Sustainable Development Goal 4: How Does the Philippines Fare on Quality Education?

Jose Ramon G. Albert, Lovelaine B. Basillote, Jason P. Alinsunurin, Jana Flor V. Vizmanos, Mika S. Muñoz, and Angelo C. Hernandez

PIDS Philippine Institute for Development Studies

Sustainable Development Goal 4 on Quality Education for All: How Does the Philippines Fare and What Needs to be Done?

Jose Ramon G. Albert
Lovelaine B. Basillote
Jason P. Alinsunurin
Jana Flor V. Vizmanos
Mika S. Muñoz
Angelo C. Hernandez

PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

December 2023

Abstract

The Global Goal on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all promotes equality in access to quality learning, supports economic development, improves health outcomes, empowers women and girls, and fosters global citizenship and peace. By reducing inequities in education, both in terms of access and quality, we can help to build a more equitable, prosperous, and sustainable world.

This study provides a detailed examination of the progress of the Philippines in achieving Sustainable Development Goal 4 (SDG4) on quality education and lifelong learning opportunities for all. It sets the stage by outlining the Philippine educational policy landscape, including its legal and institutional frameworks. The analysis then progresses to a target-by-target review of SDG 4, highlighting the nation's accomplishments and ongoing challenges. Notable achievements include nearly universal primary education enrollment and increased secondary education participation. However, issues like high dropout rates and subpar learning outcomes remain. The Philippines has also seen growth in early childhood development (ECD) and pre-primary education enrollments, yet access for disadvantaged children is still limited. The country has policies to enhance access to affordable technical, vocational, and higher education, but the quality of these programs and their alignment with future skills needs improvement. Inclusive education initiatives exist, such as programs for learners with disabilities and indigenous communities, but challenges in ensuring universal quality education persist. A shift in education outcomes in favor of girls is observed, with boys now more likely to drop out than girls across various educational levels, and with girls doing better than boys in learning. While literacy rates appear high, the need to redefine literacy measurements, considering issues like digital skills, is evident. Progress in school infrastructure development is significant, especially with the K-12 rollout, but enhancing learning environments, including using technology for learning, remains crucial. The Philippines boasts a large teaching workforce, yet there is a pressing need to elevate teacher training quality and align it with future skill requirements.

The study pinpoints critical improvement areas, including addressing learning deficits' root causes, implementing an open data policy, and refining teacher training and workload. Concluding with a call to action, the study underscores the necessity of a comprehensive strategy to tackle educational challenges holistically, with integrated planning among the three main government agencies tasked to manage the sector. It suggests developing specific targets for inclusive quality education. This comprehensive review offers valuable insights and practical recommendations for stakeholders, aiming to ensure the Philippines fulfills its commitment to quality education for all by 2030.

Keywords: education, basic education, higher education, TVET, quality education

Table of Contents

List of Tables

List of Figures

List of Boxes

Sustainable Development Goal 4: How Does the Philippines Fare on Quality Education?

Jose Ramon G. Albert, Lovelaine B. Basillote, Jason P. Alinsunurin, Jana Flor V. Vizmanos, Mika S. Muñoz, and Angelo C. Hernandez [*]

1. Introduction

In 2015, together with 192 other UN member states, the Philippines committed to attaining the Sustainable Development Goals (SDGs) by 2030 (UN 2015). The SDGs, also referred to as the Global Goals, consist of a set of 17 goals, including SDG4 on Quality Education ("Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all").

While the Millennium Development Goals, the predecessor to the SDGs, consisted of 8 goals, 21 targets, and 60 indicators, the SDGs put forth a much more ambitious coverage of 17 goals, 169 targets and 231 (unique) indicators[1] across five key themes: People, Prosperity, Planet, Peace, and Partnership. For SDG4, there are 10 targets (consisting of 7 outcome indicators and 3 means of implementation) and twelve indicators (**Box 1**).

Box 1. Targets for SDG4 ("Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all ") and Indicators for Monitoring SDG4 Targets

Targets	Indicators	Status	Supplementary indicators	Disaggregation	Remarks
Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	Indicator 4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	Not monitored	With supplementary indicators	By subject	Data available from National Achievement Tests, DepED
	Indicator 4.1.2 Completion rate (primary education, lower secondary education, upper secondary education)	Monitored	None	By level of education, sex	Data available from National Achievement Tests, DepED

---

[1] Although the total number of indicators listed in the global indicator framework of SDG indicators is 248, but thirteen indicators repeat under two or three different SDG targets. The number of unique indicators is 231. The list of indicators has been changing since the adoption of the SDGs. In 2015, the United Nations Statistical Commission (UNSC) established an Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) to develop and implement the global indicator framework for the SDGs. A year later, the UNSC approved the list of 230 indicators proposed by the IAEG-SDGs for global monitoring of the Goals and targets of the 2030 Sustainable Development Agenda. Upon the recommendation of the IAEG-SDGs, a revised set of 232 indicators was approved by the UNSC in March 2017. Further revisions to the list have been approved by the UNSC in 2020.

Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education	Indicator 4.2.1 Proportion of children aged 24–59 months who are developmentally on track in health, learning and psychosocial well-being, by sex	Monitored	None	By sex	
	Indicator 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex	Monitored	None	By sex	Data available from Enhanced Basic Education Information System (EBEIS), DepED
Target 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university	Indicator 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	Monitored	With supplementary indicators	By level of education, sex	Data available from EBEIS, DepED
Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship	Indicator 4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	Monitored	None	By geographical location, sex	Data available from 2019 National ICT Household Survey (NICTHS) of the Department of Information and Communication Technology (DICT); DICT conducting second NICTHS for 2023
Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations	Indicator 4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile, and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated	Monitored	None	By level of education	Data available from EBEIS, DepED

Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	Indicator 4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex	Monitored	None	By sex	Data available from Functional Literacy, Education and Mass Media Survey (FLEMMS), PSA
Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development	Indicator 4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student	Not monitored	None	None	
Target 4.a Build and upgrade education facilities that are child, disability, and gender sensitive and provide safe, non-violent, inclusive, and effective learning environments for all	Indicator 4.a.1 Proportion of schools offering basic services, by type of service	Monitored	None	By level of education	Data available from EBEIS, DepED
Target 4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and	Indicator 4.b.1 Volume of official development assistance flows for scholarships by sector and type of study	Not monitored	None	None	

African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering, and scientific programmes, in developed countries and other developing countries					
Target 4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	Indicator 5.c.1 Proportion of teachers with the minimum required qualifications, by education level	Monitored	With supplementary indicators	None	Data available from Administrative Data, Commission on Higher Education (CHED) and TESDA

Source: PSA SDG Watch https://psa.gov.ph/sdg/Philippines/baselinedata/4%20Quality%20Education (accessed 29 August 2022).

Since the adoption of the SDGs, the Philippines has come up with three Voluntary National Reviews to report on progress in attaining the Global Goals (NEDA 2022; NEDA 2019; NEDA 2016). Each of the SDG4 targets are based on three underlying principles: (i) education is a basic human right and an enabling right; (ii) education is a public good, of which the state is the duty bearer; and, (iii) gender equality, since everyone, both boys and girls, women and men should be empowered equally in and through education and lifelong learning.

Several of the SDG4 targets are composed of multiple and sub-indicators indicators. For example, for target 1 of SDG4 (SDG 1.1) to "ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes (by 2030)", the SDG4 indicators are the proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex (Indicator 4.1.1), and the completion rate (primary education, lower secondary education, upper secondary education) (Indicator 4.1.2).

Aside from SDG4, various SDGs (e.g., SDG1 on no poverty, SDG2 on 4 on zero hunger, SDG 3 on good health and well-being, SDG 5 on gender equality, SDG6 on safe water and sanitation) have a social lens and pertain to services and opportunities for improving human capabilities. These goals clearly have intersectionalities with SDG4.

Even before the Philippines has recognized the importance of building our human capital as a pathway for social inclusion, economic opportunity, and social mobility. The Philippine Constitution mandates primary education for all and requires the State to establish and maintain a system of free public education at the primary and secondary levels. Further, the country has committed to many international commitments on education established in numerous UN resolutions and international instruments dealing based on the view of education as a basic human right since the adoption of the Universal Declaration of Human Rights in 1948.[2] Underlying the commitment to achieve various education goals and targets in SDG4, the MDGs, and the Education for All (EFA) is recognition of the right, particularly, of all children to basic education. There is also recognition in SDG4 that it is critical for everyone, regardless of age and sex, to have lifelong learning.

The underlying idea behind the conditional cash transfer program, called the *Pantawid Pamilya Pilipino Program* (4Ps), is that households can be empowered to have better welfare if they invest in the early childhood and basic education schooling of their children. Inclusive education also is related to better health outcomes: mothers with more schooling have a higher chance of seeking pre-natal care, assisted childbirth, and post-natal case, and have a higher chance of immunizing their kids than those with little or no education. Children with mothers who can read and write are more likely to also survive past five years of age. More educated parents (particularly mothers) tend to have more educated children. Decreases in malnutrition across economies have also been attributed to better farming practices resulting from better educational attainments of farmers.

This discussion paper presents an examination of various data sourced largely from the Philippine Statistics Authority's SDG Watch pertinent to SDG4, as well other education indicators sourced from administrative data and the Labor Force Survey relevant for monitoring the SDG4; this paper seeks to provide inputs into the critical discussions that will take place in the Second Congressional Commission on Education (EDCOM 2)[3] that has been established by virtue of Republic Act 11899. Through such an examination in this discussion paper, we hope to provide specific recommendations for improved education policies and actions, design and implementation, monitoring and evaluation, and governance to meet the SGD4 targets on ensuring equal opportunities for all boys and girls to secure their rights to quality education, thus ensuring that no Filipino is left in learning.

---

[2] This perspective is endorsed in numerous international human rights agreements, including the 1960 United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention against Discrimination in Education, the 1966 International Covenant on Economic, Social and Cultural Rights, the 1981 Convention on the Elimination of All Forms of Discrimination against Women, and the 2006 Convention on the Rights of Persons with Disabilities.

[3] EDCOM 2 is a national commission tasked to undertake a comprehensive national assessment and evaluation of the performance of the Philippine education sector

2. Philippine policy environment on education

The Philippine Constitution provided the general policy framework for the Philippine education system; it identified the role of government to protect the right of all Filipinos to quality education at all levels. As pointed out in the Basic Education Development Plan (BEDP) 2030 (DepED, UNICEF and PBED 2022), several laws have been enacted and various policies have been formulated to support the Constitutional provisions on education.

The past three decades have been marked by significant legislative frameworks affecting the basic education sector (**Box 2**). In the 1990s, work by the first Education Commission led to the "tri-focalization" of the education sector in the early '90s, with the establishment of three national government agencies to manage the sector: the Department of Education, Culture and Sports (DECS) for basic education; Technical Education and Skills Development Authority (TESDA) for Technical and Vocational Education and Training; and the Commission on Higher Education (CHED) for tertiary and graduate education. Republic Act (R.A.) No. 9155 or the Governance of Basic Education Act of 2001 was enacted to improve the management of basic education with the removal of the mandate of culture and sports from DECS, and thus renaming it simply as the Department of Education (DepED). Further, some facets of decentralization of basic education were instituted, with the strengthening of responsibilities and capacities in DepED field offices (at the regional and division offices). A decade ago, R.A. No. 10157, the Kindergarten Education Act of 2012, made kindergarten mandatory for all five-year-old children, in support of the MDGs on achieving Education for All by 2015. A year later, the Enhanced Basic Education Act of 2013, or R.A. 10533, established the K-12 program, which not only further strengthened Kindergarten but also transformed basic education from 10 years into 13 years of schooling: seven for kindergarten to Grade 6, four for Junior High (Grades 7 to 10), and two for Senior High School (Grades 11 and 12). Nearly another decade later, R.A. No. 11510 or the Alternative Learning System (ALS) Act of 2020 put focus on support for out-of-school children, as well as adults who were not able to complete their basic education by way of the ALS. And this year, the legislature enacted a law to establish a Second Education Commission, by way of R.A. No. 11899.

Box 2. Significant Laws on the education sector since 1990	
Republic Act (R.A.) 7722 and R.A. 7796	respectively established the Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA), thus leading to a tri-focalization of the education sector.
Republic Act (R.A.) No. 9155 or the Governance of Basic Education Act of 2001	transformed the Department of Education, Culture and Sports (DECS) into the Department of Education (DepEd) and redefined the role of DepED field offices (regional offices, division offices, district offices and schools). It provided the overall framework for (i) school head empowerment by strengthening their leadership roles and (ii) school-based management within the context of transparency and local accountability.
R.A. No. 10157, the Kindergarten Education Act of 2012	made kindergarten mandatory for all five-year-old children
R.A. No. 10533, the Enhanced Basic Education Act of 2013	established K-12, which strengthened Kindergarten and reorganized the secondary level of education into Junior High School (JHS) and Senior High School (SHS) (thus adding two years into the previous ten-year basic education)
R.A. No. 10533, the Enhanced Basic Education Act of 2013	one of the first "anti-bullying laws" globally. Under this law, all basic-education schools should adopt anti-bullying policies and establish intervention programs for both the child victim and the child bully. Schools should also impose appropriate disciplinary measures against the perpetrators based on the gravity and nature of the bullying case.

R.A. No. 11510 or the Alternative Learning System Act of 2020	highlighted the need to support out of school children in special cases, as well as adults who were not able to complete their basic education
R.A. No. 11899	created the Second Congressional Commission on Education (EDCOM II), which is tasked to conduct a national review of the country's education sector after the COVID-19 pandemic exacted a heavy toll on learning.

Source: Authors' compilation

In the period of implementation of the MDGs, the DepED focused on increasing school participation especially at the primary level; the SDGs, particularly SDG4, leveled up goals and targets on the entire education sector to ensuring the quality of learning. Changes in the socio-economic landscape brought about by increased use of frontier technologies of the Fourth Industrial Revolution and its effects on changing the nature of work (see Dadios *et al*. 2018) also necessitate a focus on SDG4; an education system's success lies in its ability to equip its learners with future skills and competence needed for navigating a world increasingly filled with volatility, uncertainty, complexity and ambiguity (VUCA). Thus, the DepED has come up with the BEDP 2030, a long-term strategic roadmap that is meant to refocus its attention for access to quality with a battle cry for *Sulong Kalidad*. Recognizing that the promises of K-12 for improving quality in basic education have yet to materialize, the current administration has also recently come up with a reform agenda called MATATAG[4] that includes plans on strengthening literacy and numeracy programs, revitalizing the Reading, Science and Technology, and Math programs, as well as providing more support to teachers. Attaining these plans, however, are contingent on a coherent strategy as well as resources, which have not been plentiful, and are likely not to be so in the wake of the impact of COVID-19 pandemic on fiscal resources.

The Philippine Constitution expressly mandates the State to assign the highest budgetary priority to education. As of 2021, the budget for the entire education sector amounts to P751.7 billion (corresponding to 16.7 percent of the total government budget), with the Department of Education (DepED) getting 605.74 billion. While the 2021 DepED budget is an increase of 7.4 percent from that of the previous year, the growth in the DepED budget is a pittance compared to the growth in budgets of other agencies. In particular, aamong the top ten recipients of government budgets for 2021, the Department of Public Works and Highways had a budget that grew by 52.9% compared to 2020 levels, while budgets of the Department of National Defense grew by 16.4%, the Department of Transportation and Communications by 70.5% and the Department of Labor and Employment by 17.0% (Cuenca 2020).

From 2010 to 2020, the DepED budget has more than tripled in (nominal) levels (**Table 1**), but because of the needs for implementing K-12. With the shift to K-12, more teachers had to be hired and more classrooms had to be built to deliver the three more grade levels (i.e., kindergarten and two years of senior high school).

---

[4] MATATAG (which literally means sturdy) entails the following targets: (i) Make the curriculum relevant to produce competent, job-ready, active, and responsible citizens; (ii) Take steps to accelerate the delivery of basic education facilities and services; (iii) Take good care of learners by promoting learner well-being, inclusive education, and a positive learning environment; and, (iv) Give support to teachers to teach better. (https://legacy.senate.gov.ph/publications/LRS/Quick%20Notes/Ctte%20on%20Basic%20Ed-MATATAG%20curriculum%20(2).pdf)

Table 1. Education Sector Appropriations (in Million PhP), 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017*	2018	2019	2020	2021	2022
Department of Education (DepED)	161,406	192,313	201,821	232,595	281,774	321,059	411,905	544,109	553,313	501,116	521,351	557,255	592,695
Technical Education and Skills Development Authority (TESDA)	2,891	2,838	2,746	2,971	5,117	5,319	6,738	6,685	7,560	12,555	12,974	14,464	13,813
Commission on Higher Education (CHED)	1,669	925	1,421	2,782	6,941	2,369	5,636	18,705	49,426	51,491	46,782	50,506	31,685
State Universities and Colleges (SUCs)	22,402	22,035	22,098	32,771	35,935	42,280	47,415	58,718	62,115	64,711	73,716	85,956	104,177

Source: General Appropriations Acts, 2010-2022
Note:*= In 2017, appropriations considerably increased to build additional school facilities to accommodate more years in secondary education under the K-12 program. Over PhP 100 billion of the appropriations were however transferred from DepED to DPWH as BEFF since DPWH is responsible for constructing facilities. As a result, DepED-managed spending represented only about 77 percent of Basic Education spending in 2017, a significant reduction from about 90 percent in 2013.

As of August 31, 2021, data from the Civil Service Commission suggests that as much as seven out of ten career government employees (consisting of over 800 thousand employees) belong to the DepED; three fifths of these DepEd employees are female. Data from the Department of Education (DepED) also suggests that as of 2019, there are over 800 thousand public school teachers in the country, 85.7 percent more than the number of teachers nearly two decades ago **(Figure 1)**. The bulk of increase in the teaching workforce in the past two decades resulted during the shift to the K to 12 (Kindergarten to Grade 12) program, which entailed delivering three more grade levels (i.e., kindergarten and two years of senior high school) in the basic education system. In the period 2012 to 2016, the DepED hired around 200 thousand teachers for kindergarten and elementary, while in 2016, it hired nearly 40 thousand senior high school teachers. During this period, the demand for new teachers extended as well to private schools since the K to 12 program applies to all schools in the Philippines. What is unclear is whether this hiring managed to also address input deficits of schools, as monitored by DepED through a color-coding of pupil-to-teacher-ratios (PTRs).

From 2000 to 2011, there were 37 high school learners for every high school teacher; with the increase in teachers at the secondary level to implement the K-12, the PTRs dropped to 27 by 2014, and further to 24 by 2017. The PTR is an indicator of quality of learning since in crowded classrooms where there are a high numbers of learners per teacher, it can be difficult for learners to follow lessons and challenging for teachers to dedicate more time to the learning needs of all pupils. While no ideal PTR has been suggested in the literature, low PTRs are desirable, with developing countries benchmarking their PTRs with those of neighboring countries of similar development, as well those of developed countries. Reducing PTRs would also entail extra expenditures not only for costs of salaries of additional teachers, but also on more classrooms needed for smaller classes.

Figure 1. Number of Elementary, Junior High and Senior High School Teachers in the Philippines, 2002-2019
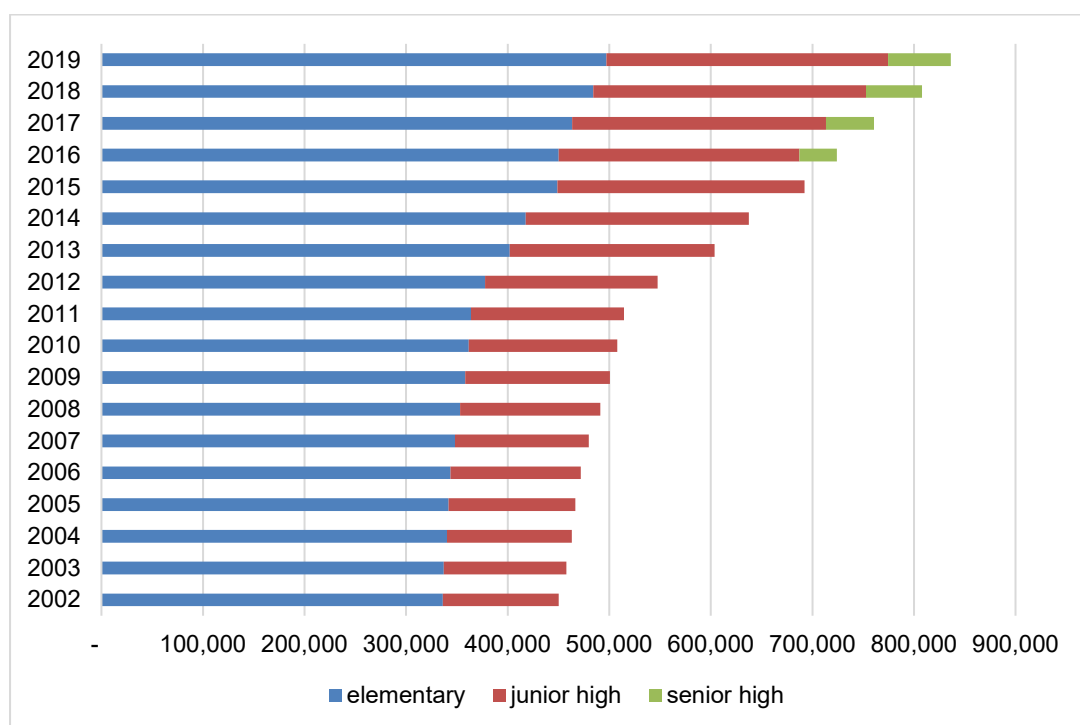
Source: Basic Education Information System (multi-year), DepED

Table 2 presents the total spending in the whole education sector, incorporating the Basic Education Facilities Fund (BEFF), now lodged with the Department of Public Works and Highways (DPWH), as well as spending of local government units (LGUs) in education. The table also provides total education spending in relation to the Gross Domestic Product (GDP). As with the trends in DepED appropriations, total education spending increased consistently between 2010 and 2017 (in both nominal terms and as a percentage of GDP) but decreased in 2018 and further in 2019 before increasing again in 2020 during the onset of the pandemic. During the period 2010 to 2020, while LGU spending increased in most years, the DepED and BEFF spending increased at a much faster rate, meanwhile the share of total education spending financed by LGUs decreased from about 6 percent in 2010 to about 3 percent in 2017.

Table 2. Total Basic Education Spending (in Million PhP), 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017*	2018	2019	2020
National Government	191,118	218,817	240,238	291,030	284,606	365,202	430,048	577,924	567,092	500,272	551,715
Local Government	13,526	14,435	16,232	16,654	15,976	15,984	16,468	18,889	20,868	24,018	21,358
(Total Government Spending as a percentage of GDP)	**(2.2)**	**(2.3)**	**(2.3)**	**(2.6)**	**(2.3)**	**(2.7)**	**(3.0)**	**(3.6)**	**(3.0)**	**(2.8)**	**(3.7)**

Source: World Bank. 2019 Philippines Basic Education Public Expenditure Review
Note: *= In 2017, appropriations considerably increased to build additional school facilities to accommodate more years in secondary education under the K-12 program. Over PhP 100 billion of the appropriations were however transferred from DepED to DPWH as BEFF since DPWH is responsible for constructing facilities. As a result, DepED-managed spending represented only about 77 percent of Basic Education spending in 2017, a significant reduction from about 90 percent in 2013.

From 2010 to 2020, about 85.0 percent of the national education budget went to the DepED. A breakdown of the DepED budget suggests that 80.1 per cent of this appropriation went directly to personal services, i.e., teacher and staff salaries (**Table 3**). Of the remaining 19.9 percent was given to Maintenance and Other Operating. Expenses (MOOE), 13.0 per cent went to school buildings while the balance was spread throughout MOOE and various other small programs initiated by the department. These spending patterns have hardly changed from more than a decade ago (see, e.g., Manasan 2010; PHDR 2008/09).

Table 3. Breakdown of DepED budget (in Million PhP), 2010-2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Personal Services	152,309.6	155,232.6	187,203.5	194,440.5	209,813.7	253,314.4	328,454.3	353,375.3	374,645.2	385,973.4
School Building Budget	10,441.2	8,780.0	14,110.4	39,028.8	48,062.6	73,182.5	109,313.6	84,783.6	14,363.3	19,935.0
Other MOOE	29,562.2	37,808.4	31,281.1	48,304.7	63,182.7	85,408.1	106,341.1	115,154.1	112,107.5	95,760.0

Source: General Appropriations Acts, 2011-2019

With the thrust of the Global Goals now on quality education for all, it is unclear how continuing these levels of spending for education could contribute to achieving the SDG4 targets. Some suggestions have been laid out on further increasing teacher salaries, but the current public teacher salaries are actually much higher than those of their private sector counterparts. Teachers do not actually complain about their salaries but have reported about being overburdened by administrative or student support roles (David et al 2019), including report writing on seminars and training activities they are tasked to attend as well as designations in line with student guidance, budget, disaster response, and health that clearly have repercussions to the quality of their teaching.

Beyond its policy declarations, the Philippines has always recognized the relevance of education in its socio-economic development plans; Philippine Development Plans justify education investments on account of long-term aspirations of Filipinos for high educational attainment (NEDA 2015), as well as the increasing needs in the labor market for a more educated labor force (NEDA 2017). Higher educational attainments are correlated with the chances of a Filipino to get engaged in decent and non-vulnerable employment. Further, education raises the quality of jobs, improves productivity, and thus, sustains and accelerates economic growth. A more educated, especially a more digitally skilled workforce, is also vastly needed to meet the emerging labor market demands of the Fourth Industrial Revolution (World Bank 2019).

Despite the country's policy thrusts and national plans, the actual spending for education has, however, barely reached 4 per cent of GDP (with public expenditures ranging from a low of 2.1 percent in 2010 to a high of 4.1 percent in 2017; spending has been 3.6 percent in 2022). Such spending is quite low, relative to what several neighbors such as Brunei Darussalam (4.4% in 2016), Malaysia (4.2% in 2019), Viet Nam (4.2% in 2018), and Indonesia (3.6% in 2015) have been spending (**Figure 2**). Clearly, the Philippines needs to improve its spending on education, but not merely for spending's sake. It will be important to identify specific areas in the education system on where to spend more that can lead to improved attainment of SDG4 outcomes.

Figure 2. Education spending as a share (in %) of GDP and log of Real GDP per capita (constant LCU, recent years)
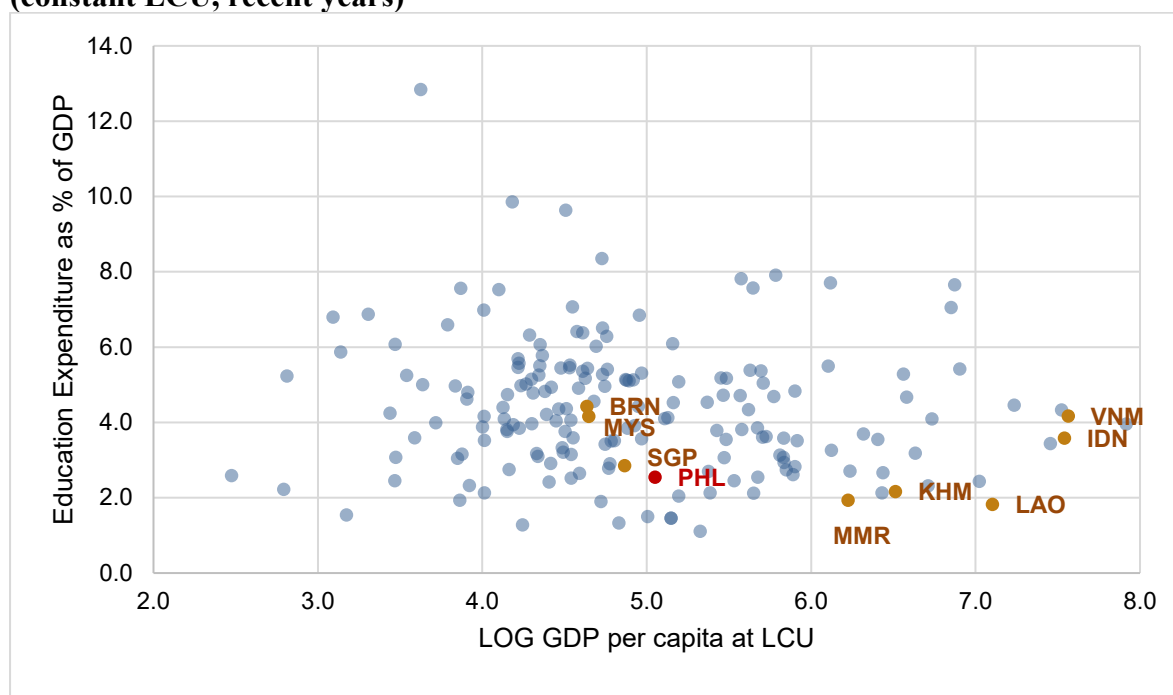
Sources: World Development Indicators, World Bank; DepED.
Note: (i) ASEAN member states identified; (ii) Data on education spending for Philippines sourced from Table 2 of this report, while for SG sourced from data.gov.sg

3. SDG Target 4.1 (Universal primary and secondary education): By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

The previous section provided a review of several laws in place in the country that pertain to education, the recent refocusing on quality from access and the current spending patterns in the education sector, especially basic education. The provision of thirteen years of free, publicly funded, inclusive, equitable, quality basic education, which ought to result in relevant learning outcomes, should be ensured for all children. However, all data suggests that this remains a huge development challenge.

In 2020, the PSA Board adopted a resolution (PSA Board Resolution No. 5, series of 2020) to assess the country's progress on the SDGs to provide a comprehensive evaluation of advancements made as well as areas needing more attention. Out of 16 key SDG4 indicators on quality education, eight were most relevant and impactful for an in-depth analysis following a UNESCAP methodology (Bidarbakht-Nia 2017; 2020; 2022). These eight SDG indicators are, viz.,
   a) 4.1.s1 Completion Rate
   b) 4.1.s2 Cohort Survival Rate
   c) 4.1.s3 Dropout Rate or School Leavers Rate
   d) 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex
   e) 4.4.1p1 Proportion of population with exposure to internet
   f) 4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated

g) 4.6.1 Percentage of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

h) 4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)

The Current Status Index (CSI), which answers the question "How much progress has been made since 2015 or other baseline year". The PSA examination, which uses a 2000 baseline, shows that while there has been a 3.4% advancement in SDG 4 since 2000 (**Figure 3**), it is crucial to highlight that this progress, although significant, falls short of achieving the expected targets by 2030.

Figure 3. Current Status Index for SDG Indicators
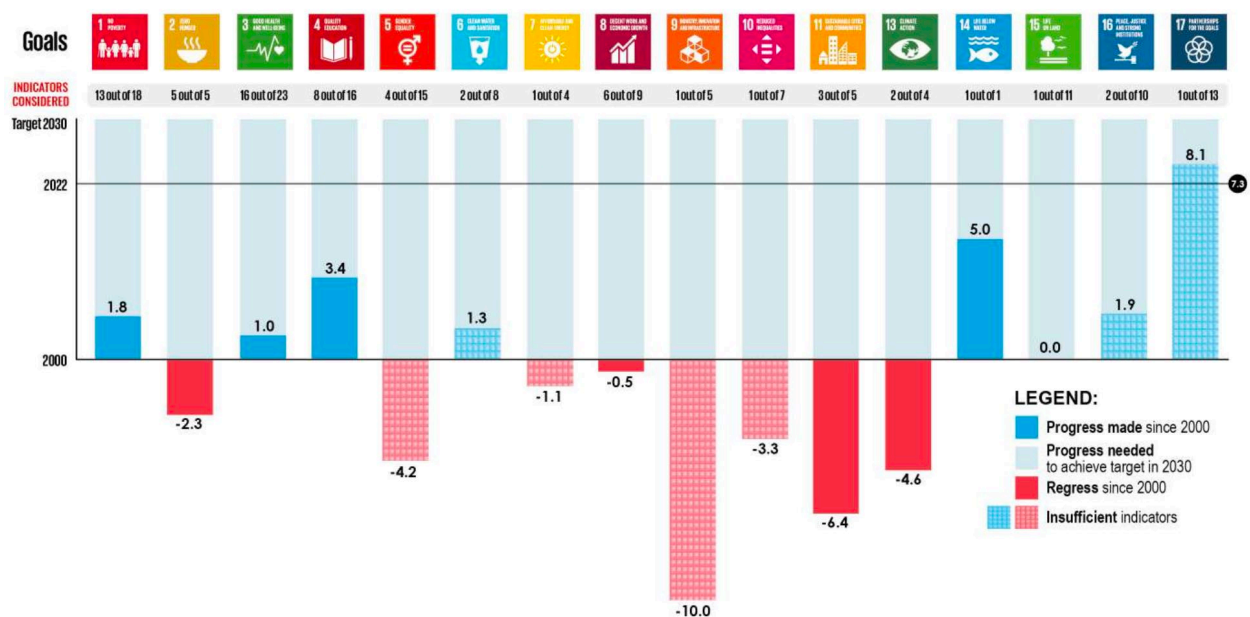
Source: PSA

Additionally, the PSA calculated the Anticipated Progress Index (API) to quantify the likelihood of meeting the 2030 targets based on current trajectories. The API measures the expected gap between present progress and the endpoint goal. Its calculation requires at least three data points since 2000 along with the specific numerical target set for 2030.

Upon examining individual SDG targets, the PSA analysis uncovered mixed results for SDG4. As regards Target 4.4 which focuses on skills for employment, this SDG target is on a positive track, with the API for National SDG indicator 4.4.1.p1 (Proportion of population with exposure to internet) suggesting that the target will likely be achieved by the end of this decade if momentum is sustained.

However, the metrics for Targets 4.1 (Learning Outcomes), 4.2 (Early Childhood Development), 4.6 (Adult Literacy and Numeracy), and 4.a (Education Facilities) present more concerning outcomes. While some improvements have occurred across these dimensions, the API indexes of 91.5, 89.9, 52.6, and 24.5 respectively indicate that current progress remains insufficient and moderately off-track from the 2030 targets. This signals an urgent need to accelerate interventions to reverse these trajectories.

Most critically, Target 4.5 addressing equal access to education obtains a negative API value of -12.8. This worrying metric suggests that not only is progress in the wrong direction, but equity gaps are actually widening – necessitating immediate corrective policy actions, investments, and partnerships to reverse the trends and fulfill the promise of 'leaving no one behind.'

Overall, the PSA's rigorous data-driven analysis provides invaluable insights into current challenges and priority areas for strategic planning, targeted investments, and multi-stakeholder efforts for accelerating progress towards SDG 4 over the remainder of this decisive decade.

3.1. Learning Outcomes

Recent data on SDG4 indicators on proficiency in reading and mathematics (**Table 4**) in ASEAN member states shows how that basic education in the Philippines (as well as in Cambodia, Lao PDR, Myanmar) is in crisis with less than a fifth of students learning minimum proficiency skills in reading and in mathematics. Meager education spending over the past several decades, which was discussed in the previous section, has clearly dire consequences on the quality of education provided to children in the country.

Table 4. Selected Global SDG4 Indicators—Proficiency in Reading and Mathematics

ASEAN member state	4.1.1.b: Proportion of Children and Young People at the End of Primary School Achieving at Least a Minimum Proficiency Level (%)					4.1.1.c: Proportion of Children and Young People at the End of Lower Secondary School Achieving at Least a Minimum Proficiency Level (%)			
	Reading		Mathematics			Reading		Mathematics	
	(2019)		(2019)			(2019)		(2019)	
Brunei Darussalam	…		…			48.2	(2018)	52.1	(2018)
Cambodia	11.0		19.0			7.5	(2015)	9.9	(2015)
Indonesia	66.2	(2011)	17.5	(2015)		30.1	(2018)	28.1	(2018)
Lao PDR	2.0		8.0			…		…	
Malaysia	58.0		64.0			54.2	(2018)	58.5	(2018)
Myanmar	11.0		12.0			…		…	
Philippines	10.0		17.0			19.4	(2018)	…	
Singapore	97.3	(2016)	96.0			88.8	(2018)	92.0	
Thailand	…		43.4	(2011)		40.5	(2018)	47.3	(2018)
Viet Nam	82.0		92.0			86.2	(2015)	80.9	(2015)

Source: United Nations Statistics Division. Global SDG Indicators Database. https://unstats.un.org/sdgs/indicators/database/ (accessed 29 August 2022).

The World Bank (2021), together with the UNESCO Institute of Statistics (UIS), have released Learning poverty (LP) measures:

$$LP = [LD \times (1-SD)] + [1 \times SD]$$

where

LP = Learning poverty

LD = Learning deprivation, defined as share of children at the end of primary who read at below the minimum proficiency level, as defined by the Global Alliance to Monitor Learning[5] in the context of the SDG 4.1.1 monitoring

SD = Schooling deprivation, defined as the share of primary aged children who are out-of-school. All out-of-school children are assumed to be below the minimum proficiency level in reading.

Thus, these measures account for both learning deficits as well as schooling deficits. In ASEAN (**Table 5**), Singapore is best performing with a learning poverty rate of merely 3%. Viet Nam and Thailand follow Singapore with rates at 20% to 25 %. Meanwhile, the Philippines, Cambodia, Lao PDR and Myanmar have learning poverty rates at around 90 % or more.

Table 5. Recent Learning Poverty Data in ASEAN member states.

ASEAN member state	Share of Children at the End-of-Primary age below minimum reading proficiency adjusted by Out-of-School Children (%)			Year
	Male	Female	Both Sexes	
Cambodia	**93**	**87**	90	2015
Indonesia	**55**	51	53	2019
Lao PDR	**98**	97	98	2019
Malaysia	**50**	35	43	2019
Myanmar			89	2019
Philippines	**92**	**90**	**90**	**2019**
Singapore	**4**	2	3	2016
Thailand	**26**	21	23	2011
Viet Nam	**20**	16	18	2019

Source: World Bank https://datacatalog.worldbank.org/search/dataset/0038947 (accessed 31 August 2023)

The Philippines has fared poorly in international large-scale assessments, particularly the 2018 Program for International Student Assessment (PISA) in Reading[6], Science[7] and Math[8], as well as the International Mathematics and Science Study (TIMSS) 2019 and the Southeast Asia Primary Learning Metrics (SEA-PLM) Program 2019 Main Regional Report. In the TIMSS, the Philippines ranked last among 58 countries in mathematics and science for Grade 4 students

---

[5] http://gaml.uis.unesco.org/learning-poverty/
[6] In Reading, the average PISA score (340) was at proficiency Level 1a, one level lower than the minimum proficiency level (Level 2); eighty percent of students from the Philippines garnered below the minimum proficiency level (Level 2).
[7] In Science, average PISA score (357) was at proficiency Level 1a, and 78% achieved below proficiency level 2.
[8] In Mathematics, average PISA score (353) was below Level 1 proficiency, with 81% below proficiency Level 2.

in 2019. As regards the PISA, the Philippines joined the PISA for the very first time in 2018 but yielded a dismal performance: it ranked among 79 participating countries and economies last in Reading and second to last in Science and Math.

In the PISA assessment, data on how much countries spend on education per student is positively correlated with learning outcomes, proxied by average reading scores in the cross-country assessment **(Figure 4)**. The poor quality of education in the country is to be expected since financial resources are required to have good teachers, a conducive learning environment, a reliable learning assessment system, and innovative technologies for learning.

Figure 4. Cumulative Spending per student and Learning Outcomes in PISA
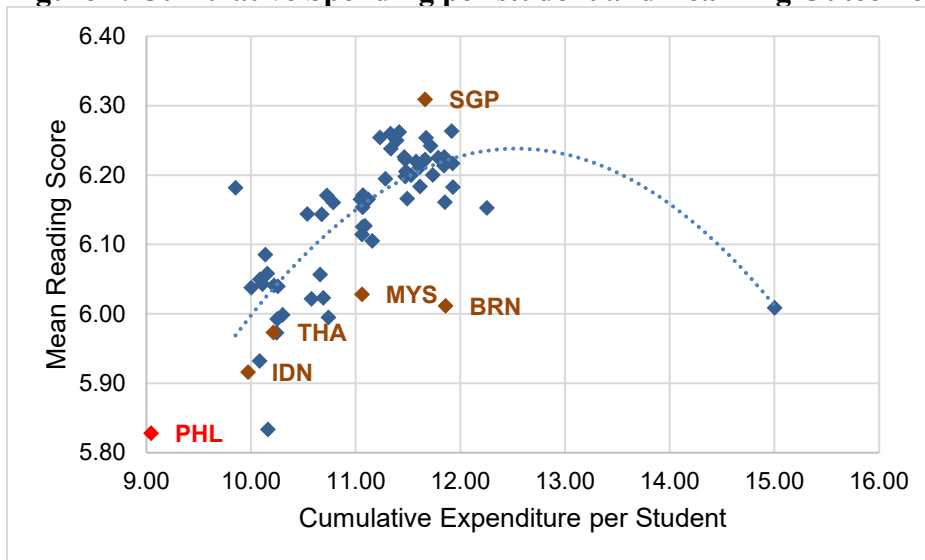
Sources: OECD, PISA 2018 database
Note: ASEAN member states identified

Figure 5 suggests that the Philippines' spending per student is among the least spending levels globally. While annual spending per student in the Philippines has tripled in nominal terms from less than P8 thousand per student in Schoolyear (SY) 2009-2010 to more than P22 thousand in SYs 2016-2017 and 2017-2018, it has subsequently declined with spending per student only at less than P21 thousand per student in SY 2020-2021 (**Figure 5**).

Figure 5. Spending per student in Basic Education, Schoolyear 2009-2010 to Schoolyear 2020-2021
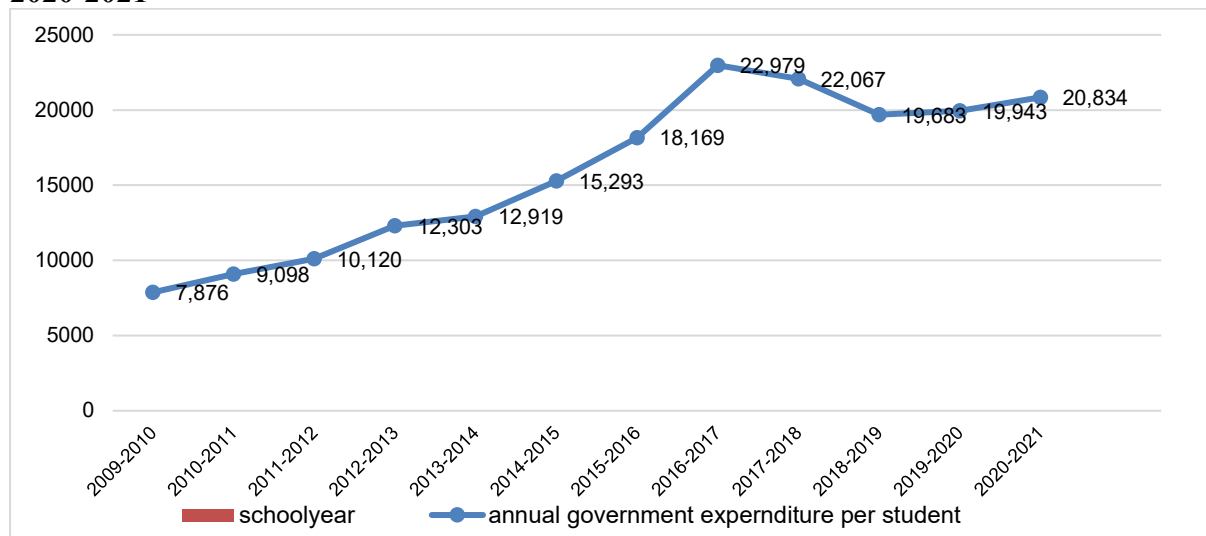
Source: DepED

Even when we look at pre-pandemic results of the National Achievement Test (NAT), that is administered to all Grade 6 and Grade 10 students, these already have indicated the looming learning crisis in the Philippines (**Figure 6** and **Figure 7**). Proficiency levels have, on average, been nearly proficient, pre and post-pandemic. Among the subject areas, students in both grade levels are least proficient in Math and Science, where average scores are at low proficiency (with learners answering only at most four out of every ten assessment questions). For 2021-2022, the scores improved for Grade 6in Math and Science, and deteriorated in Filipino, while scores deteriorated for Grade 10. NAT performance for Grade 12 has also been at low proficiency levels with performance least also in Math and Science **(Figure 8)**. Sex-disaggregated data suggest that girls are outperforming boys in all subject areas across grades.

Figure 6. National Achievement Test (Grade 6) results in mean percentage score, 2016-2017; 2017-2018; 2021-2022*
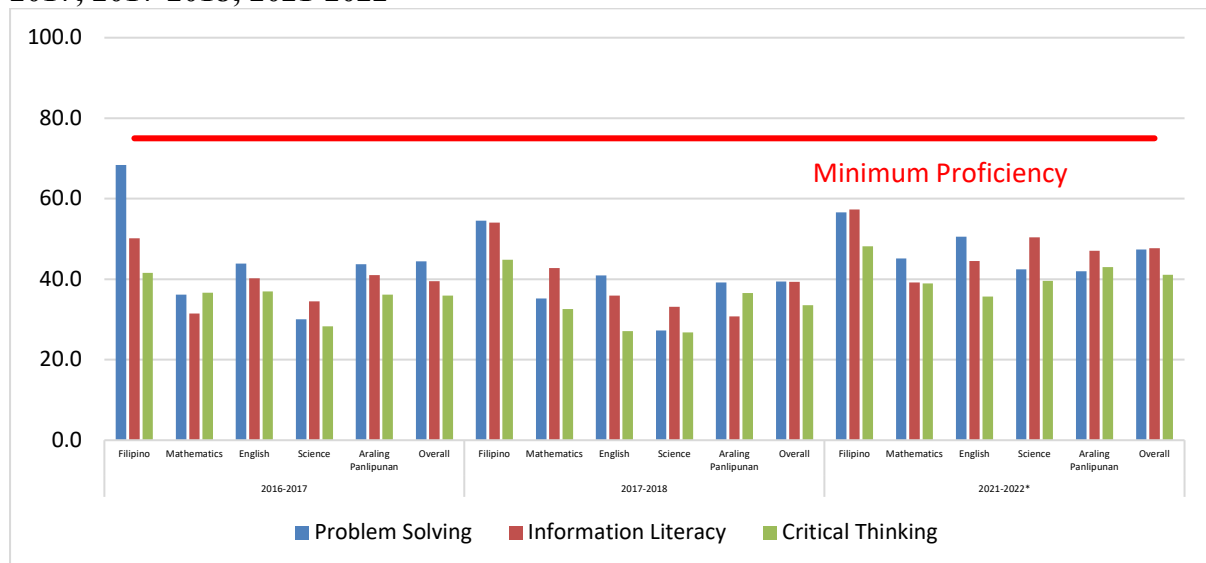
Note: Criteria of proficiency levels: highly proficient (90-100), proficient (75-89), nearly proficient (50-74), low proficient (25-49), not proficient (0-24)
Source: Bureau of Education Assessment, DepEd

Figure 7. National Achievement Test (Grade 10) results in mean percentage score, 2016-2017; 2017-2018; 2021-2022*
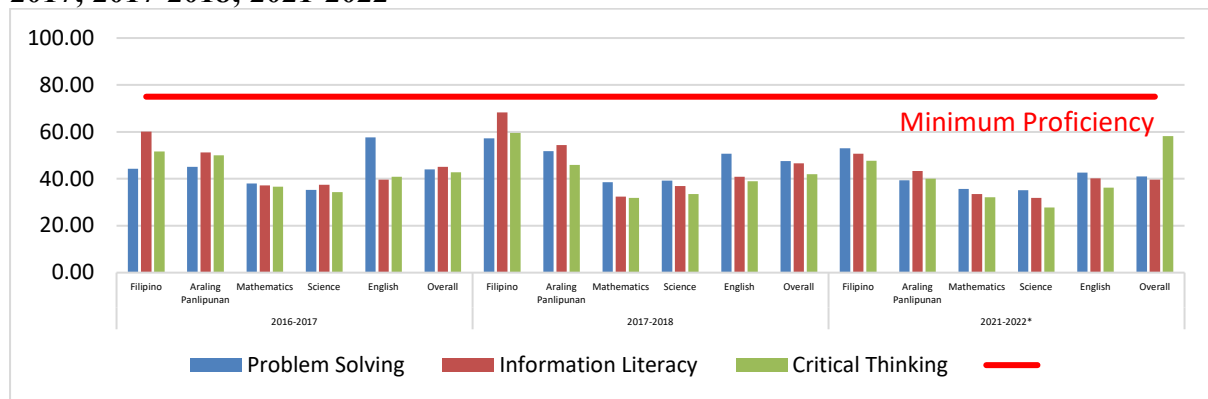
Note: Criteria of proficiency levels: highly proficient (90-100), proficient (75-89), nearly proficient (50-74), low proficient (25-49), not proficient (0-24)
Source: Bureau of Education Assessment, DepEd

Figure 8. National Achievement Test (Grade 12) results in mean percentage score, 2017-2018; 2018-2019
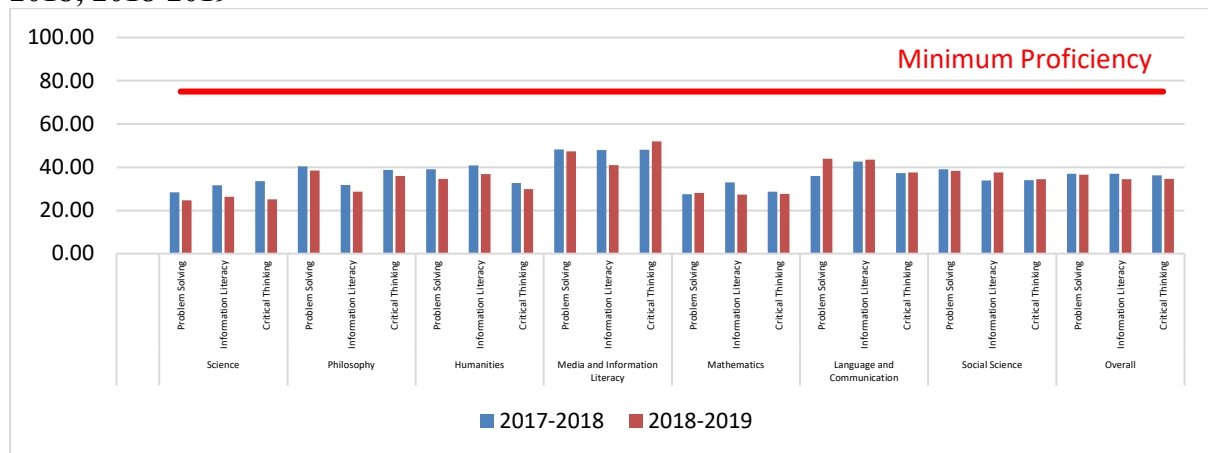
3.2. Factors affecting Learning Outcomes

Poor learning has also been observed in the NAT results both prior to 2016 and those from 2016 and beyond (though the NAT are not comparable). In 2016-2017 and 2017-2018, most students of both Grade 6 and Grade 10 did not reach proficiency levels of at least 75% (Briones 2019). Claims that K-12 is a mistake may not be the right framing of the issue but that the implementation of K-12 has not led to the results desired on quality learning.

Some suggest that even now, with K-12, learning has not improved because the current curriculum is overloaded[9], and even borders on being impractical. This criticism is

---

[9] The overcrowding of the curriculum is suggested by the volume of competencies, and even the MELCs, and this may have several dimensions borne from: (i) curriculum expansion, which results from including too much new content items in response to new societal demands without appropriately considering what items need to be removed; (ii) content overload, the excessive amount of content taught and learned in relation to the time available for instruction or even needs; (iii) perceived overload as reported by teachers and students; and (iv) curriculum imbalance, disproportionate attention given to certain areas of the curriculum at the expense of others without appropriate adjustments in the low priority areas. For instance, as regards curriculum expansion, some subjects, such as Probability and Statistics were introduced in Senior High School (specifically second semester of Grade

understandable given that the original intention in the K-12 reforms was to decongest learning activities yet as much as 14,171 competencies were targeted for K-12, though these were streamlined to 5,689 "Most Essential Learning Competencies (MELCs)". Examining the K-12 curriculum should involve looking into whether learners can use it to develop mastery of the basics, especially the 3Rs (Reading, wRiting and 'Rithmetic). These foundational literacies, which together with other competencies, and character qualities, are needed for continuous lifelong-learning and for the future of work (WEF 2015).

According to recent rounds of the Annual Poverty Indicator Survey (APIS), conducted by the PSA, most children drop out of school because of lack of interest, which often means poor academic performance, which results when kids start falling behind in early grades with low skills in reading (David *et al*. 2018). The "promotion" of nonreaders even when they have skills deficits, while not an official policy, may be practiced in classrooms and this puts these poor readers on a path to dropping out, and may even have spillover effects to their peers.

Some suggest that the use of bilingual policy in learning, and Mother Tongue-Based Multilingual Education (MTB-MLE) policy in the first few years, is a mistake. Some opine and even argue that it is better for students to be taught only in English. Many scholars, however, point out that the MTB-MLE has solid pedagogical foundations. That said, there are implementation issues with MTB-MLE (Monje *et al*. 2019). The DepED identified a core set of mother tongue languages to be used, but made schools decide what mother tongue would be used in each classroom. While this simplified MTB-MLE implementation, it made children taught, and teachers asked to teach in a regional language that may be similar though not identical to the languages in the home. This has also created problems with the procurement of learning materials.

Some point out that success of a curriculum depends on availability of learning resources. When the country transitioned into K-12, the Commission on Higher Education gathered academicians to write learning materials for science and math subjects in Senior High. These materials were provided to DepED. It is important to determine if these materials were distributed and used in the classroom and in teacher training.

Under the Magna Carta for Public School Teachers, each full-time public-school teacher is mandated to devote at most six hours of actual classroom instruction daily. According to interviews conducted for a PIDS study on out-of-school children (David *et al*. 2019; David *et al*. 2018), actual teaching is, however, being sidelined by the various non-teaching responsibilities that teachers have to fulfill. Teachers, however, report about being overburdened by administrative or student support roles, including report writing on seminars and training activities as well as designations in line with student guidance, budget, disaster response, health, and school feeding (David *et al*. 2019). Various government agencies seek the assistance of teachers to be involved in community mapping, mass immunizations, deworming, conduct of the population census, conditional cash transfer, antidrug, election, among others. These nonteaching tasks are not figured into the staffing patterns of public schools. Thus, public school teachers have to do non-teaching tasks aside from teaching. This has repercussions to efforts of having teachers apply differentiated teaching to yield quality learning given their huge time constraints.

---

11 for the Probability and Statistics course), and these effectively duplicate subjects in the General Education curriculum in tertiary education. While there may be need for some duplication but, experts in Statistics wonder whether a Grade 11 student who is going for Sports in Grade 12 will actually need t-tests, correlation and regression analysis, suggesting that the curriculum for the subject had content overload.

According to the literature (e.g., Hattie 2009 ; OECD 2009 Todd and Wolpin 2003; Lee and Barro 1997; Hanushek 1978), education quality is influenced by several factors, including human resources (teachers and principals), other school resources (curriculum, textbooks, classrooms, and school facilities), financial resources (teacher salaries and public expenditure), characteristics of learners and their households (e.g., study habits, and parental education). Unfortunately, what works in one country may not work in another (Hanushek 2021). Recent studies using PISA data suggest that accelerating *Sulong Edukalidad* should go beyond curriculum, and account for socio-economic factors such as learners' learning mindsets, reading difficulties and backgrounds (Alinsunurin 2021; Orbeta *et al*. 2020; Bernardo 2020).

What has not been studied well is the effect of technology in learning, i.e., whether approaches such as High-Tech High-Touch learning (that integrates artificial intelligence with in-person work with teachers), piloted in Viet Nam, can effectively build skills among Filipino learners (Anderson 2018).

The use of blended learning during COVID-19 undoubtedly further reduced learning quality in the Philippines; and this has even considerably affected the poor and girls disproportionately (ADB 2021; ADB 2022). In a special report, the ADB (2022) estimates that foregone learning due to COVID-school closures have reached on average 1.42 learning-adjusted years of schooling (LAYS) in the country. School closures have led to foregone learning equivalent to 20.6% of average LAYS in the Philippines before onset of pandemic. Expected losses in future earnings are 3.7% of pre-pandemic earnings for Filipino learners. The Philippines has the potential to implement more systematic approaches to address learning setbacks during the pandemic. This includes precisely assessing the scope of knowledge gaps, customizing teaching methods according to students' learning levels, emphasizing foundational skills, and delivering high-quality in-service teacher training (Molato-Gayares *et al*. 2022).

3.3. Completion

The completion rate of lower secondary education was 88.8% in 2018, while the corresponding rate for upper secondary education was 81.0%, and that for the primary level was 97.2%. Compared to performance more than a decade ago, when completion rates in basic education were below 90 percent at the primary level, below 75 percent at the secondary level, the basic education sector managed to keep more kids in school starting in 2016 when K-12 was being initiated (**Table 6**). Pandemic-induced school closures have put performance back to levels more than a decade ago. Girls' completion and cohort survival persist in being much higher than those of boys.

Table 6. Completion and Cohort Survival Rates of elementary and secondary students[1] by sex, 2016-2020

	(a) **Completion** *Rate by Level of Education*								
Level of Education	Elementary			Secondary (Junior High School)			Secondary (Senior High School) [2/]		
Sex	Both Sexes	Female	Male	Both Sexes	Female	Male	Both Sexes	Female	Male
2016	93.1	95.5	90.8	80.9	85.6	76.2	..	..	..
2017	92.4	94.6	90.4	84.3	88.1	80.5	..	..	..
2018	97.2	99.1	95.3	88.8	93.0	84.7	81.0	84.8	77.2

| 2019 | 96.6 | 98.1 | 95.1 | 85.8 | 89.7 | 81.9 | 76.7 | 80.5 | 73.0 |
| 2020 | 82.5 | 84.7 | 80.5 | 82.1 | 85.9 | 78.4 | 69.3 | 74.6 | 64.2 |

Level of Education	(b) Cohort Survival Rate by Level of Education								
	Elementary			Secondary (Junior High School)			Secondary (Senior High School) [2]		
Sex	Both Sexes	Female	Male	Both Sexes	Female	Male	Both Sexes	Female	Male
2016	93.8	96.0	91.8	83.1	87.4	78.7	..	..	..
2017	93.7	95.7	91.9	85.7	89.4	81.9	..	..	..
2018	97.4	99.1	95.7	89.5	93.6	85.4	82.6	86.2	78.9
2019	97.2	98.5	96.0	87.0	90.9	83.2	78.7	82.3	75.2
2020	83.0	85.0	81.2	82.8	86.5	79.3	71.3	76.4	66.4

Notes:
[1] – Data submissions of DepED in March 2022 to PSA.
[2] – Estimation of these indicator only started in Schoolyear 2018-2019.
Source: 3 August 2022, Email of PSA staff

While the improvements in completion (and even school participation of children) at various tiers of the basic education sector up to 2019 is commendable, the gender disparities in school completion, in participation and learning persist. Various literature (see, David *et al.,* 2018; David *et al.,* 2009; David and Albert, 2015) suggest that these disparities are driven by several socio-economic factors (including motivational issues and differences in learning expectation for boys and girls). The inequities between girls and boys and the disparities in performances across locations should be a cause for concern and the subject of action since all children have a basic right to go to school, to learn, and to complete their schooling. No Filipino child must be left behind. While efforts for a more inclusive education have been initiated, specific targets are necessary to monitor progress, or the lack of it.

4. SDG Target 4.2 (Early childhood development and universal pre-primary education): By 2030, ensure that all girls and boys have access to quality early childhood development, care, and preprimary education, so that they are ready for primary education

What SDG4 Target 4.2 on early childhood development (ECD) and universal pre-primary education means is that we should be providing at least one year of free and compulsory quality pre-primary education, to be delivered by well-trained teachers, as well as that of ECD and care. **Table 7** provides data on participation rate in pre-primary levels across ASEAN member states. In 2019, 86.3 % of children participated in pre-primary or primary education in the year prior to the official entrance age for primary school. The Philippines has done remarkably well in catching up with participation rates in organized learning of neighbors of similar states of development since a decade ago.

Table 7. Selected Indicators for Sustainable Development Goal 4—Early Childhood Education

ASEAN Member State	4.2.2: Participation Rate in Organized Learning (1 Year before the Official Primary Entry Age)[a,b] (%)												
	2010							2019					
	Total		Female		Male			Total		Female		Male	
Brunei Darussalam	99.3		98.5		100.0			82.9		82.2		83.5	
Cambodia	36.8		37.0		36.5			54.0		55.7		52.3	
Indonesia	86.5		88.6		84.6			95.8	(2018)	100.0	(2018)	91.8	(2018)
Lao PDR	35.6		35.9		35.3			69.2		69.7		68.7	
Malaysia	85.9		88.4		83.6			99.3	(2015)	100.0	(2015)	98.6	(2015)
Myanmar	8.8		9.0		8.5			11.8	(2018)	11.8	(2018)	11.7	(2018)
Philippines	41.5	(2009)	42.1	(2009)	40.9	(2009)		86.3		87.0		85.6	
Singapore	…		…		…			…		…		…	
Thailand	98.5		100.0		97.1			98.7		98.7		98.8	
Viet Nam	90.4		…		…			99.9	(2018)	99.8	(2018)	100.0	(2018)

Notes: a="According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), this is the percentage of children who participate in one or more organized learning programmes, including programmes that offer a combination of education and care, 1 year before the official age for entry to primary education (varies by economy). An organized learning programme is one which consists of a coherent set or sequence of educational activities designed with the intention of achieving pre-determined learning outcomes or the accomplishment of a specific set of educational tasks."

b-The figures for the following economies and years are estimates by the UNESCO Institute for Statistics (UIS) as published on the Global SDG Indicators Database: Cambodia (2006, 2015); Indonesia (2009, 2014, 2018); and Viet Nam (2013, 2014). For the purposes of estimating participation rates by age, the UIS may make one or more of the following: (i) an adjustment to account for over- or under-reporting in enrolments; (ii) an estimate of the number of enrolments in a given age group; (iii) a redistribution of enrolments of unknown age (across known ages); or (iv) an estimate of the population in the official age group for small economies. In all cases, estimates are based on evidence from the economy itself.

Source: United Nations Statistics Division. Global SDG Indicators Database. https://unstats.un.org/sdgs/indicators/database/ (accessed 7 August 2022).

At the beginning of the millennium (in 2001), only a quarter (24.0%) of pre-primary aged children participated in organized learning, and this improved to about two-fifths (41.5%) in 2009, and to about nine-tenths (86.3%) by 2019. However, these latest data are pre-pandemic. It is likely that the COVID-19 pandemic has also set back whatever gains made prior to the pandemic. Further, there appear to be slight advantages of girls over boys in participation in early childhood education.

5. SDG Target 4.3 (on Equal Access to Affordable Technical, Vocational and Higher Education): ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

The SDG4 Target 4.3 on Equal Access to Affordable Technical, Vocational and Higher Education emphasizes the importance of providing access to a range of educational opportunities beyond secondary education. It recognizes the value of technical and vocational education (techvoc) as well as tertiary education, including university, in equipping individuals with the skills and knowledge they need to succeed in the workforce and contribute to their communities and societies. The inclusion of "affordable" in the target highlights the need to address financial barriers that can prevent individuals from pursuing higher education. This can

include tuition fees, as well as other costs associated with education, such as textbooks, transportation, and living expenses. Overall, SDG Target 4.3 is a commitment to expanding access beyond basic education, to techvoc and higher education and ensuring that these are affordable and of high quality, with the goal of providing individuals with the tools they need to thrive in today's globalized world.

5.1. Technical and Vocational Education and Training (TVET)

The Philippines has made significant progress in promoting Technical and Vocational Education and Training (TVET) through some key initiatives, including the establishment of the Technical Education and Skills Development Authority (TESDA) in 1994 and the passage of supportive legislation. Several policy instruments also provide a roadmap for TVET development in the Philippines. These include the Sustainable Development Goals (SDGs) 2030, Ambisyon Natin 2040, the Philippine Development Plan (PDP) 2022-2028, the Philippine Employment Plan (PEP) 2023-2028, and the National Technical Education and Skills Development Plan (NTSEDP) 2023-2028. Such documents emphasize the importance of TVET in equipping the workforce with the skills they need to thrive in the 21st-century economy.

Despite these advances, a significant challenge that needs to be addressed is linking these objectives to ensure a coherent connection between shared economic prosperity, job creation, and skills development. While it is important to have international standards and definitions for TVET outcomes, as this could lead to more resources and political support for TVET, these indicators are merely the minimum. Custom indicators need to be set to reflect the current level of development in the Philippines and what Busemeyer & Iverson (2014) call institutional context to map out where it stands and where it wants to go.

Data on TVET indicators reveal that the Philippines has a lower proportion of 15- to 24-year-olds enrolled in vocational education as compared to the regional average, as shown in **Figure 8**. Additionally, there is a significant gender gap in vocational education enrollment, with females falling behind males from 2014 to 2021 (**Figure 9**). This highlights the urgent need for targeted interventions that promote equal access to quality vocational education for everyone, regardless of gender, socio-economic status, or location.

Figure 8. Proportion (%) of 15-to- 24-year-olds (both sexes) enrolled in vocational education on select ASEAN countries, 2018-2021
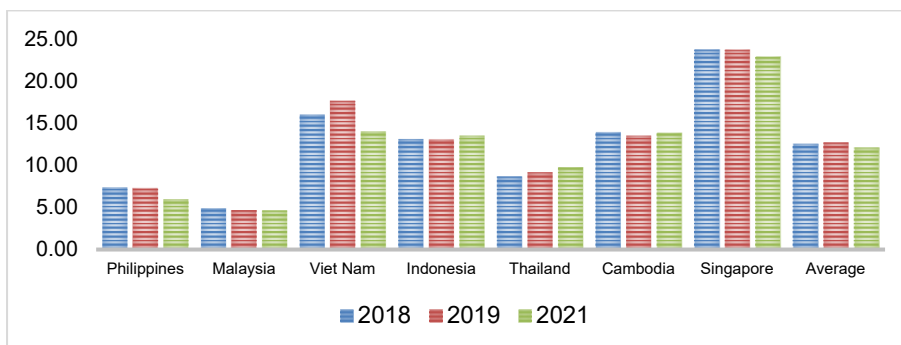
Source: UNESCO Institute for Statistics, authors' calculations

Figure 9. Proportion (%) of 15-to- 24-year-olds (by sex) enrolled in vocational education in the Philippines, 2014-2021
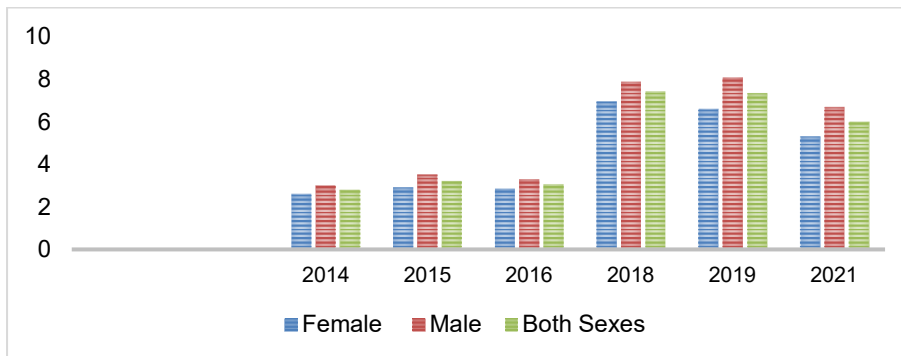
Although there has been an uptick in completion rates, the certification rates have remained flat over the past five years **(Figure 10)**. It is important to note that the completion and certification rates are based on two different groups of trainees since not all training programs have TESDA training regulations and assessment. This could be indicative of a lag in the system's ability to catch up to industry's training needs.

Figure 10. Completion and Certification Rates of TVET Outputs in the Philippines, 2017-2022
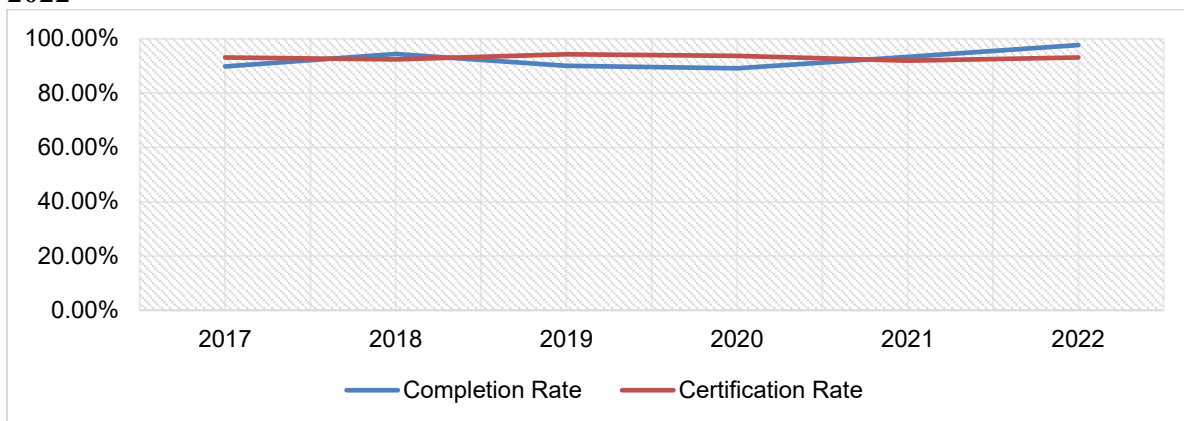
Despite facing resource constraints, TESDA has developed targeted funding mechanisms aimed at supporting disadvantaged populations (**Figures 11 & 12**). In 2021, a TESDA scholar could access an average of 15,351 pesos through the Scholarship on Tertiary Education Program (STEP) and receive up to 37,384.97 pesos through the Universal Access to Quality Tertiary Education Act (UAQTEA) (TESDA, 2021). This financial support is significant, especially considering that TESDA's budget constitutes only about 2% of the total education budget (ADB, n.d.).

Figure 11. Scholarship Budgets (in PHP), 2023

- TWSP: 3,846,928,000
- STEP: 2,779,359,000
- UAQTEA: 3,410,000,000
- TTSP: 1,033,270,000

Legend: ■ TWSP ■ STEP ■ UAQTEA ■ TTSP
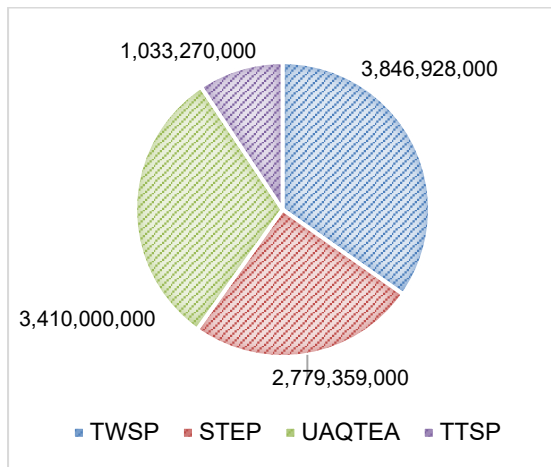
Source: DBM, GAA, 2023

Figure 12. Percentage of Enrolment in Scholarships, 2022

- TWSP: 40%
- PESFA: 2%
- STEP: 15%
- UAQTEA: 10%
- TTSP: 16%
- Others: 17%

Legend: ■ TWSP ■ PESFA ■ STEP ■ UAQTEA ■ TTSP ■ Others
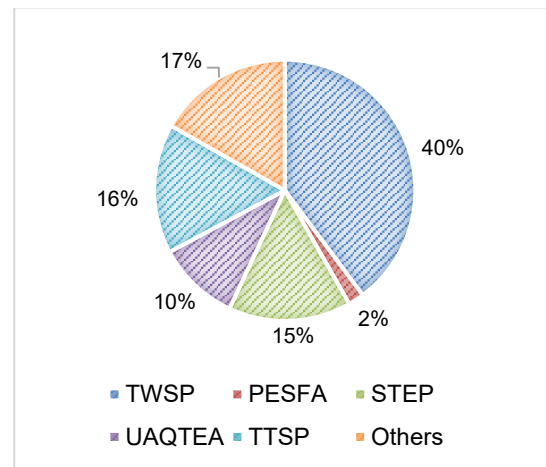
Source: NTESDP 2023-2028

Learners in special target groups have better TVET outcomes than the system average. **Figure 13** demonstrates that providing more targeted support to TVET programs can significantly improve their outcomes. However, to achieve this, policymakers and stakeholders must prioritize investigating the factors that contribute to these outcomes to identify the areas that require improvement and enable implementation of effective strategies.

Figure 13. Proportion of TVET Graduates and Certified Individuals among Special Target Groups, 2022

Target Group	% Certified	% Graduates
Wounded-in-Action AFP & PNP Personnel	100%	96%
Uniformed Personnel	96%	99%
Returning/Repatriated OFWs	95%	105%
Rebel Returnees/Decommissioned Combatants	96%	96%
Inmates and Detainees	98%	98%
Indigenous People and Cultural Communities	93%	102%
Family members of AFP & PNP Wounded-in-Action	96%	99%
Family members of AFP & PNP Killed-in-Action	95%	100%
Drug dependents surrenderees/surrenderers	96%	97%
Agrarian Reform Beneficiary	95%	97%
4Ps Beneficiary	93%	98%

Legend: ■ % Certified ■ % Graduates

Source: NTESDP 2023-2028, author's calculations

When evaluating the performance of the TVET system, it is crucial to consider its capacity. This can be measured by the number of trained TVET trainers, as indicated in 4.c.s2. Unfortunately, the current trainee-trainer ratio of 160:1 suggests that there is a shortage of trainers available, with a baseline of 6,518 trainers in 2016 to 7,746 trainers in 2021 (PSA, 2022) for the 1,240,099 enrolled in 2021 (TESDA, 2022).

TESDA's 2022 Annual Report also highlights a shortage of assessors and assessment centers, while program registration is lagging behind the demand. In 2022, about a third (35%) of the 26 sector classifications of training had less than 10 assessors, NTTC holders, assessment centers, TVET providers, and/or registered programs. These sectors had 190,873 enrollees.

As one of the key development strategies outlined in the PDP, the TVET sector has historically been underfunded. New funding sources and good governance initiatives must therefore be considered as TESDA and the EDCOM II develop a strong and resilient skills strategy. A recent evaluation by the OECD (2023) of the Skills Strategies of ASEAN countries and select OECD countries revealed two critical weaknesses in the Philippines, placing below average or worse in the bottom 20% of ASEAN and select OECD countries. Firstly, there is a lack of emphasis on developing relevant skills, primarily due to low participation rates in tertiary education, including TVET. Secondly, there is a significant challenge in putting these skills to effective use, with high NEET rates and low labor participation rates being key contributing factors.

5.2. Higher Education

Considering the gross enrolment ratio for tertiary education, it is crucial to highlight that the Philippines exhibits the second-lowest proportion among its ASEAN neighbors, only surpassing Cambodia (**Figure 14**). Despite the introduction of policies geared towards bolstering tertiary education access, such as the Universal Access to Quality Tertiary Education Act of 2017, this number has remained relatively flat with an average of 34.8% in the past nine years (**Figure 15**).

Figure 14. Gross Enrolment Ratio (%) for Tertiary Education in ASEAN, 2021
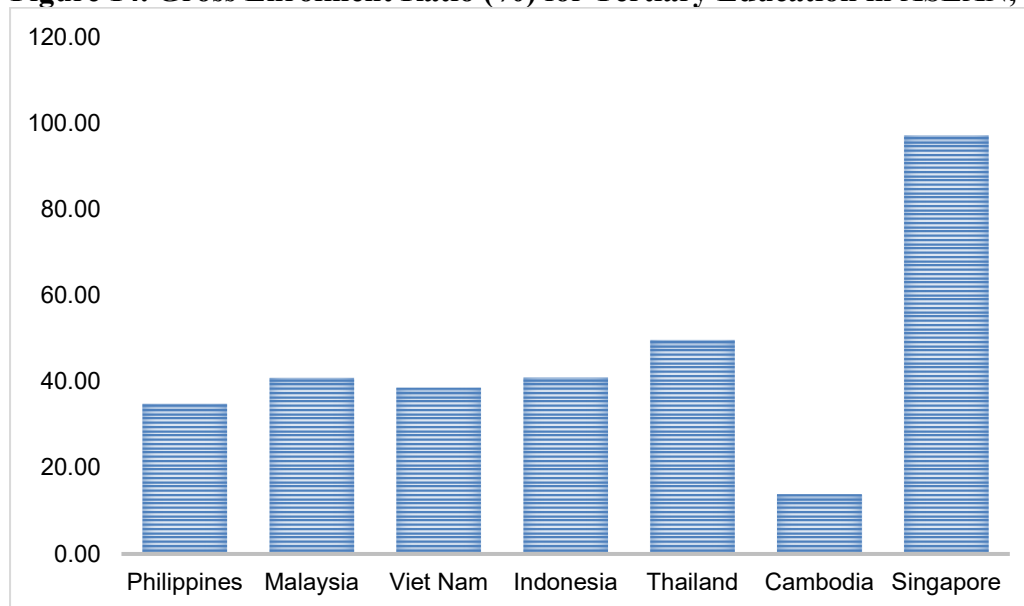
Source: UNESCO Institute for Statistics, authors' calculations

Figure 15. Gross Enrolment Ratio (%) for Tertiary Education in the Philippines, 2013-2021
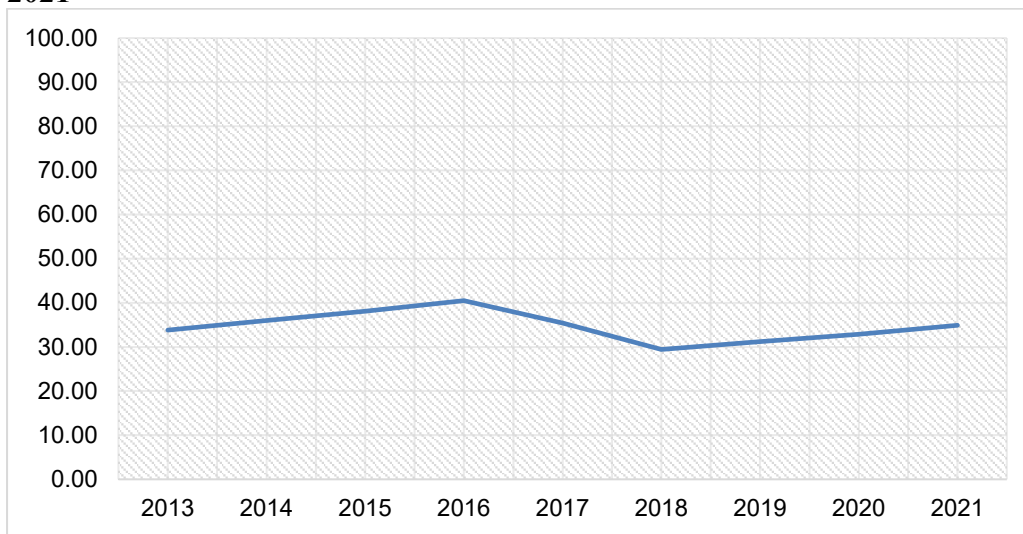
Source: UNESCO Institute for Statistics

In contrast to the trends observed in vocational education, there is a notable discrepancy where males are falling behind their female counterparts in terms of tertiary education enrollment, as illustrated in **Figure 16**.

Figure 16. Gross Enrolment Ratio for Tertiary Education in the Philippines: Adjusted Gender Parity Index, 2013-2021
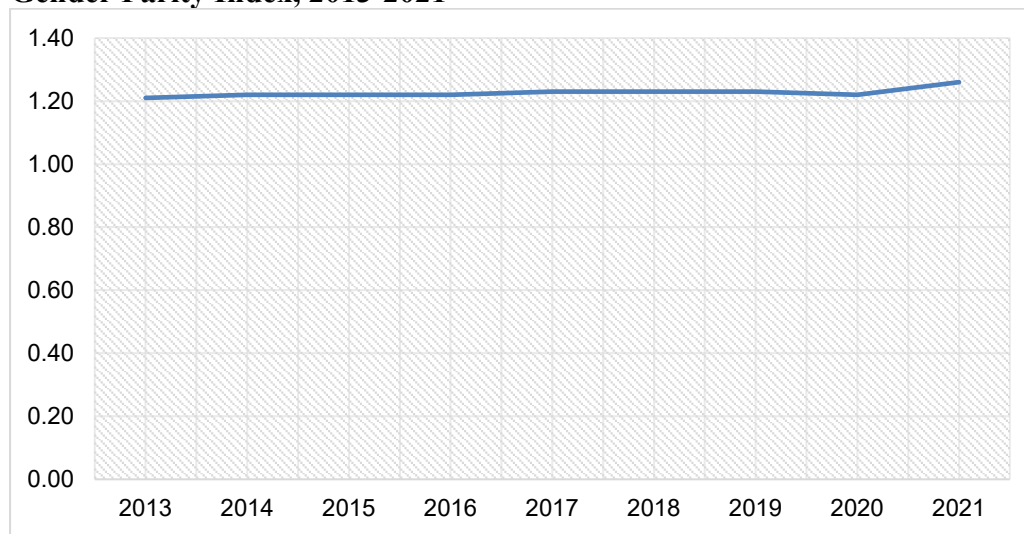
Source: UNESCO Institute for Statistics

6. **SDG Target 4.4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all): By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.**

SDG 4.4 emphasizes the importance of equipping individuals with the practical skills and competencies they need to succeed in the workforce and contribute to their communities and societies. The target recognizes the value of techvoc, as well as other forms of training, in preparing individuals for employment, decent jobs, and entrepreneurship. The inclusion of "relevant skills" highlights the need for education and training programs to be aligned with the current and emerging demands of the labor market and the needs of employers. Given the vastly changing nature of work especially brought about by advances in technologies of the Fourth Industrial Revolution, especially artificial intelligence (AI), this requires a close collaboration between educational institutions, employers, and other stakeholders to ensure that curricula and training programs are up-to-date and relevant for developing future skills. There are several ways to achieve SDG 4.4, including: expanding access to technical and vocational education and training (TVET); making TVET more relevant to the needs of the labor market; providing financial assistance to students pursuing TVET; promoting lifelong learning opportunities for adults. By investing in skills development, government can help people to find decent work and entrepreneurship opportunities and contribute to the economic growth and sustainable development of their countries.

While the country has posted continuous GDP growth, notwithstanding the COVID years, this growth has not been accompanied by job growth (ILO, 2020). The decreasing unemployment rate can largely be explained by a significant number of people of working age enrolling in K to 12 (ILO, 2020; NTESDP 2023-2028). What's worrying is the decreasing labor participation rate, with females lagging their male peers, despite on average having a higher educational attainment. The latest Labor Force Survey shows that labor force participation dropped from 66.1% in August 2022 to 64.7% in August 2023. Female labor force participation was a fifth less than that of males in August 2023 – 52.9% vs 76.3%. (PSA, 2023)

Moreover, unemployment and underemployment are a youth, women, and rural problem (PSA, 2023). Data on decent work shows that a significant percentage (38%) of the employed are in the informal sector, with an increasing number of those in the formal economy engaged in precarious jobs (ILO, 2020). Signs showing a shift to low productivity jobs pose a threat to a sector already grappling with risks associated with the fourth industrial revolution, conflicts, and climate change (World Bank, 2023).

Despite these setbacks, there are still positive aspects. For the TVET sector, enterprise-based training has demonstrated positive outcomes, reflected in high employment rates and sustained productivity (**Figure 17**). The governance system is well-established (OECD, 2023), providing a foundation for progress toward SDGs and national development goals. Leveraging existing knowledge and institutional contexts is pivotal in advancing progress towards the SDGs and development goals.

Figure 17. Employment Rate (%) of Training Venues, 2016-2020
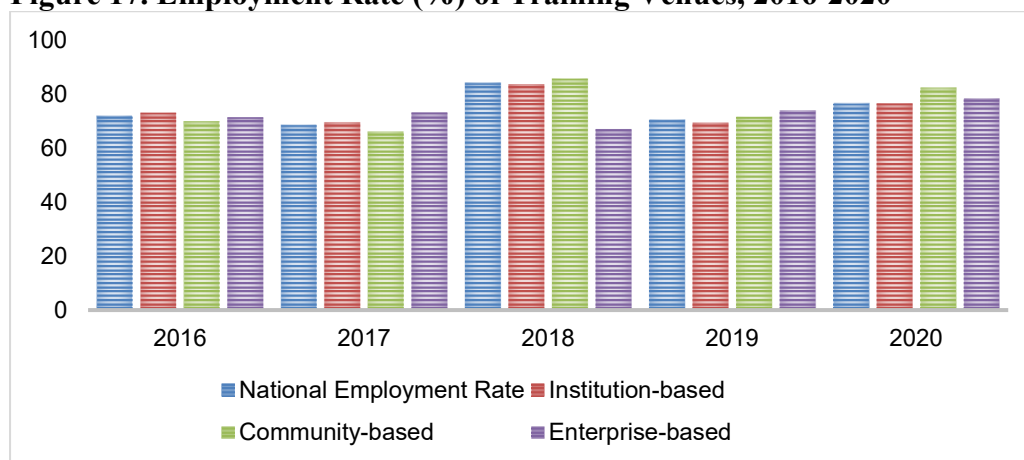
Source: NTESDP 2023-2023.

When it comes to analyzing employment outcomes in higher education, it's worth noting that there isn't a standardized set of outcomes or comprehensive information available that can provide a detailed breakdown of employment prospects across different domains of higher education. For instance, addressing diverse development targets like increasing the number of youths and adults with relevant vocational skills or scrutinizing gender and employment outcomes for vulnerable individuals poses considerable challenges. The analysis mainly relies on data sourced from the Labor Force Survey (LFS) conducted by PSA. Estimating or tracing the employment outcomes of higher education presents a significant hurdle in such scenarios.

Spanning the last three years (2019 to 2021) of the LFS, it becomes apparent that the Philippine labor force is dominated by incomplete high school education (incomplete Junior High School and below), as shown in **Figure 18**. This demographic tends to gravitate towards low-skilled, low-productivity, and low-earning jobs. This is particularly pronounced among the older population (**Figure 19**), thus explaining the social phenomenon of the younger population taking on bigger burdens for the family. The proportion of college graduates within the labor force is estimated to be only around 20%, with a slight upward trend observed.

Figure 18. Highest Grade Completed, 2019-2021
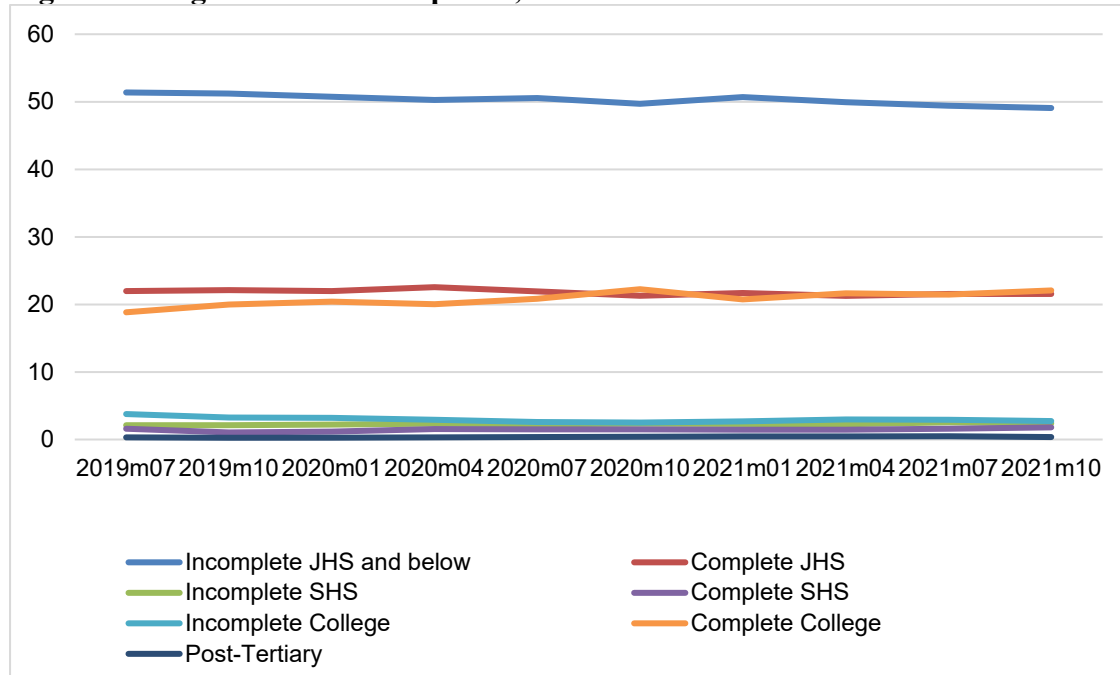
Source: LFS, PSA

Stark disparities in access to post-secondary education are likely to result in missing out on opportunities to exploit the demographic dividend. Notably, the concentration of individuals with an incomplete college education has increased since the pandemic and is observed to happen among higher age groups. This highlights the profound extent of disparities in the distribution of skill sets potentially within the labor force.

Figure 19. Share of Incomplete Junior High School by Age Group, 2020-2021
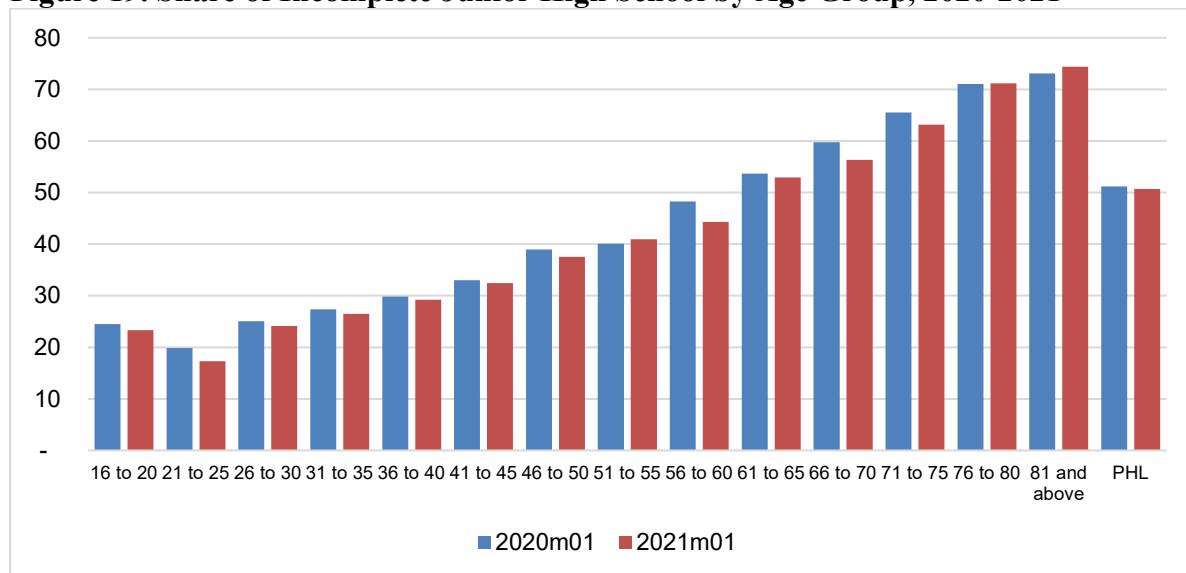
Source: LFS, PSA

Furthermore, more younger workers in the labor force hold college degrees but the distribution according to age groups is quite different across periods of the LFS (**Figure 19**). Prior literature indicates that older workers encountering challenges in returning to post-secondary training often face difficulties stemming from new social roles, family responsibilities, and work demands. This underscores the unequal distribution of individuals holding at least bachelor's degrees within the Filipino labor force.

Figure 20. Share of Bachelor's Degree (including Graduate Degree) Holders by Age Group, 2019-2020
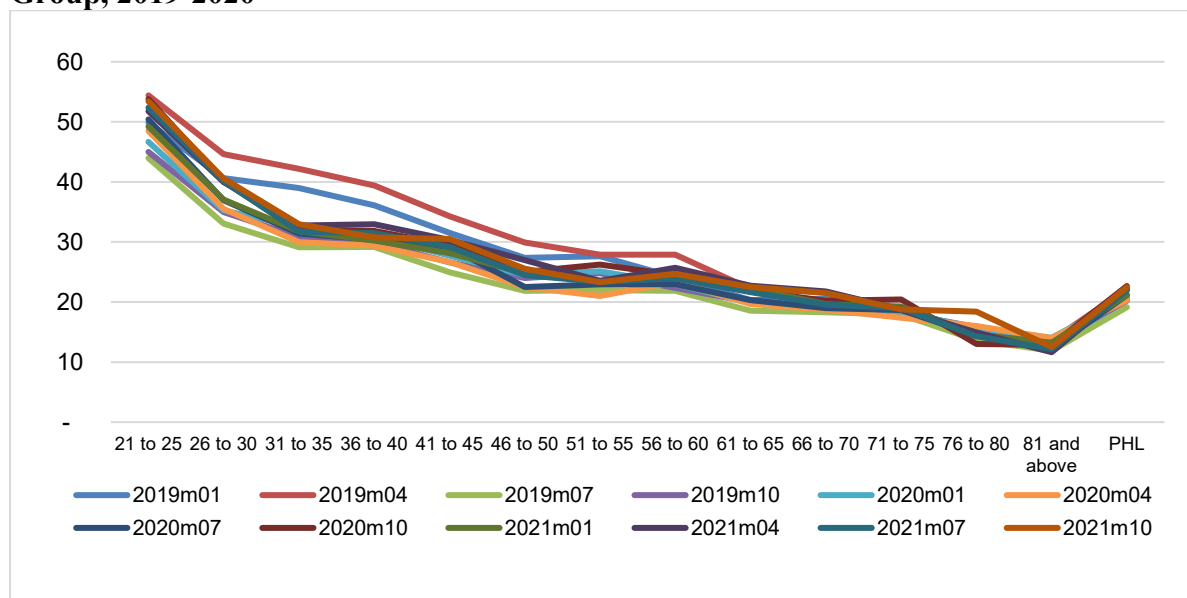
Source: LFS, PSA

More Senior High School (SHS) graduates are also entering the labor force, but those who did not complete SHS are likewise doing the same (**Figure 21**). The pressure to earn while able during times of crisis is highly pronounced in the younger age demographic of 21-25 years old. A higher labor force participation among SHS graduates can be observed, particularly to those who will not proceed to higher education.

Figure 22 shows that the same trend can be observed in those with incomplete Junior High School (JHS) and below. The pandemic rushed the entry of JHS graduates, with relatively high participation rates of the non-completers.

Figure 21. Share of Senior High School Holders (21-25 years old), 2019-2021
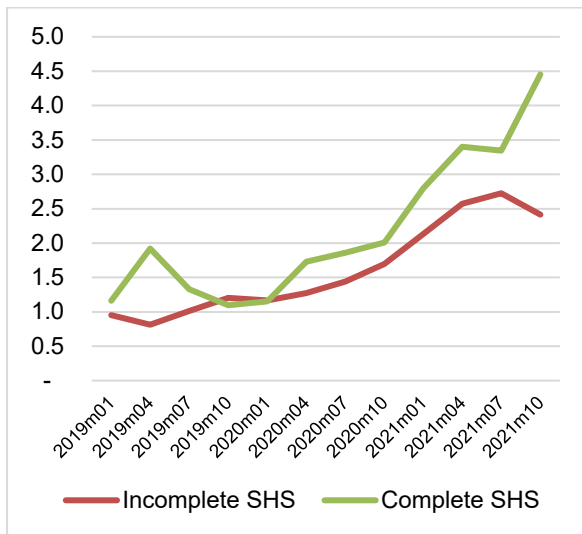
Source: LFS, PSA

Figure 22. Share of Junior High School Holders (21-25 years old), 2019-2021
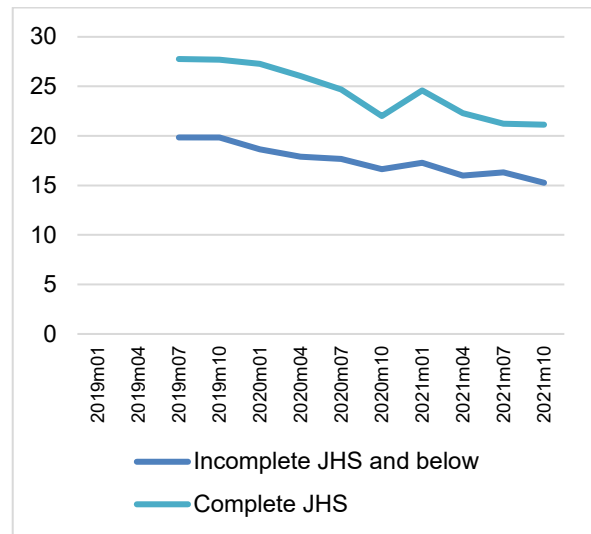
Source: LFS, PSA

In terms of gender, men are substantially behind women in college, JHS, and SHS completion rates (**Figure 23**). Consistently, **Figure 24** illustrates that almost half (54%) of men in the labor force have incomplete JHS. This can have severe implications for their skills, job, as well as marriage market prospects.

Figure 23. Share of college degree holders, by sex, 2019-2021
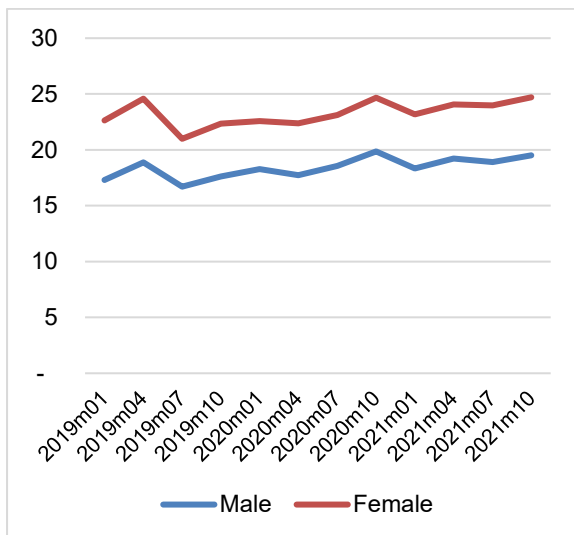
Source: LFS, PSA

Figure 24. Share of the labor force with incomplete high school, by sex, 2019-2021

Source: LFS, PSA

31
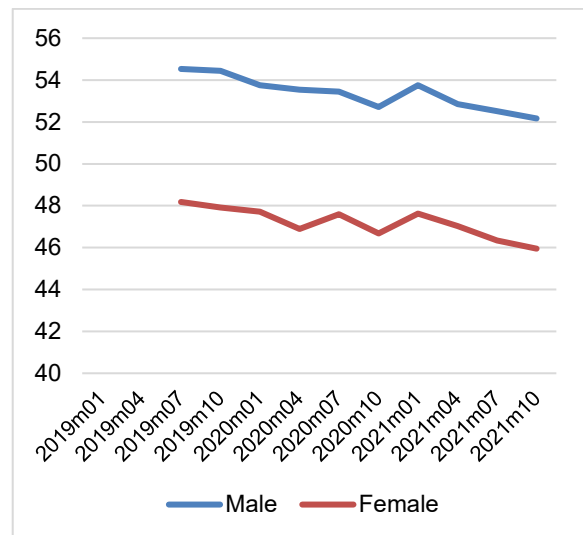
Figures 25 and 26 highlight the dominance of low-skilled jobs within the general labor force. There is also an observed decline in the share of professional roles, coupled with a corresponding increase in low-skilled occupations, particularly among younger workers. This emerging trend is worrying, as despite heightened college participation rates among the youth, a growing proportion is entering middle-skill and low-skilled occupations that do not mandate a college degree.

Figure 25. Occupational Categories, 2019-2021
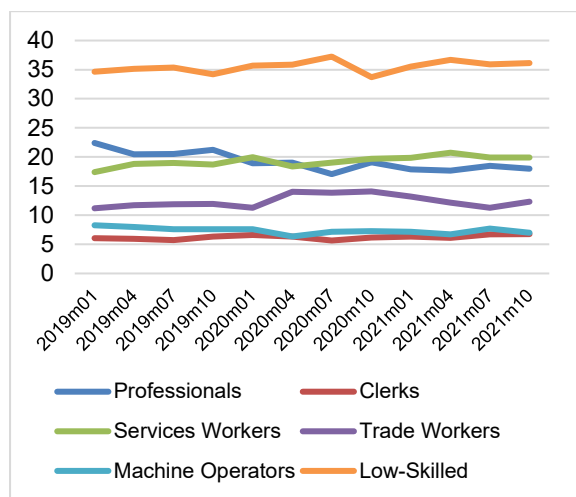
Source: LFS, PSA

Figure 26. Low-skilled occupations held by the youth, 2019-2021
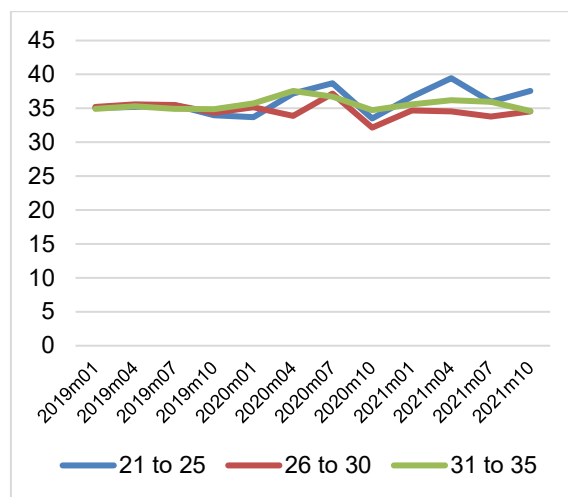
Source: LFS, PSA

An observable occupational "wedge" exists between individuals holding complete college degrees and those with incomplete degrees. Among college degree holders, there is a notable decrease in the share of professional jobs, accompanied by a shift towards more service and clerical roles (**Figure 27**). In contrast, those with incomplete college degrees experience a substantial decline in the proportion of professional jobs, with a prevalence of low-skilled and service occupations (**Figure 28**).

Figure 27. Occupational destinations of college graduates, 2019-2021
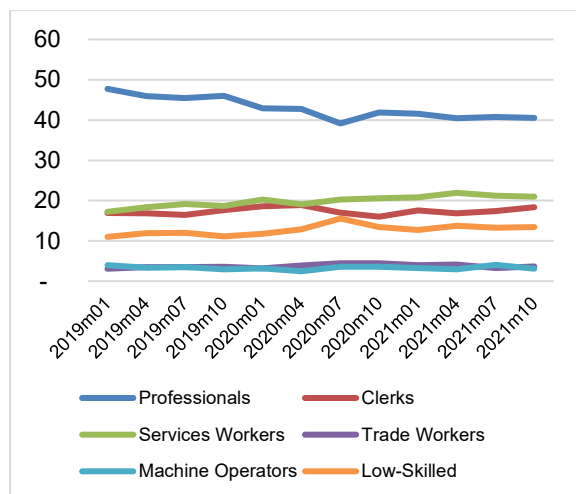
Source: LFS, PSA

Figure 28. Occupational destinations of with incomplete college degrees, 2019-2021

Source: LFS, PSA

32
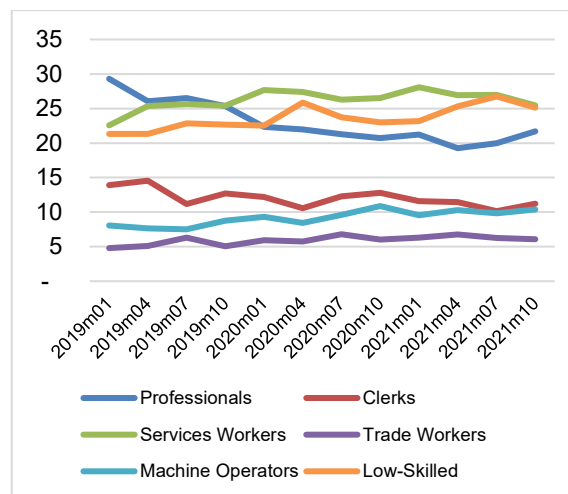
Additionally, there is a rising share of machine operator roles among this group. This occupational "wedge" reflects a disparity in labor supply and demand perspectives. Industries may not be advancing sufficiently or receiving adequate investments to accommodate highly educated workers, highlighting a mismatch between the skills offered by the labor force and the requirements of the job market.

The limitation of the LFS lies in its inability to provide insights into labor demand, leaving a gap in our understanding of the overall employment landscape. It is plausible that industries may not be advancing or investing adequately to match the sophistication required for hiring highly educated workers. This mismatch could potentially result in well-educated individuals gravitating towards less productive or low-skilled jobs within the labor market. The challenge extends beyond individual choices, pointing toward systemic issues within industries that impact the utilization of highly educated talent.

7. **SDG Target 4.5 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all): By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations.**

SDG 4.5 emphasizes the importance of social inclusion in education, aiming to eliminate gender disparities and ensure that all individuals, including persons with disabilities (PWDs), indigenous peoples, and children in vulnerable situations, have equal access to quality education at all levels across basic education, tech voc and higher education. This goal underscores the need to address the specific barriers that these marginalized groups may face in accessing education, such as discrimination, lack of accessibility, and financial constraints. Overall, SDG 4.5 is a commitment to promoting equality and inclusion in equality ducation, ensuring that everyone, regardless of their sex (and gender identity), disability status, ethnicity, or socioeconomic background, can receive a quality education and develop the skills and knowledge they need to thrive in today's interconnected world. DepED Order No. 23, s.2022, which introduces a Child Find Policy to enhance inclusive education, is aligned with this target.

The Child Find Policy outlines procedures for identifying, locating, and evaluating learners with disabilities, ensuring their seamless integration into the general basic education system. This policy encompasses children aged five and above with disabilities or developmental delays, covering various educational settings such as public and private schools, the Alternative Learning System, Muslim Education Program, Indigenous Peoples Education, community learning centers, and Out of School Children/Out of School Youth.

Despite these initiatives, the Philippines continues to face challenges in achieving universal quality education for all. A critical concern lies in ensuring that inclusive education efforts translate into tangible improvements in the educational landscape. The absence of comprehensive assessments and impact evaluations hinders the ability to gauge program efficacy, raising questions about their meaningful impact on educational outcomes.

Closing this development gap is crucial for informed decision-making and ensuring positive changes in the educational landscape. Effective evaluation mechanisms should be in place not only to measure quantitative outputs but also to assess qualitative aspects like soft skills attainment, social integration, and overall student well-being. This holistic approach will

provide valuable insights into the effectiveness of inclusive education initiatives, enabling their refinement and improvement.

Regions like the BARMM, which lag behind in many development outcomes including basic education, require tailored support to achieve inclusive education goals. DepED's assistance to the BARMM Ministry of Education in checking the alignment of education goals is essential for maintaining national standards and fostering a collaborative, cohesive approach to education. Unfortunately, institutional mechanisms for national government departments to provide technical assistance to BARMM counterparts are currently not in place.

The government's sustained investment in education is critical, with efficient resource allocation addressing the specific needs of marginalized groups. Consistency in core educational principles, alongside efforts to strengthen teacher training programs, enhance school infrastructure, and develop culturally relevant curriculum materials, contributes to a standardized foundation of knowledge and skills for all students.

This holistic approach reflects the commitment to fostering equality and inclusivity in education nationwide. By addressing the specific barriers faced by vulnerable populations, providing comprehensive assessments of inclusive education initiatives, and ensuring sustained government investment, the Philippines can move closer to achieving SDG 4.5 and ensuring that all individuals have access to quality education, regardless of their background or identity.

7.1. Inclusion and equity

The latest data from the Global SDG Database maintained by the UNSD indicates that the adjusted rural to urban parity index for primary completion rate has improved from 0.9 in 1999 to 1.0 in 2018. This is a positive shift towards parity, implying better access to primary education across different geographic regions. However, a more detailed analysis is necessary to understand the factors responsible for this change, such as changes in infrastructure, policy interventions, or societal attitudes.

Similarly, the adjusted bottom to top wealth quintile parity index for primary completion rate has risen from 0.6 in 1999 to 0.8 in 2018. This suggests a reduction in the gap of primary education completion rates between individuals from the bottom and top wealth quintiles. It is encouraging to see that efforts to enhance equity in education may be making headway.

To promote inclusive and equitable quality education for all, it is essential to delve deeper into the specific strategies and interventions that have proven effective in achieving positive shifts. While inclusive education initiatives exist in the Philippines, such as programs for learners with disabilities and indigenous communities, but challenges in ensuring universal quality education persist. Understanding the challenges faced by vulnerable populations, including persons with disabilities and indigenous peoples, is crucial in refining and expanding initiatives for inclusion and equity. Regular monitoring and assessment will be vital to ensure that progress is sustained and that no one is left behind in the pursuit of SDG Target 4.5.

7.2. Gender equality

In 2017, the gender parity index for participation rates in organized learning activities (one year before the official primary entry age) reached full parity at 1.0. This means that there was an equal representation of both genders in such activities.

The gender parity index for primary school teachers who were trained was 1.0 in 2017, meaning 100.0 female primary school teachers per 100 male primary school teachers were trained but this index does not show that the teaching bureaucracy is highly feminized. Disaggregating the data on teachers by sex, we note that even as early as 1971, the teaching bureaucracy has been dominated by women (UNESCO Institute for Statistics 2020). The proportion of female primary education teachers (which includes full-time and part-time teachers) averages to 86.9% and has ranged from 80.0% to 95.1%. Meanwhile the share of females among secondary education teachers averages to 76.2% and ranges from 70.7% to 95.1%. This lack of gender balance among public school teachers is believed to be a factor contributing to why boys have lower school participation and achievements than girls (Paqueo and Orbeta 2019; David *et al*. 2018b; Mulji 2016; Terrier 2016; David *et al*. 2009).

The literature though gives mixed results about the link between same sex teacher assignments and student performance. Holmlund and Sund (2008) suggests that there is no sufficient evidence that sex of a teacher has a causal effect on student outcomes. Sansone (2019) also find insignificance of the sex of the teacher on student interest and self-efficacy in STEM (science, technology, engineering and math) subjects. On the other hand, while Winters et al. (2013) find no effect in the elementary level, they discover small positive effects in the middle and high school levels.

The adjusted gender parity index for primary completion rate was 1.1 in 2018, suggesting that in the Philippines, girls do better in education outcomes. Gender equality, however, should mean that neither sex has an advantage. It would be important for DepED to develop policies and strategies, that include formulating specific targets on education outcomes pertaining to Gender Equality, Disability and Social Inclusion.

8. SDG Target 4.6 (on Universal Youth Literacy): By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.

The SDG4 Target 4.6 on universal youth literacy means that we should ensure that by 2030, all young people and adults should have achieved relevant and recognized proficiency levels in functional literacy and numeracy skills that are equivalent to levels achieved at successful completion of basic education. In a 1958 UNESCO convention, it was agreed that,

> "a person is literate who can, with understanding, both read and write a short simple statement on his or her everyday life." (UNESCO 1958, p.153)

Using such a metric, 98.3 percent of Filipinos aged 10 years and over are literate, as of 2015 (PSA 2017). This (simple or basic) literacy rate, sourced from the 2015 Population Census (POPCEN) is higher than the recorded 97.1 percent literacy rate in 2010 during the 2010 Census of Population and Housing (CPH).

Two decades after UNESCO first proposed the definition of (simple) literacy, UNESCO recommended a definition of functional literacy:

> "a person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his or her group and community and also for enabling him or her to continue to use reading, writing and calculation for his or her own and the community's development." (UNESCO 1978, p.54)

Aside from the CPH and the POPCEN, the Functional Literacy and Mass Media Survey (FLEMMS)[10] also provides measures of basic literacy[11] among Filipinos between the ages 10 to 64 years old. In addition, FLEMMS also has information on the functional literacy of Filipinos aged 10 to 64. First conducted in 1989, the FLEMMS is meant to provide information not only on both basic and functional literacy, but also on educational skills and mass media exposure of Filipinos, particularly those between the ages 10 to 64.

Data from the 2019 FLEMMS suggests that nearly all (96.4 %) Filipinos between 10 to 64 are reported to have the ability to read and write a simple message in any language or dialect. Among kids aged 10 to 17[12], basic literacy rate is estimated at 97.7%, as of 2019, up from 94.8% in 2013. Basic literacy among 10- to 17-year-old children varies by sex (in favor of females), as well as by region, with rates in regions ranging from 80.4% in BARMM to 99.1% in NCR.

According to data from the 2019 FLEMMS, nine in ten children aged 10 to 17 years old are functionally literate[13] (**Table 8**). Just like basic literacy rates, the functional literacy rates estimated from FLEMMS are higher for girls aged 10 to 17 than for boy counterparts; this gender gap in favor of girls is across regions. BARMM noticeably has the lowest functional literacy rate (76.5%), while Northern Mindanao has the highest rate (95.2%)

Table 8. Functional Literacy of 10–17-year-old children across regions, by sex, 2019.

Region	Male	Female	Both Sexes
Region I - Ilocos Region	88.5	94.1	91.3
Region II - Cagayan Valley	92.3	93.2	92.7
Region III - Central Luzon	90.6	93.3	91.9
Region IVA – CALABARZON	91.4	93.3	92.3

---

[10] Like nearly all household surveys conducted by the PSA, the FLEMMS is a nationally representative survey, with its respondents chosen through a two-stage design: first, enumeration areas (EAs), roughly barangays, are chosen, and within the selected EAs, housing units or dwellings are chosen as the secondary (and thus ultimate) sampling unit. Households in the sampled dwellings are interviewed.

[11] According to the PSA (2017), "simple literacy is the ability of a person to read and write a simple message. … The census question for this item, which was asked for household members 5 years old and over was: "Can _____ read and write a simple message in any language or dialect?""

[12] Although the UNESCO Institute of Statistics reports on the adult literacy rate (which corresponds to those aged. 15 and above), the youth literacy rate (for those aged 15 to 24), and on the elderly literacy rate (for those aged 65 and over), we report in this policy note on the 10 to 17 age group as this is relevant to basic education.

[13] FLEMMS respondents are made to answer the following questions to measure functional literacy: (1) Full name (2) Address (3) Complete date of birth (4) Highest educational attainment (5) If a kilo of rice costs P55.00, how much will two kilos cost? 6) If a kilo of sugar costs P72.00, how much will a half kilo cost? To measure comprehension ability, each respondent was also asked to read a paragraph and answer a set of questions. Persons who completed high school or a higher level of education are also considered functionally literate (PSA, 2019).

Region V- Bicol	87.6	92.2	89.8
Region VI - Western Visayas	87.1	90.3	88.6
Region VII - Central Visayas	84.1	88.0	86.0
Region VIII - Eastern Visayas	79.0	84.1	81.5
Region IX - Zamboanga Peninsula	87.6	91.1	89.3
Region X - Northern Mindanao	94.2	96.4	95.2
Region XI – Davao	89.8	95.0	92.4
Region XII – SOCCSKSARGEN	77.2	85.3	81.2
National Capital Region	90.9	91.6	91.3
Cordillera Administrative Region	90.0	90.5	90.2
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	74.5	78.6	76.5
Region XIII – Caraga	90.3	92.5	91.4
MIMAROPA	79.4	83.5	81.4
PHILIPPINES	**87.5**	**90.7**	**89.1**

Note: Authors' calculations from the 2019 FLEMMS, PSA.

As is to be expected, literacy rates are higher among children aged 10 to 17 who read newspapers, magazines or posters by 8 to 11 percentage points for basic literacy, and by 12 to 14 percentage points for functional literacy, compared to non-readers. Further, functional literacy is higher among children 10 to 17 years who watch tv, listen to radio and watch movies, compared to those who do not Digital divides are also concomitant to literacy gaps (**Table 9**).

Table 9. Basic and Functional Literacy Rates among 10 to 17 yr old with and without access to cellphone and broad band internet by Sex: 2019

Literacy Rate (%)	Access to Cellphone				Access to Broadband Internet			
	With		Without		With		Without	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Basic	97.2	98.8	91.0	96.8	98.7	99.6	96.3	98.4
Functional	88.7	91.3	76.5	85.5	93.2	96.1	86.5	89.8

Note: Authors' calculations from the 2019 FLEMMS, PSA.

Literacy is also ultimately tied to socio-economic status. Kids aged 10 to 17 years old with access to safe water services and safe sanitation services, who are clearly among the non-poor, are also found to have higher functional literacy rates than those without (**Figure 29**).

Figure 29. Proportion of children 10 to 17 yr old who are functionally literate and not functionally literate across (a) type of water source, and (b) type of sanitation, 2019
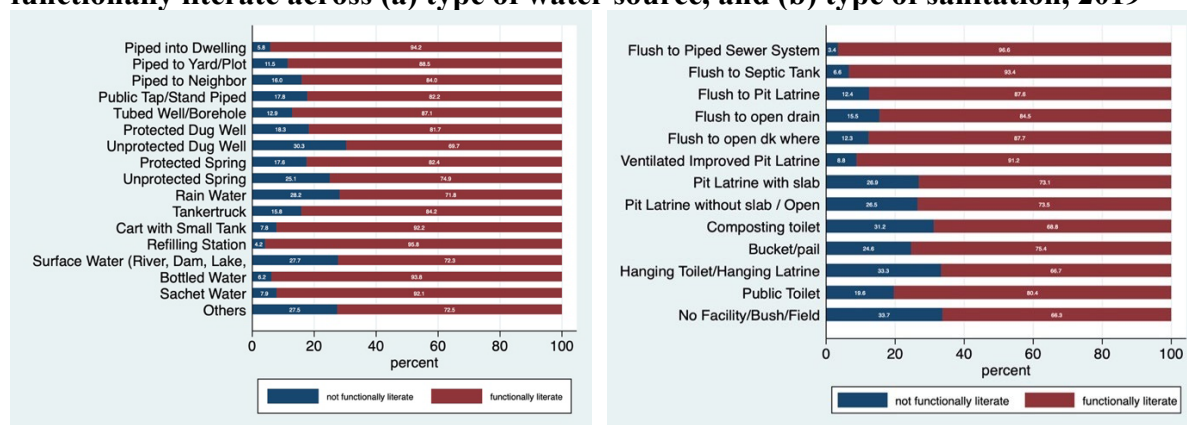
(a)   (b)

Note: Authors' calculations from the 2019 FLEMMS, PSA.

In recent years, everyone needs digital skills in the workplace, and even for everyday living. Consequently, the Philippines, just like most countries, have used digital literacy frameworks in basic education (Law *et al*. 2018). Further, the country has formulated its National ICT Competency Standards (NICS), with the Department of Education (DepED) developing three volumes of the NICS to cater for the general population and workforce: NICS-Basic, NICS-Advanced and NICS-Teachers; while other government agencies developed eight other volumes to cater to their specific needs (Hwa 2016).

Given the importance of digital skills, the indicators for monitoring the Sustainable Development Goals (SDGs) includes Indicator 4.4.1 "Proportion of youth/adults with ICT skills, by type of skills" (UN 2020). This indicator expressed as a percentage, refers to individuals that have undertaken nine computer-related activities[14] (in the last three months). In ASEAN, the Philippines lags in nearly all ITU-endorsed ICT skills[15] (**Figure 30**).

---

[14] These nine (9) computer-related activities are: (1) copying or moving a file or folder; (2) using copy and paste tools to duplicate or move information within a document; (3) sending e-mails with attached files (e.g. document, picture, video); (4) using basic arithmetic formulas in a spreadsheet; (5) connecting and installing new devices (e.g. a modem, camera, printer); (6) finding, downloading, installing and configuring software; (7) creating electronic presentations with presentation software (including images, sound, video or charts); (8) transferring files between a computer and other devices; and, (9) writing a computer program using a specialized programming language

[15] Data available from the NICTHS is only six of the nine type of skills for SDG indicator. 4.4.1

Figure 30. Proportion (%) of youths and adults in select ASEAN member states with ICT skills (SDG 4.4.1), by type of skill, recent year
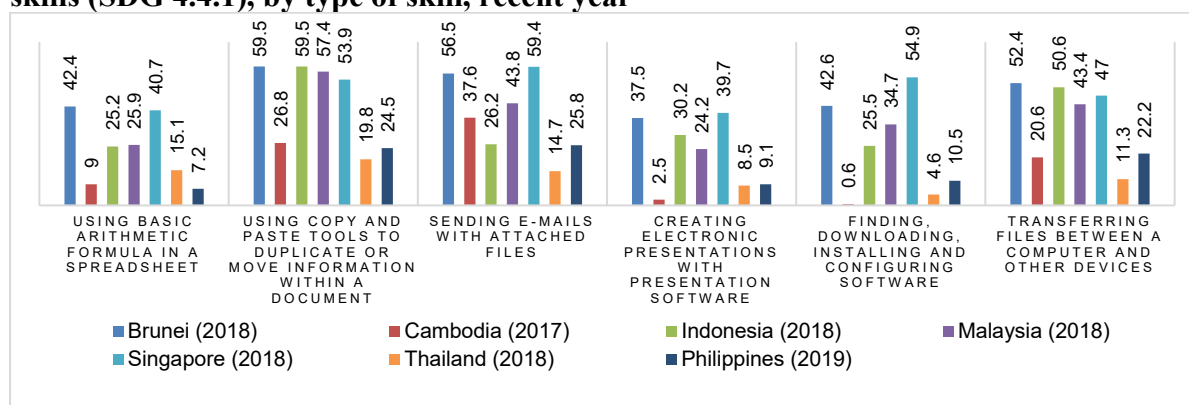
Notes: Three ICT skills listed in SDG 4.4.1 are not available for the Philippines.
Data covers youth and adults *(PH: 15 years old and above)*
Sources: Global SDG Indicators Database (https://unstats.un.org/sdgs/indicators/database/), except for Philippines-2019 NICTHS (DICT and PSRTI).

Table 10 shows that there are differences between females and males in digital skills when age is also taken into account together with sex. Further, digital skills of Filipinos need considerable improvement since less than half (40%) of Filipinos have at least one of six ICT skills (used for measuring SDG Indicator 4.4.1). Skills need enhancement especially among the very young and the elderly.

Table 10. Proportion (%) of individuals that have at least one of six ICT skills identified for measuring SDG Indicator 4.4.1

Sex	Age Group				Total
	10-14	15-24	25-64	65 and above	
Male	16.1	40.7	45.2	30.8	37.8
Female	30.4	52.3	37.4	13.4	41.4
Total	23.1	46.7	40.3	18.0	39.8

Source: 2019 NICTHS, DICT and PSRTI

9. **SDG Target 4.7 (on Education for sustainable development and global citizenship): By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.**

The knowledge, skills, values and attitudes required by citizens to lead productive lives, make informed decisions and assume active roles locally and globally in facing and resolving global challenges can be acquired through education for sustainable development and global citizenship education, which includes peace and human rights education, as well as intercultural education and education for international understanding. In the Philippines, this target, however, is not monitored by the Philippine statistical system. No data is available for SDG Global Indicator 4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student

10. SDG Target 4.a. (on Effective Learning Environments): Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

The SDG4 Target 4.a. on effective learning environments recognizes and addresses the need for adequate physical infrastructure and safe, inclusive environments. These environments help nurture learning for all, regardless of the background, sex or disability status of children. School facilities have been improving in recent years, with these improvements being justified especially for the K-12 rollout (**Table 11**). Electricity access is nearly available to all schools (with only about 2 percent with no access), as of 2020. Recent data also suggests that access to computers is about three in four for primary schools, and about four in five for secondary schools; meanwhile internet access is around 70 percent for both primary and secondary schools. Further, in 2020, three out of five schools at the primary or secondary levels had access to basic drinking water, though this proportion has increased from about half in 2017. Further, the proportion of schools in the country with basic handwashing facilities is about 9 in 10, as in 2020, which has improved from about 3 in 5 in 2016. The proportion of primary schools with access to single-sex basic sanitation was 60.4 % in 2018, up by 15 percentage points from the preceding two years. However, less than 20 percent of schools have adapted infrastructure and materials for students with disabilities, suggesting that inclusive education is still far from being a reality.

Table 11. SDG Indicator 4.a.1: Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; (g) basic handwashing facilities (as per the WASH indicator definitions) and (h) adapted infrastructure and materials for students with disabilities, by education level

Proportion of school with access to	Level of Education	2016	2017	2018	2019	2020	2021
(a) electricity	Elementary schools	88.7	92.1	94.9	..	97.6	..
	Secondary schools (Junior High School)	93.1	96.3	96.1	..	98.7	..
	Secondary schools (Senior High School)	88.9	..	92.1	..	98.3	..
(b) the Internet for pedagogical purposes	Elementary schools	25.6	32.0	28.6	..	54.0	64.2
	Secondary schools (Junior High School)	..	34.0	40.8	..	60.4	72.2
	Secondary schools (Senior High School)	..	31.0	70.5	..	63.0	67.3
(c) computers for pedagogical purposes	Elementary schools	78.5	78.2	77.9	..	70.5	75.7

Proportion of school with access to	Level of Education	2016	2017	2018	2019	2020	2021
	Secondary schools (Junior High School)	83.1	81.9	81.1	..	79.9	82.3
	Secondary schools (Senior High School)	23.6	..	60.4	..	79.3	80.8
(d) single-sex basic sanitation facilities	Elementary schools	45.1	45.1	60.4	..	..	..
	Secondary schools	77.1	77.1	..	..	..	..
(e) basic handwashing facilities (as per the WASH indicator definitions)	Elementary schools	61.0	70.1	77.1	..	90.6	..
	Secondary schools (Junior High School)	60.5	65.4	74.0	..	89.3	..
	Secondary schools (Senior High School)	..	..	65.3	..	83.2	..
(f) basic drinking water	Elementary schools	..	45.2	55.8	59.3	57.8	..
	Secondary schools (Junior High School)	..	56.5	61.6	63.9	61.6	..
	Secondary schools (Senior High School)	..	..	58.7	62.2	59.7	..
(g) adapted infrastructure and materials for students with disabilities, by education level (%)	Elementary schools				6.0	7.7	
	Secondary schools (Junior High School)				16.8	17.0	
	Secondary schools (Senior High School)				13.5	13.8	

Source: SDG Watch and UNSD Global SDG Database.

11. **SDG Target 4.b. (on Scholarships): By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.**

Total official flows received for scholarships between 2006 and 2020 was around 20 million dollars (in constant 2018 prices), though 2018 was an unusual year, when flows reached its maximum for the period, at a level of 90 million dollars (**Figure 30**). Scholarships are important, but donor countries providing scholarships to less developed countries should be encouraged to increase other forms of support to education. Where developed countries offer scholarships to students from developing countries, these should be structured with a view to building the capability of the developing country. In consonance with SDG4, scholarships from donor countries should be transparently targeted at young people from disadvantaged backgrounds with a view to considering issues on equity, inclusion and quality.

Figure 31. Total official flows for scholarships, by recipient countries (millions of constant 2021 United States dollars)
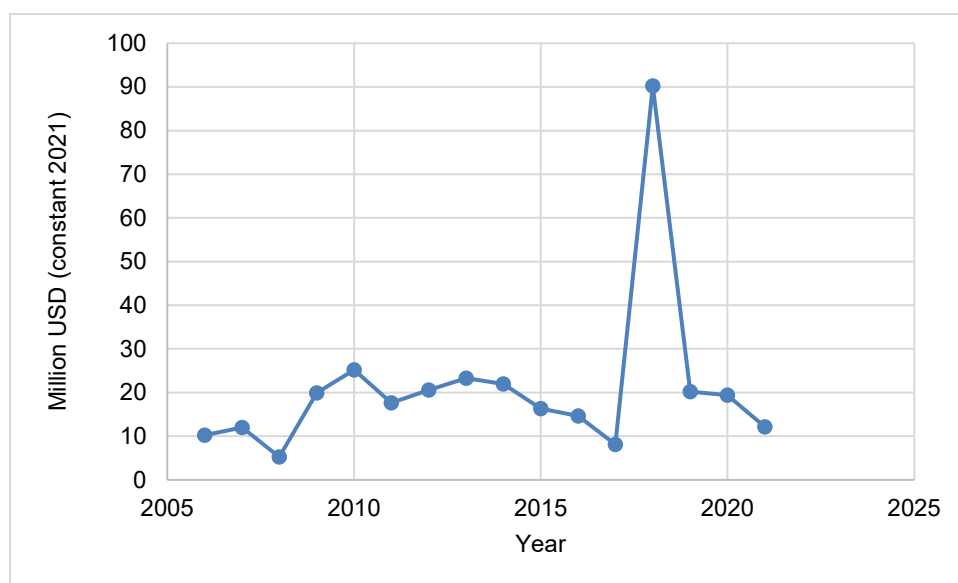
Source: UNSD Global SDG Database.

12. **SDG Target 4.c. (on Teachers and Educators): By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.**

Teachers are the most important resources in the education sector; they are instrumental in achieving SDG4. Issues regarding teachers require urgent attention, because the equity gap in education can be further exacerbated by shortage and uneven distribution of professionally-trained teachers, especially in disadvantaged areas. As teachers are a fundamental means to guarantee quality learning, teachers and educators should be empowered, adequately recruited and remunerated, motivated, professionally qualified, and sufficiently supported.

The proportion of primary school teachers who have received at least the minimum organized teacher training (e.g., pedagogical training) pre-service or in-service required for teaching was 100.0 % in 2017. However, this only accounts for teachers hired by the national government and does not include the teachers hired by local governments especially those in charge of kindergarten.

In the Philippines, teachers are a large budget item in the education sector: in the period 2010 to 2019, nearly 70 percent of the budget of the Department of Education (DepED) has gone to personal services, i.e., teacher and staff salaries (Albert *et al.* 2021). Contrary to common belief, teachers are not underpaid. Data from the October 2020 Labor Force Survey, conducted by the Philippine Statistics Authority (PSA), suggests that average wages for teachers are at PhP 22,074 per month, nearly double the median monthly wages of wage and salary workers (PhP 11,277) in the country.

With the passage of the Salary Standardization Law of 2019, public school teachers are scheduled to receive salary increases in four tranches from 2020 to 2023 (Sevilla 2021). The salary for Teacher I (SG 11) was increased to P22,316 in 2020 to P23,877 in 2021; meanwhile, in 2022 and 2023, their salaries will be increased to P25, 439 and P27,000, respectively. Those holding a Master Teacher IV post (SG 21) had salaries increased to P59,353 in 2020 and P60,901 in 2021; their salaries will be increased in 2022 and 2023 to P62,449 and P63,997, respectively. In recent years, public school teachers have had salaries higher than their private-sector counterparts, who in 2019 were getting average monthly salaries of P11,416, compared to average salaries of P19,566 of public-school teachers[16]. Thus, the salary increases for public school teachers will further widen the gap of their wages with those of private school teachers.

Public school teachers also get various benefits that come with being a public servant, such as:

- Phil. Health Membership, which includes Health Insurance for hospitalization and annual physical exam
- Government Service Insurance System (GSIS) membership benefits: Retirement and Life Insurance Plan (teachers contribute 9% of their basic pay, while the government contributes an amount equal to 12% of the basic pay)
- Vacation Credits (of up to 15 days in a year)
- Leave Privileges (such as Maternity Leave, Paternity Leave and Study Leave)
- Clothing/Uniform Allowance (P6,000 per year released not earlier than April 15)
- Mid-year Bonus (1-month basic salary released not earlier than May 15)
- Year-end Bonus (1-month basic salary released in November)
- Cash gift (P5,000 released in November)
- Anniversary Bonus: P3,000 (NOTE: given only during a milestone year, i.e., every 5 years)
- Personal Economic Relief Assistance (P2,000 per month)
- Representation and Transportation Allowance (RATA): ranges from P5,000 to P14,000 monthly depending on the position
- Step Increment Due to Length of Service: for every three (3) years of continuous satisfactory performance, depending on salary grade

---

[16] https://www.teacherph.com/public-school-teachers-salary/

- One of two step increments due to meritorious performance using the Results-based Performance Management System (RPMS)
- Loyalty Cash Incentive depending on the number of years in service (starting on the 10th year amounting to P10,000 and P5,000 after every 5 years)
- Productivity Enhancement Incentive (PEI): P5,000 per year
- Performance-Based Bonus (PBB): annual bonus ranges from 50-65% of the basic monthly salary depending on school performance

They also get other financial rewards, including:

- World Teachers Day incentive (P1,000 per year)
- Proportional Vacation Pay (PVP) 70 days PVP during summer and Christmas break for those who have rendered full services during the school year
- Cash/Chalk Allowance: P5,000 per year subject to special provisions in the Government Appropriations Act
- Step Increment for Specializing in Teaching Science and/or Mathematics: One time three salary step increments depending on salary grade
- In-service training (Program Support Fund)

and additional financial support unique to their nature of their tasks:

- Special Hardship Allowance to teachers assigned in hardship posts (cannot be reached by regular means of transportation through hiking or banca/motorcycle rides), mobile teachers and multigrade teachers (15-25% of basic salary)
- Honoraria for teaching overload (maximum of 25% of basic salary, subject to funds availability)
- For mobile teachers and District Alternative Learning Coordinators (DALCs), P5,000 per year for instructional materials and P2,000 per month for transportation allowance
- Additional incentive/allowances from LGU (selected divisions)

While the financial rewards for being a public-school teacher might seem substantial, these are merely compensating them for their huge workload, which involves teaching and nonteaching tasks (Esguerra 2018). According to interviews conducted for a PIDS study on out of school children (David et al 2019; David *et al*. 2018b), actual teaching is even being sidelined by the variegated non-teaching responsibilities and roles that teachers have to play.

Under the Magna Carta for Public School Teachers, each public-school teacher has a regular full-time teaching load and is mandated to devote at most six hours of actual classroom instruction a day. But teachers interviewed complain about being overburdened by administrative or student support roles, including report writing on seminars and trainings they are tasked to attend as well as designations in line with student guidance, budget, disaster response, and health (David *et al.* 2019).

Various government agencies seek the assistance of the DepED, and the schools and teachers, in particular to implement programs given the efficiency of their reach of large populations of children. Thus, teachers are also expected to participate in implementation of various government programs, such as community mapping, mass immunizations, deworming, school

feeding, conduct of the population census, conditional cash transfer, antidrug, election, among others. The teachers report that these nonteaching tasks are not figured into their staffing patterns. While private schools employ nonteaching staff to perform administrative activities such as enrollment, registration, records, guidance counseling, daily operations, and janitorial services, there is insufficient support and administrative staff, if any, in public schools. In consequence, public school teachers have to double up responsibilities, doing the administrative work—which can eat up on their time for ensuring quality of learning in the classroom.

According to the teachers, they prefer to focus on their actual teaching responsibilities, and spend more time speaking with students, and applying what they learned about differentiated teaching, but they are faced with huge time constraints. Their main concern in ensuring quality of learning is their workload and not their salaries as understandably, bigger salaries will not create more time for them to devote to teaching.

Teachers are required to have at least a four-year bachelor's degree: primary school teachers should have at least a Bachelor of Elementary Education, while high school teachers have a Bachelor of Secondary Education (David *et al*. 2018a). Both of these college programs encompass general education courses, education-related subjects, subject specialization, and practical teaching components. Individuals holding a bachelor's degree in other fields can also meet the qualifications to become a teacher by successfully completing a post-graduate program in Education, commonly referred to as a Certificate of Professional Education. In addition, Republic Act 7836, that was passed in 1994, makes it mandatory for students to first pass the Licensure Exam for Teachers (LET). Once hired by the government, teachers are provided professional development, especially through training activities conducted between school sessions. Often, however, these training activities do not involve training needs assessments (generated from results of the National Achievement Tests) and are also unevaluated, and consequently, they are likely to be ineffective. The findings from the 2019 Trends in International Mathematics and Science Study (TIMSS) indicate that less than half of the Filipino students included in the sample received instruction characterized as "high clarity" from their teachers. The majority received instruction with only moderate or low clarity (World Bank 2021).

13. What Needs to be Done?

The data dashboard released by the Sustainable Development Solutions Network (SDSN) and the Bertelsmann Stiftung for its Sustainable Development Report (formerly the SDG Index) provides a useful snapshot of the performance of countries on the Global Goals. Here, we find the overall assessment that the Philippines is moderately improving in SDG4, but that current trends and data also suggest that progress is insufficient to attain the goal, as challenges remain.

Policymakers from the President, to the leaderships at DepED, TESDA and CHED, as well as the members of EDCOM2, should recognize the need to prioritize optimizing impact per peso in education investments. In this study, we showcase some compelling data on where we stand on SDG4 that shows how education outcomes have fallen short, partly because we have not given the sector enough resources. However, even if resources for the sector were to be increased considerably, say doubled, we would need to be specific actions to ultimate yield increased educational attainment, reduced dropout rates, and improved learning outcomes, and thus attain SDG4.

Like most if not all countries, the Philippines has recognized the importance of the long-term economic and social benefits of a well-educated population, such as increased productivity, innovation, and civic engagement. But the country has fallen short of investing in the education sector, particularly in evidence-based education interventions that yield greater returns in the long run compared to populist policies that may provide short-term gains but fail to address underlying issues. It is apparent that the education sector is in a looming crisis, and while it is easy to resort to a blame game, it is important to identify specific issues that need urgent policy attention to yield better results in learning outcomes. It should be pointed out that the learning crisis is not unique to the Philippines, but a few countries have provided models of pathways to improving education quality. Using survey-based literacy tests for men and women born between 1950 and 2000 across 87 countries, Le Nestour *et al.* (2022) finds that education quality, defined as literacy conditional on completing five years of schooling, has stagnated in most the developing world, but with some notable exceptions of high-performers like Burundi and Viet Nam, where more than 95 percent can read by the end of grade five.

Schleicher, A (2018) provides a ten-point summary of high-performing school systems throughout the world making use of data from PISA and examining education policies and reforms. High-performing countries in education are distinguished by their comprehensive approach to education, which includes a focus on equity, quality teaching, data-driven improvement, clear goals, resource alignment, policy coherence, balanced autonomy and accountability, stakeholder engagement, student well-being, and a commitment to continuous learning and improvement.

- **Commitment to Universal Achievements**: High-performing systems are characterized by a strong commitment to achieving high educational standards for all students, regardless of their socio-economic background. This involves ensuring equitable access to quality education.
- **Quality of Teachers and Teaching**: These systems place a high emphasis on the quality of teachers and teaching. This includes rigorous teacher training, ongoing professional development, and systems that support teachers in their career progression. There is also a focus on pedagogical practices that are adaptive to diverse student needs.
- **Data and Assessment for Improvement**: Effective use of data and assessment tools is a common feature. These systems use data not just for accountability but importantly for improving student outcomes and teaching practices. Regular assessments help in identifying areas where students need more support.
- **Clear, Shared Goals and Expectations:** High-performing systems have clear and consistently high expectations for all students. Goals and standards are well communicated and shared among all stakeholders, including educators, students, and parents.
- **Alignment of Resources with Priorities:** These education systems ensure that resources are aligned with their educational priorities. This means not only adequate funding but also ensuring that resources are distributed based on the needs of students and schools.
- **Coherence and Continuity in Policy Implementation**: High-performing systems exhibit coherence in their policies over time. They avoid frequent policy changes and ensure that new policies build on existing practices. This continuity supports sustained improvement.
- **Balanced Approach to Autonomy and Accountability:** There is a balance between providing schools and teachers with autonomy and holding them accountable for

student outcomes. Autonomy empowers schools to innovate and adapt to their local context, while accountability ensures that standards are met.

- **Stakeholder Engagement and Support:** These systems actively engage various stakeholders, including parents, communities, and local industries, in the education process. There is a culture of support and shared responsibility for educational outcomes.
- **Focus on Student Well-being and Holistic Development:** Besides academic achievements, high-performing systems also focus on the overall well-being and holistic development of students. This includes social, emotional, and physical development.
- **Continuous Learning and Improvement**: Finally, these systems are characterized by a culture of continuous learning and improvement that starts with early childhood education. They are open to innovation and regularly review and update their practices based on new research and changing societal needs.

13.1. Identifying the root of learning deficits in basic education

Although the education sector, especially basic education has likely been one of the most examined sectors, the root cause for the lack of quality learning in the country has yet to be definitively determined in the local literature. Poland is also known to have significantly improved education quality (as measured by learning metrics), by way of reforming the educational system. These reforms included increased hours of instruction, delayed tracking of students into vocational or academic paths, increased autonomy for schools, and introducing a new core education curriculum (OECD 2011). Estonia is another case worth examining as it has outperformed other countries in overall PISA performance despite relatively low expenditure on education (OECD 2020). Schools in Estonia have a large degree of autonomy, with the state setting national standards and establishing principles of education funding, state supervision, and quality assessment. In recent years, Estonia has undertaken substantial initiatives to enhance digital skills, promote inclusive education among teachers, and raise their wages.

Meta-analysis has identified the crucial role of having effective teachers who can significantly raise basic competencies of learners and contribute to a positive learning environment. Hattie (2009) pointed out that teachers play a crucial role in shaping the learning environment and directly impact student outcomes. Roorda (2011) concludes that positive teacher-student relationships are associated with better academic outcomes and social-emotional development for students. The success of Viet Nam in international assessments has been attributed to the caliber of Vietnamese teachers who are not necessarily better qualified, but they are simply more effective at teaching:

> "Vietnam's teachers do their job well because they are well-managed. They receive frequent training and are given the freedom to make classes more engaging. To tackle regional inequality, those posted to remote areas are paid more. Most important, teacher assessment is based on the performance of their students." (The Economist, 2023)

At the local level, Alinsunurin (2021) explored how performance is construed by factors such as learners' backgrounds, learning mindsets, reading difficulties, and other self-reported characteristics; particular policy solutions, on improving the curriculum and intensifying teacher training, are suggested.

13.2. Adopting an open data policy in the entire education sector, especially basic education, and having an education statistics advance release calendar

Basic education statistics on performance indicators are currently not released by a quarter after school opening by DepED on its website, unlike more than a decade ago. In fairness, the DepED always responds to data requests. However, data requests can be facilitated faster if DepEd had an open data policy (i.e., making data available through its website and readily downloadable). Anonymized student-level microdata should also be readily available for public use consistent with an open data policy to enable stakeholders to conduct studies on the determinants of learning outcomes. Further, since data collected by government agencies is implicitly funded by public funds, these data have a public good.

An examination of the Statistical Capacity Index annually released by the World Bank since 2004 suggests that the Philippines' ranking within Southeast Asia reduced partly because the DepED only provided statistics on gender equality on education only once every five years rather than regularly to international statistical compilers (Albert and Vizmanos 2019). In 2012 and 2013, the DepED was already not reporting education statistics such as the net enrolment ratio to global statistics compilers.

One good practice of the Philippine Statistics Authority (PSA) is its use of an advance release calendar to inform the public on when they release statistics. While the DepED is the source of several "designated statistics" (on basic education), calendars are not currently available on these statistics in the PSA website (PSA n.d.). This has repercussions to our country's standing in international assessments on openness of data, e.g., in the Open Data Inventory (Open Data Watch 2021).

13.3. Work toward data interoperability within DepED and with other major government stakeholders of basic education, as well as use of achievement tests data as inputs to teacher training

Laudably, the DepED has developed a comprehensive Enhanced Basic Education Information System (BEIS), with some support from the development community. Notably, the EBEIS has been integrated with the Learners Reference Number (LRN) system. The LRN is a unique ID given to each learner. However, it is vital for DepED to integrate the EBEIS (and LRN) with the NAT and other data on learning outcomes. Interoperability of databases are crucial to enable DepED to see how school inputs relate with learning outcomes. DepED should also use NAT data as inputs to training needs analysis of teacher training activities that have been unevaluated and are likely ineffective.

The LRNs should make DepED databases interoperable, and interoperability can be extended to those of other government agencies, such as *Listahanan* of the Department of Social Welfare and Development. This can help examine the impact of *Pantawid Pamilyang Pilipino Program,* of school-feeding and of other interventions for marginalized learners on learning, to estimate returns on public investments in social protection.

13.4. Addressing teacher workload as this affects teaching quality

The DepED ought to examine its human resources shortages more systematically, looking into the time use of teachers. It should work with the Department of Budget and Management (DBM) to obtain the needed support to hire more administrative staff, including guidance

counsellors, who can de-load teachers of duties unrelated to teaching, and thus help teachers fulfill their mandates to teach. Public schools could also be encouraged to accept undergraduate students pursuing primary and secondary education programs to assist them in non-teaching tasks as part of their on-the-job training.

13.5. Improve measurement of literacy, particularly functional and digital literacy

While data on literacy do not give clear guidance in addressing an issue key to people's survival and success in an increasingly digital world, they provide a barometer for us to measure where we are, and where we have been in relation to where we would like to be. The accuracy of this data, however, is crucial. Using current metrics on basic and functional literacy (from FLEMMS) is somewhat at variance with metrics on digital skills (from NICTHS), although one would expect digital literacy rates to be lower than basic literacy rates. Neither basic nor functional literacy data fully capture the continuum of literacy concepts. There are also biases about "reported" basic literacy: self-reports are dependent on what each individual interprets "reading" and "writing" to signify. In addition, asking one respondent to report literacy on behalf of others can introduce prestige biases (thus yielding high basic literacy rates). Diagnostic assessment/testing is better, but the current functional literacy measurements in FLEMMS can benefit from international assessments on literacy, such as OECD's Programme for the International Assessment of Adult Competencies (PIAAC), World Bank's STEP Skills Measurement Program (STEP), UNESCO's Literacy Assessment and Monitoring Program (LAMP), and the Adult Literacy and Life Skills Survey (ALL). Digital skills measurement (in the NICTHS) could also be integrated with functional literacy assessment in the FLEMMS especially since basic functional digital skills are now life-skills and are a prerequisite for higher-level digital specialized skills needed in the workplace.

13.6. Establishing a labor market information system and strengthening lifelong learning and upskilling programs

One of the key elements to achieving SDG4 goals is the establishment of a robust labor market information system (LMIS) that can provide valuable insights into the evolving dynamics of job markets. By doing so, it can inform higher education stakeholders about the skills that are in demand in the economy. It is important to localize this LMIS to regions and provinces to make it more relevant to the specific needs of local industries and economies. Since policies surrounding employment and job training are decentralized, it is critical to provide LGUs and educational institutions with essential information on priority jobs and sectors. Leveraging information from datasets such as the LFS becomes instrumental in offering timely and valuable insights at the local level.

Furthermore, a comprehensive policy research agenda must be developed to accurately measure and regularly report education outcomes. This includes improving the registry of youth who are NEET and potential TVET clientele. The agenda should focus on aligning specific degrees with occupation requirements, which will help in designing targeted completion-reskilling programs. Private sector involvement in curriculum and training development is also crucial to ensure that educational programs are practical and applicable in real-world occupational settings. Aligning educational programs with industry needs ensures that the skills developed through education are in harmony with the demands of the job market. The efficient operationalization of the Philippine Qualifications Framework (PQF) is fundamental in this regard.

To strengthen lifelong learning and upskilling programs, practical solutions are needed to meet the demands of the future economy. Initiatives such as external validity assessments, capacity building for trainers, and the utilization of existing successful models like Germany and Korea's Meister Schools provide a roadmap for ensuring the effectiveness and relevance of educational programs. Reinforcing learning in Senior High School (SHS) is crucial, drawing insights from successful systems like Poland's continuous improvement efforts, Vietnam's High-Tech High-Touch Education, and Estonia's excellence model, inspire adaptive strategies for quality education.

13.7. Implementing targeted programs for vulnerable groups

The implementation of targeted programs for vulnerable groups is a critical step towards addressing economic barriers and promoting equitable access to post-secondary education. Scholarships and financial aid, tailored to the needs of vulnerable populations, play a crucial role in this endeavor. Learning poverty data has drowned other outcomes, particularly the need for addressing development gaps of vulnerable groups with the rest of the population. Even literacy measures (and various education outcome indicators) show how, for instance, BARMM lags across regions, yet there is no institutional mechanism for the DepED, CHED, and TESDA to assist their counterpart agencies in BARMM.

An important aspect of this strategy for inclusive education involves a comprehensive reassessment of various interventions, such as scholarship programs, programs for learners with disabilities and indigenous communities, and other vulnerable groups. By reevaluating these scholarships to cover wrap-around costs associated with training, the aim is to go beyond tuition fees and address additional financial burdens such as living expenses and materials. This approach ensures that individuals not only gain access to education but also have the necessary support to effectively apply the skills they acquire. It is also crucial to show policy makers results of cost-benefit analysis, i.e., how investing in early remedial and training programs for vulnerable and marginalized groups can lead to long-term economic benefits, such as a more skilled workforce, higher productivity, and reduced social welfare costs, and are aligned with our PDP goals on social inclusion and reducing inequalities, consistent with a commitment to universal achievements on quality learning.

Furthermore, the strategy involves maximizing the devolution of TVET to customize initiatives to the specific needs of communities. Additionally, exploring private sector incentives, drawing inspiration from successful models like Malaysia's Human Resources Development Fund, serves to establish sustainable funding mechanisms. Collaboration with the private sector can also contribute significantly to the financial sustainability of programs aimed at supporting vulnerable groups in their pursuit of education and skill development.

13.8. Developing mechanisms for Integrated planning of DepED, TESDA, and CHED

The current trifocalized system in the Philippines has led to each agency – DepEd, CHED, and TESDA – focusing on different levels of education: basic education, higher education, and technical-vocational education and training, respectively. While specialization has its benefits, it often leads to a lack of coordination and continuity in educational policies and practices across these levels.

Coordination mechanisms for DepED, TESDA and CHED should be strengthened for these agencies to meet at least yearly. Annual trilateral meetings among DepEd, CHED, and TESDA

are a practical approach to foster regular dialogue and coordination. These meetings should not only review the current educational situation in relation to SDG4 and related Global Goals but also discuss emerging trends, challenges, and opportunities in the entire education sector. The coordination should also aim at aligning the Philippine education system with international standards and best practices. This alignment will ensure that Filipino students are globally competitive and future ready so that the whole education system is responsive to both local and global emerging labor market demands. Systematic engagement of DepED, CHED and TESDA with industry stakeholders, employers, and sectoral representatives can provide valuable insights into the skills and competencies needed in the workforce. This engagement can inform curriculum development and training programs.

A common agenda among these three agencies is essential for addressing the entire spectrum of educational needs in the Philippines. This unified strategy should focus on creating a seamless educational pathway for all learners, ensuring that transitions from basic education to higher education and vocational training are smooth and well-guided. Utilizing data to inform discussions and decisions is also crucial. These agencies should collaborate on data collection and analysis to gain a comprehensive understanding of the educational landscape, including student performance, access to education, teacher quality, and labor market needs.

Developing mechanisms for lifelong learning is also essential in today's rapidly changing world. This includes not only formal education but also non-formal and informal learning opportunities. The agencies should work together to promote a culture of continuous learning and skill development.

Ensuring that education is inclusive and accessible to all, including marginalized and disadvantaged groups, should be a key part of the common agenda. This involves addressing barriers to education and developing targeted programs to support these groups. Currently, national government agencies do not have systematic institutional linkages with counterparts in BARMM to help the Bangsamoro government in addressing development gaps. This needs attention.

Strengthening the coordination of policy planning among DepEd, CHED, and TESDA is vital for creating a more integrated, efficient, and responsive education system in the Philippines. Such collaboration can lead to the development of a holistic educational strategy that not only addresses current challenges but also anticipates future needs, ensuring quality education and lifelong learning opportunities for all Filipinos.

14. References

Albert, J. R. G. and M. Raymundo. 2016. Trends in Out of School Children and Other Basic Education Statistics. Discussion Paper No. 2016-39. Philippine Institute for Development Studies https://dirp3.pids.gov.ph/websitecms/CDN/PUBLICATIONS/pidsdps1639.pdf (accessed on August 15, 2023)

Albert, J.R.G. and J.F.V. Vizmanos. 2019. Philippine statistical system in the wake of the emerging data revolution and digitization. PIDS Discussion Paper Series 2019-17. Quezon City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1917.pdf (accessed on July 10, 2023).

Alinsunurin, J. 2021. Unpacking underperformance: Learning mindsets and the challenge of academic achievement among Filipino students. Asian Institute of Management-Rizalino S. Navarro Policy Center for Competitivenes Discussion Paper 2021-004. http://dx.doi.org/10.2139/ssrn.3867956 (accessed on July 15, 2023).

Anderson, J. 2018. The former education minister of one of the world's smartest countries explains the role of AI in schools. Quartz Daily Brief. https://qz.com/1285854/ai-in-schools-helps-with-high-tech-high-touch-learning-according-to-south-koreas-former-education-minister/ (accessed on July 12, 2023).

Asian Development Bank (ADB). 2014. Framework for Inclusive Growth Indicators 2014: Key Indicators for Asia and the Pacific Special Supplement. https://www.adb.org/publications/framework-inclusive-growth-indicators-2014-key-indicators-asia-and-pacific (accessed on August 10, 2023)

ADB. 2021. Learning and earning losses from COVID-19 school closures in developing Asia: Special Topic of the Asian Development Outlook 2021 Pasig City, Philippines: ADB. https://www.adb.org/sites/default/files/publication/692111/ado2021-special-topic.pdf (Accessed August 10, 2022)

ADB. 2022. Falling further behind: The cost of COVID-19 schools closures by gender and wealth: Special Topic of the Asian Development Outlook 2021. Pasig City, Philippines: ADB. https://www.adb.org/sites/default/files/publication/784041/ado2022-learning-losses.pdf (Accessed August 10, 2022)

Basic Education Information System (BEIS). Department of Education. https://ebeis.deped.gov.ph/beis/# (accessed on August 7, 2022)

Bernardo, A.B.I. 2021. Socioeconomic status moderates the relationship between growth mindset and learning in mathematics and science: Evidence from PISA 2018 Philippine data. *International Journal of School & Educational Psychology* 9(2):208–222.

Briones, L. 2019. Making the pivot from access to quality. Presentation at the Magna Anima Teacher's College, June 28. https://magna-anima.com/assets/site/Pivot-Access-to-Quality-28-Aug-2019_no-confidential-slides.pdf (accessed on July 10, 2023)

Bureau of Education Assessment. Department of Education. 2022. Personal communication (via email on August 23, 2021)

Busemeyer, Marius & Iversen, Torben. (2014). The political economy of skills and inequality. Socio-Economic Review. 12. 241-243. 10.1093/ser/mwu013.

Council for the Welfare of Children. 2017. National Baseline Study on Violence against Children: Philippines Executive Summary. https://www.unicef.org/philippines/PHL_NBSVAC_Results_ES.pdf; (accessed on September 3, 2023)

Cuenca, J. S. 2020. Analysis of the 2021 President's Budget. Discussion Paper No. 2020-35z. Philippine Institute for Development Studies https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2035.pdf (accessed on September 26, 2023)

Dadios, E.P, A. B. Culaba, J. R. G. Albert, V. B. Paqueo, A. C. Orbeta Jr., R. B. Serafica, A. A. Bandala, and J. C. A, C. Bairan. 2018. Preparing the Philippines for the Fourth Industrial Revolution: A Scoping Study. Recent Trends in Out of School Children in the Philippines. Discussion Paper No. 2018-11. Philippine Institute for Development Studies https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1811.pdf (accessed on September 26, 2023)

Dang, H. A. H. and Glewwe, P. W. 2018. Well Begun, but Aiming Higher: A Review of Vietnam's Education Trends in the past 20 Years and Emerging Challenges. Journal of Development Studies, 54(7):1171–1195, 2018. DOI: 10.1080/00220388.2017.1380797 (accessed on November 12, 2023)

David, C.D., J.R.G. Albert and J. F. V. Vizmanos. 2019. Pressures on public school teachers and implications on quality. PIDS Policy Notes 2019-01. Makati City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn1901.pdf (accessed on July 6, 2023).

———. 2018. Out-of-School Children: Changing Landscape of School Attendance and Barriers to Completion. PIDS Discussion Paper No. 2018-25. Makati City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1825.pdf (accessed on July 6, 2023).

David, C.D. and J.R.G. Albert. 2015. How has basic education in the Philippines fared and what else needs to be done? PIDS Policy Notes 2019-17. Makati City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn1508_rev3.pdf (accessed on July 6, 2023).

———. 2015. Recent Trends in Out-of-School Children in the Philippines. Discussion Paper No. 2015-51. Philippine Institute for Development Studies https://dirp3.pids.gov.ph/websitecms/CDN/PUBLICATIONS/pidsdps1551_rev2.pdf (accessed on August 15, 2023)

David, C.D., J.R.G. Albert and S.L.-C. Monterola. 2014. In pursuit of sex parity: are girls becoming more educated than boys? Policy Notes No. 2009-05. Philippine Institute for Development Studies https://dirp4.pids.gov.ph/ris/pn/pidspn0905.pdf (accessed on August 15, 2023)

Department of Budget and Management (DBM). 2023. General Appropriations Act 2023. https://www.dbm.gov.ph/wp-content/uploads/GAA/GAA2023/TechGAA2023/DOLE/G.pdf. (accessed on October 28, 2023).

Department of Education (DepED). 2022. DepED Order No. 23, series of 2022. Child Find Policy for Learners with Disabilities towards Inclusive Education. https://www.deped.gov.ph/wp-content/uploads/2022/05/DO_s2022_023.pdf (accessed on November 11, 2023)

Department of Education (DepED), United Nations Childrens' Fund (UNICEF), and Philippine Business for Education (PBED). 2022. *Basic Education Development Plan 2022–2030*. https://assets.globalpartnership.org/s3fs-public/document/file/2022-06-Philippines-education-sector-plan_0.pdf (accessed on July 6, 2023).

The Economist. (2023). Why are Vietnam's schools so good? July 2, 2023. https://www.economist.com/asia/2023/06/29/why-are-vietnams-schools-so-good (accessed on November 12, 2023).

General Appropriations Acts (GAA). 2010-2020. Department of Budget and Management (DBM). https://www.dbm.gov.ph/index.php/budget (accessed on August 19, 2022).

Hanushek, E.A. 1978. Conceptual and empirical issues in the estimation of educational production functions. *Journal of Human Resources* 14(3):351–388. http://hanushek.stanford.edu/sites/default/files/publications/Hanushek%201979%20JHumRes%2014%283%29.pdf (accessed on August 12, 2023).

———. 2021. Addressing cross-national generalizability in education impact evaluation. *International Journal of Educational Development* 80(2021):102318. https://www.sciencedirect.com/science/article/abs/pii/S0738059320304776 (accessed on August 12, 2023).

Hattie, J. 2009. Visible Learning: A synthesis of over 800 meta-analyses relating to achievement. London, UK: Routledge. https://www.routledge.com/Visible-Learning-A-Synthesis-of-Over-800-Meta-Analyses-Relating-to-Achievement/Hattie/p/book/9780415476188 (accessed on August 12, 2023).

Holmlund, H. and K. Sund. 2008. Is the Gender Gap in School Performance Affected by the Sex of the Teacher?. Labour Economics. 15. 37-53. 10.1016/j.labeco.2006.12.002. (accessed on July 12, 2023).

International Labour Organization. 2020. Decent Work Country Programme Philippines 202-2024. https://www.ilo.org/wcmsp5/groups/public/---ed_mas/---program/documents/genericdocument/wcms_755642.pdf (accessed on October 18, 2023).

Lee, J.W. and R.J. Barro. 1997. Schooling quality in a cross-section of countries. *Economica* 68(271):465–488. https://www.nber.org/papers/w6198 (accessed on August 12, 2023).

Le Nestour, A. Moscoviz, L., and J. Sandefur (2023). The Long-Run Decline of Education Quality in the Developing World. Center for Global Development Working Paper 608. September 2023. https://www.cgdev.org/sites/default/files/long-run-decline-education.pdf (accessed on November 12, 2023).

Monje, J.D., A.C. Orbeta Jr., K. Francisco-Abrigo and E.M. Capones. 2010. Starting where the children are A process evaluation of the mother tongue-based multilingual education implementation. PIDS Discussion Paper Series 2019-06. Quezon City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1906.pdf (accessed on July 12, 2023).

Molato-Gayares, R., A. Park, D. A. Raitzer, D. Suryadarma, M. Thomas, and P. Vandenberg. 2022. How to Recover Learning Losses from COVID-19 School Closures in Asia and the Pacific. (July) ADB Briefs No. 217. Pasig City, Philippines: ADB. https://www.adb.org/sites/default/files/publication/808471/adb-brief-217-learning-losses-covid-19-school-closures.pdf (accessed on August 10, 2022).

Mulji, N. 2016. The Role of Teacher Gender in Students' Academic Performance. Lund University Publications. http://lup.lub.lu.se/student-papers/record/8880641 (accessed on July 12, 2023).

National Economic Development Authority (NEDA). 2022. The 2022 Voluntary National Review of the Philippines. https://hlpf.un.org/sites/default/files/vnrs/2022/06222022%20VNR%20of%20the%20Philippines.pdf (accessed on August 15, 2023).

⸻. 2019. The 2019 Voluntary National Review of the Philippines. https://hlpf.un.org/sites/default/files/vnrs/2021/23366Voluntary_National_Review_2019_Philippines.pdf (accessed on August 15, 2023).

⸻. 2016. The 2016 Voluntary National Review of the Philippines. https://hlpf.un.org/sites/default/files/vnrs/2021/10765PH%20VoluntaryNationalReview_FINAL.pdf (accessed on August 15, 2023).

Open Data Watch. 2021. Open Data Inventory: Country profile for the Philippines for 2020. https://odin.opendatawatch.com/Report/countryProfileUpdated/PHL?year=2020 (accessed on July 15, 2023).

Organization for Economic Cooperation and Development (OECD). 2020. Education Policy Outlook: Estonia. https://www.oecd.org/education/policy-outlook/country-profile-Estonia-2020.pdf (accessed on August 19, 2022).

————. 2023. *OECD Skills Strategy Southeast Asia: Skills for a Post-COVID Recovery and Growth,* OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/923bfd03-en.

————. 2011. "Vignettes on Education Reforms: England and Poland", in Lessons from PISA for the United States, OECD Publishing, Paris.: https://doi.org/10.1787/9789264096660-11-en (accessed on October 12, 2023).

————. 2009. Creating effective teaching and learning environments: First results from TALIS, Paris, France. https://www.oecd.org/education/school/43023606.pdf (accessed on July 12, 2023).

Orbeta, A.C., Jr., K.A.M. Melad, and M. Potestad. 2020. Correlates of test performance of 15-year-old students in the Philippines: Evidence from PISA. Quezon City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2057.pdf (accessed on July 15, 2023).

Paqueo, V.B. and A.C. Orbeta Jr. 2019. Gender Equity in Education: Helping the Boys Catch Up. Quezon City, Philippines: Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1901.pdf (accessed on July 15, 2023)

Philippine Statistics Authority (PSA). n.d. System of designated statistics online monitoring of the Department of Education. https://psa.gov.ph/philippine-statistical-system/sds/online-monitoring-imp-agency/Department%20of%20Education (accessed on July 15, 2023).

————. 2017. 2015 Population Census report no. 2: Demographic and socioeconomic characteristics, Philippines. Quezon City, Philippines: PSA. https://psa.gov.ph/sites/default/files/2015%20CPH_REPORT%20NO.%202_PHILIPPINES.pdf (accessed on August 23, 2023).

————. 2019. Functional Literacy and Mass Media Survey. Quezon City, Philippines: PSA.

————. 2023. SDG Watch. https://psa.gov.ph/sdg (accessed on August 15, 2023)

_____. 2023. Philippine Labor and Employment Indicators, August 2023 Labor Force Survey. https://psa.gov.ph/sites/default/files/infographics/AUGUST%202023%20LABOR%20FORCE%20SURVEY.pdf?width=950&height=700&iframe=true (accessed on November 10, 2023).

Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The Influence of Affective Teacher-Student Relationships on Students' School Engagement and Achievement: A Meta-Analytic Approach. Review of Educational Research, 81(4), 493-529. https://journals.sagepub.com/doi/10.3102/0034654311421793 (accessed on October 15, 2023).

Sansone, D. 2019. Teacher Characteristics, Student Beliefs, and the Gender Gap in STEM Fields. Educational Evaluation and Policy Analysis, 41(2), 127–144. http://www.jstor.org/stable/45221669 (accessed on July 12, 2023)

Schleicher, A. (2018), World Class: How to Build a 21st-Century School System, Strong Performers and Successful Reformers in Education, OECD Publishing, Paris, https://www.oecd-ilibrary.org/education/world-class_9789264300002-en (accessed on November 15, 2023).

Technical Education and Skills Development Authority (TESDA). 2021. TESDA Circular. https://www.tesda.gov.ph/Uploads/File/TWSP%20and%20STEP/Circular/2021/TESD A%20Circular%20No.%20013-2021%20-%20FY%202021%20Rationalized%20Training%20Cost%20of%20TESDA%20Schola rship%20Programs.pdf (accessed on October 28, 2023).

_____. 2023. National Technical Education and Skills Development Plan.

_____. 2022. 2021 TVET Statistics Annual Report. https://www.tesda.gov.ph/Uploads/File/Planning2022/Annual%20Report/ANNUAL-TVET-Stat-2021-1.pdf. (accessed October 27, 2023).

_____. 2023. 2022 TVET Statistics Annual Report. https://www.tesda.gov.ph/Uploads/File/Planning2022/Annual%20Report/2022%20TV ET%20Statistics%20Annual%20Report.pdf. (accessed October 27, 2023).

Terrier, C. 2016. Boys Lag Behind: How Teachers' Gender Biases Affect Student Achievement. IZA Discussion Paper No. 10343, Institute for the Study of Labor (IZA), Bonn. https://docs.iza.org/dp10343.pdf (accessed on August 9, 2023)

Todd, P., and K. Wolpin. 2003. On the specification and estimation of the production function for cognitive achievement. *Economic Journal* 113(485): F3–F33. https://onlinelibrary.wiley.com/doi/10.1111/1468-0297.00097 (accessed on August 15, 2023)

United Nations (UN). 2015. 70/1. Transforming our world: the 2030 Agenda for Sustainable Development. General Assembly Resolution A/RES/70/1 https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf (accessed on August 15, 2023)

UNESCO Institute for Statistics (UIS). 2023. http://data.uis.unesco.org/ (accessed on July 7, 2023).

UN Statistics Division. Global SDG Indicators Database. https://unstats.un.org/sdgs/indicators/database/ (accessed August 7, 2022).

Winters, M.A., R.C. Haight, T.T. Swaim, and K.A. Pickering. 2013. The effect of same-gender teacher assignment on student achievement in the elementary and secondary grades: Evidence from panel data, Economics of Education Review, Volume 34, Pages 69-75, ISSN 0272-7757, https://doi.org/10.1016/j.econedurev.2013.01.007. (accessed August 7, 2022).

World Economic Forum (WEF). 2015. New vision for education: Fostering social and emotional learning through technology. Geneva, Switzerland: WEF. https://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf (accessed on July 12, 2023).

World Bank. 2010. Successful Education Reform: Lessons from Poland. Europe and central Asia Knowledge Brief. November 2010. Volume 34. https://documents1.worldbank.org/curated/en/711041468093564484/pdf/622500BRI0S ucc0Box0361475B00PUBLIC0.pdf (accessed on October 12, 2023).

————. 2019. Philippines Basic Education: Public Expenditure Review. Washington, D.C., USA: World Bank. https://documents1.worldbank.org/curated/en/429921603168506339/Philippines-Basic-Education-Public-Expenditure-Review.docx (accessed on August 12, 2023).

————. 2021. The World Bank. What is Learning Poverty? https://www.worldbank.org/en/topic/education/brief/what-is-learning-poverty (accessed on October 28, 2023)

————. 2023. World Development Indicators. https://data.worldbank.org/ (accessed on July 7, 2023).

_____. 2023. Philippines Economic Update, June 2023: Securing Clean Energy Future. © Washington, DC. http://hdl.handle.net/10986/39858 License: CC BY-NC 3.0 IGO.