

SHARPENING EDUCATION THROUGH THE USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

COUNTRY PAPER FOR THE PHILIPPINES

BY

NIÑO A. CRISOLO

Sta. Catalina National High School, SDO Quezon, Philippines

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ABSTRACT

ICT creates a significant role in the development of any country. Great opportunities easily come along to anyone apt in this field. Thus, it is important for a nation to produce ICT literate citizens who will build the infrastructure required to survive in this digitally-age of society. In response to this demand, the Department of Education is continuously introducing ICT into its system. The Philippines government is also making all possibilities to provide technological advancement to its people. Remote places across the region are being reached to make sure that no Island is being left behind when it comes to technology. As the Philippine education embraces the technology, students are no longer solely relying on hard text for learning. Through DepEd, funded by the government and other partner institutions, learning processes are now transformed digitally. Now, students have access to thousands of learning materials uploaded in the DepEd - managed Online Learning Portal. This undertaking was strengthened by the creation of the Department of Information and Communication Technology (DICT), an executive department of the Philippine government responsible for the planning, development and promotion of the country's ICT agenda in support to national development. ^[1] Despite all of these efforts, government through DepEd is still facing the biggest challenge in keeping innovative education in this quickly changing world.

COUNTRY PROFILE

Philippines is a unique country, situated in south East Asia in the Western Pacific Ocean. Echoing the soft across 7100 islands, Philippines is the second largest archipelago in the world. Three main geographical islands – Luzon, Visayas, and Mindanao make up the country's land area. Due to its archipelagic nature, Philippines becomes a culturally diverse nation. Notably, the country is known to have a rich biodiversity and is considered one of the prodigious biodiversities in the world with high numbers of fauna and flora endemism.

Equally notable, Philippines is also rich in history combining European, Asian and American influences. Filipinos had a great trading commerce with the Chinese and Japanese before the Spanish colonization. On the other hand, Spanish colonization which was started in 1521 brought the construction of various European buildings and churches which were replicated on their governed regions across the archipelago. Moreover, following the Philippine-American War, the United States carried widespread education to the islands.^[2] The event of volatile past does not stop its people to fight for their own sovereignty. It was the innate patriotism among its men that served as the key to unlock the chain of foreign colonization. Filipinos are a freedom-loving

people, having waged two peaceful, bloodless revolutions against what were perceived as corrupted regimes of Former Leader Marcos and Former President Estrada. This values lead the country in having a vibrant democracy as evidenced by 12 English national newspapers, 7 national television stations, hundreds of cable TV stations, and 2,000 radio stations. [3]

The fact that the country is abundant in natural resources, disparity in income and quality of life across the region is still prevalent. Environmental assets remain unavailable to the unprivileged groups owing them to exclusion, insecure land tenure, degraded resources and lack of access to technologies. But despite these hiccups the commitment of the government to provide better service to its people is on its course to fulfillment. The latest report reveals that Philippines is now one of the most dynamic economies in the East Asia and the Pacific region. Business activities are buoyant with notable performance in the services sector including the Business Process Outsourcing, real estate, finance, and insurance industries. [4] The invaluable asset of the Filipino which is to speak Business English also help in advancing the economy as it fueled the burgeoning sector of business process outsourcing (BPO) and service industries.

Despite persistent efforts by the government to eradicate excessive bureaucracy, the investment climate in the Philippines has still a lot of scope for improvement. The current administration under Duterte's leadership hammer the economy by funding more on infrastructure projects which according to the state economists could extinguish the Southeast Asian reputation as the "sick man of Asia" and usher an unprecedented era of inclusive economic development.

EDUCATION SYSTEM

GENERAL STRUCTURE OF THE PHILIPPINE EDUCATION SYSTEM

Education System in the Philippines is administered by three different government agencies, each exercising largely exclusive jurisdiction over various aspects of the education system.

The Department of Education

Introduced in 2011, the Department of Education (DepEd) administered a shift to a fresh learning scheme — the K to 12 basic education program. This was spearheaded by the former Secretary Armin Luistro, FSJ,. He

once called it as *“the most comprehensive basic education reform initiative ever done in the country since the establishment of the public education system more than a century ago”*. Reformation of the Philippines's basic educational system through the K to 12 Program is a tough but strategic move by the state to ensure that it produces competent graduates who can serve as the backbone for a highly skilled and employable work force.

Seven (7) years ago, the Philippines is the last country in Asia and one of only three countries in the world to offer a 10-year pre-university program. An old system that creates marginalization among its graduates in the international arena. Thus, to address this shortcoming the Philippine government initiated structural changes in the basic education system and so the creation of the K-12 program.

Fatefully, the “Kindergarten Education Act”, passed in 2011, enacted a mandatory pre-elementary year of Kindergarten education, while the “2013 Basic Education Act”, extended the elementary and secondary education cycle from 10 to 12 years. It lengthened basic secondary schooling adding two-year senior high school program which offers academics and technical vocational courses. General and basic subjects were also incorporated to include basic science and technology, engineering, mathematics, accountancy, business and management, humanities and social sciences, and general academic courses such as technical-vocational-livelihood, arts and design, and sports.

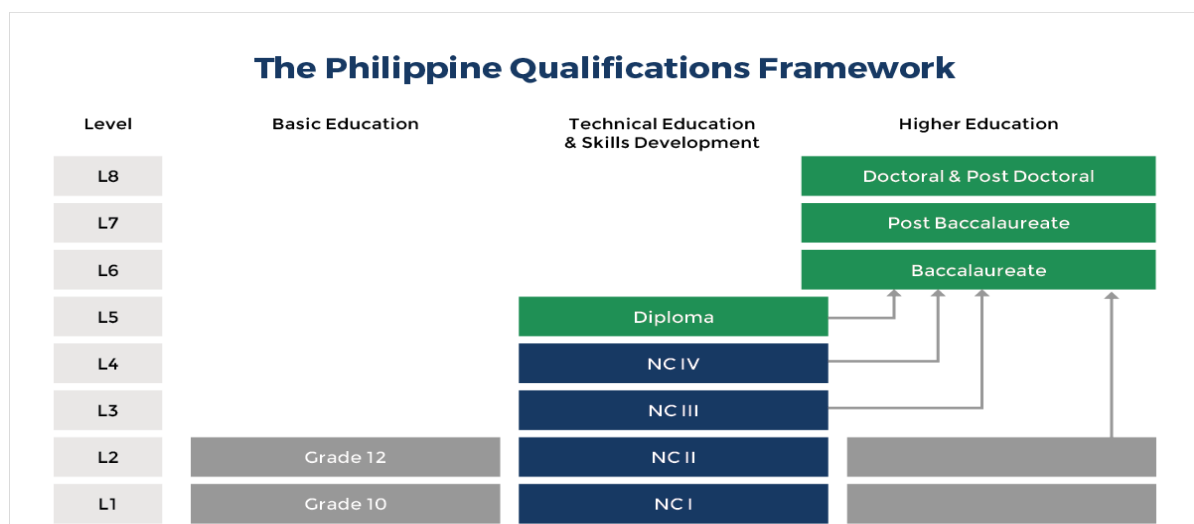
Basic education in the Philippines embraces formal and non-formal education. The Bureau of Alternative Learning System (BALS), for instance, was designed for “out-of-school children, youth and adults who need basic and functional literacy skills, knowledge and values.” Two of its major programs are the Basic Literacy Program (BLP), which aims to eliminate illiteracy among out-of-school children and adults, as well as the “Continuing Education: Accreditation and Equivalency (A&E) Program”, which helps school dropouts to complete basic education outside the formal education system. ^[5]

Technical and Vocational Education and Training (TVET)

TVET is designed to provide technical assistance to the Philippine labor force and prepare graduates for medium- skilled employment in various vocations, ranging from agriculture to automotive technology, bookkeeping, business services, computer maintenance, information technology, health services, cookery, tourism and hospitality services, carpentry, seafaring, housekeeping, web design or teaching ESL. TVET providers are overseen by the Technical

Education and Skills Development Authority (TESDA). It acts as a regulatory body setting standards, curricula and testing requirements for vocational programs.

The Philippine Qualification Framework (PQF) specifies five level of TVET qualifications. National Certificate (NC) I and NC II are primarily offered in the senior high school level (Grade 11-12) and are designed to impart practical skills in a “limited range of highly familiar and predictable contexts.” On the other hand, NC III, NC IV and Diploma are post-secondary qualifications at levels 3 to 5 of the PQF. TVET programs can be applied mostly in nature, whereas diploma programs tend to be more theoretically oriented and often lead to a higher University degree.



Source: Technical Education and Skills Development Authority (TESDA)

TVET is competency - based, earning a qualification requires a set number of “units of competency”, formally certified in Certificates of Competency (COCs). COCs may be awarded upon completion of a set number of hours of instruction, or demonstrated mastery of certain practical competencies. Training programs are often modular and self-faced. They also have online program called TESDA Online Program (TOP). TOP is an open educational resource which aims to make technical education more accessible to Filipino citizens through the use of information and communication technologies. It provides an effective and efficient way of delivering technical education and skills development services to a broader audience/wide range of users/all learners at a lesser cost.

Overall, Technical and Vocational Education and Training in the Philippines helps the country in producing technically skilled workforce which are vital to the country's booming economy. As Director General Villanueva has said, “TVET could just offer the best chance at a solid career to graduates,

and the savior against the rising unemployment." A solid evidence of government commitment to bring education at all levels, while keeping the progress into the next generation.

Tertiary Education

The Philippines Higher Education (HE) sector has grown rapidly over the past decades and is now larger than that in many of its ASEAN neighbors including Thailand, Vietnam, Indonesia and Malaysia. Higher Education in the country is characterized by a predominance of private institutions resulting from the commercialization of the sector. Data shows that the Philippines is one of the few countries where the number of private higher education institutions and students enrolled there is greater than in the state sector.

Higher Education sectors are overseen by the Commission on Higher Education (CHED). The commission is the governing body covering both public and private higher education institutions as well as degree-granting programs in all tertiary educational institution. CHED, since its establishment, has aspired to make education in the country globally at par with the educational standards of highly industrialized countries. Their goals are to produce thoughtful graduates imbued with values reflective of a humanist orientation, conscious of his/her identity as an individual, a Filipino, a member of the global community, and a steward of the environment. ^[6]

To meet this quality challenges, importing and exporting higher educational services is being improved by the higher education institutions (HEIs). This mode of provision being referred as transnational education (TNE) is vital for the country's empowerment to consider given the increasing pace of globalization in services fueled by liberalizing trade arrangements and developments in information and communication technologies. The types of (TNE) arrangements include, but are not limited to, the following are; Distance Education, Face-to-face or Conventional Mode of Education Offered Transnationally, and Blended Learning.

National government is steadfast in providing free quality education in all level, resulting higher budget spending on the tertiary education segment. The 2017 allocation reflects the government decision to scrap tuition fees at all state universities and colleges. President Duterte had said, "Empowering our citizens and building our nation are indeed challenging but both rewarding and a beautiful task. It may be difficult from the start, but the results are, in the end will give our people the chance to lead productive, meaningful and comfortable lives." ^[7] A hope that every Filipinos want to achieved.

CURRENT STATUS OF ICT IN THE PHILIPPINE EDUCATION SYSTEM

A nation's ability to adopt new technologies is paramount, it is a building block to achieve advancement and prosperity in all aspects. As reported by National Competitiveness Council Philippines, the Philippines climbed two notches from 74th to 76th out of the 143 economies assessed by the World Economic Forum (WEFO) for the Global Information Technology Report 2015, as the country continued to show improvements in terms of leveraging the benefits of information and communications technologies (ICT).

From this report, one can yield the joined effort of the government and other industries to maximize the exploitation of technology in the country. Emphasizing the role of ICT in country's development, the government enacted the RA No. 10844 also known as the "Department of Information and Communications Technology Act of 2015." The law aims to strengthen and widen opportunities of the Filipinos to take advantage on what technology may offer. Likewise, the presence of a reliable, accessible and affordable technology is required for us to actively participate in the information economy.

Administering agencies of the Philippine Education System have a vision of creating an ICT-enabled educational system that transforms students into dynamic life-long learners and values-centered, productive and responsible citizens. ^[8] The Department of Education, one of the largest government agencies had the biggest challenge in keeping the pace and innovations in delivering quality education in this quickly changing world. According to DepEd's Bureau of Curriculum Development Dir. Jocelyn DR. Andaya, *"ICT is the first step to enhance[e]ing the quality of education in the Philippines."* As such, the department had created its DepEd Computerization Programme (DCP) to provide schools with computer packages and IT equipment. The Department also developed a Learning Resources (LR) portal to provide digitized educational materials with more than 4,000 learning resources available online.

Higher education institutions (HEIs) are also taking their part into a more technologically - advanced state of learning. Major universities of the country are offering Distance Education program. The University of the Philippines Open University, for instance, is pioneering the Massive Open Online Course (MOOC) in the country. According to Faculty Regent Patricia Arinto, *"MOOCs can improve the quality of teaching and learning by fostering open educational practices (OEP),"* Indeed, the future of educational technology in the country is very promising as it was designed meticulously.

CURRENT PRACTICES, MAJOR ISSUES AND CHALLENGES, AND THE FUTURE

Despite of appealing visions and endeavors initiated by public and private entities for the country to take advantage with technology, the status of ICT in the Philippines is still characterized with some identified barriers. Dotong, et al., (2016), identified barriers in an effective utilization of ICT in the country, these are; inadequate financial support and infrastructure, human capital, management support, as well as behavioral and environmental aspects. The country's geographical location is another factor to consider.

It has been observed that attempts to enhance and reform education through ICTs require clear and specific objectives, guidelines and time-bound targets, the mobilization of required resources, and the political commitment at all levels to see the initiative through. ^[9] Moreover, technology should not drive the education, rather, educational goals and objectives, and careful economics must drive technology use. By this way the Philippines can effectively and equitably address the key needs of the people and to help them respond to the new challenges and opportunities produced by an increasingly global economy.

BEST ICT PRACTICES OF STA.CATALINA NATIONAL HIGH SCHOOL

ICT connects experts from all over the world to the students using internet. These possibilities can have greater impact on student performance and achievement. It was year 2014 when the school participated in an online forum called Adopt-A-Physicist. Adopt-a-Physicist is a service provided by Sigma Pi Sigma ($\Sigma\Pi\Sigma$), the physics honor society, in collaboration with the American Physical Society (APS), the American Association of Physics Teachers (AAPT), and ComPADRE. It is supported, in part, by the National Science Foundation and the American Physical Society Campaign for Physics. Adopt-a-Physicist connects high school physics students to real physics graduates who are eager to share their knowledge about their specialization. At present, Sta.Catalina National High School and Manila Science High School are the only two national high schools in the Philippines enrolled in the Adopt-a-Physicist program.

Presently, our school successfully adopted 7 physicists coming from several states in America since 2014. The program is made possible even outside of the computer laboratory. Students used their smartphone to continue communicating with the adopted physicist. In 2015, Sta. Catalina National High School was featured in an American online scientific journal, a history that made mention of our school internationally.

Adopt-A-Physicist program contributes to the development of students cognitive and critical thinking skills, allows time for thoughtful, in-depth reflection on course topics, facilitates exploratory learning by allowing them to review and respond to the answer of the physicist. It shows engagement among student's, and promote growth of collaborative learning communities. Significant increase on their MPS was also observed after involving them on the program. The forum then serves as an empowering tool to better quality education.

UTILIZATION OF EDMODO AND QUIPPER AS VIRTUAL CLASSROOMS

To make a difference in teaching and learning process is the main goal of this practice. Edmodo on the first hand is a different kind of Learning Management System (LMS). It is a social learning network for encouraging collaboration and sharing in the classroom. Though it is possible to upload learning materials in the platform, Edmodo is more on organizing and simplifying technical works of teacher. Surprisingly, we find it very useful specially in delivering homeworks to the students, plotting summative assessment and in evaluating students' progress.

Quipper, on the other hand is more user-friendly and pre-loaded with k-12 courses. One of the most noticeable effects of using LMS is the development of collaborative learning as it allows students to learn together, share experiences, ask questions, share knowledge with their peers in cyberspace. It was also found out that LMS creates a significant shift on students' engagement towards the lesson.

Despite having positive results to meet the aims of almost ideally great learning circumstances, sustainability of LMS in our school is merely poor. This is due to digital divide, lack of training and financial support, and connectivity issue. Thus, developing a bridge to address the aforementioned issues will surely make a difference in further sharpening the education experience of our students.

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