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Counting the cost

Achieving literacy in countries of the Global Alliance for Literacy

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The UNESCO Institute for Lifelong Learning (UIL) undertakes research, capacity-building, networking and publication on lifelong learning, with a focus on adult and continuing education, literacy and non-formal basic education.

Its publications are a valuable resource for education researchers, planners, policy-makers and practitioners. While the programmes of UIL are established along the lines laid down by the General Conference of UNESCO, the publications of the Institute are issued under its sole responsibility.

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What is the Global Alliance for Literacy?

The Global Alliance for Literacy within the Framework of Lifelong Learning (GAL) was initiated in 2016 as an alliance of the countries with an adult literacy rate below 50% and the nine countries with the largest populations worldwide which are home to 67% of the global population of youth and adults who lack basic literacy and numeracy. Today, GAL is made up of 29 countries strongly committed to improving youth and adult literacy.

GAL engages a multiplicity of stakeholders to advocate for the importance of youth and adult literacy and to catalyse in an effective and coordinated manner efforts to improve literacy rates in the countries that need it the most.

GAL's objectives are to:

- Improve GAL stakeholders' (intersectoral) collaboration for literacy and numeracy development at international, regional, national and local levels;
- Increase resources for the implementation of literacy efforts of the 29 GAL countries by strengthening political will, commitments and public awareness;
- Strengthen GAL member countries' capacity to formulate, implement and monitor education policies and programmes for the advancement of literacy and numeracy;
- Enhance knowledge creation and sharing for GAL member countries' evidence-based literacy policy designs and implementation.

Closely aligned with the UNESCO Strategy for Youth and Adult Literacy (2020–2025), GAL's Strategy was adopted in April 2020 and functions as a guiding framework for the Alliance's work. The strategy sets out five areas of focus to advance literacy and numeracy in GAL member countries: (1) policy and planning; (2) equity and inclusion; (3) innovation; (4) data and monitoring; and (5) partnerships and cooperation.

These areas of focus target youth and adults from the most disadvantaged backgrounds to support the development of their literacy and numeracy skills, and thereby their potential for progress in their personal, community and work lives.

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Abstract

This paper seeks to determine the cost of achieving Sustainable Development Goal 4 (SDG 4) Target 4.6: 'By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy'. In an effort to answer this question, UNESCO ran simulations and identified the cost and funding gap for the 29 member countries of the Global Alliance for Literacy within the Framework of Lifelong Learning (GAL). This paper argues that 739 million youth and adults require additional literacy programmes of which 580 million are located in 9 of the 29 member countries (the E-9 countries). Based on the results of the simulation, an estimated US$ 190 billion is needed to achieve Target 4.6 by 2030 in the 29 GAL countries. The E-9 countries account for 80% of this cost as the large majority of the global population of youth and adults who lack basic literacy skills live in these territories. The estimation considers the impact of the COVID-19 crisis on GDP growth and presents several scenarios for consideration. If the 29 member countries allocate the recommended 3 per cent of their national education budget to youth and adult literacy, a funding gap of US$ 17 billion will still remain. However, this gap is greater in the 20 non-E9 countries, which account for US$ 12 billion of the funding gap. These 20 non-E9 countries already experience massive challenges for investing in their public education system due to low economic growth and low education development outcomes. A detailed description of the UNESCO GAL simulation model used to estimate the total cost and identify the financing gap for the 29 countries is presented to help interpret the results. The paper ends with a set of recommendations for governments and the international community to work together and ensure the availability of lifelong learning opportunities for all, especially those often left behind.

Introduction

Literacy is a core component of the right to education and a foundation for lifelong learning. Yet, an estimated 773 million youth and adults worldwide still have not achieved basic literacy skills. Two-thirds of this group are women (UIS, 2020). For these youth and adults, the inability to read and write in an increasingly text-mediated society and the economy represents a major obstacle to full participation in their communities and realization of their potential. Poor and low literacy and numeracy skills also impact their ability to secure and remain in decent jobs and engage in lifelong learning and obtain further training opportunities. Most importantly, poor literacy skills limit their access to and ability to process relevant everyday information on health, the environment, politics and the economy.

The UN Sustainable Development Goals (SDGs) recognize the global literacy issue and urge Member States and the international community to 'ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy' by 2030 (Target 4.6). In the context of the SDGs and Target 4.6, the UNESCO Director-General officially launched the Global Alliance for Literacy within the Framework of Lifelong Learning (GAL) on 8 September 2016 on the 50th anniversary of International Literacy Day. In so doing, UNESCO reaffirmed literacy as a foundation for lifelong learning, and as a building block for achieving human rights and fundamental freedoms through several UN General Assembly resolutions. The UNESCO Institute for Lifelong Learning (UIL) has served as the GAL secretariat since its formation. In late 2018, GAL renewed its focus on 29 countries strongly committed to improving youth and adult literacy of which 9 countries have the highest number of youth and adults with no and low basic literacy skills (hereafter the 'E-9 countries'), while 14 out of the remaining 20 countries had adult literacy rates below 50% as of 2017 (see Table 1).

Table 1. List of GAL countries by group

GAL countries in two groups	
E-9 GAL countries (9)	Bangladesh, Brazil, People's Republic of China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan
Non-E9 GAL countries (20)	Afghanistan, Benin, Burkina Faso, Central African Republic, Chad, Comoros, Côte d'Ivoire, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Iraq, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone and South Sudan.

As an alliance of 29 member countries, GAL fosters and coordinates a partnership towards concerted action on youth and adult literacy in the world. In early 2020, after extensive consultations, the 29 GAL member countries adopted the GAL Strategy for 2020-2025 (UIL, 2020), which aligns closely with the newly adopted UNESCO Strategy for youth and adult literacy (UNESCO, 2019) and covers the same time period. In the context of the Education 2030 Framework for Action and the 2030 Agenda for Sustainable Development (UNESCO, 2016), the GAL envisions that 'By 2030, all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy', following closely the wording of SDG Target 4.6.

The E-9 countries are home to nearly 60% of the total youth and adult populations that cannot read and write at basic levels. The remaining 20 (hereafter the 20 GAL or non-E-9 countries) are characterized by poor education quality, low 15-year-old illiteracy rates and slow GDP growth. In order to facilitate effective collaboration, renew political will, raise policy awareness among stakeholders and ensure the necessary concerted efforts, a key step is to achieve a degree of common understanding about the costs involved in achieving SDG Target 4.6.

Based on a simulation model, this paper presents the projections of the literacy targets and the cost to achieve them in the 29 GAL countries. The basis of the cost estimation is the unit cost to train a young person or adult to become literate. The unit cost model is based on the work of Ravens and Aggio (2005), although the underlying assumptions are revisited to reflect updates in two key areas – instructors' salary and number of contact hours. The paper estimates the total costs of achieving various outcomes in relation to the literacy goal by 2030 and projects the funding gaps after considering the recommended government investment of 3% of the education budget in literacy programmes. It demonstrates that to reach near universal literacy by 2030, the total number of youth and adults, who need additional training is projected to be 739 million. Additional funding of US$ 17 billion is needed to reach near universal literacy in the 29 GAL countries. In particular, 85% of the additional funding must be allocated to the 20 GAL countries with low-performing education systems and poor economic growth, thereby, lowering the level of public finance dedicated to youth and adult literacy programmes.

It is important to emphasize that although the paper presents the financial requirements to achieve SDG Target 4.6 in GAL countries, it does not intend to produce precise figures for individual countries in terms of the projected literacy targets, estimated costs and the remaining funding gap. Rather, the purpose of this paper is to inform a discussion on the need to increase investment in literacy as the foundation and integral part of lifelong learning at the global level.

Quantifying the challenge

Before embarking on the analysis and estimations, it is important to specify the source of the literacy data and the youth and adult literacy goals used to estimate the illiterate population in the 29 GAL countries by 2030.

Literacy data

This paper used updated literacy data provided in 2020 by the UNESCO Institute for Statistics (UIS),[1] which measures literacy as a dichotomous variable (i.e. literate and illiterate). Most of the data are derived from censuses and surveys which use a conventional question designed to gauge the level of literacy (the ability to read and write with understanding) by eliciting a short, simple statement about the respondent's everyday life. In most countries, the data are based on self-declaration either by each member of the household or the head of the household. A very limited number of countries conduct direct literacy assessments and, even when they do, rarely assess the full range of literacy skills.

A conceptual gap exists between this dichotomous definition used for currently available literacy statistics and recent developments in the expansion of understanding of literacy, with some arguing that concepts of literacy are diverse and context-specific. In the current discourse it is generally agreed that literacy is a continuum of functional literacy and numeracy skills acquired throughout a lifetime, rather than the literate/illiterate dichotomy applied in the above definition. For the purposes of monitoring progress towards SDG Target 4.6, the global indicator 4.6.1 is the proportion of the population of a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex. This leaves some opportunity to define and agree upon on a definition of 'a fixed level of proficiency in functional literacy and numeracy'.

At the same time, the available statistics that reflect this notion of literacy as a continuum of skills are still quite limited. While an assessment and reporting framework under this new definition are currently being developed by taskforce 4.6 of the Global Alliance to Monitor Learning (GAML), data are of limited availability, especially for the countries covered in this paper. Hence, the paper draws on the literacy data based on the dichotomous definition, as these are the most widely available. In so doing, the paper acknowledges that it may underestimate the scale of the literacy challenge as well as the magnitude of investment required to address it. It is hoped that once more nuanced and accurate data are available for a significant number of countries, using a definition and a methodology that GAML will define, the estimations can be revised and updated.

Youth and adult literacy target scenarios

Unlike Education For All (EFA) Goal 4 of the Millennium Development Goals (MDGs), SDG Target 4.6 does not specify a quantitative target. The objective of SDG Target 4.6 is that 'all youth' and a 'substantial proportion of adults' will achieve literacy and numeracy by 2030. Therefore, the first step in estimating the cost of achieving SDG 4.6 for 29 GAL countries is to quantify this internationally agreed commitment.

As shown in Table 2, this paper first assumes that the youth population will reach 100% literacy in all three scenarios by 2030, owing to the expansion of basic education (SDG 4.1) and consistent with the formulation of SDG target 4.6 as 'all youth'. The age range for the category of youth is 15–24 years old. For the baseline year of 2017, E-9 countries have a higher 15-year-old literacy rate, based on the percentage of the 15-year-old population who obtained literacy skills through formal schooling (between 83% and

[1] UNESCO Institute for Statistics (UIS) Data Centre: http://data.uis.unesco.org.

100%), than the non-E9 GAL countries where the literacy rate for 15-year-olds ranges from 41% (Chad) to 81% (Iraq). For the category of adults, the age range is 25+ years old.

Taking these different starting points into consideration, the paper explores two scenarios in which literacy targets for the adult population were set higher for E-9 countries as compared to the non-E9 GAL countries (i.e. 60% for Scenario 1 and 75% for Scenario 2). The projection also considers the eventuality of reaching 100% literacy rates in all 29 countries (i.e. Scenario 3).

Table 2. Literacy target scenarios used for projections for the GAL countries

	Scenario 1	Scenario 2	Scenario 3
Measurable targets by 2030	**Target value**	**Target value**	**Target value**
1. Youth literacy rate (15–24 years old)	100%	100%	100%
2. Adult literacy rate (25+): % of gap filled	20 non-E9 GAL countries: 50% E-9 countries: 60%	20 non-E9 GAL countries: 70% E-9 countries: 75%	100% for both groups

For example, if the adult literacy rate was 50% in one of the 20 non-E9 GAL countries in 2017, under Scenario 1, which requires the country to fill 50% of the adult literacy gap, the adult literacy rate should reach 75% (50% + 50*50%) by 2030. In Scenario 2, the adult literacy rate in 2030 will be 87.5% (50% + 50*70%), and in Scenario 3 it would reach 100% (50% + 50*100%).

Rapid review of unit cost estimations in literacy programmes

Estimations of the cost to achieve global literacy target were first attempted for EFA Goal 4 of the MDGs. The first step in this process is to develop estimates for the unit costs – in particular, the cost to train an illiterate youth or adult. Ravens and Aggio (2005) proposed three variants for these unit costs: (i) the standard variant, (ii) the budget variant and (iii) the advanced variants.

The standard variant includes six parameters: (i) instructional time needed to acquire a basic level of mastery (assumed to be 400 hours); (ii) instructors' annual salary, (iii) working hours per year (assumed to be 1,800 hours), (iv) number of courses an instructor can deliver per year, (v) % of salary on total cost and (vi) group size. According to Ravens and Aggio (2005), the instructor's annual salary was expressed in terms of GNP per capita. Using the above formula, the standard costs were estimated to be 5.3% of GNP per capita for South West Asia, East Asia and the Pacific, and the Arab States. For sub-Saharan Africa and Latin America, the estimations were 8.9% and 4.4% of GNP per capita, respectively. Based on the standard variant, the results then produced the total cost of US$ 26 billion, which would be needed to ensure that 558 million people would complete 400 hours of literacy programmes for all developing countries (including 24 'LIFE'[2] countries). Thus, the standard variant implies an average unit cost of US$ 47.

[2] LIFE (Literacy Initiative for Empowerment) countries include **Group A** countries where the literacy rate is below 50% (Bangladesh, Benin, Burkina Faso, Central African Republic, Chad, Ethiopia, Mali, Mozambique, Nepal, Niger, Pakistan, Senegal, and Sierra Leone), and **Group B** countries with > 10 million illiterates in absolute numbers (Bangladesh, Brazil, People's Republic of China, Democratic Republic of Congo, Egypt, Ethiopia, Indonesia, Islamic Republic of Iran, Madagascar, Mauritania, Morocco, Nigeria, Pakistan and Papua New Guinea). Bangladesh, Ethiopia and Pakistan meet both criteria (a literacy rate lower than 50% and more than 10 million illiterates), but were only included in Group A (Ravens and Aggio, 2005).

The second variant in the Ravens-Aggio model is the **budget variant** which focuses on the cost-efficiency of literacy programmes, often extensively utilizing educational technology and relying on unpaid volunteers. The average unit cost for this variant was **US$ 20**, resulting in an estimated total cost of US$ 11 billion.

Lastly, the third variant, **advanced variants**, includes the cost of creating a literate environment on top of the standard variant parameters. In other words, in addition to the six parameters in the standard variant, the variants include an estimation of opportunity costs to learners, and the cost of acquiring other skills in addition to literacy. The estimated total unit cost using the advanced variables were in the range of **US$ 100–200** for a two-year programme and **US$ 150–300** for a three-year programme. Based on this methodology and adding the premium cost for female learners, as well as extending the course duration to ensure the acquisition of life skills beyond basic literacy, Raya (2012) calculated a cost of US$ 45 billion over five years (2010–2014) to achieve the EFA literacy goals for the Asia and the Pacific region, where the number of illiterate people is estimated at 260 million.[3]

While significant efforts have been made to estimate the unit cost for literacy programmes, the process remains a challenging one partly due to the significant variation in the cost of literacy programmes across countries. The content and delivery method of literacy programmes vary from country to country, ranging from very simple classroom-style programmes run by volunteer teachers to a more comprehensive, possibly ICT-enhanced, literacy with life skills component organized by full-time instructors. To these can be added programmes targeting youth or older populations or addressing the needs of linguistic minority groups. The respective financial implications differ significantly, adding further to the overall cost of literacy programmes. Furthermore, while creating a 'literate environment' – access to newspapers, books and libraries and, increasingly, digital devices and the Internet – is critically important to improve the acquisition and use of literacy skills, the associated costs are difficult to determine and measure.

On the basis of the above literature, this paper focuses on the standard variant with restrictive assumptions in estimating funding gaps. As mentioned in the Introduction, these estimations are not intended to produce precise figures for individual countries; instead, they aim to indicate an order of magnitude of costs in order to significantly improve literacy levels in these 29 countries. More specific estimations can be produced by individual countries based on precise data on the types of programmes and target groups, including their learning needs.

UNESCO GAL model

The cost structure as well as the key assumptions of the UNESCO GAL simulation model were informed by Ravens and Aggio (2005) with the following modifications. The main difference between the UNESCO GAL model and the Ravens-Aggio model is the consideration of demographic and social/educational changes when estimating the size of the illiterate population over time. Unlike the Ravens-Aggio model which considers the illiterate population to be constant over the period in question (i.e. 2005–2015), a flow-based simulation was applied in this paper to reflect the impact of formal education expansion (SDG 4.1) as well as the projected changes in demographic patterns. In addition, the UNESCO GAL model covers the population up to 100 years of age and can differentiate literacy projections for youth (15–24 years old) and adults (25–100 years old) in order to generate a projection that is more sensitive to the learning needs of different age groups.

[3] More studies have shed light on the estimation of costs to achieve EFA literacy goals. In particular, the Global Campaign for Education (GCE) and Action Aid International (2005) have contributed significantly to this discussion. Analysing 67 adult literacy programmes from 35 countries, the GCE concluded that a good-quality literacy programme would likely cost between US$ 50 to US$ 100 per learner per year for at least three years. Another study by Carr-Hill and Roberts (2007), analysing programmes implemented by both NGOs and governments in mostly African countries, estimated the minimum unit cost of quality literacy programme to be US$ 100.

The following formula is used to specify the unit cost of the UNESCO GAL model:

$$\text{Unit cost} = \frac{\frac{\text{GDPpc} \times \text{IAS}}{\text{WC} / \text{TC}}}{\text{ROUNDDOWN}\left(\frac{\text{WHY}}{\text{ITN}}, 0\right) \times \text{GS}}$$

where **GDPpc** refers to gross domestic product per capita (GDPpc),
IAS is the instructor's annual salary in GDPpc,
WC/TC is the percentage of salary in the total cost,
WHY is the working hours per year for an instructor;
ITN is the instructional time needed to acquire a basic level of mastery
and **GS** refers to group size.

In calculating the unit costs, this paper updated the parameter values specified in Ravens and Aggio (2005) with information submitted to the UNESCO's International Literacy Prizes (see Annex 3). In addition, the paper relied on salary data from Wils (2015, 2018), data on literacy programme contact hours from Hanemann (2015),[4] and further information provided by GAL countries during and after an Expert Meeting.[5] Three main differences from the parameter values set in Ravens and Aggio (2005) can be highlighted.

First, the recent review of literacy programmes suggested that the minimum contact hours for acquiring basic literacy and numeracy may be around 200–250 hours, while 450–500 contact hours are desirable if the literacy programmes include skills training in addition to basic literacy and numeracy. Table 3 presents examples of existing literacy programmes separated into two contact hour scenarios for 250 hours and 500 hours.

Table 3. Examples of literacy programmes classified under two contact hour scenarios

Minimum contact hours: 250 hours	Desirable contact hours: 500 hours
• 210 hours: National Literacy Programme (Pakistan) • 240 hours: South African Kha Ri Gude mass literacy campaign • 240 hours: Namibian adult basic education programme (basic level)	• 458 hours: Afghanistan National Association for Adult Education (ANAFAE)

Source: Data for the basic literacy and numeracy programmes were drawn from Hanemann (2015); data for the programmes incorporating additional skills training were gathered at an UIL Expert meeting held in May 2019.

[4] Annex 3 provides details of these past costing studies.
[5] The UNESCO Institute for Lifelong Learning (UIL) organized an expert meeting on 27 May 2019 to review the methodology, parameters and assumptions of this costing exercise.

Second, in the UNESCO GAL model, the instructor's annual salary and working hours are set lower than the assumptions made in Ravens and Aggio (2005). Ravens and Aggio assumed that the salary of literacy instructors would be equivalent to that of primary teachers and they work 1,800 hours per year.[6] According to the experts at the UIL meeting, literacy instructors were often paid less and tended to work part time. Hence, an assumption was made that literacy instructors are paid 50% of primary teachers' salaries and work significantly fewer hours than was assumed by Ravens and Aggio (2005).

Third, the UNESCO GAL model also sets the share of instructors' salary as a percentage of the total cost lower than in Ravens and Aggio (2005). While Ravens and Aggio established the share as 70%, more recent data suggest that the share of the salary in total cost may be around 40–50% for GAL countries. For instance, the Ibero-American Plan for Literacy and Basic Education of Youth and Adults (PIA) allocated 40% of the total cost to facilitators and educators in 2006 (Hanneman, 2015, p. 28). According to the Afghanistan National Association for Adult Education (ANAFAE), costs related to literacy facilitators and local administrators represented approximately 44% of total expenditures in 2018.[7] Based on these studies and the feedback provided during the Expert Meeting held at UIL in 2019, the share of instructors' salary was set at 45% for this paper. A further assumption was made that this share would increase to 65% by 2030. The assumption is based on possible economies of scale: as the total coverage of literacy programmes expands, the teaching cost as a share of the total cost will increase as the non-teaching cost (e.g. programme design, curriculum development, material development, evaluation, etc.) decreases.[8]

While fully acknowledging the significant variations across literacy programmes among GAL countries, two scenarios were explored with different sets of parameter values in order to estimate the standard variant unit costs (Table 4).

Table 4. Unit cost standard variants in two contact hour scenarios

Key parameters	Minimum contact hours	Desirable contact hours
Number of contact hours	250 hours	500 hours
Annual salary for instructors	50% primary school teacher salaries multiplied by GDP per capita	
Annual working hours per year	900	
Number of courses delivered by an instructor/year (NC)	3.6	1.8
% of salary of total cost (WC/TC)	45% in 2017, 65% in 2030	
Group size (GS)	20	
Pass rate	15–24 years old: 80%, 25–64 years old: 70% 65+ years old: 60%	

[7] Data provided at the UIL Expert meeting in May 2019.
[8] While actual data to estimate the percentage of instructors' salaries are scarce, in the case of primary education the percentage is estimated to be 70–75%. Given that literacy programmes often cover disadvantaged/marginalized populations, a slightly lower share of instructors' salary (65%) was used in this exercise.

COVID-19 crisis and GDP projections

At the time of writing, the world is still in the middle of the COVID-19 crisis, and the path of the pandemic remains uncertain. As a consequence, the long-term negative consequences of the crisis on GDP growth are yet to become clear. Given that the annual salary of instructors is closely linked to GDP per capita and accounts for a substantial part the cost of literacy programmes, this paper follows the economic projections of the International Monetary Fund's (IMF) *World Economic Outlook*,[9] published in April 2020, and considers the following four GDP projection scenarios:

i. As is: projecting GDP growth up to 2030 as if COVID-19 never occurred.

ii. Back to normal (drop in 2021 and recovery after): reverting to the pre-COVID-19 growth trajectory, but with lower output in 2030. The average annual GDP growth rate over 2010–2018 is applied as the GDP growth rate for 2021–2030 projection.

iii. New normal (drops iterating until 2030): the economic trend projected in 2021 and 2022 is projected over the entire period between 2020 and 2030. Rather than a return to normality, decline and recovery alternates year after year from 2020 to 2030.

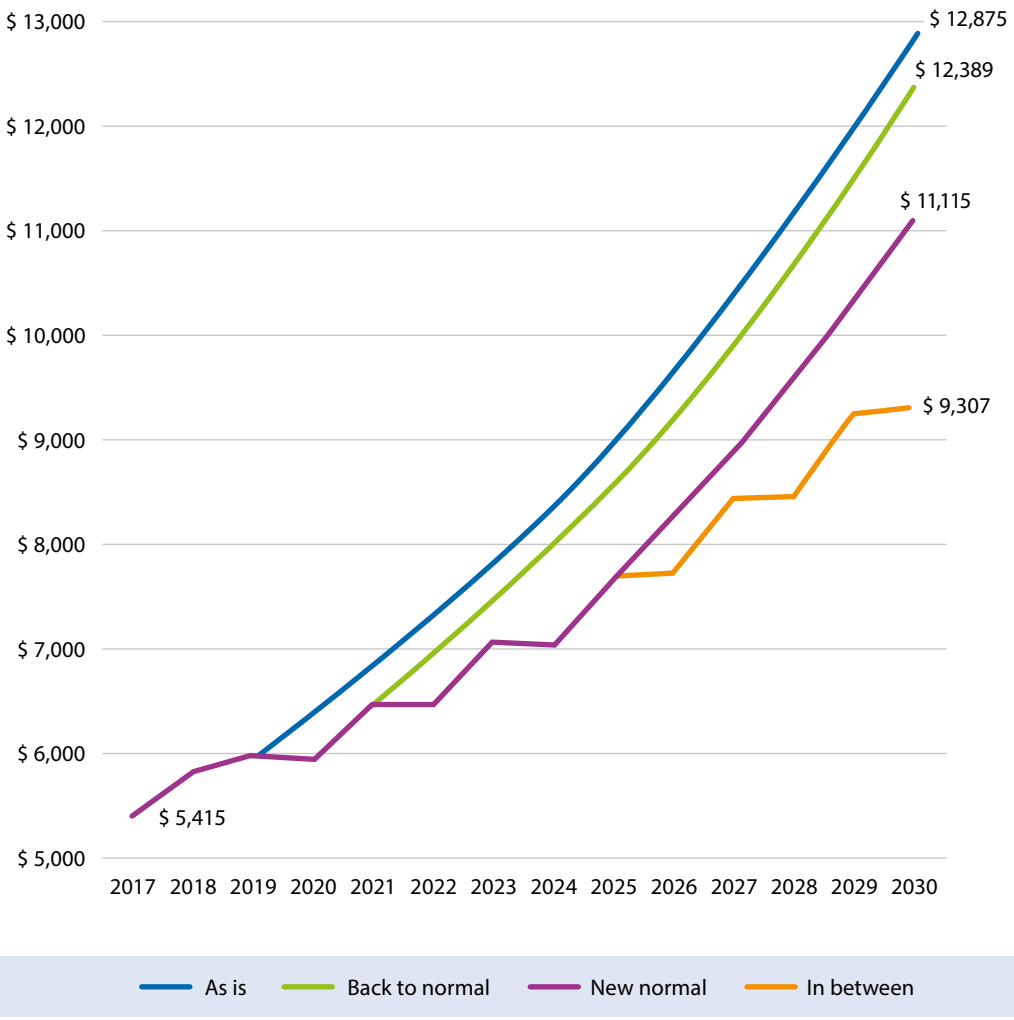
iv. In between (double drop until 2025 and recovery after): two additional waves of COVID-19 cause another GDP decline and recovery, after which the economy returns to pre-COVID-19 growth rates. For example, the GDP change rates over 2022–2023 and 2024–2025 share the same economic growth paths as the IMF-projected 2020–2021 GDP change rate, and then return to the earlier 2010–2018 trajectory, which will persist until 2030.

As shown in Figure 1, under the *back to normal* scenario for GDP projections in the COVID-19 context, the overall GDP per capita of the 29 GAL countries is expected to increase significantly by 128.8% from US$ 5,415 to US$ 12,389.

Under the *new normal* GDP projection scenario, the average GDP per capita of the 29 GAL countries can increase by 71.9% from US$ 5,415 to US$ 9,307, representing a drop of 27.7% compared to the initial projection prior to the COVID-19 pandemic (the *As is* scenario).

[9] See www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020#Growth%20Projections%20Table.

Figure 1. Overall GDP per capita projections by scenario



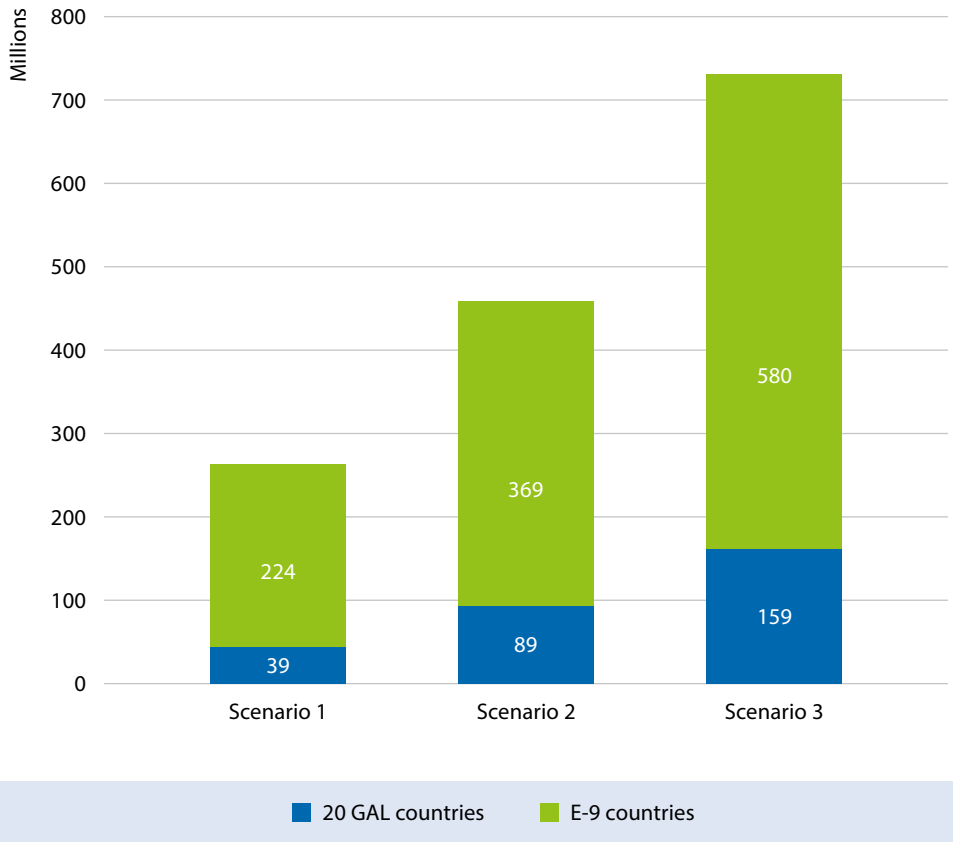
To recapitulate, there are three groups of scenarios: (i) three literacy targets scenarios, (ii) two literacy programme contact hour scenarios and (iii) four GDP projection scenarios. The costing model used in this paper combines all of them, allowing for the exploration of 24 different combinations of scenarios in order to calculate total costs and financing gaps.

Key findings

739 million youth and adults need additional literacy training by 2030

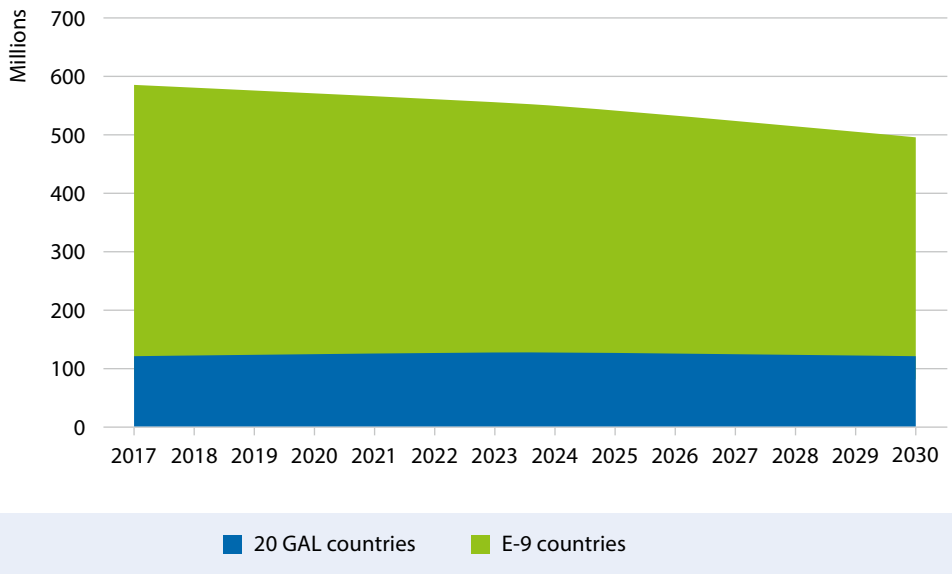
To reach near universal literacy, that is, 100% literacy for all youth and adults by 2030 or Scenario 3 (see Table 2), the total number of youth and adults who need additional training is projected to be 739 million by 2030. However, the total number of those who need additional literacy training by 2030 is 458 million, if Scenario 2 (100% youth, but 70% adults in 20 non-E9 countries, 75% in E9) is considered. Moreover, for Scenario 1, that is, 100% youth, but 50% adults in 20 non-E9 and 60% in E9 countries), the number is 263 million. The majority of people who need additional training programmes to acquire literacy come from E-9 countries and account for 80% of the total illiterate population (Figure 2).

Figure 2. Number of people to acquire literacy by group



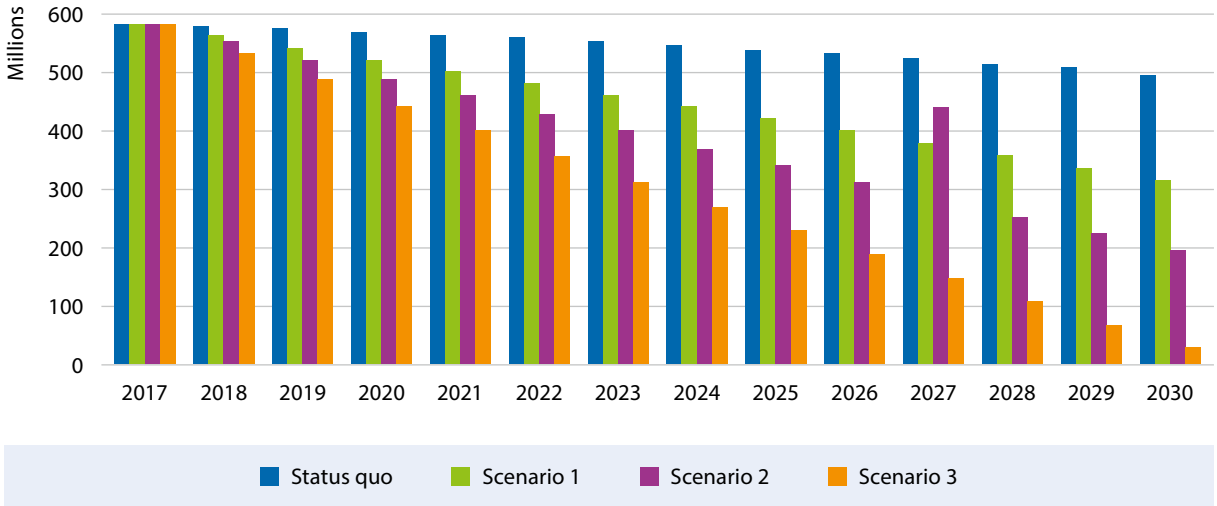
Even without any additional literacy programme provision, that is, a status quo scenario, the overall youth and adult illiteracy rate in 29 GAL countries is projected to reduce significantly by 2030, with the total number of the illiterate population projected to drop from 582.7 million in 2017 to 496.2 million in 2030 (Figure 3). In this context, the majority of youth and adults that still need to acquire literacy comes from E-9 countries; however, projected trends for improving literacy are more encouraging in E-9 countries as compared to the 20 non-E9 GAL countries. The 20 GAL countries will continue to suffer from a much lower baseline year literacy rate of 15 year-olds (41–81%) and experience an increase in the illiterate population of 1.1% between 2017 and 2030. In contrast, the projected illiterate population in E-9 countries will reduce substantially by 18.8% over the period 2017–2030 (Figure 3), owing mainly to expanded school education.

Figure 3. Projected illiterate population of 29 GAL countries under the status quo scenario or without any additional interventions



With additional literacy programmes, such a reduction across 29 GAL countries is estimated at 45.9% (267.3 million) under the literacy target in Scenario 1 (50% adults for 20 non-E9 and 60% E9 countries), 66.5% (387.7 million) under Scenario 2 (70% adults in 20 non-E9 and 75% in E9 countries), and 94.9% (552.9 million) under Scenario 3, that is, 100% youth and adults (Figure 4).[10] Figure 4 presents the projected illiterate populations in four different literacy target scenarios.

Figure 4. Projected illiterate population of 29 GAL countries, 2017–2030 for four literacy target scenarios

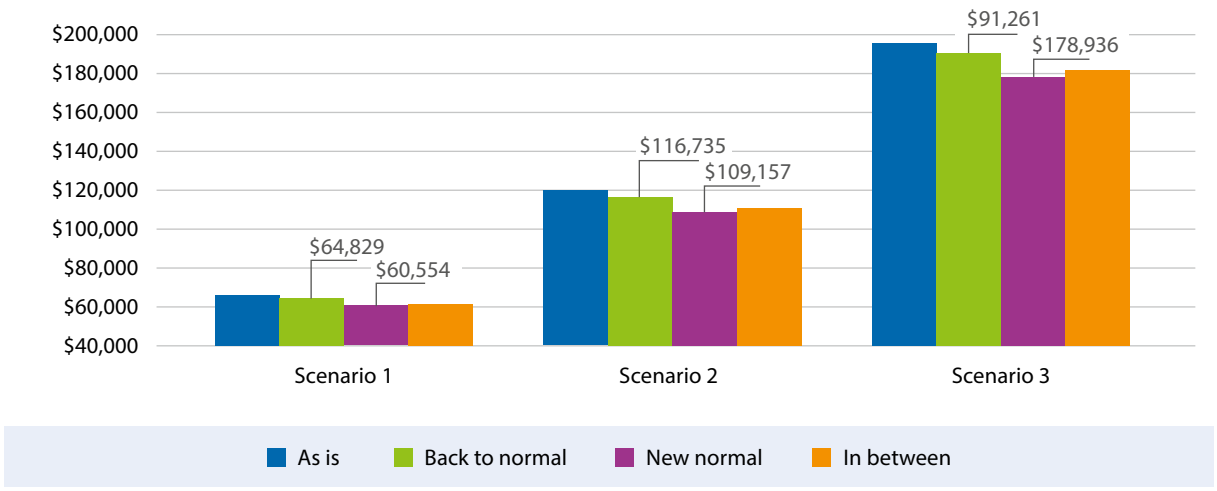


[10] Under the current model parameter settings, the target of filling 100% of the literacy rate gap by 2030 is unlikely to be achieved by some countries, and a small portion of the population will remain illiterate even under the literacy target in Scenario 3. The best possible outcome that can be achieved by 2030 is that 96% of the literacy gaps are filled, with the overall literacy rate of the GAL countries reaching 99.2%.

US$ 190 billion is needed to achieve SDG 4.6 by 2030

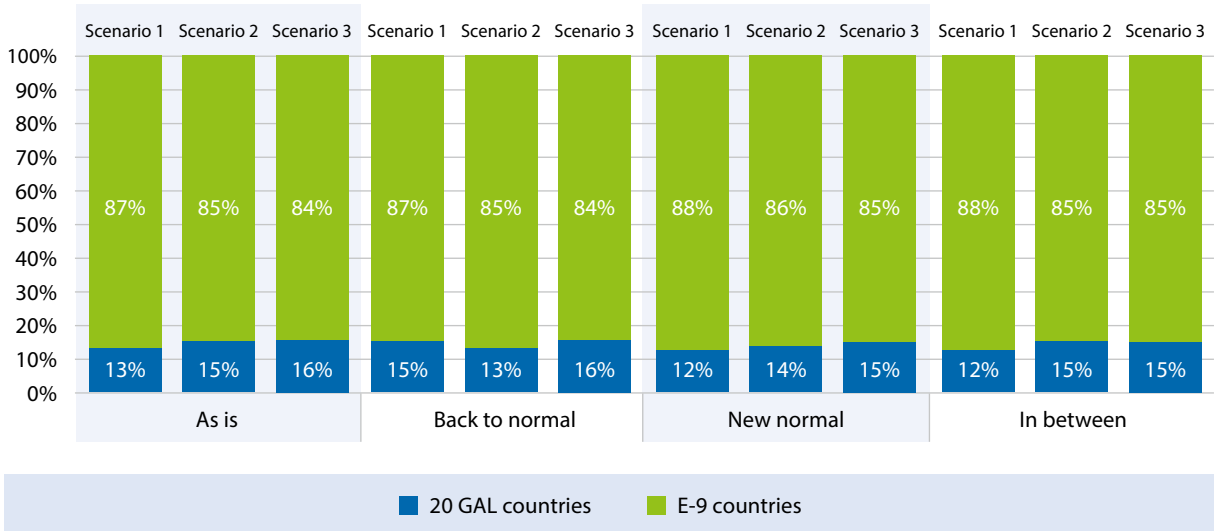
To reach near universal literacy with the desired literacy programme with 500 hour provision, which is the best literacy target scenario, the total cost across 29 GAL countries is projected to be around US$ 190 billion (Figure 5, Scenario 3). If the literacy target best-case scenario cannot be realized, then US$ 116 billion is needed to fill 70–75% of the literacy gap (Scenario 2) and US$ 64 billion to fill 50–60% of the gap (Scenario 1). The estimated costs are about half of these figures if only the minimum of 250 hours is provided for each literacy programme.

Figure 5. Total costs of the 500-hour programme under three different literacy target scenarios (million US$)



Importantly, despite the relatively higher literacy rates among E-9 countries, more than 80% of the estimated costs need to be allocated to these countries, while only 12–16% should be allocated to the 20 non-E9 GAL countries (Figure 6). This is due to the higher salaries for literacy instructors in E-9 countries due to their higher GDP per capita and the higher volume of the illiterate population. For similar reasons, 69% of the total illiterate population are found in the Asia-Pacific region, which also has a higher GDP per capita resulting in the projected costs to fund literacy programmes being the highest in this region.

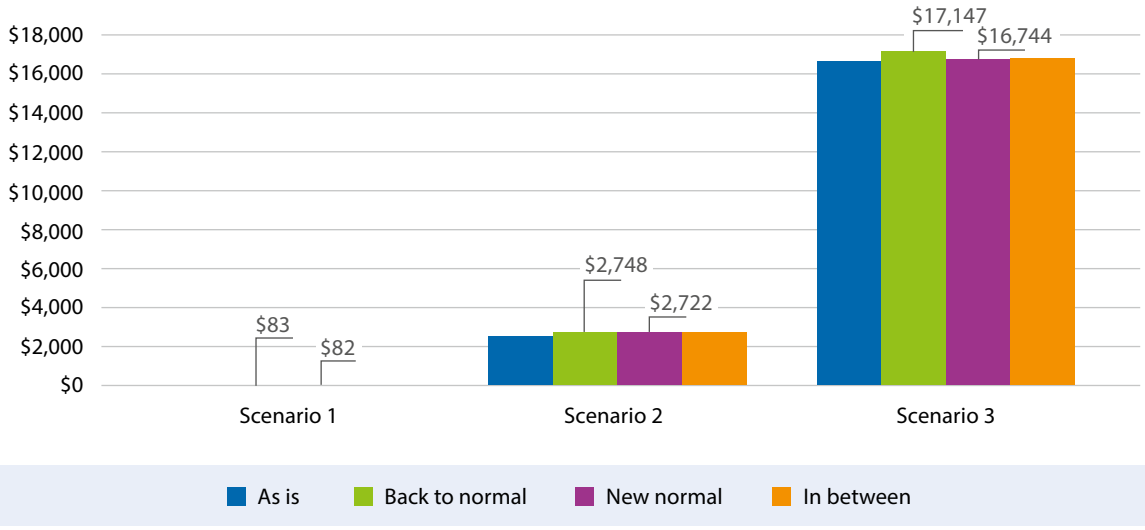
Figure 6. Cost distribution between E-9 and non-E9 GAL countries (500-hour programme)



The funding gap amounts to US$ 17 billion

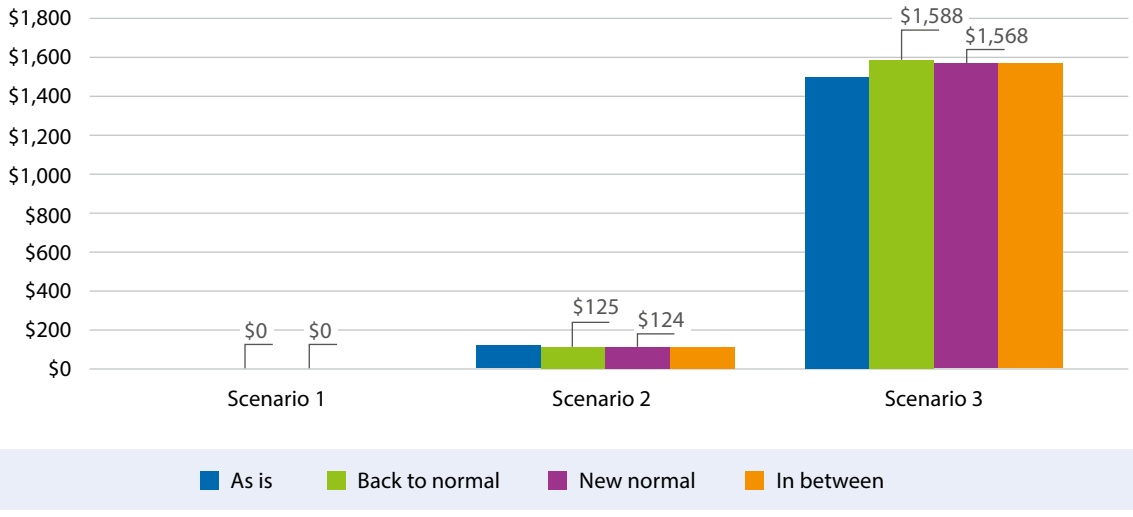
Even in the event that countries invest the recommended 3% of their education budget in literacy programmes – 0.15% of their GDP – and provide 500-hour programmes that integrate skills training, additional external funding of US$ 17 billion is needed to reach near universal literacy in the 29 GAL countries or the literacy target specified under Scenario 3 (Figure 7). However, US$ 2.7 billion is required to fill 70–75% of the literacy gap (literacy target, *Scenario 2*), and US$ 82 million to fill 50–60% of the literacy gap (literacy target, *Scenario 1*).

Figure 7. Funding gap for the 500-hour literacy programme



Alternatively, most of the countries may be able to finance the required minimum 250-hour programmes without external assistance, or the financing gap for these programmes may be significantly reduced to less than US$ 1.6 billion to achieve near universal literacy (Figure 8). However, it is unlikely that such programmes with contact hours cut by half will be sufficient to provide the basic skills necessary to sustain and enable learners to participate fully in society.

Figure 8. Funding gap for the 250-hour literacy programme



It is important to recognize that funding gaps are most severe in the 20 non-E9 countries due to limited domestic education financing means. In the best scenario for achieving near universal literacy (literacy target Scenario 3), approximately 75% of the total additional external international funding needed by 2030 will have to be allocated to the 20 non-E9 countries (Figure 9). This is equivalent to US$ 12 billion. Therefore, achieving SDG Target 4.6 by 2030 for these 20 non-E9 countries will require more international and external financing than for the E-9 countries. Although the E-9 countries have a higher rate of illiteracy, they could achieve near universal literacy by 2030 if their governments invest the recommended 3% of the education budget in literacy (amounting to 0.15% of their GDP), and make the necessary political commitment.

Figure 9. Funding gap distribution between E-9 and non-E9 countries with the 500-hour programme

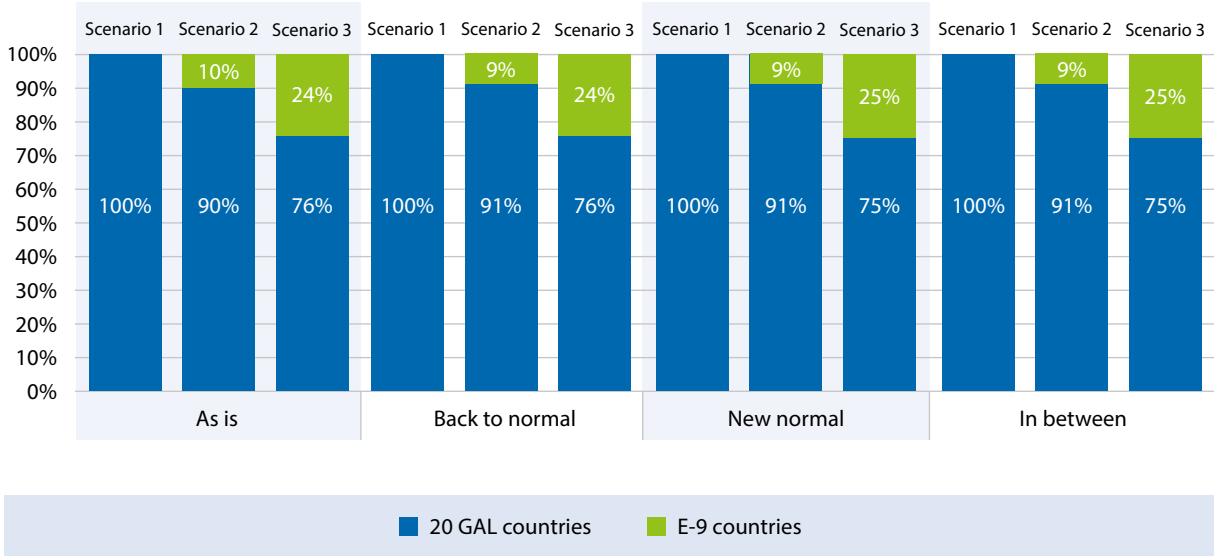


Table 5 provides a breakdown of the funding gaps between E-9 and 20 non-E9 countries for two different contact hour programmes (i.e. 250 hour and 500 hour).

Table 5. Breakdown of funding gaps between E-9 and non-E9 countries (million US$)

As is	250 hours		500 hours		Back to normal	250 hours		500 hours	
	20 GAL	E-9	20 GAL	E-9		20 GAL	E-9	20 GAL	E-9
Scenario 1	0	0	84	0	Scenario 1	0	0	83	0
Scenario 2	127	0	2,331	245	Scenario 2	125	0	2,504	245
Scenario 3	1,510	0	12,722	4,031	Scenario 3	1,588	0	13,069	4,078
New normal	250 h		500 h		In between	250 h		500 h	
	20 GAL	E-9	20 GAL	E-9		20 GAL	E-9	20 GAL	E-9
Scenario 1	0	0	82	0	Scenario 1	0	0	82	0
Scenario 2	124	0	2,477	245	Scenario 2	124	0	2,483	245
Scenario 3	1,568	0	12,563	4,181	Scenario 3	1,573	0	12,684	4,160

Conclusion

The world has made significant progress towards improving literacy. With the expansion of basic education, the literacy rate is expected to continue rising in most countries. According to projections in this paper, to reach near universal literacy, **the total number of youth and adults that need additional training is 739 million (Scenario 3) of which 580 million are in E-9 countries**. There is also a growing recognition of the existence of a learning crisis. Direct assessments of learning outcomes and competencies show low literacy and numeracy skills of schoolchildren and youth in some countries. It is important to highlight the need to improve basic education provision and learning outcomes for children and youth in order to sustain current positive trends and to reduce the burden on adult education and literacy programmes.

The total cost of achieving SDG 4.6 is estimated at US$ 190 billion of which E-9 countries account for 80%. The main obstacle is the limited fiscal space in most ministries of education in the 29 GAL countries to ensure that 3% of the education budget is invested in youth and adult education, which includes literacy programmes. As discussed in this paper, the impact of the COVID-19 crisis on the economies of these GAL countries, especially their GDP per capita growth projections, and on the provision of school education, has further complicated their capacity to invest in adult literacy and education.

While the total funding gap for all 29 countries is estimated at US$ 17 billion, US$ 12 billion of which is needed for the 20 non-E9 GAL countries. These 20 countries are characterized by low-performing education systems and poor economic growth, and even if their governments invest the recommended level of funding for literacy (3% of the education budget), they will still require external international funding to achieve the literacy goal by 2030. Both international development agencies and national government need to recognize that basic literacy is a foundation for basic education, skills training and lifelong learning, without which it is difficult to imagine the sustainable development of society and economy.

In the majority of GAL countries, literacy programmes often form part of skills training undertaken by other ministries, such as ministries of social affairs, agriculture, health, and women. Non-governmental organizations also often playing an important role in delivering and sometimes financing literacy programmes. A cross-ministerial approach, together with non-government partners, could be an effective option to address this major financial challenge on a collective basis.

Several challenges identified in previous studies relating to the estimation of literacy costs have also affected this paper. These include: (i) problems of literacy data; (ii) a narrow empirical basis regarding literacy practice; (iii) omission of some key factors such as the cost of the literacy environment; (iv) assumptions based on weak/limited evidence; and (v) limited knowledge regarding the effectiveness of literacy programmes. In addition, the coverage, design and costs of literacy programmes vary significantly across countries. Applying a common set of parameters using the same assumptions is not an ideal approach to carry out such a costing exercise. This being said, the main purpose of this paper is not to calculate the precise figure to achieve SDG 4.6. Rather, it is to facilitate dialogue about the magnitude of the financial commitments required and to advocate for increased investment in literacy.

Lastly, policy-makers in GAL countries are invited to reflect and move towards establishing lifelong learning systems in which literacy programmes for youth and adults are redesigned to respond to the emerging demands of society and the economy, which increasingly require more proficient literate youth and adult populations.

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Annex 1

Determination of baseline data

The baseline year of the simulation is 2017. The population projection, disaggregated by age and by sex, is based on UN DESA/PD's *World Population Prospects*.[11] GDP and GDP growth are drawn from the IMF's *World Economic Outlook*.[12] The GDP per capita is calculated based on these two sources.

Additionally, calculation of the cost of the literacy programmes requires data on the illiterate population, especially the number of people that need to be trained and the number needed to train them based on the literacy rate at the baseline year and according to set literacy targets.

The population concerned with literacy programmes is the illiterate population aged 15 and above. This number, in a given year t, is determined by three factors:
1. The percentage of the 15-year-old population who obtained literacy skills through formal schooling;
2. The illiterate population in year *t-1*; and
3. The illiterate population in year *t-1* who received and passed training in *t-1*, and hence, become literate in t.

Without literacy programmes, the literacy rate (LR) of a given age *a* in year *t* is equal to LR of age *a-1* in *t-1*.

While illiterate population and literacy rate data from the UNESCO Institute for Statistics (UIS) is available only by age group, the model can deduce the literacy rate by age from the three literacy rates by age groups 15–24, 25–64 and 65+. The model supposes that the literacy rate (LR) increases linearly between the two age group boundaries,[13] and minimizes the sum of the breaks between the slopes between two age groups so that the LR applied to the population must give the exact number of the illiterate population for the three age groups. Then, it obtains the first three LR of the three age groups (15 years, 25 years and 65 years) at the baseline year according to the adjusted coefficients.

It is worth noting that the year of the latest available data on the illiterate population from UIS varies across countries. Data for some countries can date back to 2012. In this case, because $LR^{t}_{a} = LR^{t-1}_{a-1}$, it is necessary to determine LR_{15} for 2013–2017, and the LR_{15} is determined through a proxy of primary and secondary completion rates, gross intake ratio to the last grade of primary or gross enrolment ratio to lower secondary. When more than one of these indicators are available, the model calculates for each of them the slope, then applies the mean to the LR_{15}.

Based on the literacy targets, the distribution of people trained and the pass rate set for each age group, the model then calculates the LR, year by year, from 2017 to 2030, as presented in Annex 2. At the same time, costs and financing gaps are projected according to the cost-related parameters set.

[11] https://population.un.org/wpp.
[12] www.imf.org/en/Publications/WEO.
[13] For example, $LR_{16} = 0.99\ LR_{15}$, $LR_{17} = 0.99\ LR_{16}$, and so on, where 0.99 is the coefficient for the 15–24 age group.

Annex 2

Projected youth and adult literacy rates by sex, age group and country group (2017–2030)

Table A1. 15–24-year-old female literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	91	92	92	93	93	93	94	94	95	95	96	96	97	98
20 non-E9 GAL	55	57	59	61	64	66	68	71	73	76	79	82	85	87
29 GAL	87	88	88	89	90	90	91	91	92	93	94	94	95	96
Scenario 1														
E-9	91	94	96	97	98	99	99	99	99	100	100	100	100	100
220non-E9 GAL	55	61	65	70	74	77	81	84	87	90	92	95	97	99
29 GAL	87	90	93	94	95	96	97	97	98	98	99	99	100	100
Scenario 2														
E-9	91	95	97	98	99	99	99	100	100	100	100	100	100	100
20 non-E9 GAL	55	65	73	80	86	91	94	96	97	98	99	99	99	100
29 GAL	87	92	95	96	97	98	99	99	99	99	100	100	100	100
Scenario 3														
E-9	91	96	98	99	99	99	99	100	100	100	100	100	100	100
20 non-E9 GAL	55	71	84	92	95	97	97	97	98	98	99	99	99	100
29 GAL	87	94	97	98	99	99	99	99	99	100	100	100	100	100

Source: UNESCO literacy model.

Table A2. 15–24-year-old male literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	94	94	95	95	95	95	96	96	96	97	97	97	98	98
20 non-E9 GAL	65	66	67	69	70	72	73	75	77	80	82	85	87	89
29 GAL	91	91	92	92	92	93	93	94	94	95	95	96	96	97
Scenario 1														
E-9	94	96	97	98	99	99	99	99	100	100	100	100	100	100
20 non-E9 GAL	65	68	71	74	77	80	82	85	87	90	92	94	96	98
29 GAL	91	93	94	95	96	97	97	98	98	98	99	99	99	100
Scenario 2														
E-9	94	96	98	99	99	100	100	100	100	100	100	100	100	100
20 non-E9 GAL	65	71	77	82	86	90	94	96	97	98	99	99	100	100
29 GAL	91	94	96	97	98	98	99	99	99	100	100	100	100	100
Scenario 3														
E-9	94	97	99	99	100	100	100	100	100	100	100	100	100	100
20 non-E9 GAL	65	75	84	92	96	97	97	98	98	99	99	99	100	100
29 GAL	91	95	97	99	99	99	99	99	100	100	100	100	100	100

Source: UNESCO literacy model.

Table A3. 25–64-year-old female literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	80	80	81	81	82	82	83	83	83	84	84	85	85	86
20 non-E9 GAL	27	29	30	31	32	33	35	36	38	39	40	42	43	45
29 GAL	77	77	78	78	78	79	79	80	80	81	81	82	82	82
Scenario 1														
E-9	80	80	81	82	83	84	85	86	87	88	89	90	91	92
20 non-E9 GAL	27	29	30	32	34	36	39	41	44	46	49	51	54	57
29 GAL	77	77	78	79	80	81	82	83	84	85	86	87	88	89
Scenario 2														
E-9	80	80	82	83	84	86	87	88	90	91	92	93	94	95
20 non-E9 GAL	27	29	31	34	37	40	45	49	54	59	63	68	72	76
29 GAL	77	77	79	80	81	83	84	86	87	89	90	91	92	94
Scenario 3														
E-9	80	81	83	84	86	88	90	92	93	95	96	97	98	99
20 non-E9 GAL	27	29	32	37	44	52	60	67	73	79	84	89	93	97
29 GAL	77	78	79	82	84	86	88	90	92	93	95	97	98	99

Source: UNESCO literacy model.

Table A4. 25–64-year-old male literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	89	89	89	90	90	90	90	91	91	91	91	91	92	92
20 non-E9 GAL	49	50	51	51	52	53	54	54	55	56	57	58	59	59
29 GAL	87	87	87	87	88	88	88	88	88	89	89	89	89	89
Scenario 1														
E-9	89	89	90	90	90	91	92	92	93	93	94	94	95	95
20 non-E9 GAL	49	50	51	52	53	55	56	58	60	61	63	65	66	68
29 GAL	87	87	87	88	88	89	89	90	91	91	92	92	93	93
Scenario 2														
E-9	89	89	90	90	91	92	93	93	94	95	95	96	97	97
20 non-E9 GAL	49	50	52	53	55	57	60	63	66	69	72	76	79	82
29 GAL	87	87	88	88	89	90	91	91	92	93	94	95	95	96
Scenario 3														
E-9	89	89	90	91	92	93	94	95	96	97	98	98	99	100
20 non-E9 GAL	49	50	52	55	59	65	70	75	80	85	88	92	95	98
29 GAL	87	87	88	89	90	92	93	94	95	96	97	98	99	99

Source: UNESCO literacy model.

Table A5. 65-year-old and older female literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	58	59	61	62	63	64	65	66	68	68	69	70	71	72
20 non-E9 GAL	8	8	8	9	9	10	10	10	11	11	12	12	13	13
29 GAL	56	57	59	60	61	62	63	64	65	66	67	68	69	70
Scenario 1														
E-9	58	59	61	63	64	66	67	69	71	72	74	76	77	79
20 non-E9 GAL	8	8	8	9	9	10	10	10	11	11	12	12	13	14
29 GAL	56	57	59	61	62	64	65	67	69	70	72	73	75	77
Scenario 2														
E-9	58	60	62	64	66	68	70	73	75	77	79	82	84	86
20 non-E9 GAL	8	8	8	9	9	10	11	12	13	15	18	21	26	32
29 GAL	56	58	60	62	64	66	68	70	73	75	77	80	82	84
Scenario 3														
E-9	58	60	63	66	69	72	75	78	82	85	88	91	94	97
20 non-E9 GAL	8	8	8	9	11	13	17	22	29	37	47	58	72	86
29 GAL	56	58	61	64	67	70	73	76	80	83	87	90	93	97

Source: UNESCO literacy model.

Table A6. 65-year-old and older male literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	77	78	79	80	80	81	82	82	83	83	84	84	85	85
20 non-E9 GAL	26	26	27	28	29	30	30	31	32	33	34	34	35	36
29 GAL	75	76	77	78	79	79	80	80	81	82	82	82	83	83
Scenario 1														
E-9	77	78	79	80	81	81	82	83	84	85	85	86	87	88
20 non-E9 GAL	26	26	27	28	29	30	30	31	32	33	34	34	35	36
29 GAL	75	76	77	78	79	80	80	81	82	83	84	85	86	87
Scenario 2														
E-9	77	78	79	80	81	82	83	85	86	87	88	89	91	92
20 non-E9 GAL	26	26	27	28	29	30	31	32	33	34	36	38	42	46
29 GAL	75	76	77	78	79	80	82	83	84	85	86	88	89	91
Scenario 3														
E-9	77	78	79	81	83	84	86	88	89	91	93	95	97	98
20 non-E9 GAL	26	26	27	28	29	31	34	37	42	48	55	65	76	88
29 GAL	75	76	77	79	81	82	84	86	88	90	92	94	96	98

Source: UNESCO literacy model.

Table A7. 15-year-old and older female literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	80	80	81	81	82	82	83	83	84	84	84	85	85	86
20 non-E9 GAL	36	37	39	40	42	43	45	46	48	50	51	53	55	57
29 GAL	77	77	78	78	79	79	80	80	81	81	82	82	83	83
Scenario 1														
E-9	80	81	82	83	84	85	86	87	87	88	89	90	91	91
20 non-E9 GAL	36	39	41	44	46	49	51	54	56	58	61	63	66	68
29 GAL	77	78	79	80	81	82	83	84	85	86	87	88	89	89
Scenario 2														
E-9	80	81	83	84	85	86	87	89	90	91	92	93	94	95
20 non-E9 GAL	36	40	44	48	52	56	59	63	66	69	72	75	78	81
29 GAL	77	78	80	81	83	84	85	87	88	89	90	91	92	93
Scenario 3														
E-9	80	82	84	85	87	88	90	91	93	94	96	97	98	99
20 non-E9 GAL	36	43	49	55	60	65	70	74	79	83	87	91	94	97
29 GAL	77	79	81	83	85	87	88	90	92	93	95	96	98	99

Source: UNESCO literacy model.

Table A8. 15-year-old and older male literacy rate by group (%)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo														
E-9	89	89	90	90	90	90	90	91	91	91	91	92	92	92
20 non-E9 GAL	54	55	55	56	57	58	59	61	62	63	64	66	67	68
29 GAL	87	87	87	88	88	88	88	89	89	89	89	90	90	90
Scenario 1														
E-9	89	90	90	91	91	92	92	93	93	94	94	94	95	95
20 non-E9 GAL	54	55	57	59	61	63	64	66	68	70	71	73	75	77
29 GAL	87	87	88	89	89	90	90	91	91	92	92	93	93	94
Scenario 2														
E-9	89	90	91	91	92	93	93	94	94	95	95	96	97	97
20 non-E9 GAL	54	57	60	62	65	68	70	73	75	77	80	82	84	86
29 GAL	87	88	88	89	90	91	92	92	93	94	94	95	96	96
Scenario 3														
E-9	89	90	91	92	93	94	95	95	96	97	98	98	99	100
20 non-E9 GAL	54	58	63	67	71	75	78	81	85	88	90	93	96	98
29 GAL	87	88	89	90	91	92	93	94	95	96	97	98	99	99

Source: UNESCO literacy model.

Annex 3

Analysis of the UNESCO 2018 International Literacy Prizes applications

Data

Since 1967, UNESCO has recognized and rewarded excellence and innovation in literacy. Currently, the following two International Prizes are awarded by UNESCO: the UNESCO King Sejong Literacy Prize and the UNESCO Confucius Prize for Literacy.

In 2018, the application form for the above prizes included key information on hours and duration of the programme, annual budget and number of learners. These applications were used to estimate the unit cost of literacy programmes.

A total of 50 applications were analysed, representing all UNESCO regions (Table A9).

Table A9. Number of 2018 UNESCO ILP applications reviewed, by region

Regions	No. of applications
Africa	10
Arab States	4
Asia and Pacific	18
Europe and North America	9
Latin America and the Caribbean	9
Total	50

Applications focusing on teacher training, material development and school-level activities were excluded from the analysis. In addition, applications without sufficient information on number of learners, contact hours and duration of the programmes, and annual budget were omitted. Finally, programmes with less than 300 hours of total contact hours were also removed, as previous studies indicate that a minimum of 300 hours is required to obtain a basic level of literacy. As a result, the total number of applications used for the cost estimation was reduced to 14 (Table A10). A summary of applications used for the estimation is provided in Table A16.

Table A10. Number of 2018 UNESCO ILP applications analysed, by region

Regions	No. of applications
Africa	2
Arab States	2
Asia and Pacific	4
Europe and North America	3
Latin America and the Caribbean	3
Total	14

The scale of the programmes varies across the applications. Some are large-scale government programmes, but the majority are NGO-funded small to medium-scale programmes (Table A11).

Table A11. Number of learners, 2017

No. of learners	No. of applications
<500 (small)	6
500–5,000 (medium)	5
5,000< (large)	3
Total	14

Most of the programmes are less than 1,000 hours long (Table 4), the majority of which are completed in less than one year (Table A12).

Table A12. Programme contact hours (literacy and other skills training)

Hours	No. of applications
300–500	6
500–1,000	6
1,000<	2
Total	14

Table A13. Programme duration

Months	No. of applications
Less than 12 (short)	8
12–36 (medium)	5
More than 36 (large)	1
Total	14

Unit costs

As expected, the average cost per learner decreased as the number of learners increased (Table A14). The difference was extremely large, however, ranging from US$ 34 per learner for programmes with more than 5,000 learners to US$ 1,386 for programmes with less than 500 learners.

Table A14. Average annual cost per learner by size of programmes in US$, 2017

No. of learners	Average annual cost per learner
<500 (small)	1,386
500–5,000 (medium)	168
5,000< (large)	34

Table A15. Average annual cost per learner in US$ by annual contact hours, 2017

Annual contact hours	No. of applications
300–500	106
500–1,000	140
1,000<	771

Looking at the annual unit cost of medium-size literacy programmes (unit cost of US$ 168) and programmes with annual contact hours between 300–500 (unit cost of US$ 140) in the above table, the findings seem in line with the study conducted by the Global Campaign for Education and ActionAid in 2005, which found the annual cost of a good quality literacy programme to be from US$ 50 to US$ 100. With an average global inflation rate of 3.6% between 2005 and 2017,[14] US$ 100 in 2005 is equivalent to US$ 153 in 2017. Hence, it may be assumed that, in 2017, the unit cost of a good quality literacy programme may be around US$ 150 per learner.

Limitations and recommended next steps

The analysis was challenged by the varying quality of the data in the applications. While many of the programmes are relevant to the exercise, many applications were excluded from the analysis due to incomplete information. With 14 applications, the results were very susceptible to outliners and possible errors in the data, and it was extremely difficult to calculate meaningful averages for different types of literacy programmes. For instance, there were not enough applications to estimate the annual unit cost based on the contact hours and size of the programme. As a result, the estimation given in this document is very crude and needs more evidence for the purposes of verification.

As the total number of the 2018 ILP applications (50) as well as their regional representation is comparable to the study conducted by the Global Campaign for Education and Action Aid International (2005), these applications can be a powerful tool to collect key information on existing literacy programmes. In the future, these applications might be used for further analyses.

[14] https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG.

Table A16. Summary of programmes used for the estimation (UNESCO International Literacy Prize applicants)

Country (project country)	Region	Type of Organiza-tion	Programme description	Main target population	Coverage (2017)	# of hours for literacy training	# of hours for skills training	Total contact hours	Pro-gramme duration (months)
Hungary (Hungary)	Europe and North America	NPO	Mother tongue literacy and schools	Minority population	58	400	74	474	45
Spain (Spain)	Europe and North America	NPO	Literacy & skills training	Women	104	369	703	1,072	8
Spain (Spain)	Europe and North America	NPO	Literacy and skills training for immigrants	Adult immigrants	175	352	131	483	10
Mexico (Mexico)	Latin America	Government	Bilingual education	Youth and adults	235	336		336	14
Senegal (Senegal)	Africa	Business	Literacy & skills training	Youth and adults	265	432		432	36
Canada (Kenya)	Africa	NPO	Literacy & skills training	Children & youths	295	600		600	30
Yemen (Yemen)	Arab States	NPO	Literacy & skills training	Youth (15–40 yrs)	538	300	280	580	12
India (India)	Asia-Pacific	NPO	Functional literacy and empowerment	Rural women	1,538	540		540	8
Guatemala (Guatemala)	Latin America	NPO	Spanish literacy	Youths and adults	2,044	343		343	12
Afghanistan (Afghanistan)	Asia-Pacific	NPO	Accelerated primary and secondary education	Young girls and adults	3,250	972	108	1,080	9
Iran (Iran)	Asia-Pacific	Government	Literacy & skills training	Youth and adults	4,552	800		800	8
Yemen (Yemen)	Arab States	Academia	Literacy & skills training	Adult women	10,928	480	160	640	8
El Salvador (El Salvador)	Latin America	Government	Literacy and entrepreneurship	Youth and adults	29,727	600		600	5
Pakistan (Pakistan)	Asia-Pacific	Government	Training for literacy teachers	Literacy teachers	146,196	195	129	324	5

Table A16. Summary of programmes used for the estimation (UNESCO International Literacy Prize applicants) (continued)

Country (Project country)	# of staff (teachers)	# administrative staff	# technical staff	Total annual budget (2017 in US$)	Curriculum hours per year	Cost per learner per annual contact hour (US$)	Annual cost per learner	Cost per learner to complete the programme (US$)	GDP per capita (2017 in US$)	Annual cost per learner (% of GDP/ capita)	Cost per leaner to complete the programme (% of GDP/ capita)
Hungary (Hungary)	51	6	2	250,067	126	34.11	4,311.50	16,168	14,224.85	30.31%	113.66%
Spain (Spain)	11	4	6	139,000	1072	1.247	1,336.54	1,337	28,156.82	4.75%	4.75%
Spain (Spain)	9	1	1	49,884	483	0.59	285.052	285	28,156.82	1.01%	1.01%
Mexico (Mexico)	235	2	21	40,000	288	0.591	170.213	199	8,902.83	1.91%	2.23%
Senegal (Senegal)	13	3	10	20,000	144	0.524	75.472	226	1,033.07	7.31%	21.92%
Canada (Kenya)	16	4	3	630,000	240	8.898	2,135.59	5,339	1,507.81	141.64%	354.09%
Yemen (Yemen)	17	6	11	100,000	580	0.30	185.874	186	660.28	28.15%	28.15%
India (India)	221	6	6	616,000	540	0.742	400.52	401	1,939.61	20.65%	20.65%
Guatemala (Guatemala)	6	3	4	37,500	343	0.053	18.346	18	4,470.99	0.41%	0.41%
Afghanistan (Afghanistan)	162	7	8	665,000	1080	0.189	204.615	205	585.85	34.93%	34.93%
Iran (Iran)	589	10	96	129,732	800	0.036	28.5	29	5,145.21	0.55%	0.55%
Yemen (Yemen)	33	10	23	41,990	640	0.006	3.842	4	660.28	0.58%	0.58%
El Salvador (El Salvador)	20,309	21	80	2,450,004	600	0.137	82.417	82	3,889.31	2.12%	2.12%
Pakistan (Pakistan)	19,097	454	43	2,190,000	324	0.046	14.90	15	1,547.85	0.97%	0.97%

Annex 4

Table A17. Review of existing literacy costing studies

Author(s)	Geographic coverage	Unit cost
Global Campaign for Education and Action Aid (2005)	67 adult literacy programmes from 35 countries, followed by feedback from 142 respondents in 47 countries	• Good literacy programmes have 600 hours of contact time over a 2–3-year period. • The average cost per learner is US$ 47 in Africa, US$ 30 in Asia and US$ 61 in Latin America. • Average cost per 'successful' learner is US$ 68 in Africa, US$ 32 in Asia and US$ 83 in Latin America.
Ravens and Aggio (2005)	24 LIFE countries	• The standard variant is based on parameters such as the number of contact hours, group size and instructors' salaries. Unit costs are expressed as a % of GNP per capita: SSA (8.9%); South West Asia, East Asia and Pacific (5.3%); Arab States (5.3%); and Latin America (4.4%) • The budget variant assumes a high reliance on technology and volunteer teachers (US$ 20 per learner) • The advanced variant includes the costs of creating 'desirable' literate environment beyond basic literacy programmes. It is not included in the final cost projection.
Carr-Hill and Roberts (2007, 2010)	Nine programmes from eight countries	• Acknowledges the significant variance among literacy programmes in unit cost (five-fold range). Suggest that the minimum unit cost of literacy is close to US$ 100.
Ravens and Aggio (2007)	Brazil, Burkina Faso and Uganda	• Good literacy programmes have 600 hours of contact time over a 2–3-year period. • The average cost per learner is US$ 47 in Africa, US$ 30 in Asia and US$ 61 in Latin America. • Average cost per 'successful' learner is US$ 68 in Africa, US$ 32 in Asia and US$ 83 in Latin America.

[15] Bangladesh, Benin, Brazil, Burkina Faso, Central African Republic, Chad, People's Republic of China, Democratic Republic of Congo, Egypt, Ethiopia, Indonesia, Iran, Madagascar, Mali, Mauritania, Morocco, Mozambique, Nepal, Niger, Nigeria, Pakistan, Papua New Guinea, Senegal and Sierra Leone.
[16] Brazil, Burkina Faso, Ghana, Namibia, Senegal, Somalia, South Africa and Turkey.

Author(s)	Geographic coverage	Unit cost
Wils (2015)	82 low and lower middle-income countries	• The exercise was conducted to estimate the cost of achieving SDG 4 targets of pre-primary, primary, and lower and upper-secondary schooling • The simulation model also includes the cost of literacy programmes, which is by default set at the primary education unit cost.
The International Commission on Financing Global Education Opportunity (2016)[17]	Low, lower-middle and upper-middle income countries	• Builds on the 'UNESCO model' developed by Wils (2015) • The unit cost of literacy training is estimated to be same as the unit cost of primary education.
Hanemann (2015)	National and regional literacy programmes from 32 countries	• Unit costs vary significantly across literacy programmes, ranging from US$ 5 (India) to US$ 1 035 (Venezuela)
Unpublished analysis		
UNESCO (2018)	14 literacy programmes from 13 countries Nine African countries[18]	• US$ 150 for middle sized programme
UIL (2019)	Nine African countries[19]	• Programme duration ranges from 2-3 months to 1 year • The unweighted average unit cost without equipment is FCFA 29 482 (approximately US$ 50), 6.8% of GDP per capita.

[17] The Education Commission Report (2016). The Learning Generation: Investing in education for a changing world. https://report.educationcommission.org/wp-content/uploads/2016/09/Learning_Generation_Full_Report.pdf
[18] Afghanistan, El Salvador, Guatemala, Hungary, India, Iran, Kenya, Mexico, Pakistan, Senegal, Spain and Yemen.
[19] Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Mali, Niger, Democratic Republic of Congo, Senegal and Togo.

Table A18. Assumptions used for standard variant

Instructional time needed to acquire a basic level of mastery	400 hours[20]
Instructor's annual salary in SSA, Asia, Arab States and LA	5, 3 and 2.5 times the average GNP per capita
Working hours per year	1,800
Number of courses an instructor can deliver per year	4
% of salary on total cost	70%
Group size	20
Pass rates	75%[21]

Source: Ravens and Aggio (2005).

Table A19. Proposed categories and distribution of costs

Component	Approximate % to be allocated
Instructional materials	13
Training for literacy facilitators, business trainers and immediate supervisors	15
Remunerating facilitators, business trainers and field supervisors	30
Training and other forms of capacity building and institutional strengthening for public and private agencies	13
Operational and administrative expenses	15
Monitoring, evaluation and research	4
Savings, credit and enterprise development	10

Source: Car-Hill and Roberts (2007), reproduced from Oxenham (2004).

[20] Oxenham (2008) states that 300-400 hours will be needed.
[21] Oxenham (2008) also states that a 75–80% completion rate is a reasonable expectation for successful literacy programmes.

Table A20. Unit cost per country, variant, localization and age (in US$, 2004 prices)

	Localization	Age	Brazil (3 000, 2.5)[22]	Burkina Faso (350,5)	Uganda (250,5)
Standard	Urban	Below 45years	120.5	28.1	20.1
		Above 45 years[23]	124.2	29.0	20.7
	Rural[24]	Below 45years	147.3	34.4	24.6
		Above 45 years	151.7	35.4	25.3
Cross-sectoral	Urban	Below 45years	144.6	33.8	24.1
		Above 45 years	149.0	34.8	24.8
	Rural	Below 45years	176.8	41.3	29.5
		Above 45 years	182.1	42.5	30.3
Volun-teering	Urban	Below 45years	53.0	12.4	8.8
		Above 45 years	54.6	12.7	9.1
	Rural	Below 45years	64.8	15.1	10.8
		Above 45 years	66.8	15.6	11.1

Source: Ravens and Aggio (2007).

Table A21. Primary teacher salaries in proportion to GDP per capita: unweighted regional average

Region	Primary teacher salaries, in proportion to GDP per capita
Asia-Pacific	2.29
Arab States	2.86
Eastern Europe	1.96
Latin America & Caribbean	2.49
Sub-Saharan Africa	4.14

Source: calculated by the author based on data from Wils (2015).

[22] GNP per capita (in US$ 2014 prices) and salary for literacy instructors as a proportion of GNP per capita.
[23] It is 3% more expensive to train a person older than 45 years old.
[24] It is 20% more expensive to train in a person in rural areas.

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Education 2030

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