saiz, J. (2017). Uso de tecnologías digitales y logro académico en estudiantes de pedagogía chilenos. *Estudios pedagógicos 43(3)*. 119-133.

Chacaltana, J., Diaz, J. & Rosas, D. (2015). Hacia un Sistema de Formación Continua de la Fuerza Laboral del Perú. Monograph. Washington, D.C: Inter-American Development Bank.

Chapman, B. (2016). Income contingent loans in higher education financing. IZA World of Labor 227. Bonn. Institute of Labor Economics. Available at https://wol.iza.org/articles/income-contingent-loans-in-higher-education-financing/long (accessed in November 2019)

Chen, J., Wang, M., Kirschner, P. & Tsai, C. (2018). The role of collaboration, computer use, learning environments, and supporting strategies in CSCL: A meta-analysis. *Review of Educational Research 88(6)*. 799-843.

Cheng, R., Lam, S. & Chan, J. (2008). When high achievers and low achievers work in the same group: The roles of group heterogeneity and processes in project-based learning. *British Journal of Educational Psychology 78(2)*. 205-221.

Chetty, R., Friedman, J. & Rockoff, J. (2014). Measuring the Impacts of Teachers, I: Evaluating Bias in Teacher Value-Added Estimates. *American Economic Review 104(9).* 2593-2632.

Cho, H. & Kim J. (2016). Administrative assistants' informal learning and related factor. *Journal of Workplace Learning 28(7).* 406-423.

Chung, JY. & Lee, S. (2018). Dropout early warning systems for high school students using machine learning. *Children and Youth Services Review 96.* 346-353

CIMA (2019). Nota CIMA #14: ¿Cuentan las escuelas con la tecnología necesaria para la transformación digital?. Washington, D.C.: Inter-American Development Bank.

Clotfelter, C., Ladd, H. & Vigdor, J. (2010). Teacher Credentials and Student Achievement in High School: A Cross-Subject Analysis with Student Fixed Effects. *The Journal of Human Resources 45(3)*. 655–81.

Clotfelter, C., Glennie, E., Ladd, H. & Vigdor, J. (2008). Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina. *Journal of Public Economics 92(5-6)*. 1352-1370.

CNP, Comisión Nacional de Productividad (2018). Formación de Competencias para el Trabajo en Chile. Available at https://www.comisiondeproductividad.cl/wp-content/uploads/2018/03/Informe_Formacion-de_Competencias-para_el_Trabajo.pdf (accessed in December 2019)

Colombo, E. & Stanca, L. (2014). The Impact of Training on Productivity: Evidence from a Large Panel of Firms. *International Journal of Manpower 35(8).* 1140-1158.

Cooper, CW., Riehl, CJ., & Hasan, AL. (2010). Leading and Learning with Diverse Families in Schools: Critical Epistemology amid Communities of Practice. *Journal of School Leadership 20(6)*. 758-788.

Crespi, G., Fernández Arias, E. & Stein, E. (2014). *¿Cómo repensar el desarrollo productivo? Políticas e instituciones sólidas para la transformación productiva.* Washington, D.C.: Inter-American Development Bank.

Cruz-Aguayo, Y., Hincapie, D. & Rodríguez, C. (2020). *Profesores a prueba. Claves para una evaluación docente exitosa.* Washington, D.C.: Inter-American Development Bank.

Cuesta, A., Glewwe, AP. & Krause, AP. (2016). School Infrastructure and Educational Outcomes: A Literature Review, with Special Reference to Latin America. *Economia*, *17(1).* 95-130

Cullen, JB., & Reback, R. (2006). Tinkering Toward Accolades: School Gaming Under a Performance Accountability System. *Advances in applied microeconomics 14(1).* 1-34

Cunha, F. & Heckman, J. (2007). The technology of skill formation. *American Economic Review 97(2).* 31-47.

Cunningham, W. & Villasenor, P. (2016). Employer voices, employer demands, and implications for public skills development policy connecting the labor and education sectors (English). World Bank Policy Research Working Paper 7582. Washington, D.C.: World Bank Group.

Cunningham, W., McGinnis, L., García-Verdú, R., Tesliuc, C. & Vernes, D. (2008). *Youth at risk in Latin America and the Caribbean: Understanding the causes realizing the potential.* Washington, D.C.: World Bank Group.

Darling-Hammond, L. (2006). *Powerful Teacher Education: Lessons from Exemplary Programs*. San Francisco, CA: Jossey-Bass.

Daugherty, L., Miller, T., Dossani, R. & Clifford, M. (2013). *Building the Links between Funding and Quality in Higher Education: India's Challenge.* Santa Monica, CA: RAND Corporation.

De Diego, M., Gonzalez, C., Rieble, S. & Rucci, G. (2017). Public Financing of Vocational Training through Competitive Funds: A Promising Option for Latin America and the Caribbean. IDB Technical Note IDB-TN-1280. Washington, D.C.: Inter-American Development Bank

De Grip, A. & Sauermann, J. (2013). The effect of training on productivity: The transfer of on-the-job training from the perspective of economics. *Educational Research Review 8*. 28-36.

De Mendoza, C., Huneeus, C., Rucci, G. (2013). Una Visión Crítica sobre la Asignación de Recursos Públicos para la capacitación en América Latina y el Caribe. IDB Discussion Paper IDB-DP-265. Washington, D.C.: Inter-American Development Bank

De Witte, K. & Rogge, N. (2013). Dropout from secondary education: all's well that begins well. *European Journal of Education 47(4).* 1-20.

Dearden, L., Reed,H. & Van Reenen, J. (2006). The Impact of Training on Productivity and Wages: Evidence from British Panel Data. *Oxford Bulletin of Economics and Statistics 68(4)*. 397-421.

Deming, D., Kahn, L. (2018). Skill requirements across firms and labor markets: Evidence from job postings for professionals. *Journal of Labor Economics*, *36(S1).* 337-369.

Desjardins, R. (2017). *Political Economy of Adult Learning Systems.* Bloomsbury Academic. London, New York.

Di Gropello, E. (2006). A Comparative Analysis of School-Based Management in Central America. World Bank Working Paper 72. Washington, D.C.: World Bank Group.

Dortch, C. (2014). Career and Technical Education (CTE). A Primer. Washington D.C.: Library of Congress. Congressional Research Service.

Dostie, B. (2014). Innovation, Productivity, and Training. IZA Discussion Paper 8506. Bonn, Germany: IZA Institute for Labor Economics

Duarte, J., Jaureguiberry, F. & Racimo, M. (2017). Sufficiency, equity and effectiveness of school infrastructure in Latin America according to TERCE. Report. Washington, D.C.: Inter-American Development Bank.

Duckworth, AL., & Seligman, MEP. (2005). Self-Discipline Outdoes IQ in Predicting Academic Performance of Adolescents. *Psychological Science 16(12).* 939–944.

Duckworth, A., Peterson, C., Matthews, M. & Kelly, D. (2007). Grit: Perseverance and Passion for Long-Term Goals. *Journal of personality and social psychology*, *92*(6), 1087.

Duflo, E., Dupas, P., Kremer M. (2015). School governance, teacher incentives, and pupil– teacher ratios: Experimental evidence from Kenyan primary schools. *Journal of Public Economics 123*, 92-110.

Durlak, J.; Weissberg, R., Dymnicki, A., Taylor, R. & Schellinger, K. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child development 82(1).* 405-432.

Dutz, M., Almeida, R., Packard, T. (2018). *The Jobs of Tomorrow: Technology, Productivity, and Prosperity in Latin America and the Caribbean. Directions in Development*. Washington, D.C.: World Bank Group.

Dynarski, S. & Scott-Clayton, J. (2013). Financial Aid Policy: Lessons from Research. *The Future of Children 23(1).* 67–91.

ECLAC, CAF & OECD (2019). Latin America Economic Outlook 2019: Development in transition. Available at https://www.cepal.org/en/publications/44515-latin-american-economic-outlook-2019-development-transition (accessed in December 2019)

Edelson, D. (2001). Learning-for-use: A framework for integrating content and process learning in the design of inquiry activities. *Journal of Research in Science Teaching 38*. 355-385.

Edin, P, Fredriksson, P., Nybom, M., & Ockert, B. (2017). The Rising Return to Non-Cognitive Skill. IZA Discussion Paper 10914. Bonn, Germany: IZA Institute for Labor Economics

Eichhorst, W., Rodríguez-Planas, N., Schmidl, R. & Zimmermann, K. (2012). A Roadmap to Vocational Education and Training Systems Around the World. IZA Discussion Paper 7110. Bonn, Germany: IZA Institute for Labor Economics IZA

Elacqua, G., Munevar, I., Sanchez, F. & Santos, H. (2019a). The impact of decentralized decision making on student outcomes and teacher quality. Evidence from Colombia. IDB Working Paper Series IDB-WP-1058. Washington, D.C.: Inter-American Development Bank

Elacqua, G., Navarro-Palau, P., Prada, M. F., & Soares, S. (2019b). Does technical education improve academic outcomes? Evidence from Brazil. IDB Working Paper Series IDB-WP-1057. Washington, D.C.: Inter-American Development Bank

Elacqua, G., Hincapie, D., Vegas, E. & Alfonso, M. (2018a). *Profesión: Profesor en América Latina ¿Por qué se perdió el prestigio docente y cómo recuperarlo?.* Washington, D.C.: Inter-American Development Bank

Elacqua, G., Iribarren, M. & Santos, H. (2018b). Private Schooling in Latin America: Trends and Public Policies. IDB Technical Note IDB-TN-1550. Washington, D.C.: Inter-American Development Bank.

Elacqua, G. & Alves, F. (2014). *Monitoring and Evaluation in Education in Latin America*. New York: UNESCO-OREALC.

ENQA, European Association for Quality Assurance in Higher Education. (2018). Considerations for Quality and Assurance of E-Learning Provision. Occasional Papers 26. Brussels: ENQA.

ENQA-VET, European Network on Quality Assurance in Vocational Education and Training (2009). Making initial vocational education and training more attractive for learners. Brussels: ENQA-VET. Available at https://www. deqa-vet. de/_media/TG_Report_MIVMA. pdf (accessed in November 2019).

Escueta, M., Quan, V., Nickow, A. & Oreopoulos, P. (2017). Education technology: an evidence-based review. NBER Working Paper 23744. Cambridge, MA: National Bureau of Economic Research.

Estrada, R. (2019). Rules Rather than Discretion: Teacher Hiring and Rent Extraction. *Journal of Labor Economics 37 (2)*. 545-579.

Fazio, M., Fernández-Coto, R. & Ripani, L. (2016). *Apprenticeships for the XXI Century: A Model for Latin America and the Caribbean.* Washington, D.C.: Inter-American Development Bank.

Fein, D. (2012). Career Pathways as a Framework for Program Design and Evaluation Vol. 30. OPRE Report. Washington D.C.: Office of Planning and Research Evaluation, Administration of Children and Families, US Department of Health and Human Services.

Feres Junior, J., & Daflon, VT. (2015). A nata e as cotas raciais: Genealogia de um argumento público. *Opinião Pública 21(2)*. 238–267.

Ferreyra, MM., Avitabile, C., Botero Álvarez, J., Haimovich Paz, F. & Urzúa, S. (2017). *At a Crossroads: Higher Education in Latin America and the Caribbean.* Washington, D.C.: World Bank Group.

Figlio, D. & Loeb, S. (2011). School Accountability. In EA. Hanushek, S. Machin & L. Woessmann (eds.): *Handbook of the Economics of Education Volume 3*. 383-421. Amsterdam, Netherlands: North Holland.

Florez, A. & Jayaram, S. (2016). Bridging the Skills Gap in Latin America and the Caribbean. Report. FHI 360, R4D. Washington, D.C. Unpublished document.

Frazelle, S. & Nagel, A. (2015). A practitioner's guide to implementing early warning systems (REL 2015–056). Washington, DC: US Department of Education, Institute of Education Sciences. Available at http://ies.ed.gov/ncee/edlabs (accessed in December 2019)

Freire, G., Diaz-Bonilla, C., Schwartz Orellana, S., Soler Lopez, J., & Carbonari, F. (2018). *Afro-descendants in Latin America: Toward a Framework of Inclusion*. Washington D.C., World Bank Group.

Gaiger Silvera, F., Campolina, B. & van Horn, R. (2014). Impacts of the Bolsa Familia on the Allocation of Time between Work and School for Children and Adolescents Aged 10 to 18. In T. Campello and M. Côrtes Neri (eds.), *Bolsa Família Program: A Decade of Social Inclusion in Brazil*. 53-54. Brasília: Ipea

Gamliel, T. & Gabay, N. (2014). Knowledge exchange, social interactions, and empowerment in an intergenerational technology program at school. *Educational Gerontology 40(8)*. 597-617.

Garcia, S., Fernandez, C. & Weiss, C. (2013). Does Lengthening the School Day Reduce the Likelihood of Early School Dropout and Grade Repetition: Evidence from Colombia. Available at https://ssrn.com/abstract=2926193 (accessed in November 2019)

Githens, R. (2007). Older adults and e-learning: Opportunities and Barriers. *Quarterly Review of Distance Education 8(4)*. 329-338

Gittleman, M., Klee, M. & Kleiner, M. (2018). Analyzing the labor market outcomes of occupational licensing. *Industrial Relations: A Journal of Economy and Society 57(1)*. 57-100.

Glazerman, S., Protik, A., Teh, B., Bruch, J. & Max, J. (2013). Transfer Incentives for High-Performing Teachers: Final Results from a Multisite Randomized Experiment. NCEE 2014-4003. Washington, D.C.: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Glazerman, S., Isenberg, E., Dolfin, S., Bleeker, M., Johnson, A., Grider, M. & Jacobus, M. (2010). Impacts of Comprehensive Teacher Induction: Final Results from a Randomized Controlled Study. NCEE 2010-4027. Washington, D.C.: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Glewwe, P. & Muralidharan, K. (2016). Improving School Education Outcomes in Developing Countries: Evidence, Knowledge Gaps, and Policy Implications, in EA Hanushek, S. Machin & L. Wouessmann (eds.): *Handbook of the Economics of Education Volume 5*. 653-744. Amsterdam, Netherlands: North Holland.

Glewwe, P., Hanushek, E., Humpage, S. & Ravina, R. (2011). School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010. NBER Working Paper 17554. Cambridge, MA: National Bureau of Economic Research

Goldhaber, D., Grout, C. & Huntington-Klein, N. (2017). Screen Twice, Cut Once: Assessing the Predictive Validity of Applicant Selection Tools. *Education Finance and Policy 12(2).* 197-223

Goldhaber, D. & Brewer, D. (2000). Does Teacher Certification Matter? High School Teacher Certification Status and Student Achievement. *Educational Evaluation and Policy Analysis 22(2)*. 129-145.

González-Velosa, C. & Peña Tenjo, N. (2019). Demanda de Trabajo en América Latina. ¿Qué podemos aprender de los portales de vacantes online? IDB Technical Note IDB-TN-1769. Washington, D.C.: Inter-American Development Bank

González-Velosa, C., Ripani, L., & Rosas-Shady, D. (2012). How Can Job Opportunities for Young People in Latin America be Improved?. IDB Technical Note IDB-TN-345. Washington, D.C.: Inter-American Development Bank

Gonzalez-Velosa, C., Rosas-Shady, D. & Flores-Lima, R. (2016). On-the-Job Training in Latin America and the Caribbean: Recent Evidence. In M. Grazzi, & C. Pietrobelli (eds.). *Firm Innovation and Productivity in Latin America and the Caribbean: The Engine of Economic Development*. 137-166. Washington, D.C.: Inter-American Development Bank.

González-Velosa, C., Rucci, G., Sarzosa, M. & Urzúa, S. (2015). Returns to Higher Education in Chile and Colombia. IDB Working Paper Series IDB-WP-587. Washington, D.C.: Inter-American Development Bank

Grantham-McGregor, S. & Smith, J. (2016). Extending the Jamaican Early Childhood Development Intervention. *Journal of Applied Research on Children: Informing Policy for Children at Risk 7(2)*. Article 4.

Grissom, J. & Loeb, S. (2011). Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers and Assistant Principals Identify the Central Importance of Managerial Skills. *American Educational Research Journal 48(5).* 1091-1123.

Gualano, M., Voglino, G., Bert, F., Thomas, R., Camussi, E. & Siliquini, R. (2018). The impact of intergenerational programs on children and older adults: a review. *International psychogeriatrics 30(4).* 451-468.

Halpern, R. (2009). *The Means to Grow Up. Reinventing Apprenticeship as a Developmental Support in Adolescence.* New York: Routledge.

Hannaway, J., & Hamilton, L. (2008). Effects of Accountability Policies on Classroom Practices. Report. Washington, DC: The Urban Institute. Available at https://www.urban.org/sites/default/files/publication/33161/411779-Accountability-Policies.PDF (accessed in November 2019)

Hanni, M. (2019). *Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean*. Santiago de Chile. CEPAL.

Hanushek, EA. & Woessmann, L. (2012). Schooling, Educational Achievement, and the Latin American Growth Puzzle. *Journal of Development Economics 99(2).* 497-512.

Hart, B., & Risley, TR. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Paul H. Brookes Publishing Company.

Hastings, J., Neilson, C. & Zimmerman, S. (2015). The Effects of Earnings Disclosure on College Enrollment Decisions. NBER Working Paper 21300. Cambridge, MA: National Bureau of Economic Research

Hastings, J., Neilson, C. & Zimmerman, S. (2013). Are Some Degrees Worth More than Others? Evidence from College Admission Cutoffs in Chile. NBER Working Paper 19241. Cambridge, MA: National Bureau of Economic Research

Heckman, JJ. & Kautz, T. (2013). Fostering and measuring skills: Interventions that improve character and cognition. NBER Working Paper 19656. Cambridge, MA: National Bureau of Economic Research

Heckman, JJ. & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics 19(4)*. 451-464

Heckman, JJ. & Rubinstein, Y. (2001). The Importance of Noncognitive Skills: Lessons from the GED Testing Program. *American Economic Review 91(2).* 145-149.

Hernandez, C. & Gonzalez, M. (2008). Effects of intergenerational interaction on aging. *Educational Gerontology 34(4).* 292-305.

Herrera, L., Buitrago, RE., Lorenzo, O., & Badea, M. (2015). Socio-Emotional Intelligence in Colombian Children of Primary Education. An analysis in rural and urban settings. *Procedia-Social and Behavioral Sciences 203*. 4-10.

Hincapie, D., Duryea, S. & Hincapie, A. (2019). Education for All: Advancing Disability Inclusion in Latin America and the Caribbean. IDB Policy Brief IDB-PB-299. Washington, DC: Inter-American Development Bank

Hincapie, D. (2016). Do Longer School Days Improve Student Achievement? Evidence from Colombia. IDB Working Paper Series IDB-WP-679. Washington, D.C.: Inter-American Development Bank

Hmelo-Silver, C., Duncan, R. & Chinn, C. (2007). Scaffolding and Achievement in Problem-based and Inquiry-Learning: A Response to Kirschner, Sweller, and Clark (2006). *Educational Psychologist 43(2).* 99-107.

Holzer, H. (2014). Improving Employment Outcomes for Disadvantaged Students. In M. Kearney & B. Harris (eds.). *Policies to Address Poverty in America*. 87-96. Washington, D.C.: Brookings Institution Press.

IDB, Inter-American Development Bank (2019). Migration and Education. Obstacles and opportunities. Mimeo. Washington, D.C.: Inter-American Development Bank.

IDB, Inter-American Development Bank and BID Invest (2018). What is Sustainable Infraestructure? A Framework to Guide Sustainability Across the Project Cycle. IDB Technical Note IDB-TN-1388. Washington, D.C.: Inter-American Development Bank

ILO, International Labour Organization (2019). Trabajar para un futuro más prometedor – Comisión Mundial sobre el Futuro del Trabajo. Report. Geneva: International Labor Organization.

ILO, International Labour Organization (2017). The Future of Vocational Training in Latin America and the Caribbean: Overview and Strengthening Guidelines. Montevideo: ILO Regional Office for Latin America and the Carribean.INEE (2018), Instituto Nacional de Evaluación Educativa. Panorama educativo de la población indígena y afrodescendiente 2017. México: INEE y UNICEF.

IPA (forthcoming). Evaluación Experimental del Programa JADENKÄ Matemática Intercultural-Bilingüe en Educación Preescolar en Panamá. Lima, Peru: Innovations for Poverty Action.

IPA (2019). Randomized Control Trial of the JADENKÄ Bilingual Inquiry- and Problem-Based Preschool Mathematics Instruction Program. IDB Consultancy Report. Lima, Peru. Unpublished document.

Jackson, C., Porter, S., Easton, J., Blanchard, A., & Kiguel, S. (2020). School Effects on Socio-emotional Development, School-Based Arrests, and Educational Attainment. NBER Working Paper 26759, Cambridge, MA: National Bureau of Economic Research.

Jackson, C. (2018). What Do Test Scores Miss? The Importance of Teacher Effects on Non–Test Score Outcomes. *Journal of Political Economy* 126(5), 2072-2107.Jackson, C., Johnson, R. & Persico, C. (2015). The effects of school spending on educational and economic outcomes: Evidence from school finance reforms. *The Quarterly Journal of Economics 131(1).* 157-218.

Jacob, B. (2005). Accountability, incentives and behavior: the impact of high stakes testing in the Chicago Public Schools. *Journal of Public Economics 89(5-6).* 761-796.

Jacob, B., Rockoff, J., Taylor, E., Lindy, B.& Rosen, R. (2016). Teacher Applicant Hiring and Teacher Performance: Evidence from DC Public Schools. NBER Working Paper 22054. Cambridge, MA: National Bureau of Economic Research.

Jaimovich, A. (2016). ¿Cómo mejoran los sistemas educativos? ¿Qué rol pueden cumplir las estructuras de gestión de la educación en el aseguramiento de procesos de mejora continua a nivel sistémico? Mimeo. Washington DC: Inter-American Development Bank.

Jensen, R. (2010). The (perceived) returns to education and the demand for schooling. *The Quarterly Journal of Economics 125(2).* 515-548.

Jimenez, E. & Sawada, Y. (1999). Do community-managed schools work? An evaluation of El Salvador's EDUCO program. *The World Bank Economic Review (13)3*. 415-41.

Johanson, RK. (2009). Good Practices in the Development of Technical Vocational Skills. Draft. Manila: Asian Development Bank. Unpublished document.

Jones, D., Karoly, L., Crowley, D. & Greenberg, M. (2015). Considering Valuation of Noncognitive Skills in Benefit-Cost Analysis of Programs for Children. *Journal of Benefit-Cost Analysis 6(3).* 471-507

Josephson, K., Francis, R. & Jayaram, S. (2018). *Promoting secondary school retention in Latin America and the Caribbean.* Caracas: CAF

Kaldi, S., Filippatou, D. & Govaris, C. (2011). Project-based learning in primary schools: Effects on pupils' learning and attitudes. *International Journal of Primary, Elementary and Early Years Education 39(1).* 35-47.

Kirkebøen, I., Leuven, E. & Mogstad, M. (2016). Field of study, earnings, and self-selection. *The Quarterly Journal of Economics 131(3).* 1057–1111.

Kleiner, M. & Krueger, A. (2013). Analyzing the extent and influence of occupational licensing on the labor market. *Journal of Labor Economics 31(S1).* S173-S202.

Knauer, H., Ozer, E., Down, W. & Fernald, L. (2018). Stimulating Parenting Practices in Indigenous and Non-Indigenous Mexican Communities. *International journal of environmental research and public health 15(1). 29.*

Kong, S. & Abelson, H. (2019). *Computational Thinking Education*. Singapore: Springer Singapore.

Konings, J. & Vanormelingen, S. (2015). The Impact of Training on Productivity and Wages: Firm-Level Evidence. *The Review of Economics and Statistics 97(2).* 485-497.

Koretz, D. (2008). *Measuring Up: What Educational Testing Really Tells Us*. Cambridge, MA: Harvard University Press.

Koumenta, M. & Pagliero, M. (2018). Occupational regulation in the European Union: coverage and wage effects. *British Journal of Industrial Relations 57(4).* 818-849

Ladd, H., & Fiske, E. (2009). The Dutch experience with weighted student funding: Some lessons for the US. *Sanford School of Public Policy Working Paper (Duke University), SAN09-03*

Lareau, A. (2011). *Unequal Childhoods: Class, race, and Family Life with an Update Decade Later*. London: University of California Press, Ltd.

Lareau, A. (2000). *Home Advantage: Social Class and Parental Intervention in Elementary Education*. London: Rowman and Littlefield Publishers, Inc.

Lee, S. & Chung, JY. (2019). The Machine Learning-Based Dropout Early Warning System for Improving the Performance of Dropout Prediction. *Applied Sciences 9(15)*. 3093.

Leyva, D., Weiland, C., Barata, C., Yoshikawa, H., Snow, C., Treviño, E. & Rolla, A. (2015). Teacher-Child Interactions in Chile and Their Associations with Prekindergarten Outcomes. *Child Development 86(3)*. 781-99.

López, LE. (2018). Interculturalidad y políticas públicas en América Latina. In JE González. (ed.) *Multiculturalismo e interculturalidad en las Américas*. 48-101. Bogotá: Universidad Nacional.

Luckin, R., Griffiths, M. & Forcier, L. (2016). *Intelligence Unleashed. An Argument for AI in Education*, London: Pearson.

Manpower Group (2015). Talent Shortage Survey. Available at https://www.manpowergroup.com/wps/wcm/connect/db23c560-08b6-485f-9bf6-f5f38a43c76a/2015_Talent_Shortage_Survey_US-lo_res.pdf?MOD=AJPERES (accessed in December 2019)

Mateo-Berganza Díaz, M. & Rucci, G. (2019). *El futuro ya está aquí: Habilidades transversales de América Latina y el Caribe en el siglo XXI*. Washington, D.C.: Inter-American Development Bank

McKinsey (2018). Skill Shift: Automation and the Future of the Workforce. Discussion paper. New York: McKinsey Global Institute.

Melguizo, T., Sánchez, F. & Velasco, T. (2016). Credit for Low-Income Students and Access to and Academic Performance in Higher Education in Colombia: A Regression Discontinuity Approach. *World Development* 80. 61–77.

Mioduser, D. & Betzer, N. (2007). The contribution of project-based learning to high achievers' acquisition of technological knowledge and skills. *International Journal of Technology and Design Education 18(1).* 59-77.

Mizala, A., & Torche, F. (2013). ¿Logra la subvención escolar preferencial igualar los resultados educativos? *Espacio Público 9.* 1-36.

Murnane, R., Waldman, M., Willett, J., Bos, S. & Vegas, E. (2016). The consequences of educational voucher reform in Chile. NBER Working Paper 23555. Cambridge, MA: National Bureau of Economic Research

Myers, K. & de Broucker, P. (2006). *Too Many Left Behind: Canada's Adult Education and Training System*. Toronto: Canadian Research Policy Networks.

Näslund-Hadley, E. & Bando, R. (2015). All Children Count: Early Mathematics and Science Education in Latin America and the Caribbean: Overview report. Brochure. Washington, DC: Inter-American Development Bank.

Näslund-Hadley, E., Loera, A. & Hepworth, K. (2014). What Goes on Inside Latin American Math and Science Classrooms: A Video Study of Teaching Practices. *Global Education Review 1(3)*. 110-128.

Näslund-Hadley, E. & Binstock, G. (2010). The Miseducation of Latin American Girls: Poor Schooling Makes Pregnancy a Rational Choice. IDB Technical Note IDB-TN-204. Washington, D.C.: Inter-American Development Bank

Novella, R., Repetto, A., Robino, C. & Rucci, G. (2018). *Millennials en América Latina y el Caribe: ¿trabajar o estudiar?.* Washington, D.C: Inter-American Development Bank.

Novella, R. & Pérez-Dávila, Y. (2017). Are Apprenticeships Programs Effective? Lessons for Latin America and the Caribbean. IDB Technical Note IDB-TN-1319. Washington, D.C.: Inter-American Development Bank

Nueman,S. &. Ziderman, A. (1999). Vocational Education in Israel: wage effect of the VocEd Occupation Match. *The Journal of Human Resources 34 (2)*. 407-20

OECD (2019). *Getting Skills Right: Future-Ready Adult Learning Systems*. Paris: OECD Publishing.

OECD (2017). *La educación a distancia en la educación superior en América Latina*. Paris: OECD Publishing.

OECD (2016), PISA 2015 Results (Volume I): Excellence and Equity in Education, PISA. Report. Paris: OECD Publishing.

OECD (2015). Skills for Social Progress: The Power of Social and Emotional Skills. OECD Skills Studies. Paris: OECD Publishing.

OECD (2004). Completing the Foundation for Lifelong Learning: An OECD Survey of Upper Secondary Schools. Report. Paris: OECD Publishing.

Ospino, C. (2019): El rol de las habilidades socioemocionales para la productividad en los mercados laborales del siglo XXI. IDB Technical Note IDB-TN-1687. Washington, D.C.: Inter-American Development Bank

Page, LC. & Scott-Clayton, J. (2016). Improving College Access in the United States: Barriers and Policy Responses. *Economics of Education Review 51.* 4–22.

Percival, J., Cozzarin, B. & Formaneck, S. (2013). Return on investment for workplace training: The Canadian experience. *International Journal of Training and Development 17*. 20-32.

Pires, T. & Urzua, S. (2010). Longer schools' days, better outcomes? Working Paper. Illinois: Northwestern University. Unpublished document.

Porayska-Pomsta, K. (2015). AI in Education as a Methodology for Enabling Educational Evidence-Based Practice. *Seventeenth International Conference on Artificial Intelligence in Education* (AIED 2015). 52–61.

Prada, MF. & Rucci, G. (2016). Guide to workforce skills assessment instruments. IDB Technical Note IDB-TN-1070. Washington, D.C.: Inter-American Development Bank

Prada, MF., Rucci, G., & Urzúa, S. (2019). Training, soft skills and productivity: Evidence from a field experiment in retail. IDB Working Paper Series IDB-WP-1015. Washington, D.C.: Inter-American Development Bank

Quintini, G., Martin, J. & Martin, S. (2007). The changing nature of the school-to-work transition process in OECD countries. IZA Discussion Paper 2582. Bonn, Germany: IZA Institute for Labor Economics

Rau, T., Rojas, E. & Urzúa, S. (2013). Loans for Higher Education: Does the Dream Come True? NBER Working Paper 19138. Cambridge, MA: National Bureau of Economic Research.

Reardon, SF. (2013). The Widening Income Achievement Gap. *Faces of Poverty 70 (8),* 10-16.

Reardon, SF. (2011). The widening academic achievement gap between rich and poor: New evidence and possible explanations. In GJ. Duncan & RJ. Murnane (eds.), *Whither opportunity? Rising inequality, schools, and children's life chances*. 91-115. New York: Russell Sage Foundation.

Reynolds, AJ., Ou, SR. & Temple, JA. (2018). A multicomponent, preschool to third grade preventive intervention and educational attainment at 35 years of age. *JAMA pediatrics 172(3),* 247-256.

Riccio, J., Dechausay, N., Miller, C., Nuñez, S., Verma, N., & Yang, E. (2013). *Conditional Cash Transfers in New York City: The Continuing Story of the Opportunity NYC-Family Rewards Demonstration.* New York: MDRC.

Rockoff, J. (2008). Does Mentoring Reduce Turnover and Improve Skills of New Employees? Evidence from Teachers in New York City. NBER Working Paper 13868. Cambridge, MA: National Bureau of Economic Research

Rockoff, J. & Turner, L. (2008). Short Run Impacts of Accountability on School Quality. NBER Working Paper 14564. Cambridge, MA: National Bureau of Economic Research.

Rockoff, J (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review 94(2)*. 247-252.

Rodríguez, J., Urzúa, S. & Reyes, L. (2016). Heterogeneous Economic Returns to Post-Secondary Degrees: Evidence from Chile. *Journal of Human Resources* 51(*2)*. 416–60.

Rodriguez-Planas, N. (2010). Longer-term impacts of mentoring, educational services, and learning incentives: Evidence from a randomized trial in the United States. *American Economic Journal: Applied Economics 4(4)*. 121-39.

Rogers, T. & Feller, A. (2018). Reducing Student Absences at Scale by Targeting Parents´ Misbeliefs. *Nature Human Behaviour 5(2)*. 335.

Rose, M. (2004). *The Mind at Work: Valuing the Intelligence of the American Worker*. New York: Viking Books.

Rouse, CE., Hannaway, J., Goldhaber, D., & Figlio, D. (2013). Feeling the Florida Heat? How Low Performing Schools Respond to Voucher and Accountability Pressure. *American Economic Journal: Economic Policy 5(2)*. 251-81

Rumberger, R., & Lim, S. (2008). Why Students Drop Out of School: A Review of 25 Years of Research. Project Report No. 15. California Dropout Research Project. Santa Barbara, CA: University of California.

Saavedra, A. & Saavedra, JE (2011). Do colleges cultivate critical thinking, problem solving, writing and interpersonal skills? *Economics of Education Review 30(6),* 1516-1152.

Salmi, J. (2013). Tertiary Education in Latin America and the Caribbean: Challenges and Opportunities. Washington, D.C.: Inter-American Development Bank. Unpublished document.

Salmi, J. & Hauptman, A. (2006). Innovations in Tertiary Education Financing: A Comparative Evaluation of Allocation Mechanisms. World Bank Education Working Paper 4. Washington DC: World Bank Group.

Samaniego, P; Laitano, S., Valerio, E. & Francisco, C. (2012). Informe sobre el Uso de las Tecnologías de Información y Comunicación (TIC) en la Educación para Personas con Discapacidad. Report. Quito: UNESCO.

Schady, N. (2012). El desarrollo infantil temprano en América Latina y el Caribe: acceso, In M. Cabrol & M. Szekely (eds.), *Educación para la Transformación*. 53-92. Washington DC: Inter-American Development Bank.

Schimanski, C., Chagalj, C. and Ruprah, I. (2018). Gender-based Educational and Occupational Segregation in the Caribbean. IDB Working Paper 931. Inter-American Development Bank. Washington, DC.

Schmelkes, S. (2011). Adult education and indigenous peoples in Latin America. *International review of education 57(1-2).* 89-105.

Sevilla, M. (2017). Panorama de la educación técnica profesional en América Latina y el Caribe. CEPAL Serie Políticas Sociales 222. División de Desarrollo Social. Santiago de Chile: CEPAL.

Silva Filho, G. (2016). Higher Salaries, More Teaching, Better Performance? The Effects of the Introduction of the Minimum Salary for Teachers in Brazil. São Paulo: Fundación Getulio Vargas. Unpublished academic thesis.

Simpson, O. (2002). *Supporting Students in Online, Open and Distance Learning.* London: Routledge.

Sinclair, M., Christenson, S. & Thurlow, M. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children 71(4).* 465–482.

Sinclair, M., Christenson, S., Evelo, D. & Hurley, C. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional children 65(1).* 7-21.

Solís, A. (2017). Credit Access and College Enrollment. *Journal of Political Economy 125(2).* 562–622.

Specht, J., Egloff, B., & Schmukle, SC. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the big five. *Journal of Personality and Social Psychology 101(4)*. 862–882.

Springer, M., Ballou, D. & Peng, A. (2014). Estimated Effect of the Teacher Advancement Program on Student Test Score Gains. *Education Finance and Policy 9(2).*193-230.

Strehl, F., Reisinger, S. & Kalatschan, M. (2007). Funding Systems and Their Effects on Higher Education Systems. OECD Education Working Paper 6. Paris: OECD Publishing.

Sunkel, G., Trucco, D. & Cepal, N. (2012). *Las tecnologías digitales frente a los desafíos de una educación inclusiva en América Latina: Algunos casos de buenas prácticas*. Santiago de Chile. CEPAL.

Székely M. & Mendoza, P. (2017). Declining inequality in Latin America: structural shift or temporary phenomenon? *Oxford Development Studies 45(2)*. 204-221.

Taut, S. & Sun, Y. (2014). The Development and Implementation of a National, Standards-based, Multi-method Teacher Performance Assessment System in Chile. *Education policy analysis archives 22(71)*. 1-30.

Tuomi, I. (2018). *The Impact of Artificial Intelligence on Learning, Teaching, and Education: Policies for the Future.* Luxembourg. Publications Office of the European Union.

Uhder, C. (2017). Diversifying the funding sources for TVET. Report of the UNESCO-UNEVOC virtual conference 16 to 22 January 2017 Bonn. Report. Bonn: UNESCO-UNEVOC

UNESCO (2017). Sociedad digital: brechas y retos para la inclusión digital en América Latina y el Caribe, UNESCO Policy Paper. Montevideo: UNESCO.

UNESCO (2014). Proposed Indicators for Assessing Technical and Vocational Education and Training. Report. Paris. UNESCO.

UNESCO (2013). *ICT in Education in Latin America and the Caribbean: A regional analysis of ICT integration and e-readiness.* Montreal: UNESCO.

UNHCR (2019). Protecting Monitoring. Venezuela Situation. Update # 1, January-June 2019. New York: UN Refugee Agency. Available at http://reporting.unhcr.org/node/23224 (accessed in December 2019).

UNODC (2017). United Nations Office on Drugs and Crime. Data of crime and criminal justice. Available at https://dataunodc.un.org/crime (accessed in December 2019)

Valenzuela, J., Villarroel, G. & Villalobos, C. (2013). Ley de Subvención Escolar Preferencial (SEP). algunos resultados preliminares de su implementación. *Pensamiento Educativo 50(2)*. 113 -131.

Valverde, G. & Näslund-Hadley, E. (2010). La condición de la educación en matemáticas y ciencias en América Latina y el Caribe. IDB Technical Note IDB-TN-211. Washington, D.C.: Inter-American Development Bank.

Versteijlen, M., Perez Salgado, F., Janssen Groesbeek, M., and Counotte, A. (2017). Pros and cons of online education as a measure to reduce carbon emissions in higher education in the Netherlands. Current Opinion in Environmental Sustainability, Vol. 28. 80-89.

Wilkins, J. & Bost, L. (2016). Dropout Prevention in Middle and High Schools: From Research to Practice. *Intervention in School and Clinic 51(5)*. 267-275.

Windisch, H. (2015). Adults with low literacy and numeracy skills: A literature review on policy intervention. OECD Education Working Paper 123. Paris: OECD Publishing.

Winkelmann, R. (1996). Employment prospects and skill acquisition of apprenticeship-trained workers in Germany. *Industrial and Labour Relations Review 49(4).* 658-672.

Woessmann, L. (2004). How Equal are Educational Opportunities? Family Background and Student Achievement in Europe and the US. IZA Discussion Paper 1284. Bonn, Germany: IZA Institute for Labor Economics

Woessmann L. (2003). Central Exams as the "Currency" of School Systems: International Evidence on the Complementarity of School Autonomy and Central Exams. *CESifo DICE Report 1(4)*. 46-56.

World Bank (2019). Enterprise Surveys 2019. Washington, DC: World Bank Group. Available at https://www.enterprisesurveys.org/ (accessed in October 2019)

World Bank (2018). *World Development Report 2019: The Changing Nature of Work*. Washington, DC: World Bank Group.

World Economic Forum (2017): *Accelerating Workforce Reskilling for the Fourth Industrial Revolution (4IR): An Agenda for Leaders to Shape the Future of Education, Gender and Work*. Davos. World Economic Forum

Yew, E. & Goh, K. (2016). Problem-Based Learning: An Overview of its Process and Impact on Learning. *Health Professions Education 2(2).* 75-79.

Yoshikawa, H., Leyva, D., Snow, C., Treviño, E., Barata, C., Weiland, C. & Gomez, C. (2015). Experimental impacts of a teacher professional development program in Chile on preschool classroom quality and child outcomes. *Developmental Psychology 51(3).* 309-322.

Ziderman, A., (2016) Funding Mechanisms for Financing Vocational Training: An Analytical Framework. IZA Policy Paper 110. Bonn, Germany: IZA Institute for Labor Economics.