

# Technology-Enabled Innovation in Education in Southeast Asia (TIESEA)

Diagnostic Assessment Report – Philippines Country Report

March 2022



Learning Possibilities

This Report presents preliminary findings and an official ADB publication will be produced in due time

**TECHNOLOGY- ENABLED INNOVATION IN EDUCATION IN SOUTHEAST ASIA (TIESEA) – EDTECH DIAGNOSTICS AND INTERVENTIONS SUPPORT**

DIAGNOSTIC ASSESSMENT REPORT – PHILIPPINES COUNTRY REPORT

TA-6671 REG - CONTRACT N° 167252-S53987

---

March 2022

*The views expressed in this publication are those of the authors and do not necessarily reflect the views and policies of the Asian Development Bank (ADB) or its Board of Governors or the governments they represent.*

# TABLE OF CONTENTS

<b>ABBREVIATIONS</b> .....	2
<b>EXECUTIVE SUMMARY</b> .....	4
<b>1. THE EDTECH READINESS ASSESSMENT FRAMEWORK</b> .....	8
<b>2. APPLYING THE EDTECH READINESS ASSESSMENT FRAMEWORK TO THE PHILIPPINES</b> .....	10
Infrastructure .....	10
Government.....	11
Schools / Teachers.....	12
Students / Parents.....	14
Providers – Companies and Public Private Partnerships .....	15
<b>3. KEY FINDINGS AND RECOMMENDED INTERVENTIONS</b> .....	17
<b>REFERENCES</b> .....	19
<b>ANNEXES</b> .....	21
Annex 1: Inventory of EdTech providers.....	21
Annex 2: Survey findings – The Philippines.....	37
Annex 3: Report on gender gap in EdTech in the Philippines .....	43

## ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>ADM</b>	Alternative Delivery Modes
<b>ADMU</b>	Ateneo de Manila University
<b>AFI</b>	Ayala Foundation
<b>AI</b>	Artificial Intelligence
<b>APEC</b>	Asia-Pacific Economic Cooperation
<b>ASM</b>	Advocacy and Social Mobilization
<b>AYLC</b>	Ayala Young Leaders Congress
<b>BALS</b>	Bureau of Alternative Learning System
<b>BPS</b>	Broadcasting System
<b>CHED</b>	Commission on Higher Education
<b>CIDA</b>	Canadian International Development Agency
<b>CSR</b>	Corporate Social Responsibility
<b>DCP</b>	Computerization Program
<b>DepEd</b>	Department of Education
<b>DERF</b>	Digital Education Readiness Framework
<b>DICT</b>	Department of Information and Communications Technology
<b>DLSU</b>	De La Salle University
<b>ED</b>	Enhanced Basic Education Information System
<b>FLO</b>	Flexible Learning Opportunities
<b>GILAS</b>	Gearing Up for Internet Literacy and Access to Students
<b>GO</b>	Government
<b>HRD</b>	Fiscal Year
<b>ICT</b>	Information And Communications Technology
<b>IF</b>	Infrastructure
<b>ILC</b>	Interlocal Cooperation
<b>IMPACT</b>	Instructional Management by Parents, Community, and Teachers
<b>IT</b>	Information Technology
<b>IYF</b>	International Youth Foundation
<b>KPITTC</b>	Korea-Philippines Information Technology Training Center
<b>LAN</b>	Local Area Network
<b>MOA</b>	
<b>MOD</b>	Massive Open Distance
<b>MOOC</b>	Massive Open Online Courses
<b>MSME</b>	Micro, Small and Medium Enterprises
<b>NCRFW</b>	National Commission on the Role of Filipino Women
<b>NED</b>	Nokia Education Delivery
<b>NRI</b>	Network Readiness Index
<b>OER</b>	Open Educational Resources
<b>OFW</b>	Overseas Filipino Workers

---

<b>OS</b>	Operating System
<b>PCW</b>	Philippine Commission on Women
<b>PDF</b>	Pedagogy for Remote Teaching
<b>PDTS</b>	Philippines Digital Transformation Strategy
<b>PIDS</b>	Philippine Institute for Development Studies
<b>PPP</b>	Public Private Partnerships
<b>PR</b>	Providers
<b>PSHS</b>	Philippine Science High School
<b>PSOF</b>	Public Schools of the Future
<b>SIPTVETS</b>	Supporting Innovation in the Philippine Technical Vocational Education and Training System
<b>SP</b>	Students/Parents
<b>T2T</b>	Text-To-Teach
<b>TDF</b>	TESDA Development Fund
<b>TEEP</b>	Third Education Project
<b>TESDA</b>	Technical Education and Skills Development Authority
<b>TOP</b>	TESDA Online Program
<b>TTCTCE</b>	TESDA Training Center Taguig Campus Enterprise

---

## EXECUTIVE SUMMARY

Based on the five pillars of the ADB EdTech Readiness Framework, this report describes the current situation of education in Philippines in general, with a specific focus on how EdTech is being implemented to improve the quality of teaching and learning. The five pillars include infrastructure, government, schools/teachers, parents/students, and EdTech providers. By identifying the existing status of EdTech readiness, the report seeks to provide evidence against which decision-makers can identify initiatives likely to make a positive contribution to the quality of the education ecosystem and opportunities for public-private partnerships.

The TIESEA team, as part of the study in the Philippines, also undertook a gender analysis and the report is presented in full in Annex 3. Historically, the education system in the Philippines favored males over the females, but from the 1970s onwards the number of college-educated women began to surpass that of men. It is reported that, currently, the number of girls completing secondary education surpasses that of boys by 12%. The Philippines is the only country in Asia to be in the top twenty for gender parity, though there is an underrepresentation of girls and women in the technology sectors, mostly due to cultural traditions and family preferences. Nonetheless, there are proportionally more women in the service sectors of the economy where there is often a high reliance on ICT skills. In contrast to international averages where, typically women's aggregate wages are 20% lower than men's, in Philippines women's earnings are, when taken as a whole, are 10% higher. Although a great majority of female entrepreneurs operate in the small to medium enterprise (SME) sectors only a small proportion of them have had any training about harnessing technology as part of entrepreneurship training. This is despite many campaigns to promote women's expertise in ICT. Nonetheless, recent government policy moves have resulted in increasing numbers of women enrolling in STEM-related disciplines at university level.

### Infrastructure

In terms of **power supply and electricity access**, in 2020, the household electrification level in the Philippines was at **94.5 percent**. Infrastructure remains expensive, and the geographically scattered country makes it hard to get good telecoms infrastructure in place, and natural disasters are an issue. In 2020 DepEd reported that **there were 2,414 schools that did not have electrical supply**. In these schools, about **350,000 learners and 14,000 teachers did not have the opportunity to avail of the remote learning materials** offered in lieu of face-to-face sessions during the pandemic.

**The country has a major challenge in terms of Internet speed**. With 22.50 Mbps average mobile speed, the Philippines is in the 83rd spot out of 134 countries by the Portulans Institute. The slow internet connection is felt all over the country. The business and education sectors are not able to conduct their activities efficiently because of this slow Internet connection. With 22.50 Mbps average mobile speed, the Philippines is in the 83rd spot out of 134 countries by the Portulans Institute. Unreliable connectivity is another major issue as it reaches only 34% of households and 48% of schools.

On **devices and hardware**, mobile phones are the most popular among Internet users aged 16 to 64 who use the Internet at an average of 10 hours a day. 96.5 % of the 73.91 million users access the Internet via their mobile devices. Laptop or desk top computers are the second most used, followed by tablet devices, non-smart mobile phones, games tablets, smart wristbands, streaming sticks, smart home devices, and virtual reality devices. About 2 out of 5 (41.4%) households had personal computers or broadband Internet. Mobile devices are used primarily for social media purposes.

Regarding **radio/TV broadcasting strategies, content creation and transmission**, the country has robust communication structures and facilities, as reflected by: (a) more than 952 radio stations all over

the country (AM stations: 369, and; FM stations: 583, shortwave; (b) three major TV channels with nationwide coverage, with provincial sister stations and (c) more than 400 cable stations and community radio-TV stations, and (d) three (3) major cell phone providers and eleven (11) local providers. These media networks broadcast educational programs for free.

## Government

There is strong government support for technology in education, with special focus on hardware provision to schools. The prevailing model of classroom integration is learning about technology (i.e., digital literacy to prepare for the information age workforce) or teaching with technology (i.e., digitizing lesson plans to move from chalkboard to projector), but not learning with technology.

**Government policy development/funding.** The country's Digital Transformation Strategy (PDTS) of 2022 was developed by the Department of Information and Communications Technology (DICT).

Primary initiatives of the Government on Ed Tech are: (1) Internet in Schools, *iSchools* project which provide public high schools with computers with broadband internet connectivity (2) by educator's training, tech support, and monitoring and evaluation, and (3) Regional ICT that Centers help spur regional development through the use of ICT in education.

DepEd has mobile laboratories containing tablets and laptops that can be moved from one classroom to another. The DepEd has also launched the "Digital Rise" campaign which provides offline-accessible OER with every school computer delivery, along with training on how to create digital resources. The TESDA Online Program (TOP) is a major TESDA delivery strategy in responding to the lockdown of TVET learning centers during the pandemic. TOP is a web-based platform that offers free Massive Open Online Courses (MOOCs) for the technical education and skills development of the Filipino learners.

The main guiding body in the **education and performance measurement** of both DepEd and TESDA ICT-based initiatives is the Philippine Qualification Framework (PQF). It is an inter-agency program composed of DepEd, TESDA, CHED, Professional Regulation Commission (PRC) and the Department of Labor and Employment (DOLE). Its primary aim is to address gaps in the education, training, professional, and industry sectors. Its goal is to align the national training programs with international standards.

School closure has been the primary measure to mitigate the adverse effects of the COVID-19 pandemic. This closure of schools is expected to lead to learning loss, drop-outs and higher inequality in school performance.

## School/teachers

Regarding **teacher capacity in educational technology**, Filipino educators feel the need for adequate training on ICT since they are generally unprepared to do ICT-related tasks. They also felt that it is **not only teachers who need preparation but also government, educational institutions, academic staff, students, parents, and even academic recognition bodies**.

**Training.** In 2020 DepED embarked on a massive in-service teacher training program to respond to the ICT training needs of teachers. DepEd offices at central and local levels undertake the development of printed self-learning modules, downloadable digital resources, radio and television programs, and massive teacher training and orientation efforts.

**Training in terms of ICT pedagogy integration in pre-service teacher education.** The overall picture is promising. A recent research study was conducted to determine the readiness of teacher

education institutions to integrate Ed Tech into pre-service teacher education. The findings suggest that **education managers felt that they are ICT-ready** in terms of selecting and integrating digital resources for teaching and learning. In terms of **school/teachers**, particularly on **teacher capacity in educational technology**, Filipino teachers feel the need for adequate training on ICT since they are generally unprepared to do ICT-related tasks such as tracking and analyzing student performance. ICT resources are not regularly used by teachers for instructional purposes.

As regards, **equipment and software**. In 2020, there were 45,869 classrooms with television sets, projectors and computers that support ICT-assisted teaching in schools. However, not all schools with computers had the same level of access. Schools with large student populations had challenges because of inadequate computers.

There are major **Governance** policy issuances such DepEd Computerization Program which have made technology available in schools: (1) The use of ICT is anchored on the Digital Rise Program, under the Public Schools of the Future (PSOF) Framework, pursuant to *Sulong Edukalidad*; (2) Learning Continuity Plan (LCP) specifies that “no face-to-face learning shall take place unless local risk severity allows for it,

**Funding.** The education sector has significant increases in budget allocation for its Computerization Program (DCP) which aims to provide ICT packages and IT infrastructure in public schools.

## Home students/parents

In terms of **ICT’s place in the Filipino home**, 73.9% of Filipinos aged 10 to 64 years old surf the Internet and other platforms. They use the Internet more frequently for social media (73.9%) than for research work and e-mail (63.6%). Parents equally have high acceptance of ICT in their homes.

Regarding **online access to curriculum content**, both DepEd and TESDA deliver their digitized learning packages in their websites, Facebook YouTube and/or locally available reception sites. Through partnership arrangements, these learning packages are aired/transmitted via the broadcast facilities of radio/TV stations and cable network stations.

**Community Support**, support and assistance of local government units include: village education committees aid the delivery outfits by guiding them to the sites where students reside.

## Providers – Companies and Public Private Partnerships

There are numerous **ICT providers/companies which have public/private partnerships** with the education sector on systems development and conduct of ICT-based projects (see Annex 2).

In the area of **partnerships and sponsorships** of Ed Tech projects, the country has partnerships with (1) international institutions and national government agencies engaged in education, including universities and colleges; (2) non-government agencies and private groups.

Presently, there are partnerships between government agencies with international institutions namely: Asian Development Bank (SEHS/SERD), World Bank (WB) United States Agency for International Development (USAID) United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children’s Fund (UNICEF), the Philippines and the Korean Government.

There is a growing market for content management systems, and content repositories with curriculum-aligned resources, but this commercial sector will have to compete—ideologically and financially—with the government’s own open educational resources (OER) movement. The Philippines Department of

Education (DepEd) has launched the “Digital Rise” campaign that includes providing offline-accessible OER with every school computer delivery, along with training on how to create custom digital resources. Whether this Digital Rise is the new official vision and strategy for ICT in education, and whether DepEd will be given the leadership and authority to coordinate EdTech across the country, remains to be seen.

At present, there is strong support for connecting last-mile schools and harnessing technology for out-of-school youth. Yet the focus remains hardware provision and improving internet connectivity or finding offline solutions for general digital pedagogy – that is, to say, pedagogy that is enhanced by digital resources and introduced by teachers with a good understanding of the application of EdTech to teaching and learning. There is not a large market for subject-specific EdTech software or personalized learning applications but adaptive-learning software that personalizes learning by using artificial intelligence and machine learning techniques to “adapt” the learning path, offered to an individual student in time, could be introduced in the longer term to resolve this issue.

# 1. THE EDTECH READINESS ASSESSMENT FRAMEWORK

This study was undertaken to analyze the Education Technology (EdTech) readiness of the Philippines in each of the five areas – also called pillars - of the Digital Education Readiness Framework (DERF) framework. The overview of each pillar of DERF contributes to a holistic understanding of the EdTech readiness of the Philippines, and would assist this Project to identify appropriate interventions to be implemented in 2022. This study will allow the ADB to fund EdTech interventions that can contribute to improving the quality of learning and teaching and schools in the Philippines using the affordances of appropriate EdTechs. The ADB is the target audience as well as relevant government officials.

The ADB's Education Sector Group has developed the EdTech Readiness Assessment Framework as a tool to assess the current state of EdTech in the general education sector. The framework has five pillars as described below:

- 1. Infrastructure:** This pillar focuses on the current status of the ICT Infrastructure to support education, including its availability, accessibility, quality of services, and affordability. Four key components are assessed, including 1) power/electricity access, 2) telephony and internet connectivity, 3) devices and 4) broadcasting.
- 2. Government:** This pillar assesses the current situation of government policies and action plans that support the utilization of EdTech in enhancing educational outcomes. It relates to 1) policies and funding, 2) ICT integration in the curriculum, 3) education performance measurement, and 4) pre-service teacher training.
- 3. Schools/teachers:** This describes the capacity of school teachers and administrators to optimize the use of EdTech in teaching and learning. There are four key areas studied including 1) teacher capacity building in EdTech (in-service training), 2) equipment & software in schools, 3) governance (school policies, budget, monitoring for quality learning outcomes), as well as 4) community outreach.
- 4. Parents/students:** This pillar describes the home or community environment that enables or facilitates the use of EdTech to improve student learning outcomes. Again, there are four components including: 1) students' digital literacy, 2) home connectivity and availability of devices, 3) online access to curriculum content, and 4) community support.
- 5. Providers:** The last pillar shares insights on current EdTech providers and education public-private partnerships (PPP). It included a review of 1) the current situation of PPP in the Philippines, 2) learning management / eLearning systems and their online contents, and 3) emerging technology developers.

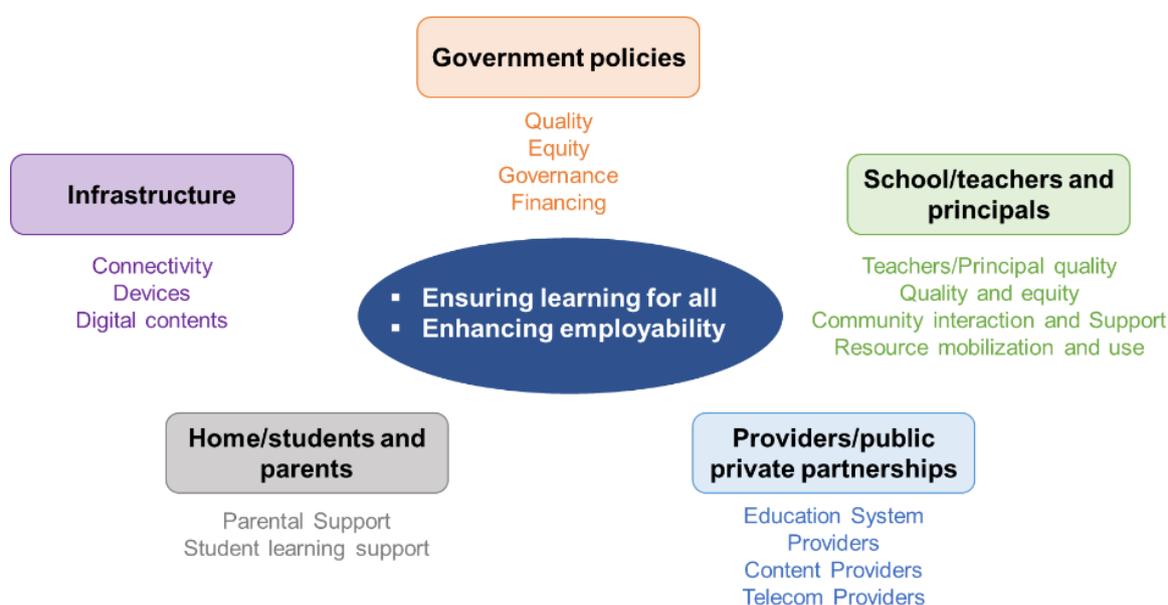


Figure 1: The EdTech Readiness Framework – Five Pillars of the EdTech Assessment for a Country (source: ADB)

The key components of the DERF domains and sub-domains are detailed as follows:

Domain / Sub-domain	PILLAR 1 Infrastructure	PILLAR 2 Government	PILLAR 3 Schools/ Teachers	PILLAR 4 Students/ Parents	PILLAR 5 Providers
1	IF1 (power, electricity access)	GO1 (policy / funding)	ST1 (teacher capacity in edtech)	SP1 (digital literacy of students)	PR1 (partners, sponsors)
2	IF 2 (telephony, internet connectivity, user stats)	GO2 (curriculum and content)	ST2 (equipment and software)	SP2 (connectivity and devices at home)	PR2 (e-learning systems)
3	IF3 (devices and hardware)	GO3 (education performance measurement)	ST3 (governance)	SP3 (online access to curriculum content)	PR3 (online content)
4	IF4 (TV/radio broadcasting)	GO4 (training)	ST4 (community outreach)	SP4 (community support)	PR4 (integrators, emerging tech)

Table 1: Key Components in each Domain

## 2. APPLYING THE EDTECH READINESS ASSESSMENT FRAMEWORK TO THE PHILIPPINES

This country report describes the current situation of education in Indonesia based on the above-mentioned five pillars of the EdTech Readiness Framework.

### Infrastructure

<b>IF1 (power, electricity access)</b>	The national electricity infrastructure and issues/challenges that schools and learners may have regarding access to electricity.
<b>IF2 (telephony, internet connectivity, user stats)</b>	Telecommunication access and internet connectivity - issues, challenges availability, etc.
<b>IF3 (devices and hardware)</b>	The national level availability of ICT devices that are related to edtech - availability, costs, maintenance, providers.
<b>IF4 (TV/radio broadcasting)</b>	Broadcasting methods, content creation and transmission, how it supports curriculum delivery and attainment of learning outcomes.

In terms of **power supply and electricity access**, in 2020, the household electrification level in the Philippines was at **94.5 percent**. Infrastructure remains expensive, and the geographically scattered country makes it hard to get good telecoms infrastructure in place, and natural disasters are an issue. In 2020 DepEd reported that **there were 2,414 schools that did not have electrical supply**. In these schools, about **350,000 learners and 14,000 teachers did not have the opportunity to avail of the remote learning materials** offered in lieu of face-to-face sessions during the pandemic.

The telecommunication sector of the country is improving, with the presence of modern infrastructure facilities from the national to the provincial levels. At present, there are numerous telecommunication service providers for mobile, fixed-line, Internet and other services that have been established primarily due to their important roles to support industry. However, the archipelagic nature of the Philippines and prevalence of natural disasters impede upon connectivity.

The digital economy of the country is a robust sector in the Philippines. In 2020, the Internet sector was estimated to be worth USD7.5 billion and is expected to grow 30 per cent annually to reach USD28 billion by 2025. An evidence-based study results show that if leveraged fully, digital transformation can unlock PHP5 trillion (USD101.3 billion) worth of annual economic value in 2030.

The 2021 Portulans Institute's Network Readiness Index (NRI) report shows that the country ranks 83rd out of the 130 economies. Its strongest performance is in the area of *Impact* while *Technology* needs attention. The Philippines registered high performance in: *E-commerce legislation, High-tech exports, and ICT services exports*. Its weakest indicators are: *Socioeconomic gap in use of digital payments, Rural gap in use of digital payments, and SDG 4: Quality education*.

Internet services became available 1994 and by 2021, the number of Internet users grew to about 73.91 million people, or more than half of the total population of the country. **Majority of the digital population mostly belong to the age group of 16 years old and above** – pointing to a serious barrier for EdTech use in primary education. With an estimated reach of 67.0% of the population in January 2021, the Internet sector contributes significantly to the Philippine economy. In 2021, there were 152.4 million mobile connections in the Philippines or 138.2% of the total country population. This is attributed

to multiple ownership as many people own two or three units. There were 89.00 million social media users (80.7% of the population).

On **devices and hardware**, mobile phones are the most popular among Internet users aged 16 to 64 who use the Internet at an average of 10 hours a day. 96.5 % of the 73.91 million users access the Internet via their mobile devices. Laptop or desk top computers are the second most used, followed by tablet devices, non-smart mobile phones, games tablets, smart wristbands, streaming sticks, smart home devices, and virtual reality devices. About 2 out of 5 (41.4%) households had personal computers or broadband Internet. Mobile devices are used primarily for social media purposes.

**The country has a major challenge in terms of Internet speed.** With 22.50 Mbps average mobile speed, the Philippines is in the 83rd spot out of 134 countries by the Portulans Institute. The slow internet connection is felt all over the country. The business and education sectors are not able to conduct their activities efficiently because of this slow Internet connection.

Regarding **radio/TV broadcasting strategies, content creation and transmission**, the country has robust communication structures and facilities, as reflected by: (a) more than 952 radio stations all over the country (AM stations: 369, and; FM stations: 583, shortwave); (b) three major TV channels with nationwide coverage, with provincial sister stations and (c) more than 400 cable stations and community radio-TV stations, and (d) three (3) major cell phone providers and eleven (11) local providers. These media networks broadcast educational programs for free.

## Government

<b>GO1 (Policy /funding)</b>	ICT related policies, plans and funding at the national level - implementation, limitations, challenges, etc.
<b>GO2 (Curriculum and content)</b>	The state of integration of edtech in the national curriculum to support learning outcomes (limitations and gaps).
<b>GO3 (Education performance measurement)</b>	ICT used to collect and analyze key system performance data (systems, processes, issues, challenges, gaps).
<b>GO4 (Training)</b>	ICT pedagogy integration in pre-service teacher education

**Government policy development/funding.** The country's Digital Transformation Strategy (PDTS) of 2022 was developed by the Department of Information and Communications Technology (DICT). It is based on the 2015 ASEAN ICT Master Plan of 2015 (AIM 2015) which is anchored on three pillars and foundations, namely the *economic transformation, people engagement, and innovation*. The components of the PDTS are infrastructure development, human capital development, and bridging the digital divide, focusing on service to business, education, sciences and technology.

Primary initiatives of the Government on Ed Tech are: (1) Internet in Schools, *iSchools* project which provide public high schools with computers with broadband internet connectivity (2) by educator's training, tech support, and monitoring and evaluation, and (3) Regional ICT that Centers help spur regional development through the use of ICT in education.

However, the United Nations (UN) e-Government Survey of 2018 shows that the overall e-government development ranking of the country slipped from 71st in 2014 to 75th in 2018 because of low telecommunication infrastructures.

**Content development and production using ICT-based strategies** have been put in place by the education sector, particularly the DepEd, TESDA and the CHED, in partnership with non-government organizations, private groups and international development partners. The DepEd Learning Continuity Plan (LCP) was crafted in 2020 to implement distance education as a response to the closure of schools

due to the pandemic. Its primary task was the conversion of learning packages into digital formats for online learning. These packages are: printed learning modules, radio and TV-based materials. DepEd's ICT curricular offering emphasizes the development of digital literacy skills in: (1) Grades 4-6: Productivity Tools (2) Grade 7: Basic programming, (3) Grades 8-10: Multimedia Skills, and (4) Grades 11-12: Vocational Skills. The ICT-Assisted Teaching in-service training program enables teachers to gain insights on how they will have access to e-learning resources that have been mapped out against the curriculum and can be used in classroom setting.

DepEd has mobile laboratories containing tablets and laptops that can be moved from one classroom to another. The DepEd has also launched the "Digital Rise" campaign which provides offline-accessible OER with every school computer delivery, along with training on how to create digital resources. DepEd has the "Digital Rise" campaign that includes providing offline-accessible OER with every school computer delivery, along with training on how to create digital resources.

The TESDA Online Program (TOP) is a major TESDA delivery strategy in responding to the lockdown of TVET learning centers during the pandemic. TOP is a web-based platform that offers free Massive Open Online Courses (MOOCs) for the technical education and skills development of the Filipino learners. The TOP delivers technical-vocational education at the learner's own space and time. TOP's objectives are: (i) to broaden access and opportunities to quality TVET; (ii) to improve quality of TVET delivery through standardized content of TVET programs; (iii) to increase absorptive capacity of TVET institutions; and (iv) expand TESDA services beyond borders. The TESDA TOP training programs are provided to both the DepEd senior high school students as well as the out-of-school youth beneficiaries of the DepEd Bureau of Alternative Learning System (BALS).

**Interface of DepEd and TESDA in Curriculum Development and Instructional Delivery.** The Senior High School Level (SHS) or Grades 11 and 12 focuses on a two-year specialized upper secondary education. It has 4 tracks: Academic; Technical-Vocational-Livelihood; Arts and Design; and Sports. Passers of the Technical-Vocational-Livelihood track, obtain a National Certificate Level II (NC II) should they pass the TESDA competency-based assessment of the TESDA. A National Certificate Level II (NC II) enables the graduates to get into the world of work.

The main guiding body in the **education and performance measurement** of both DepEd and TESDA ICT-based initiatives is the Philippine Qualification Framework (PQF). It is an inter-agency program composed of DepEd, TESDA, CHED, Professional Regulation Commission (PRC) and the Department of Labor and Employment (DOLE). Its primary aim is to address gaps in the education, training, professional, and industry sectors. Its goal is to align the national training programs with international standards. It establishes the levels of educational qualifications and sets the standards for qualification outcomes. It is a quality-assured national system for the development, recognition, and award of qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers of the country.

## Schools / Teachers

<b>ST1 (teacher capacity in edtech)</b>	Teachers' digital literacy and the description of training support provided to teachers in improving their digital literacy skills at the school level (gaps/issues).
<b>ST2 (equipment and software)</b>	Types of technology support provided by school to admin staff, teachers and students (issues/challenges/concerns/gaps).
<b>ST3 (governance)</b>	The policies, budget and monitoring process and/or tools (differences/gaps across schools)
<b>ST4 (community outreach)</b>	How schools/teachers use ICT to communicate with parents/students/community: tools they use, issues they discuss (differences/gaps).

Regarding **teacher capacity in educational technology**, it is important to note that internationally the transitioning to online learning at scale is a very difficult and highly complex undertaking for education systems, even in the best of circumstances. Filipino educators feel the need for adequate training on ICT since they are generally unprepared to do ICT-related tasks. They also felt that it is **not only teachers who need preparation but also government, educational institutions, academic staff, students, parents, and even academic recognition bodies**. Materials, strategies, and people and trainers who implement ICT activities are generally insufficient. Majority of teachers do not utilize computers to track and analyze student performance and ICT resources are not regularly used by teachers for instructional purposes. Students are not taught to use ICT resources to do data collection or data analysis. Educators do not use computers to take formal online courses or even self-study using video tutorials and digital learning materials. Studies have also found out that teachers often use their personal funds to be able to deliver remote learning to their students. Some teachers borrow money from friends and/or banks to finance the purchase of cell phones to access the Internet facility in their community.

**Training.** In 2020 DepED embarked on a massive in-service teacher training program to respond to the ICT training needs of teachers. DepEd offices at central and local levels undertake the development of printed self-learning modules, downloadable digital resources, radio and television programs, and massive teacher training and orientation efforts. A notable initiative is the training the teachers to serve as video anchorpersons and resource persons. To date, the training which began in June 2020 and school managers continue to train their teachers on locally-produced video-based learning episodes. They are now able to develop radio/TV-based lessons.

**Training in terms of ICT pedagogy integration in pre-service teacher education.** The overall picture is promising. A recent research study was conducted to determine the readiness of teacher education institutions to integrate Ed Tech into pre-service teacher education. The findings suggest that **education managers felt that they are ICT-ready** in terms of selecting and integrating digital resources for teaching and learning. However, they feel that they need further training on learning management systems. The respondents also felt that there is need to “rethink ICT planning, redesign research initiatives, and strengthen teacher-training capabilities in order to integrate Ed Tech into the teacher education curriculum.”

In terms of **school/teachers**, particularly on **teacher capacity in educational technology**, Filipino teachers feel the need for adequate training on ICT since they are generally unprepared to do ICT-related tasks such as tracking and analyzing student performance. ICT resources are not regularly used by teachers for instructional purposes. The students are not taught to use ICT resources to do data collection or data analysis. Educators generally do not use computers to take formal online courses or even self-study using video tutorials and digital learning materials. Moreover, it is not only teachers who need preparation but also government, educational institutions, academic staff, and parents, and even academic recognition bodies. Materials, strategies, managers and trainers who implement ICT activities are insufficient.

As regards, **equipment and software**. In 2020, there were 45,869 classrooms with television sets, projectors and computers that support ICT-assisted teaching in schools. However, not all schools with computers had the same level of access. Schools with large student populations had challenges because of inadequate computers. Due to scheduling difficulties, students only had a one-hour computer class per week. Another major challenge is the unreliable connectivity, which reaches only 34% of households and 48% of schools. This is presently being addressed by the Government.

**Governance** (policies, budget and monitoring process and/or tools ,differences/gaps across schools), There are major government policy issuances such DepEd Computerization Program which have made technology available in schools: (1) “Accelerating DepEd Computerization Program- Digital Learning Requirements,” (2020) the use of ICT is anchored on the Digital Rise Program, under the Public Schools of the Future (PSOF) Framework, pursuant to *Sulong Edukalidad*; (2) Learning Continuity Plan

(LCP) specifies that “no face-to-face learning shall take place unless local risk severity allows for it,” and alternative learning delivery modalities such as blended learning, distance learning, and homeschooling are put in place by schools according to their situation.”

**Funding.** The education sector has significant increases in budget allocation for its Computerization Program (DCP) which aims to provide ICT packages and IT infrastructure in public schools. The P19.7 billion for Capital Outlay of the DepEd’s budget includes funds for the procurement of ICT equipment and facilities. The Technical Education and Skills Development Authority (TESDA) has P15 billion budget for 2022, which includes acquisition of ICT resources.

Regarding **community engagement**, the education sector spearheads the efforts to reach out to various community groups from the national to the local levels. Thus far, the sector has been able to reach local government units (LGUs), local business groups, non-government organizations, faith-based institutions, international development organizations, funding agencies and people’s organizations.

## Students / Parents

<b>SP1 (digital literacy of students)</b>	Students' digital literacy and the support they receive from parents/guardians (issues/gaps).
<b>SP2 (connectivity and devices at home)</b>	Students access to devices and internet connection and the support they receive from parents/guardians (issues/gaps).
<b>SP3 (online access to curriculum content)</b>	Availability and types content that assists students in reaching learning outcomes (as outlined in the national curriculum)
<b>SP4 (community support)</b>	The how local community supports students with access to devices, internet, elearning content and technical support (challenges, gaps).

In terms of **ICT’s place in the Filipino home**, 73.9% of Filipinos aged 10 to 64 years old surf the Internet and other platforms. They use the Internet more frequently for social media (73.9%) than for research work and e-mail (63.6%). Parents equally have high acceptance of ICT in their homes. In 2019, most Filipino households had cellular phones (86.8%) and almost 80% had television sets. About 96.1 per cent of Filipino households owned at least one ICT device.

Regarding **online access to curriculum content**, both DepEd and TESDA deliver their digitized learning packages in their websites, Facebook YouTube and/or locally available reception sites. Through partnership arrangements, these learning packages are aired/transmitted via the broadcast facilities of radio/TV stations and cable network stations. Printed learning modules are provided to the learners by delivery outfits such as FedEx, DHL and other local couriers. Again, this task is made possible through partnerships with business partners.

**Community Support**, support and assistance of local government units include: village education committees aid the delivery outfits by guiding them to the sites where students reside. If the students’ homes are difficult to reach, the community leaders receive the learning packages on behalf of the students. Community leaders make available community facilities such as their libraries and learning gadgets (radios and TV sets and computers) to enable students, especially those who are vulnerable or have disabilities of any kind, to listen/view educational radio-TV broadcasts/use computers.

## Providers – Companies and Public Private Partnerships

<b>PR1 (partners, sponsors)</b>	Partners and sponsors on Edtech: administrators, sponsors, funders, projects supported and/or funded, project locations, amounts, key focus areas.
<b>PR2 (elearning systems)</b>	Types of elearning management systems and educational apps: users, costs, use cases, limitations (compatibility, accessibility).
<b>PR3 (online content)</b>	Available digital content, sources and language, upload/storage methods, distribution, limitations.
<b>PR4 (integrators, emerging tech)</b>	System integrators, existing technologies that support elearning (email, communication apps, social media), and emerging technologies (AI, AR/VR).

There are numerous **ICT providers/companies which have public/private partnerships** with the education sector on systems development and conduct of ICT-based projects (see Annex 2).

In the area of **partnerships and sponsorships** of Ed Tech projects, the country has partnerships with (1) international institutions and national government agencies engaged in education, including universities and colleges; (2) non-government agencies and private groups.

Presently, there are partnerships between government agencies with international institutions namely: Asian Development Bank (SEHS/SERD), World Bank (WB) United States Agency for International Development (USAID) United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children's Fund (UNICEF), the Philippines and the Korean Government.

There are further Ed Tech partnerships between government agencies, non-government organizations, and private groups.

On the development of **e-learning systems**, the following are e-learning management systems which have been undertaken in the country:

- **Massive Open Distance eLearning (MODEL)** is a leading initiative in e-learning management systems in the country. managed by the University of the Philippines-Open University (UPOU). MODEL is the official MOOC-based (Massive Open Online Courses ) platform is used by government agencies in the conduct of their human resource development (HRD) programs..
- **The Department of the Interior and Local Government (DILG) MOOC-based Training Program.** This program is a partnership between DILG and UPOU to train local government officials on Interlocal Cooperation (ILC). It aims to enhance the LGU's capability to work with other LGUs to achieve LGU goals. Target beneficiaries: 1,488 municipalities/cities and 42,046 barangays all over the country.
- **The Commission on Higher Education (CHED) eLearning System.** CHED developed a partnership with the UPOU in the development of its teacher training learning packages. These training packages are made available to teacher training institutions, state universities and colleges that offer educational technology in their baccalaureate programs.
- **TESDA (TOP) Learning System** is a web-based platform using Massive Open Online Courses (MOOCs) for the technical education and skills development of the Filipino workers. The TOP utilizes open education resource framework to make technical education accessible and inclusive.

In terms of **online content**, the DepEd and TESDA media-based instructional materials are aired/broadcast by local radio-TV stations, for free. The lessons are also aired via national, regional and district websites as well as You Tube, Facebook and other providers. Parents are trained to guide their children and help them with their lessons and related activities. The parents meet the teachers of their children once a week to get the weekly learning guides and consult the teachers on their concerns as well as possible difficulties their children may encounter.

On **integrators and emerging technologies**, the University of the Philippines-Open University (UPOU) has been a major actor in the systems integration activities of remote learning programs. Other key actors are leading universities offering IT in their curricular programs. Another major sector which is active in systems integration is the business sector composed mainly of EdTech companies. Philippine publishing houses are likewise active in developing ICT-based learning materials for Filipino learners in and out of school.

## Gender and ICT

The gender gap in education has been narrowed since after World War II. Historically, the education system in the Philippines favored males over the females, but from the 1970s onwards the number of college-educated women began to surpass that of men. It is reported that, currently, the number of girls completing secondary education surpasses that of boys by 78% vs 66% respectively. However, girls from poor families were more disadvantaged than boys in terms of access to education during the COVID-19 pandemic.

The Philippines is the only country in Asia to be in the top twenty for gender parity, though there is an underrepresentation of girls and women in the technology sectors, mostly due to cultural traditions and family preferences. Hence, the ICT, Technology, Engineering, and Mathematics (STEM) fields in general are a more appropriate field of productive endeavor for men. Nonetheless, there are proportionally more women in the service sectors of the economy where there is often a high reliance on ICT skills.

In contrast to international averages where, typically women's aggregate wages are 20% lower than men's, in Philippines women's earnings are, when taken as a whole, are 10% higher. Although a great majority of female entrepreneurs operate in the small to medium enterprise (SME) sectors only a small proportion of them have had any training about harnessing technology as part of entrepreneurship training. This is despite many campaigns to promote women's expertise in ICT. Nonetheless, recent government policy moves have resulted in increasing numbers of women enrolling in STEM-related disciplines at university level. It is about 99.84% of graduates are pursuing undergraduate STEM-related courses. *The full report is in an Annex 3.*

### 3. KEY FINDINGS AND RECOMMENDED INTERVENTIONS

51.2% of the population live in urban areas (compared to 45.3% in 2010) and 49% in rural areas. The gender ratio is 104 males to 100 females.

FLEMMS<sup>1</sup> indicates that 73.9% of Filipinos aged 10 to 64 years old surf the Internet and other platforms primarily for social media, and students and young learners feel at home on the use of ICTs.

Philippines' budget allocation in the education sector is said to be one of the lowest among the ASEAN countries (Source: <https://edtechreview.in>).

School closure was used as the primary measure to mitigate the adverse effects of the COVID-19 pandemic. This closure of schools is expected to lead to learning loss, drop-outs and higher inequality in school performance.

There is gender parity in education since 1970s, but Filipino males dominate the country's information technology sector. This is due to the patriarchal nature of traditional Filipino households, particularly in rural areas. With effort of government, recently, numbers of women enrolling in STEM-related disciplines at university level increased.

International and national development institutions like World Bank and ADB, also note that if countries initiate measures to support continued learning during the pandemic, they turn complex educational challenges into opportunities. A major implementing strategy of these three education institutions is the use of educational technology in the delivery of learning to students and out-of-school youth. On the positive side, the novelty feature of educational technology in remote learning has made students interested in ICT-based learning – listening to the radio, viewing TV lessons, using computers, tablets and cell phones. Parents too, felt like “learners” again.

There are many efforts by a range of stakeholders, independently and in partnerships or coalitions, to create opportunities for children to use technology in school. Similarly, many organizations are involved in teacher training, but the content and focus of these trainings is not coordinated under the umbrella of a clear set of standards for what technology integration looks like and what teachers need to know and do to achieve that standard.

At present, there is strong support for connecting last-mile schools and harnessing technology for out-of-school youth. Yet the focus remains hardware provision and improving internet connectivity or finding offline solutions for general digital pedagogy. There is not a large market for subject-specific EdTech software or personalized learning applications but adaptive-learning software (that personalizes learning by using artificial intelligence and machine learning techniques to “adapt” the learning path offered to an individual student in real time could be introduced in the longer term to resolve this issue.

There is a growing market for content management systems, and content repositories with curriculum-aligned resources, but this commercial sector will have to compete—ideologically and financially—with the government's own open educational resources (OER) movement. The Philippines Department of Education (DepEd) has launched the “Digital Rise” campaign that includes providing offline-accessible OER with every school computer delivery, along with training on how to create custom digital resources.

---

<sup>1</sup> Functional Literacy, Education and Mass Media Survey

Whether this Digital Rise is the new official vision and strategy for ICT in education, and whether DepEd will be given the leadership and authority to coordinate EdTech across the country, remains to be seen.

### **Possible interventions by ADB**

There are several possible potential partners with whom the TIESEA project team could work with the aim of formulating a project intervention that is measurable, in terms of its impact on learners; is affordable and scalable, in terms of access to high quality learning resources, devices and connectivity; and is sustainable in terms of long-term application and availability across the whole country.

The original ADB scoping mission for the TIESEA project in the autumn of 2019 was requested to explore and provide an intervention that focused on vocational education within the orbit of TESDA. As the country research has progressed during the formulation of this report, and the country diagnostic study has sought the views and opinions of many stakeholders we have tried to target specific aspects of vocational education and training, and life skills development and skills for employability.

Discussions are still at an early stage, but the project team has been able to enlist the support and interest from several sources and interested bodies – for example, the BDO Foundation has an interest in broadening the scope and the opportunities for young people to improve their financial literacy skills; the Consuelo Foundation helped in the development of the life skills program of the Department of education. Google in the Philippines has expressed an interest in getting involved in the context of their already wide involvement in the education sector in the Philippines through their supply of technology-enhanced learning materials, both on and offline. Furthermore, USAID has been supporting TESDA by integrating work-readiness elements to a curriculum for out-of-school youth. The project team is currently negotiating with all these potential partners to design a programme, that would be delivered both on and offline and utilising the highly-regarded TESDA TOP training platform, with new modules being designed and incorporated.

## REFERENCES

- Asian Development Bank, ADB's Focus on Education. Retrieved from: <https://www.adb.org/what-we-do/sectors/education/main>
- Datareportal.com (2020). Digital 2020: Philippines. Retrieved from: <https://datareportal.com/reports/digital-2020-Philippines>
- DepEd (2019b). Enhanced School Improvement Plan 2019-2022, Eduardo Barretto National High School
- DepEd (2019c). Enhanced School Improvement Plan 2019-2022, Real Elementary School
- DepEd (2019d). Alternative Learning System 2.0. Strategic Roadmap;
- DepEd (2019e). Implementation of the NEAP Transformation, DO 11;
- DepEd (2019g). The Enhanced Basic Education Program. DO 21;
- DepEd (2017a). National Adoption and Implementation of the Philippines Professional Standards for Teachers (PPST). DO s 142
- DepEd (2017b). Gender-Responsive Basic Education Policy, DO 32
- DepEd (2017c). Policy Guidelines on System Assessment in the K-12 Basic Education Program, DO 29
- DepEd (2017g). Policy on the Protection of Children in Armed Conflict, DO 57
- DepEd (2016a). Basic Education Research Agenda
- DepEd (2016c). National Indigenous Peoples Education (IPEd) Program Implementing Guidelines on the Allocation and Utilization of the IPEd Program Support Fund for Fiscal Year 2016. DO 22 s.2016
- DepEd Regional Memorandum No. 223, Utilization of RBU and TVi Supplementary Learning Resources
- DepEd (2014). Indigenous Peoples Education: From Alienation to Rootedness, IPEd Monograph Series No. 4
- DepEd (2011c). Adopting the National Indigenous Peoples Education Policy Framework, DO No. 62
- EdTech in South East Asia. (2020). EdTech in SouthEast Asia: Opportunities for EdTech development and investment in five Southeast Asian markets: Indonesia, Malaysia, the Philippines, Thailand and Vietnam. Retrieved from: <https://octavafoundation.org/wp-content/uploads/2021/07/Edtech-in-Southeast-Asia-White-Paper-Summary.pdf>
- ITU (2017). ICT Development Index (IDI). Retrieved from: <https://www.itu.int/net4/ITU-D/idi/2017/index.html>
- ITU (2019). Global and Development ICT Data. Retrieved from: <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>
- Kemp (2021). Digital Philippines 2021. Retrieved from: <https://datareportal.com/reports/digital-2021-Philippines>
- OECD (2015b). Schools for 21st-Century Learners - strong leaders, confident teachers, innovative approaches
- Portulans Institute (2021). Network Readiness Index 2020 Philippines
- Philippine Qualification Framework Fact Sheet. Available at <https://pqf.gov.ph/>
- Philippine Statistics Authority (2019). Functional Literacy, Education and Mass Media Survey (FLEMMS) Final Report
- United Nations (2020). UN E-Government Survey 2020. Retrieved from: <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020>
- UNICEF (2020a). Promising Practices for Equitable Remote Learning
- UNICEF (2018a). Situation Analysis of Children in the Philippines
- UNICEF (2020d). COVID-19: Are Children Able to Continue Learning During School Closures?
- UNICEF (2020e). Promising Practices for Equitable Remote Learn

- USAID (2017, June). All Children Reading–Asia All Children Reading–Philippines School-based technology and the shift to remote learning during COVID-19: Exploring remote learning readiness of school districts in the Philippines White Paper Submitted by: RTI International  
Authored by: Sarah Pouezevara, Jennifer Ryan, Saddam Bazer
- USAID (2020, April). EdTech Ecosystem Report: Philippines,2020. A report by RTI International
- USAID (2020, December). “School-based technology and the shift to remote learning during COVID-19: Exploring remote learning readiness of school districts in the Philippines. White Paper.”  
Submitted by: RTI International
- World Bank Group. (2019). Digital Government and Open Data Readiness Assessment. Retrieved from Washington DC 20433. Retrieved from:  
<https://openknowledge.worldbank.org/handle/10986/32547>

# ANNEXES

## Annex 1: Inventory of EdTech providers

### PR 1 Partners / sponsors

The current landscape of partnerships and alliances on educational projects related to educational technology is focused primarily on addressing and mitigating the effects of the Pandemic. The country has partnerships with (1) international institutions and national government agencies engaged in education, including universities and colleges; (2) non-government agencies and private groups.

- **Partnerships with International Institutions, National Government Agencies Engaged in Education, including Universities and Colleges**

#### Asian Development Bank

A major partnership initiative of the Philippine Government with the ADB is the *"EdTech Solutions for Last Mile Schools in COVID-19,"* a technical assistance project (TA 6670), in support of the Learning Continuity Plan of the Department of Education. Its over-all objective is to enable students to continue learning through blended learning modalities during the COVID-19 pandemic. (Source: ADB Website)

The TA will build the DepEd capacity and support distance education by developing content, training teachers, and piloting education technology (EdTech) solutions to ensure that secondary school students have access to quality education throughout school year (SY) 2020/21 and beyond. The pilot will use low-cost tablets to be connected to a local area network (LAN) supported by a solar-powered battery antenna, and target learners in selected school divisions. The content will be accessible nationwide through DepEd platforms.

The *"EdTech Solutions for Last Mile Schools in COVID-19"* project supports broader access to quality secondary education. It interfaces with ADB's Secondary Education Support Program, and the *Pantawid Pamilyang Pilipino (PPP)* conditional cash transfer program, which provides education grants to poor households with children younger than 18 years old. TA 6670 is aligned with the country's priority along: (1) addressing remaining poverty and reducing inequalities; (2) progress in gender equality) of ADB's Strategy 2030, and; (3) it will contribute to UNESCO's Sustainable Development Goal by protecting the basic rights of thousands of students to quality education.

The major outputs of the TA are:

- Output 1: Content for blended learning in secondary education developed. The TA has engaged the services of a consulting firm to develop interactive, gender-, and indigenous people-responsive digital content for both audio and visual modes for secondary education, which are aligned with the MELCs and K–12 curriculum.
- Output 2: Low-cost edtech solution for distance education piloted. The TA will conduct a pilot project using low-cost tablets and installing antennas to connect to LANs. These will be supported by solar-powered batteries in selected LMS communities, where reliable electricity access and internet connection are not available.
- Output 3: Technical expertise and training in sustaining blended learning provided. The TA will support training for teachers and school leaders in sustaining student learning through distance education in the medium and long term. This involves (i) using technologies for additional content development; (ii) supporting individualized learning for students; (iii) enhancing formative

assessment of student learning; and (iv) transitioning students back to classroom teaching and learning.

The envisioned outcome of the project is that secondary education learning continuity is strengthened in the time of COVID-19 pandemic. The achievement of the outcome will be determined by examining the dropout rate and the mainstreaming of interactive, gender-sensitivity, and indigenous people responsive content as proxies of quality education being provided by the education sector.

Another ADB initiative involving educational technology is the TESDA project “Supporting Innovation in the Philippine Technical Vocational Education and Training System (SIPTVETS). It is a USD100m concessional loan from ADB in which will modernize the Philippines technical and vocational education and training (TVET) system to prepare it to compete in an increasingly globalized, technology- and knowledge-driven market. It will enhance the quality of skills development programs, upgrade training facilities and equipment, and develop trainers’ capacity to impact higher-level skills and competencies required by employers. It will help TESDA implement institutional reforms, improve project management skills, and foster collaboration between public TVET institutes and industry in enterprise-based training, business incubation, and applied research and development. Additionally, (1) RTIC will be established in each region which will be an additional facility to the existing TTIs and will be established within the compound of the institution to ensure seamless complementary function and operation.

The project is planned to be implemented from January 2022 to December 2026, with the following outputs:

- Output 1: The Philippines' skills development ecosystem modernized.
- Output 2: TVET training made more demand-driven and industry-led.
- Output 3: Selected TTIs upgraded/modernized into industry responsive RTICs.
- Output 4: TESDA's institutional capacity strengthened.

### **World Bank (WB)**

Present WB initiatives on educational technology focus on “*managing continuity*” and “*improving and accelerating*”, during the COVID-19 pandemic (Source: WB website). This effort is aimed at generating lessons for education during the pandemic. With many different approaches being taken by countries worldwide, the COVID-19 pandemic is an opportunity for policy makers to learn from each other and co-operate to mitigate the effects of the COVID-19 pandemic and maybe even “build back better”. To support countries in this effort, the Harvard Global Education Innovation Initiative, HundrED, the OECD Directorate for Education and Skills and the World Bank Group Education Global Practice are combining their expertise to provide the countries with information and resources from around the world on the education response to the crisis.

The EdTech Hub, a joint initiative of the World Bank and the Gates Foundation, develops and shares reports and knowledge resources related to the use of educational technology during the COVID-19 pandemic, including, by country and theme: (1) Consolidated list of EdTech companies in Sub-Saharan Africa, (2) Opportunities and constraints of using EdTech in low-income countries the during COVID-19 pandemic, (3) Best practice in pedagogy for remote teaching (PDF) | short summary (PDF), (4) What’s working? What isn’t? (PDF), and (5) View all coronavirus (COVID-19) blog posts from the EdTech Hub.

### **United States Agency for International Development (USAID)**

USAID supports various Philippine various initiatives in education peace-building in Mindanao through learning camps and youth exchanges (Source: [www.usaid.gov.philippines/education](http://www.usaid.gov.philippines/education)). Improving education outcomes for all children and youth remains a core challenge for the Philippine basic education system. At the root of the problem are the poor reading and math skills of many Filipino students, particularly in the early grades.

Through its *Opportunity 2.0* program, USAID also helps Philippine ALS and technical-vocational education pivot to distance learning to be more accessible to out-of-school youth, and establish Youth

Development Alliances to help stakeholders collaborate toward common youth development and local economy goals.

The USAID study “The Impact of COVID-19 on Opportunities for Out-of-School Youth in the Philippines,” showed that the number of out-of-school youth in the country rose in the first four months of 2020 from 16.9 percent to 25.2 percent.

While the study found the pandemic disproportionately impacted education, employment, and livelihood opportunities for out-of-school youth, it identified opportunities to improve the situation of youth and their families through collaboration among government, nongovernment organizations, businesses, and academia.

USAID supports DepEd and TESDA by integrating new work readiness content into the curriculum for out-of-school youth. Through its Opportunity 2.0 program, USAID also helps Philippine ALS and technical-vocational education pivot to distance learning to be more accessible to out-of-school youth, and establish Youth Development Alliances to help stakeholders collaborate toward common youth development and local economy goals. supports systems in the Philippines to provide second-chance education to 180,000 out-of-school youth across 12 cities that lead to their successful employment and livelihoods.

Also included in the report is how the COVID-19 pandemic highlighted the importance of environment-friendly and digital skills, which will become even more important as industries move to renewable energy sources and digital operations. Meanwhile, among local employers, there remains a high demand for “soft skills”—including communication, positive values, resilience, emotional intelligence, and willingness to learn.

Another notable joint initiative of DepEd and USAID is the training of 500 DepEd TV script writers and teacher-broadcasters in creating gender-fair and inclusive educational TV episodes across all grade levels and subject areas. USAID also supported the addition of Filipino Sign Language insets and subtitles to 200 episodes, conversion of another 200 episodes to radio-based instruction, translation of 50 episodes to mother tongue languages, and production of 16 new DepEd TV episodes in English and Filipino subjects. These efforts will help more than 25 million Filipino learners.

USAID supports the digital inclusion as a critical element to children’s well-being and to ensure the success of learners, especially girls and students with disabilities in the most difficult and vulnerable conditions—to learn, to earn, and to have their voices heard. According to Dr. LeBlanc, the partnership between USAID and DepEd is one step to promoting digital inclusion, especially among young children—girls and boys, of all abilities—wherever they are in the Philippines. This assistance is part of USAID’s All Children Reading Philippines, a four-year project that supports DepEd in improving reading outcomes for early grade learners.

The USAID-funded STRIDE project focused on disciplines that contribute to high-growth sectors, including electronics, chemical industries, alternative energy, agribusiness and information technology, with cross-cutting themes of manufacturing and new product development. STRIDE assisted a dynamic network of researchers in universities and industry who continuously innovate; entrepreneurs and investors who turn discoveries into products and companies; and a government supportive of initiatives that enable these partnerships to flourish.

### **United Nations Educational, Scientific and Cultural Organization**

UNESCO’s partnership with the Philippines focuses on research and development studies. Most of its programs and projects are conducted in coordination with the *Philippine National Commission for UNESCO (also known as PH NatCom or UNACOM)*. UNACOM’s mandate is to implement the country’s national activities in accordance with Philippines’ international commitment to UNESCO. PH NatCom’s original mandate was to serve as an advisory and liaison body bridging the work of relevant Philippine partners to UNESCO’s own work in educational, scientific and cultural matters and concerns.

One of the working committees of UNACOM is the education committee which monitors UNACOM-funded projects, including educational technology initiatives which are undertaken by universities, colleges, both public and private, as well as educational research institutions.

### **United Nations Children’s Fund (UNICEF)**

UNICEF works to promote and protect the rights of every Filipino child, with a particular focus on those who are most vulnerable and disadvantaged. The organization works with the Philippine government to improve national policies, programs and services for children and adolescents.

### **Partnership between the Philippines and the Korean Government**

TESDA was assisted by the Government of the Republic of Korea through a financial grant which established the Korea-Philippines Information Technology Training Center (KPITTC) at the Quezon City Polytechnic University. Its objective is to serve as the premier information and communication technology training center in the Asia-Pacific region by producing competent information technology practitioners to service the local and global manpower needs. It also provides training on computer graphics and animation. Additional assistance was provided to the Regional Skills Development Center in Guinto, Bulacan and at the Davao City Provincial Government.

#### **▪ Partnerships with non-government agencies and private groups**

### **Microsoft**

Microsoft is a partner of DepEd in the procurement and distribution of hardware and Microsoft software packages under the DepEd Internet Connectivity Project. Microsoft also supports schools directly and has several programs such as the Microsoft Education Ambassadors, Microsoft Showcase schools and Education Summit. Teachers can find global resources through the Microsoft Educator Community online portal. Website address: <https://www.microsoft.com/en-ph>

### **Globe telecommunication**

Globe telecommunications has been an active partner of the education sector in providing support of ICT Integration. Early interventions included providing internet access and hardware. Globe telecommunications created the Global Filipino School, beginning with a Local Government Unit in Bohol province. It provided a package of services namely: infrastructure, internet access (wireless and wired), teacher training and community mobilization. Website address: [https://www.dnb.com/business-directory/company-profiles.globe\\_telecom](https://www.dnb.com/business-directory/company-profiles.globe_telecom)

### **Ayala Foundation (AFI)**

AFI has a partnership with DepEd in the following projects:

1. Ayala Young Leaders Congress (AYLC) is a student leadership summit designed to build confidence, hone leadership skills, nurture commitment, foster nationalism and idealism, and encourage faithful stewardship. AYLC is the flagship leadership program of the Ayala Group of Companies led by the Ayala Foundation, is an annual student leadership summit for 81 of the most promising student leaders selected from the best colleges and universities in the country
2. CENTEX involves the collaborative work of teachers, parents, community members, and other stakeholders. It focuses on the essentials for lifelong learning—classroom pedagogy, development of critical thinking skills, values clarification, and use of technology in the classroom.
3. Code/it is a digital literacy learning program that provides public elementary school students with access to basic computer science and programming education as part of their educational curriculum. The project was designed to address the widening digital divide in many disadvantaged communities and originated from our belief that technology can change lives. The project is

envisioned to help Filipino children learn the digital skills needed to remain relevant in the workplace of tomorrow.

4. ProFuturo uses digital technology to provide access to quality, transformational, and universal education, and through it, access to equal opportunities for boys and girls, in a more inclusive and global society.

The project partners are: ProFuturo Foundation, Fundación Telefónica, Fundación Bancaria “la Caixa”, Department of Education, and local government units. Project site are: Palawan, Oriental Mindoro, Occidental Mindoro, Romblon and Marinduque. It has 126 school beneficiaries, 993 teachers trained on ICT and 5,160 students served by the project.

ProFuturo uses digital technology to provide access to quality, transformational, and universal education, and through it, access to equal opportunities for boys and girls. It focuses on enhancing teachers’ skills, methods, and competencies, and leveraging on digital technologies. It has so far reached 5.6 million children worldwide, particularly in parts of Central and South America, Sub-Saharan Africa, and parts of Asia.

5. Sari-Saring Aralan is a 12-month community project that encourages the youth to pursue one of three pathways: education, employment, or entrepreneurship. It uses the corner store as the hub of learning activities. Unlike the usual image of the sari-sari store as the place where aimless youth or “*tambays*” hang out, Sari- Saring Aralan transforms the community corner store as a venue where out-of-school youth can interact with teachers, mentors, and fellow learners.
6. Gearing Up for Internet Literacy and Access to Students (GILAS) is a joint project of DepEd and AFI which reached 4,683 public high schools nationwide by providing a budget that allowed the schools to pay the monthly connectivity fees. GILAS as a private partner of DepEd is a multi-stakeholder consortium of companies that put philanthropic or corporate social responsibility (CSR) funds into ICT projects in public high schools in the country. The GILAS consortium is composed of the Ayala Foundation, Ayala Corporation, Ayala-led Globe Telecom, Integrated Micro-electronics, Inc., American chamber of Commerce, Apple, Bato-Balani Foundation, Bayan, Digitel, GMA 7, HP, IBM, Intel, Makati Business Club, Microsoft, Mitsubishi Corp, Narra Venture Capita, PBSP, Philstar, PLDT-Smart.

Website address: <https://ayalafoundation.org/contact-us>

### **Consuelo Foundation**

Consuelo Foundation helped in the development of the life skills program of the Department of education. Its major contribution to education is its Life Skills Plus Program which aims to reduce risk for abuse by improving the competencies of disadvantaged, at-risk, and out-of-school youth, helping them become responsible, resilient and self-reliant individuals who have the skills to handle problems and become active and productive members of their communities.

As a youth development model, the program focuses on five domains: education, healthy lifestyles, employability, family life, and civic engagement. The provision of skills training (technical vocation, creative arts, leadership, etc.) is coupled with training on life skills that cover youth upkeep and self-care, interaction and communication, productivity, relationships, reproductive health, personal safety, employability, and community involvement.

Website address: <https://www.cof.org>

### **BDO Foundation**

BDO Foundation is the corporate social responsibility arm of BDO Unibank. A non-stock, non-profit organization founded in 2008, the foundation implements initiatives to address the needs of underserved sectors of society. It serves as the channel for BDO’s outreach activities. BDO

Foundation's advocacies are disaster response, which include rehabilitation and rebuilding; and financial inclusion.

As part of its disaster response effort BDO Foundation constructs school buildings in areas affected by natural disasters or armed conflict. The initiative supports the Department of Education's Adopt-a-School program and efforts to address the need for more classrooms in the country. Responding to the need for environments conducive to learning, the foundation constructs classrooms complete with blackboards, electric fans, desks for teachers and chairs for students.

The foundation also constructs technical-vocational training facilities, which contribute to the achievement of the United Nations Sustainable Development Goal no. 8 to promote sustained economic growth, full and productive employment, and decent work for all. Through the initiative, BDO Foundation helps educate disadvantaged and young learners enrolled in schools and out-of-school youth, capacitate them, and make them employable in the Philippines and abroad.

As part of a shared advocacy to promote financial inclusion, BDO Foundation implements financial education programs in partnership with the Bangko Sentral ng Pilipinas, Department of Education, Overseas Workers Welfare Administration, Civil Service Commission, Armed Forces of the Philippines, Bureau of Fisheries and Aquatic Resources, Bureau of Fire Protection, and Philippine National Police.

The BDO programs benefit public school students, teachers and non-teaching personnel; overseas Filipino workers and recipients of remittances; government workers; uniformed and civilian personnel of the armed forces; fisherfolk; firefighters; and police personnel.

Website address: <https://www.bdo.com.ph/foundation>

#### **One Meralco Foundation**

This foundation supports rural electrification through Solar energy. Meralco Electrification has positive effect on basic teaching and learning process, because schools can operate when there are storms and teachers can remain on site for printing and other administrative tasks. Solar electrification also opens possibility of use of technology in teaching and learning in rural areas. These partnerships are facilitated through DepEd Adopt a school program.

Website address: <https://www.onemeralcofoundation.org/>

#### **Knowledge Channel**

Knowledge Channel is a Philippine free-to-air television channel owned by ABS-CBN that consists of educational and informative programs. The channel is available on digital TV via BEAM TV, Sky Cable, Sky Direct, Signal, Parasat Cable TV, G Sat and other cable providers. It also livestreams online via iWantTFC while a video on demand service is available on YouTube. Its broadcast coverage covers the whole country.

Website address: <https://www.knowledgechannel.org>

#### **League of Corporate Foundations (LCF)**

Members of the LCF have ICT-based programs and projects which are in various stages of development. They have international and national partners which they have partnered with in the development of the project concept and implementation plans.

Website address: <https://lcf.org.ph>

#### **The Philippine Business for Education (PBE)**

PBE in partnership with the United States Agency for International Development (USAID) implements Youth Works PH, a five-year (2018-2023) project which aims to provide work-based training to marginalized youth. Youth Works PH's three priority sectors are construction, manufacturing, and tourism and hospitality. In 2019, PBE, the Technical Education and Skills Development Authority (TESDA), and the Philippine Institute for Development Studies (PIDS) entered into a tripartite

partnership for policy research. The partnership endeavors to fill gaps in quantitative and qualitative studies through a series of research focusing on the training and skilling landscape in the Philippines, with the objective of supporting policy interventions and providing a knowledgebase for advocacy effort.

Website address: <https://www.pbed.ph>

### **Go Digital ASEAN**

The *Go Digital ASEAN* initiative is spearheaded by the Association of South East Asian Nations (ASEAN). Its primary aim is to close the digital gap across the ASEAN Region in support of the vision set out by the ASEAN Coordinating Committee on micro, small and medium enterprises (MSMEs). This initiative is implemented by the Asia Foundation, with support from Google.org, Google's philanthropic arm, the initiative will train 200,000 people from rural regions and underserved communities – including entrepreneurs, underemployed youth and women.

Asia Foundation works with local partners in Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam, the US\$3.3 million grant to each of these countries will help broaden participation in the digital economy to include groups that have the most to gain from 21st century skills, such as digital literacy and online safety awareness and how to reduce the risk of compromising personal data and attendant dangers of identity theft and cyberbullying. *Go Digital ASEAN* aims to train citizens of the members of ASEAN to and help contribute to the Region's country's socioeconomic development.

Website address: <https://asiafoundation.org/emerging-issues/go-digital-asean/>

### **SEAMEO-INNOTECH**

South East Asian Ministers of Education Organization's Regional Center for Educational Innovation and Technology (SEAMEO-INNOTECH) is also active in designing and delivering digital learning and advocating in EdTech. Under its mandate to introduce ICT in education landscape specifically innovations to teachers in the ASEAN countries. In its ICT initiatives, SEAMEO INNOTECH has observed that the extent to which these organizations communicate to the level of teachers, however, is not clear. Teachers tend to use social media such as Facebook to share resources and experiences, and now DepEd is also institutionalizing Facebook Workplace as a communication method.

Website address: <https://www.seameo-innotech.org>

### **Nokia**

Nokia, together with its partners the International Youth Foundation (IYF), Pearson, and the United Nations Development Program (UNDP) has a substantial initiative in ICT-based educational delivery system. *Bridgeit*- the innovative, interactive educational program which they managed in the Philippines, reached several thousands of students, out-of school youth, school administrators for about a decade. *Bridgeit*, through its program Teach to Teach, used mobile technology specifically mobile phones supplied by Nokia, to access a library of science, math videos provided by Pearson and English lessons produced by SEAMEO INNOTECH. Once selected, videos were downloaded via satellite to a Nokia digital video recorder connected to a television right in the classroom.

Website address: <https://www.nokia.com>

## **PR2 eLearning systems**

### **Massive Open Distance eLearning (MODeL)**

MODeL is the leading initiative in e-learning management systems in the country at present (Source: UPOU website). It is managed by the University of the Philippines - Open University (UPOU) which pioneered in online teaching and learning in the country. UPOU continues to play a leading role in the

study and practice of open learning and distance education in the Philippines. MODeL is the official MOOC-based (Massive Open Online Courses) platform of UPOU and has been adopted by several government agencies in the conduct of human resource development (HRD) programs for their staff as well as for their clients.

In the Philippines, MOOCs, are web-based courses open to the public for free and are designed for unlimited learner participation. It was first coined in 2008 by Professor Dave Cormier of the University of Prince Edward Island in Canada (Nova Southeastern University, n.d.). The concept of MOOCs-based training programs was first implemented in 2011. The MODeL accommodated thousands of learners as it was anchored on “openness”, providing access to all interested individuals and groups. “openness” dimension of this system is reflected in practice of using open educational resources (OERs), producing OERs, and employing open access software in its MOOCs.

Even in its early stages of implementation, the potential of MOOCs to reach a wider audience was discernible as it has been able to make education more open and accessible, and to promote lifelong learning. It has also been perceived to be capable of improving the quality of teaching and learning by fostering open educational practices.

In July 2013, the first MOOCs-based learning strategy “Mobile Application Development Using Android Platform” was implemented.” It received Merit Awards in the Public Relations Programs Merit on a Sustained Basis (Education/Literacy Category) at the 49th Anvil Awards held on 26 February 2014. The course aimed to equip learners with the necessary skills and know-how to deploy android applications for android phones and tablets.

This training program was developed and offered in collaboration with SMART Communications, Inc. The UPOU launched Fundamentals of Business Processing Management and Business Communication a year later. Since its inception in 2013, substantial number of MOOCs-based programs have been developed, with the aim of making education more open and accessible, and promoting lifelong learning.

The Massive Open Distance e-Learning (MODeL), through its MOOC platform, offers training programs guided by the thrust of making learning more accessible to more people. Its beneficiaries include out-of-school youth, alternative learning system students, career shifters, and overseas Filipino workers (OFWs). The MODeL website is <https://model.upou.edu.ph><sup>2</sup>.

### **The Department of the Interior and Local Government (DILG) MOOC-based Training Program**

The MOOC- based training program on Interlocal Cooperation (ILC) is specifically designed to enhance the LGU’s capability to coordinate and work with other LGUs in achieving a common goal. At present, the DILG is over-all in charge of the human resource development programs of all local government units (LGUs) in the country, consisting of 1,488 municipalities and cities as well as 42,046 barangays all over the 7,000plus islands in the country.

The major responsibility of providing HRD programs to the officers and staff of these LGUs guided the DILG to search for distance learning strategies to reach its vast constituency. In 2020, partnership between DILG and UPOU was developed, through Memorandum Circular No. 2020-069, signed and issued by DILG Secretary Eduardo Año on April 3, 2020. The memo encourages local government heads and officials to enroll and directs DILG regional directors as well as the Bangsamoro Autonomous Region of Muslim Mindanao Minister for Local Government to widely disseminate the memo.

Local government executives are able to participate in this training which aims “to help harness the capabilities of local governments in working together to accomplish common goals that will benefit the larger Philippine society.” (Source: DILG website). This program is a massive open online course

---

<sup>2</sup> Address: National Highway, Brgy. Maahas, Los Baños, Laguna, Philippines - Telephone Number (+6349) 536-6001 to 06 local 710, or 536-5992.

(MOOC) on interlocal cooperation. It is free and open to the public. It is a four-module course, with each module consisting of three weeks.

- Module 1: General Course on Interlocal Cooperation.
- Module 2: Legal Ingredients
- Module 3: Institutional Ingredients
- Module 4: Financial Ingredients

### **The Commission on Higher Education (CHED) eLearning System**

CHED likewise developed a partnership with the UPOU in the development of its teacher training learning packages. These training packages are provided to teacher training institutions, state colleges and universities which offer educational technology in their baccalaureate programs.

### **TESDA (TOP) Learning System**

It's a web-based platform that offers free Massive Open Online Courses (MOOCs) for the technical education and skills development of the Filipino workers. The TOP utilizes open education resource framework that aims to make technical education accessible and inclusive using ICT.

The TOP provides an on-line way to deliver technical-vocational education and training at the learner's own space and time. TOP'S objectives are: (i) to broaden access and opportunities to quality TVET by harnessing technology; (ii) to improve quality of TVET delivery through standardized content of TVET programs; (iii) to increase absorptive capacity of TVET institutions; and (iv) expand TESDA services beyond borders. The program was conceived to provide opportunities to the citizens anytime, anywhere, by offering free online TVET courses and learning materials and providing them a chance to get skills and be certified to increase their employability.

The TESDA TOP training programs are provided to both the DepEd senior high school students as well as the out-of-school youth beneficiaries of the DepEd Bureau of Alternative Learning System (BALS). Counseling and monitoring of the senior high school students are done by the DepEd basic education teachers while the learning facilitators of BALS monitor and counsel the participants of the ALS/TESDA training programs.

### **Educational Television funded by Rockefeller Foundation**

The concept of e-learning has been in the Philippine landscape since 1964 when the Rockefeller Foundation established the educational TV facility in the campus of the Ateneo University in Quezon City.

It was a closed-circuit system which produced in-syllabus TV learning packages at the elementary school level. Content development and production of printed lesson guides was a shared responsibility of the Ateneo University and DepEd. Transmission airing of the TV lessons was the responsibility of the Government-owned Philippine Broadcasting System (BPS). The geographical coverage of the broadcast was the Greater Manila Area. After the ten-year assistance of Rockefeller Foundation, the schools divisions of Greater Manila until the 1970s when the DepEd revised its curriculum and the lessons served as video enrichment materials.

### **The Instructional Management by Parents, Community, and Teachers (IMPACT)**

The IMPACT learning system is one of the pioneer projects of SEAMEO INNOTECH funded by the Canadian International Development Agency (CIDA) which has been adopted by DepEd as one of its alternative delivery modes (ADMs) for teaching and learning. Initially a print-based learning system, students of the higher grade levels served as learning guides to students in lower grades while the

teachers and parents monitor their activities and would provide remediation activities for lessons which necessitate further discussions by the teachers.

In the early 2000s, INNOTECH revisited the program and produced video versions of the lessons. The project sites in the Southern part of the Philippines continue to use this family and community-based learning system, with the addition on e-learning video packages.

### **The text-to-teach Project (T2T)**

T2T is a mobile learning project founded by BridgeIT, a global ICT-based programme developed through an alliance between Nokia, the International Youth Foundation, the Pearson Foundation and the United Nations Development Programme Source: UNESCO). BridgeIT aims to narrow the educational divide by improving the quality of basic education in underserved schools in developing countries. BridgeIT projects enable teachers to utilize digital content to supplement local curricula, with the end goal of equipping students with the knowledge, skills and aptitudes to actively shape their futures (Source: Ayala Foundation, 2011).

In 2003, BridgeIT launched the T2T project in the Philippines and local partners were: the Ayala Foundation, responsible for leading the project; Nokia, the technology project leader; the mobile infrastructure provider Globe Telecom; the Southeast Asian Ministers of Education Organization for Innovation and Technology (SEAMEO INNOTECH), responsible for curriculum and teacher development; the Department of Education of the Philippines (DepEd); and, until 2007, the satellite provider PMSI and the mobile phone software developer Chikka.

- T2T's project mission is to create a sustainable, scalable and replicable platform for delivering digitized education content to in-classroom TV sets through mobile technology, and to empower local teachers with new teaching tools and train them to deliver the content in ways that add substantial value to a child's learning experience. Its intermediate goal is to help improve the quality of teaching in elementary schools through the provision of highly interactive, easy-to-use multimedia packages designed to make learning more exciting and meaningful.
- In terms of management systems and educational apps, T2T management and educational apps, a Nokia-managed server contained more than 400 5-minute educational videos, 100 of which were provided by Pearson and the rest developed by local partners led by and DepED. Each school was provided with a mobile phone, a TV set, a satellite dish, a storage device called Media Master that also served as the video player, and lesson plans for teachers to accompany each video. The mobile phone was used primarily to "order" or request for videos by sending an SMS containing the catalogue number of the desired video. The SMS would trigger the server to send the requested video via satellite to the Media Master device, which was attached to the TV set for classroom viewing. The mobile phone was also used to access the T2T Helpdesk and to communicate with other teachers to compare notes and share experiences.

In Phase Three of the project, this satellite-based technology platform was replaced with the Nokia Education Delivery (NED) system -- a high-end, high-memory smartphone loaded with NED software. The software enables the teacher to download a five minute video in fifteen minutes via Globe Telecom's 3G (third generation) infrastructure. Downloaded videos are stored and catalogued in the mobile phone for future use. The NED software has cataloguing and search features that enable the teacher to easily retrieve the needed videos and to monitor usage. The smartphone can then be connected to the TV or a digital projector to screen the videos in class.

The instructional design of T2T is in keeping with the learner-centered pedagogy called for in the DepEd's basic education curriculum, specifically the science curriculum for Grades 5 and 6. The materials developed for the project align with the DepEd's curriculum are in-syllabus and are designed for use in regular classes, not just enrichment or supplementary activities. The overall pedagogical strategy is a blended continuum of interconnected learning strands, which include pre-viewing activities,

video viewing, and post-viewing enhancements, with the teacher serving as the unifying thread in the learning process. The T2T technology-based educational strategy involves the teacher, the mobile phone, the video materials and the students – all are considered integral to the learning environment, and each one performs important roles in making learning meaningful to the students.

The M&E component of the T2T system generated POSITIVE field data:

1. T2T lessens the burden on teachers in preparing lesson plans and instructional materials; T2T makes it easier to teach science, math and English;
2. T2T equips teachers with essential knowledge and skills in science, math and English and teaches them how to impart these understandings to their students;
3. T2T increases students' engagement and attentiveness, as children find the videos interesting to watch;
4. T2T creates a more challenging learning environment for students. While T2T has been very successful in terms of community acceptance, teacher empowerment and improvement of student learning, the project also faces several challenges.
5. Feedback from participating teachers and students include: the quality of the videos could be improved. Participants complained that videos' narrators speak very fast, and their accent is often difficult for teachers and students to understand.
6. Teachers would like to see the program expanded to include additional grades and subjects, such as social sciences.
7. Finally, equipment shortages caused implementation challenges for many schools. Schools had only one mobile phone and TV set. Teachers would like to use the videos more often, but because there is only one mobile phone, it must be booked ahead of time. After planning an activity, teachers found out that other teachers had planned to use the T2T equipment at the same time.
8. Because some classrooms are located in separate buildings, the movement of classes proves doubly difficult during inclement weather. The project management team contended with other challenges, including natural disasters like floods that destroy the project equipment and materials;
9. Limited mobile phone signals in some project sites; and the safety of project resources, as mobile phones are very easy to steal. Project sustainability is another issue.
10. Advocacy and Social Mobilization (ASM) and community engagement have been important components of T2T, in keeping with the project leaders' efforts to move the private-public partnership toward local ownership and sustainability.

To date, more than half a million students in 555 schools in 9 provinces of the Philippines have been served by T2T. More than 1,500 teachers have also been trained, not only in math, English and science subjects, but also on how to use the T2T tools for teaching. The schools that participated in Phases One and Two continue to use the project resources even after Phase Two ended.

T2T summative evaluation studies were conducted and they indicated that the project had a considerable impact on education (Ayala Foundation, 2011). Results included: 1. Improved teacher competence when using technology 2. More positive teacher and student attitudes about learning and technology 3. Statistically higher learning gains in English and science for students participating in the programme compared with a control group 4. Learning gains in both well-performing schools as well as challenged schools with weak academic performance and limited learning resources 5. Learning gains for socio-economically disadvantaged students 6. Reduced absenteeism.

T2T was bestowed the Grand Award by the Asian Social Corporate Responsibility Award of the Asian Institute of Management, beating 51 other entries in the Asian Region.

The USAID noted the achievements of T2T and encouraged the project team to submit a proposal to continue and expand the project in additional project sites. A USAID grant was consequently awarded to T2T and it was able to cover more geographical areas, more hard-to-reach and “unreached learners of Mindanao.

### **qLearn**

Still another online program undertaken by DepEd is qLearn, a media-based training of teachers of the World Bank-Assisted project called the Third Education Project (TEEP). The project developed video packages have been used by the learning action cells in conducting its continuing education sessions at the school-level.

## **PR3 Online content**

### **Learning Continuity Plan**

To implement the Learning Continuity Plan which is a strategy to mitigate the adverse effect of the COVID-19 pandemic, the DepEd launched the “remote learning” strategy wherein all subject areas are taught via the distance education scheme. Their parents serve as the primary learning guides while they go through printed materials called learning modules, radio-based lessons and TV-based instructions. The printed learning modules are delivered to the barangay offices and they are collected by the parents on a weekly basis.

The radio-based lessons and video-based instructional materials are aired /broadcast by local radio-TV stations. The radio-TV broadcast stations all over the country have made available school-time airing for free, so that learners can avail of these lessons during school hours. These broadcast lessons are also aired t=via the websites of the DepEd national, regional and district websites as well as You Tube and In terms of language, the English, Science and Math are taught in English while the social sciences, health, physical education are either in English or vernaculars. The parents are trained to guide them and help them with their lessons and related activities. The parents meet the teachers of their children once a week to get the weekly learning guides and consult the teachers on their concerns as well as possible difficulties their children may encounter. The DepEd also embarked on a massive teacher training through its website, in order to guide the teachers on the basics of distance education. The DepEd had been able to reach the teachers though its regional, division and district offices. The latter offices are the ones responsible for cascading the training programs to the teachers in their districts. There are minimal issues in this kind of cascade training since they are conducted during office hours.

### **TESDA TOP training programs**

The TESDA TOP training programs are provided to senior high school students of DepED. The students have the option to choose which courses to take and they are given and NC2 certificate when they satisfactorily complete the training program. With this certificate, they are able to land jobs/employment or continue taking TESDA TOP courses in order to equip them with skills which may be needed by business outfits in their communities.

The TESDA Training Center Taguig Campus Enterprise (TTCTCE). conducts and advanced technology training programs registered under UTPRAS in partnership with industry organizations under a co-management scheme in response to the training requirements of the industry. These programs generate income to support TESDA Development Fund (TDF). The TESDA board approves the training fees. From the training fees, at an agreed sharing scheme contained in a MOA, the industry partners assume all the training expenses, repair and maintain the training facilities of the center. They also bring the equipment to augment TESDA's delivery system.

### **HRD programs**

In terms of digital content, majority of the HRD programs have tie-ups with the UPOU and other leading universities in the country. Some of the existing digital content are :

- Distance Education Readiness Module
- GNN: Training of Teachers on Flexible Learning
- Business Analytics Concepts and Frameworks
- Blended Teaching and Learning Using OERs
- Learner Support
- Social Entrepreneurship
- Developing and Producing an Interactive Educational Video

The UPOU-CHED digital content in HRD programs include the following:

1. The Flexible Teaching and Learning Model: Revisiting the Mode of Instructional Delivery. This training program is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". It has 5 training hours: 2 hours Synchronous; 3 hours Asynchronous.
2. Course Delivery is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". This module is equivalent to 35 training tours: 14 Hours Synchronous; 21 Hours Asynchronous.
3. Developing, Using and Sharing Open Educational Resources is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". It has 5 training hours: 2 Hours Synchronous; 3 Hours Asynchronous.
4. Designing and Implementing Training Programs in the time of COVID-19 Pandemic is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". It has 5 training hours: 2 Hours Synchronous; 3 Hours Asynchronous
5. The What; Why's and How is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". I has 7 training Hours: 2 hours Synchronous; 5 hours Asynchronous.
6. Internationalization at the course and program level is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". This module is equivalent to 5 Training Hours: 2 hours Synchronous; 3 hours
7. Revisiting QA Frameworks in Teaching and Learning Under the New Normal is entitled " Training of Teacher-Trainers on Flexible Teaching and Learning in the New Normal". This module is equivalent to 5 Training Hours: 2 hour Synchronous; 3 hours Asynchronous

### **The Alternative Learning System (ALS) section of DepEd**

It has more than 500 digitized lessons for out-of-school youth. They are used and/or loaned to learners who are enrolled in various ALS courses at the basic education level. These resources are in the DepED national headquarters in Pasig, Metro Manila and in the SEAMEO-INNOTECH which produced all the ALS video and print materials.

#### ***qLearn***

The *qLearn* teacher training materials are:

- sixty-one modules (31 for schools' heads and 30 for teachers)
- corresponding sixty-one video modules (31 for school heads and 30 for teachers)

These resources are likewise in the DepED national headquarters in Pasig, Metro Manila and in the SEAMEO-INNOTECH which produced all the *qLearn* video and print materials.

#### **T2T**

T2T resource materials include:

- 240 lessons in Grades 5 and 6 science, math and English
- corresponding teachers guides ection of the DepEd

The above content materials are in the DepED national headquarters in Pasig, Metro Manila and in the SEAMEO-INNOTECH which produced all the T2T video and print materials.

## PR4 Integrators / emerging trends

The University of the Philippines-Open University (UPOU) has been a major actor in the systems integration activities of remote learning programs. Other key actors are leading universities offering IT in their curricular programs. The top 4 of these universities are (Source: Quacquarelli Symonds (QS) Asia University Rankings for 2019)

1. University of the Philippines Diliman (UP)
2. Ateneo de Manila University (ADMU)
3. De La Salle University (DLSU)
4. University of Santo Tomas (UST)

Another QS-recognized university is the Mapua University. It was also recognized by Times Higher Education (THE) for its social and economic impact, placing in the Partnership for the Goals category of the inaugural THE University Impact Rankings. Mapua University is the first school in Southeast Asia to obtain accreditation from the United States-based ABET ([www.abet.org](http://www.abet.org)) and has the most number (14) of accredited engineering and computing programs in a single campus in the Philippines.

A major sector which is active in systems integration is the business sector composed mainly of edtech companies. EdTech outfits founded by Filipinos have a big advantage – they possess substantial understanding of the needs of local students and what needs to be improved (Source: [worldremit.com/2019](http://worldremit.com/2019)).

The 16 leading educational technology companies in the Philippines as of 2019 are:

1. Edukasyon. Its portal provides comprehensive information to help students advance their education – from applying to their dream school to choosing the right career path. It has helped more than half a million students to make better choices, as well as parents and school administrators to give better guidance to students. Website address: <https://www.edukasyon.ph>
2. Learntalk. This outfit aims to help students advance in their English language skills by providing high-quality, affordable lessons through video call lessons.  
Website address: <https://learntalk.org>
3. PhilSmile is an all-in-one school management system for academic institutions. It covers multiple areas from enrolment to grading and financials. The company has helped more than 40 schools to upgrade their rules and policies to make it more efficient and build relationships with students and parents through an app. The platform is convenient for students, helps parents guide their children and eases the payment collection for schools.  
Website address: <https://learntalk.org7.co/startups/philsmile>
4. KITE eLearning Solutions. This edtech company offers e-learning programs to educational institutions in the country. From an end-to-end system to an app encouraging children to read, there are many products to choose from. With KITE Academy, teachers can follow the set curriculum, create customized lessons and effectively communicate with students. All their products are backed up by local research and tested in the global environment to meet the demands of 21<sup>st</sup> Century students.  
Website address: <https://www.kite.ph>
5. JakenPoy's Study Buddy. In the Filipino language, jakenpoy refers to the rock-paper-scissors game, and just like the actual game, this company aims to make learning a fun activity, while bringing

generations together. Based on the content and open access, Study Buddy's mobile application and website defines what modern digital age is all about. Parents and teachers assign children tasks and homework created around the DepEd official curriculum. Website address: <https://ph.seekweb.com/search>

6. Zzish originated in the United Kingdom and it is a tool used by teachers to analyze the performance of their class. As the educators track the student progress, they can optimize their approach to meet the need of every student. Zzsh has helped improve the educational outcomes of more than 120,000 students in the country. Website address <https://www.zzish.com/site/company>

7. Quipper. In 2015, the London-Tokyo Quipper was introduced to the Filipino learners. Bringing video lessons and coaching from the best teachers directly to students' smart phones, this app aims to help close the education gap, not only between countries but also within the Philippines. Website address: <https://ph.seekweb.com>

8. CloudSwift is a Cloud based training and assessment solutions. It offers a platform that enables companies to create and manage IT training assessment and development environment without the need to purchase and manually set up hardware and software tools. CloudSwyft has partnered with top global technology companies to deliver a broad range of cutting-edge digital skills learning options, with over 500 courses, integrated with Hands-On Labs and digital credentials, available today. Website address: <https://www.couldswyft.com>

9. Edusuite is an AI-powered school management system provider. Features include the following: attendance management, curriculum management, faculty management. Communication management and others. Website address: <https://usa.edusuite.asia>

10. Orange Apps is a web and mobile integrated platform that allows schools and universities to manage their operations. It allows teachers to create, assign and analyze assessments and in real-time. It allows school admins to manage student information, online enrollment, online grades, tuition fee payments, class scheduling, etc. The app is available for iOS and Android platforms. Website address: <https://www.orange.com>

11. EdTech Center UST is the ICT arm of the University of Santo Tomas and also provides ICT assistance to requesting parties. Website address: <https://www.ust.edu.ph>

12. Integrated Solutions Technology Limited - A Philippine Regional Operating Headquarter. Address: [www.ist-global.com](http://www.ist-global.com)

13. Up System Information technology is the ICT arm of the University of the Philippines and also provides ICT assistance to requesting parties. Website address: <https://ovpaa.up.edu.ph>

14. Omni WE Solutions Technology. Omni App Solution is a software development company based in Singapore, offering custom software, web and mobile apps. Website Address: <https://www.omniappsolutions.com>

15. Accupro Tech Ventures Central Institute of Technology. It is a center in the country where research in all disciplines relating to fishing and fish processing is undertaken. Website address: <https://www.getmyuni.com/college/central-institute-of-technology>

16. DXC Technology is an end-to-end IT services company. It operates through 2 segments: Global Business Services and Global Infrastructure Services. The Global Business Services segment offers

analytics, engineering, applications, and business process services, which include digital integration and optimization of front and back-office processes, and agile process automation. Website address <https://www.dxc.com/ph>

Philippine publishing houses are likewise active in developing ICT-based learning materials for Filipino learners in and out of school.

1. Adarna House.
2. Anvil Publishing.
3. Abiva Publishing House.
4. Rex Bookstore.
5. Vibal Publishing House.

## Annex 2: Survey findings – The Philippines

As part of the process in attempting to create an understanding of the current status of eReadiness in each of the four project countries the team has been provided teachers' survey data conducted by the Asian Development Bank (ADB) Sustainable Development and Climate change division in cooperation with TIESEA. The surveys attempt to better understand roughly three areas of teacher interaction with EdTech covering digital access (availability of devices), digital skill (ability to use devices) and digital literacy (ability to manipulate devices to create materials and train others).

Over the course of the in 2021 an online survey using Kobotoolbox<sup>3</sup> was conducted with teachers in the Philippines reaching 1,000 teachers across the three levels of grades 1-12, TVET and higher education. Noting that the purpose of the survey was to reach teachers who are active in the use of online and digital learning.

The research team used a variety of methods to reach the target users, but primarily their approach was via social media teachers' groups and online professional communities of practice. Teachers were provided with an online link to the survey tool and they completed the survey in their own time with complete individual anonymity. The survey tool is able, however, to identify the geolocation of the participants, allowing a national map of respondents' location. In this way it has been possible to ensure that the survey covers all areas of each country, including both urban and rural locations.

In order to assure quality of data the survey aimed to collect a minimum sample size covering teachers from grades 1-12, TVET and higher education levels. Additional criteria on demographic distribution were collected by assuring proportionate spread across regions of the country and urban/rural location. The research team was also able to collect demographic indicators on sex, years of teaching experience. Those variables then served as cross comparison in analyzing the core questions on digital access, skill and literacy as is presented through the following graphs.

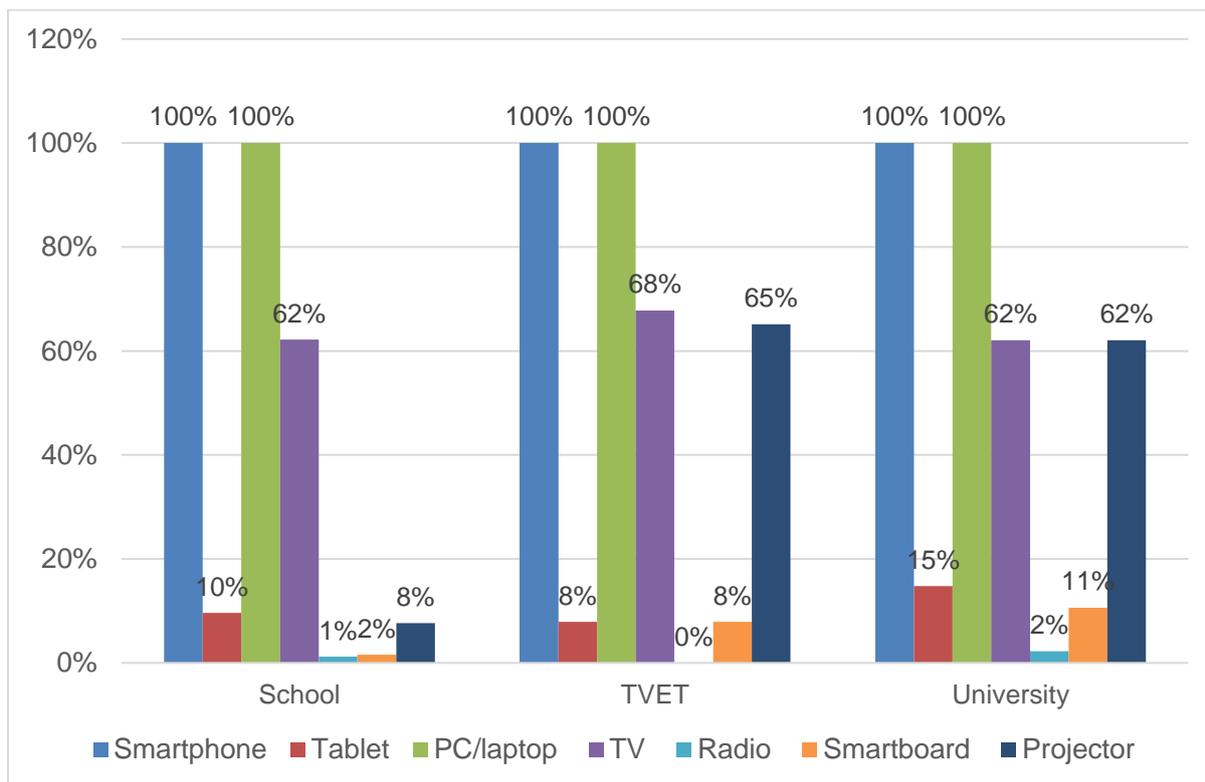
### **Limitation on survey sample**

It is recognized that these surveys, being conducted solely online are biased toward respondents with access to the internet (and potentially may have omitted those who are not connected or poorly connected to the internet), thus creating the 'skew' of responses from teacher/educators with internet access vs those without it. E.g., as devices and connectivity are typically related to each other, the survey results regarding access to devices, teacher digital skills/literacy, etc. may have been overstated (as only those teachers with devices and internet access may have completed the survey).

---

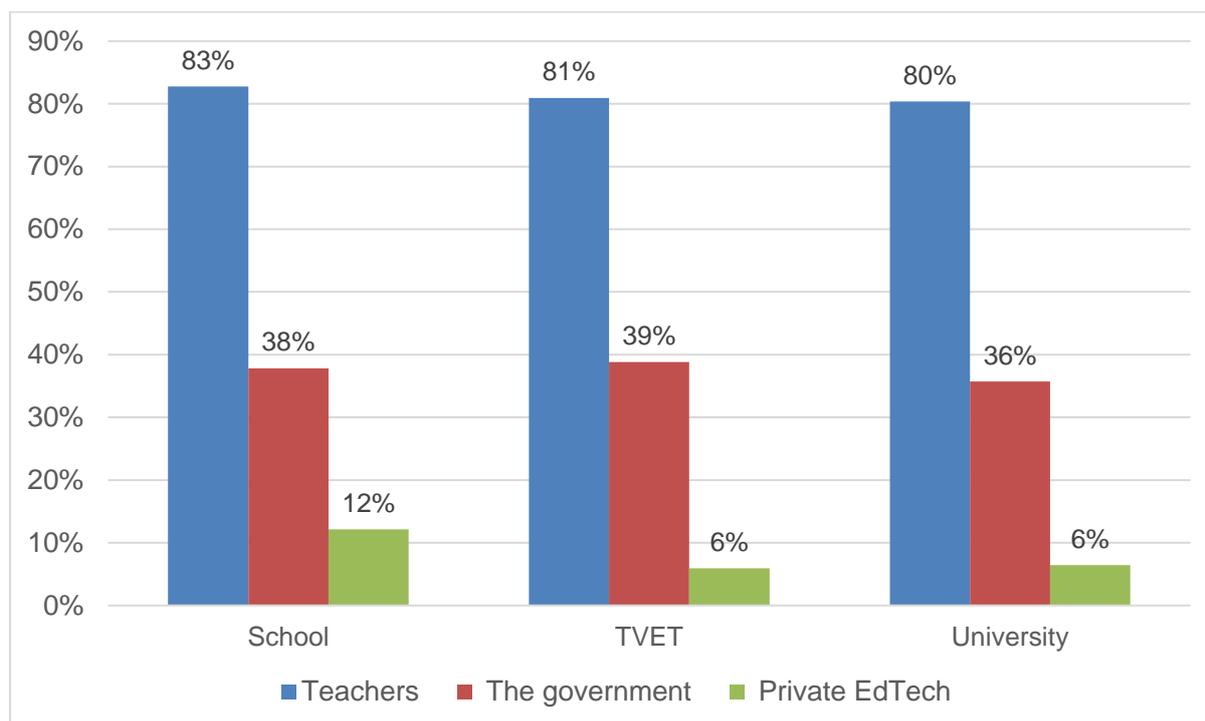
<sup>3</sup> <https://www.kobotoolbox.org/>

### Access to devices by teachers at schools, TVET and universities



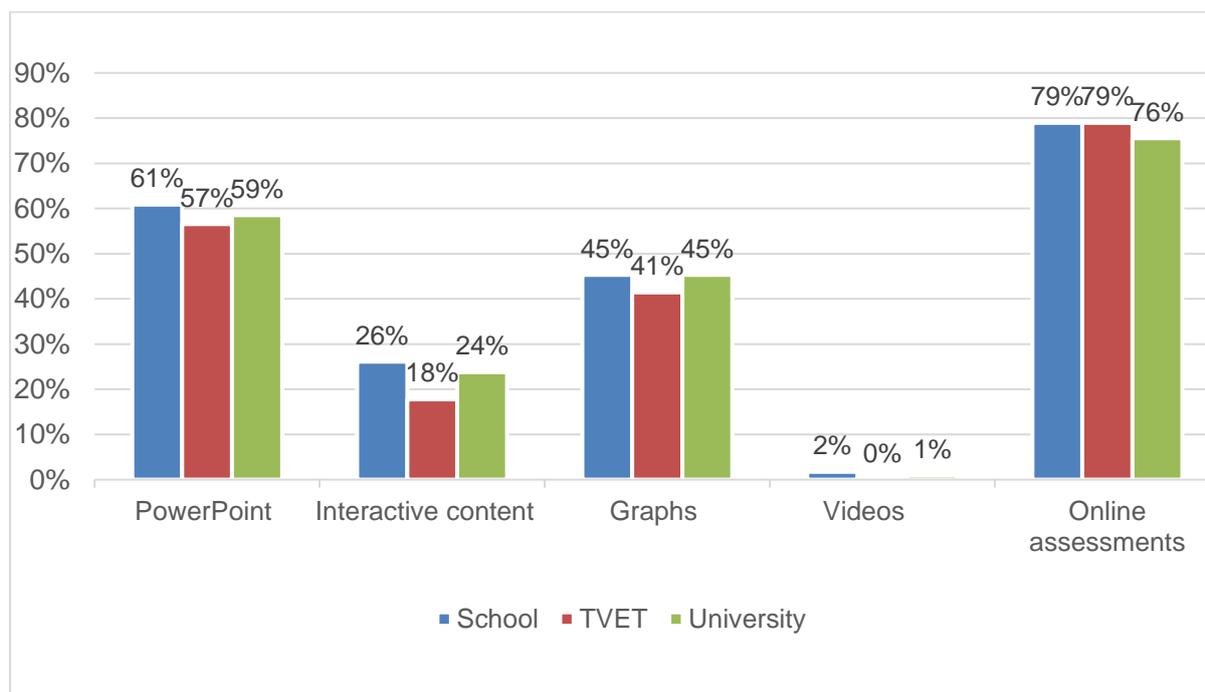
We polled 1000 teachers from school, TVET and university levels to ask about the type of devices they most often access at school. Of the seven types of devices that teachers around the world commonly access while at their institution three of them appear to be more prevalent at a rate of over 50%; smartphone, PC/laptop and TV while at TVET and University levels we see a strong rise in the use of the projector with over 60% reporting access. While tablet, radio and smartboards are clearly not utilized across the three levels showing no more than 9% uptake.

## Who provides or creates the content?



We asked teachers where they get the digital content (self-provided, from the government or via private EdTech providers) used in their classes. Most notable is the results of the survey of over 1000 teachers across the three levels of school, TVET and University was profile consisting of the three potential providers of digital content looks very similar across each level. This points to a very healthy digital content ecosystem in the Philippines where most notably teachers are highly involved in content creation at all levels, the government contributions about 1/3 of the content used while private providers contribute no more than 11% across the three levels.

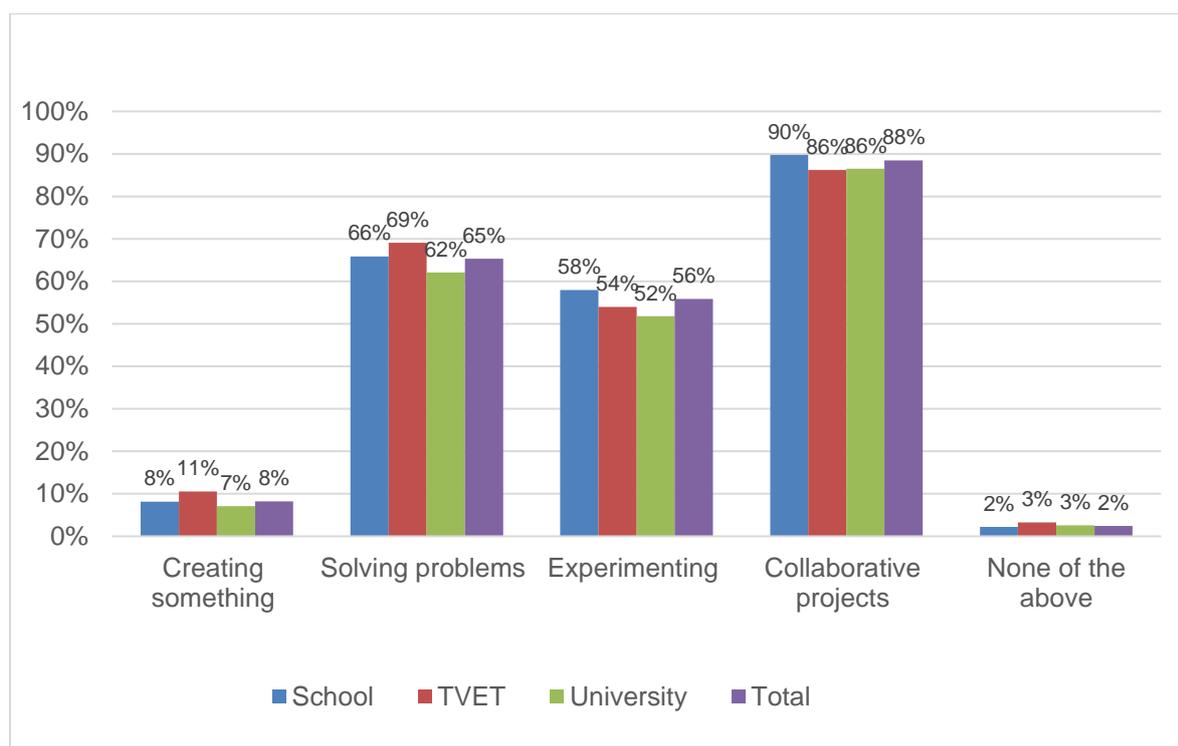
## Digital content that teachers can create



We asked teachers in the Philippines about their ability to create five types of content (PowerPoint, interactive content, graphs/charts, video, and online assessment). Interestingly in the Philippines there is no discernable difference between the three levels of school, TVET and university. The data shows that across those three levels their ability to create the five categories of content is similar. It is with online assessment that across all three levels teachers are more adept while they are less capable at creating videos. The results are somewhat surprising since oftentimes PowerPoint is considered a more common and easy to use tool while the highest scoring category of online assessments is generally thought of as somewhat complex. It is also notable that in the category of video creation across all three levels teachers report a lack of ability in content creation.

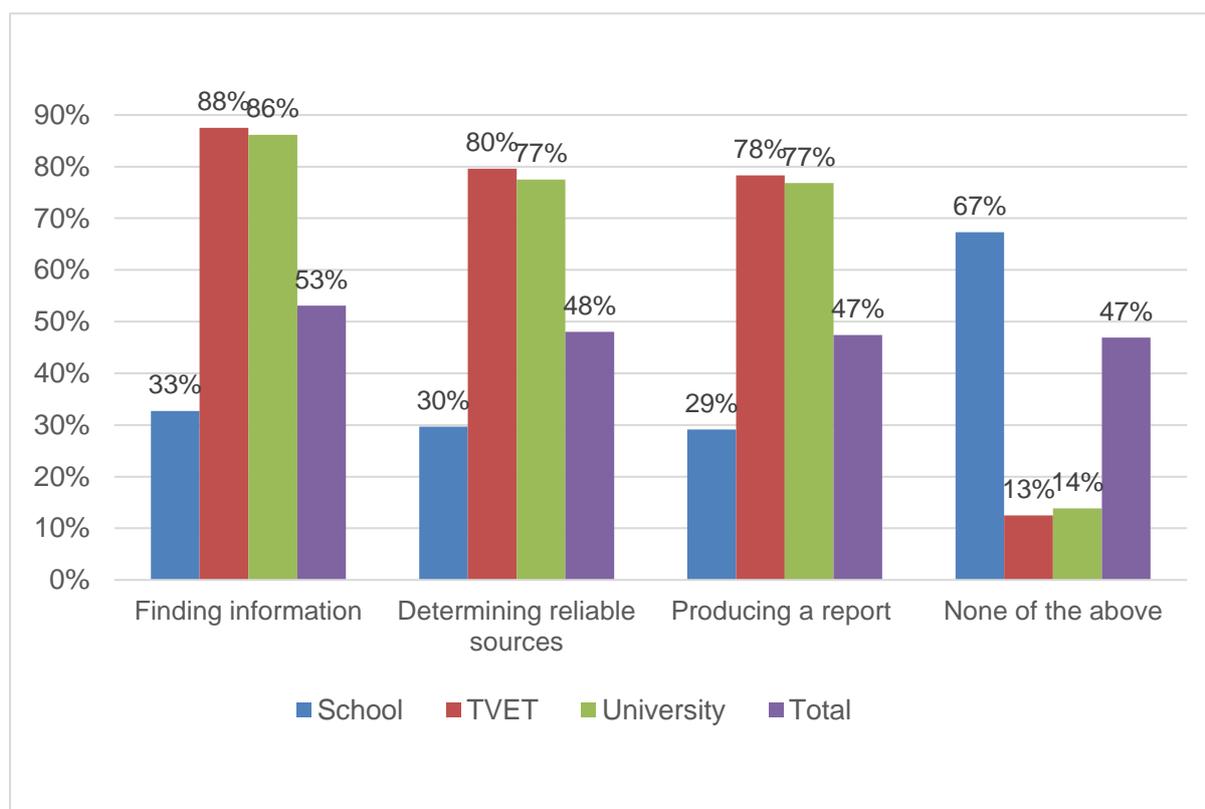
## Teachers engage students in the following creative activities

In this question we wanted to check on how digital technologies are being used to further 21<sup>st</sup> century skills (i.e., communicating, collaborating, creating, problem solving). The important learning for the Philippines is that teachers perceive they are using digital technology to help student improve on 21<sup>st</sup> century skills. While we have no clear way of discerning the quality of such learning it is evident that they are engaging and considering the use of tools across the board. The data shows that in the Philippines teachers across the three levels felt that they engage less on “creative” engagement while “collaboration” appears to be a strong point. This may help in developing capacity development that more equally engages across the 21<sup>st</sup> century skills.



### Teachers teach students to conduct online research in the following ways:

In modern day use of online resources to conduct school-based research it is assumed there are three key areas in which teachers should engage their students to build research skills (finding information, determining the reliability of such information and producing reports based on the information found). Teachers across all the three levels, seem to equally teach their students on 'Finding information related to a task or assignment on the internet'. However, there is a significant disparity between higher education and TVET which seem to produce similar levels of perceived engagement across the three skill areas while at the school level the data suggest far less engagement across the board. We can therefore surmise that schools engage in far less research, which certainly makes sense. Nevertheless, it is an area that needs to be strengthened as is exemplified in the desire to improve on 21<sup>st</sup> century skills.





## Wage disparity

Women and men's labour market participation is important for economic development and fulfilling the 2030 Development Agenda. According to SPF (2017), there is a gender disparity in labour force participation, with women accounting for 52% of the work force and men accounting for 81%. The data from the Philippines showed the majority of women work in the service sector, followed by agriculture and industry at rates of 70%, 20%, and 10%, respectively<sup>10</sup>. These sectors (i.e., services and industry) require a moderate to heavy reliance on ICT. This is consistent with women having a greater rate of education than men; they appear to work more in high-productivity and skilled labour.

Gender inequality in (income) earnings is quite common and has a long history on a global scale. According to SEY 2021, women earn 20%<sup>11</sup> less than males globally. In the Philippines, on the other hand, women earn more than males. The study discovered negative gender paying disparities in the Philippines (–10%, meaning women earn 10% more than males). Paying gaps are inextricably linked to education and professional development and cannot be avoided.

## Women's knowledge and capabilities in the digital economy

The government of the Philippines recognizes and acknowledges the critical role of ICT in state building. Technology and infrastructure development are critical components of the economic growth agenda. Together with the development of human capital through educational reforms and upgrades, the development plan intends to realize the government's ambitious long-term vision for the next 25 years. *“The Philippines shall, by 2040, be a prosperous, predominantly middle-class society where no one is poor; our people shall live long, healthy lives, be smart and innovative, and live in a high-trust society”*<sup>12</sup>.

The Philippine government has a robust legal and policy framework in place to protect and promote women's rights, as well as women's participation in micro, small, and medium-sized businesses (MSMEs). Numerous policies and regulations exist to promote women's empowerment, protection, and entrepreneurialism. According to APEC (2018), the member economy has around 900,914 enterprises, of which approximately 896,839, or 99.5%, are classified as micro, small, and medium-sized enterprises (MSMEs). The majority of female entrepreneurs operate in the micro, small, and medium-sized enterprise (MSME) categories. However, only a small percentage of the of women participating in business courses at postsecondary schools receive appropriate entrepreneurship training<sup>13</sup>.

Numerous initiatives and programs have been launched to empower women in entrepreneurship and information and communications technology (ICT), including by the government, the private sector, and civil society, such as Women ICT Frontier Initiatives (WIFI) and Telecentre Foundation, to launch a Digital Literacy Campaign for Women, which has educated 10,000 Filipino females since 2017<sup>14</sup>.

The Philippines is one of several Asian countries where women are more than twice as likely as men to face job loss. Because the majority of newly created jobs will require ICT (or other technical) abilities, this risk exacerbates the range of gender biases and other barriers that girls and women experience in acquiring ICT skills, accessing ICT devices that facilitate skill adoption, and obtaining employment. As a result, the aim to empower women and youth with ICT skills and digital literacy must continue to reduce the gender gap and minimize future job losses for women.

<sup>10</sup> SPF, 2017: ICT skills for girls and Women in Southeast ASIA, available at: [ICT-SKILLS-FOR-GIRLS-AND-WOMEN.pdf \(spf.org\)](#)

<sup>11</sup> Araba SEY Araba SEY: Gender Digital Equality Across ASEAN, 2021

<sup>12</sup> USAID-A, 2020: EdTech Ecosystem Report

<sup>13</sup> ESCAP, Women ICT Frontier Initiative (WiFi) in the Philippines, available at: [Case Study on "Women ICT Frontier Initiative \(WiFi\) in the Philippines" | APCICT/ESCAP \(unapcict.org\)](#)

<sup>14</sup> SPF, 2017: ICT skills for girls and Women in Southeast ASIA, available at: [ICT-SKILLS-FOR-GIRLS-AND-WOMEN.pdf \(spf.org\)](#)

## Literacy of female instructors and students in ICT

While more females complete primary and secondary school, they have, traditionally enrolled in STEM disciplines at a lower rate than males due to gender stereotypes and discrimination. Though the situation is changing. As a result of the Philippine Science High School (PSHS) effort, 99.84% of graduates are pursuing undergraduate STEM-related courses this year and there is approximate gender parity in enrolments.

The is gender parity in education and ownership of mobile phones is and women than men are active on social media platforms such as Facebook and Instagram but are less active on websites. Females between the ages of 18-24 are the most active users of such apps, and there is no gender disparity in their use of social media sites<sup>6</sup>. This finding is consistent with another study that revealed that approximately 30% of women (compared to approximately 20% of males) who are aware of mobile Internet regarded the cost of both handsets and data as significant barriers to adopting mobile Internet<sup>15</sup>.

As a consequence of the COVID-19 pandemic-related school closures, a vast majority of teachers have reported a willingness to switch to distance learning education. However, levels of preparedness varied depending on the type of distance learning modality used. While 69% of teachers felt prepared to use printed modules as a tool, only 58% felt prepared to conduct distance education using online resources and platforms such as Khan Academy, Edmodo, or Zoom. Only 51% of teacher respondents indicated that they were adequately prepared for distant learning and had attended a series of training sessions and workshops on distance learning education management. While many teachers expressed an interest in implementing distant education, they expressed concerns and uncertainties due to a lack of facilities, equipment, and capacity-building opportunities<sup>16</sup>.

Furthermore, the research shows that teachers from both private and public schools faced a variety of issues and challenges, including internet connectivity and accessibility, availability of learning materials and resources, and equipment (i.e., computers, tablets), students' capabilities, parental competence and time in providing support to their children in remote learning, and household resources available to support remote learning. This pandemic has contributed to the shaping of ICT school-based learning as well as the acceleration of the digital transformation process.

---

<sup>15</sup> OECD (GSMA, 2018).

<sup>16</sup> USAID, 2020: [School-based technology and the shift to remote learning during COVID-19: Philippines - White Paper \(usaid.gov\)](https://www.usaid.gov/our-work/education/school-based-technology-and-the-shift-to-remote-learning-during-covid-19-philippines-white-paper)