Republika ng Pilipinas

Kagawaran ng Edukasyon

Tanggapan ng Pangalawang Kalihim

BUILDING THE DIGITAL INFRASTRUCTURE BRIDGING THE EDUCATION DIVIDE

POLICY DIRECTIONS – 1960s TO 2016

The Department of Education (DepEd) has always underscored the importance of Information and Communications Technology (ICT) not only in governance and management but also in enhancing the teaching and learning process. **DepEd recognizes that ICT is a vital tool in transforming basic education** to ensure that our students are equipped with the needed 21st century skills to become successful and productive members of the digital global community.

ICT undertakings at the Department started in the 60s with the introduction of radio broadcast in education and by the 70s, educational programs were being produced for television. 'Edutainment' then made its way in the 80s through programs such as *Tulong Aral, Kulit Bulilit, and Batibot,* which

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translated to *SineSkwela* and *Mathtinik* in the 90s, which were products of the public-private partnerships for educational television.

Come 1996, the *School of the Future* project pushed information technology to the forefront, revolutionizing the teaching and learning process including education management and operations. The following year, computer literacy became a basic requirement for the hiring of new teachers, and in 1999, the Education Department launched Project Digital Satellite Highway or Project DISH, further improving the interconnectivity in all schools and learning centers.

2002 saw the Department directing all Schools Division Offices to avail of Internet subscriptions in their respective localities. In the same year, the General Appropriations Act allowed the acquisition of computers through lease-rental agreement with IT providers.

2007 saw the establishment of the ICT Governance Committee, the ICT Technical Committee and the ICT Unit, along with the assignment of Regional ICT Coordinators, to handle a more cohesive ICT program of the Department. Two years later, the DepEd Internet Connectivity Project (DICP) was launched, directing all public high schools to subscribe to internet connectivity services. It defined **the specifications for the connectivity of schools at 64kbps up to 3.5Mbps** (shared bandwidth) for wired, fixed wireless or a USB modem. Schools in areas where there were no infrastructure from telecommunications companies (telcos) were directed to connect through satellite broadband internet service providers (ISPs), with the **required committed information rate (CIR) of 64kbps** uplink and downlink. **A budget of P4,000.00 per month or P48,000 annually per school were allocated and downloaded to the Schools Divisions Offices for internet connectivity**.

In the same year, the Department required all Regional and Division Offices to avail of internet subscription and the use of @deped.gov.ph as official email address. Regional ICT Tech-Voc High Schools were mandated to serve as Centers of Excellence in ICT where a wide range of ICT specializations leading to local and international certifications were offered in pursuance to the ICT4E strategic plan.

In 2015, the DepEd Rationalization Plan was implemented and with it, the ICT Service (ICTS) was created with each Regional Office provided with an ICT Unit, each Division Office, an IT Officer, and each school an IT Coordinator.

And just this year, **the budget for internet connectivity for all schools are now directly downloaded to all schools** as part of their Maintenance and Other Operating Expenses (MOOE).

POLICY DIRECTION – EDUCATION SECRETARY

LEONOR MAGTOLIS BRIONES

In her Declaration of the Vision and Agenda for **Quality, Accessible, Relevant and Liberating Basic Education for All**, Education Secretary Leonor Magtolis Briones said,

> *"The knowledge and information age has opened a new terrain that builds bridges across far distances, and allows people linked by information and communications technology to participate in a variety of activities that produces economic, social, and developmental value.*

> ***Our basic education and our teachers must be attuned in terms of competencies and facilities to the developments in the information and communications technologies,*** *if we are to take advantage of the opportunities of the knowledge and information age.*

> ***We will continue curriculum improvements in ICT literacy*** *by further improving curriculum content, teaching methods, and appropriate facilities.*

> *Being* ***attuned to the opportunities of the knowledge and information age*** *will require a basic education that highlights competence in science and technology, and collaborative efforts with outside stakeholders that have the most advanced data, expertise, and experience in these fields.*

> *To be truly relevant to the urgent needs as well as opportunities of our nation,* ***the Department will heighten interaction and partnerships with these stakeholders.****"*

Secretary Briones' 10-Point Agenda mentioned about **ICT-assisted learning** in Agenda #1; **upgrading to keep pace with the knowledge and information age to highlight competence in ICT** among others and to **forge collaborative efforts with partners that have the most advanced data, expertise and experience** in Agenda #5; **new ideas and pathways to innovation in teaching delivery and content** in Agenda #6; and **Financial Management Information System** in Agenda #7.

SITUATIONER – COMPUTER EQUIPMENT

DepEd Computerization Program (DCP) has a budget of P6.82 billion for 2016, compared to just P74 million back in 2008. The **computer replacement cycle is now 5 years**, five less than the previous 10. **All schools are now provided with computers in multiple packages based on enrollment population**, as compared to only one (1) package per school and only in energized high schools.

39,522 computer packages have already been deployed, 27,592 are on-going deployment while 24,908 are still up for procurement. **There are a total of 92,022 computer packages**, 67,512 for elementary 11,437 for junior high school, 5,942 for senior high schools, 1,520 for ALS mobile teachers and about 5,611 for un-energized schools.

DepEd has also adjusted to the growing needs of learners, including adjusting to the K-12 curriculum, by improving its computer packages over the years.

We have continuously provided, upgraded, and added to our learners' ICT-related needs from the beginning, conscious of the constant turnover in technology.

Presently, the DCP coverage and items now include the following: **Kindergarten to Grades 3** are provided with Laptops with Multimedia Speakers, a LCD Projector and Screen, and an LED Television set;

Grades 4-6 have 2-4 Host PCs, 12-24 Thin Clients, 1-2 Laptops, and 1-2 LED Television sets; **Grades 7-10** are provided with 7 Host PCs and 42 Thin Clients, 2 Laptops and 2 LCD Projectors; and **Grades 11-12** are given 51 stand-alone PCs and 1 LCD Projector.

At present, some **38,002 public schools or 81% already have computer packages** (32,334 or 83.64% of elementary schools and 5,668 or 70.13% of secondary schools). **The 100% mark will be achieved once the un-energized schools finally receive their computer packages with corresponding solar energy items**. These have already been provided for in the 2016 budget.

For 2017, some P6.9 Billion has been proposed for appropriation for more computer packages to cover new schools, to augment existing setups, or to replace old computers.

The computer packages that have been discussed will be provided, with the following parameters: for **Kindergarten**, 1 set for every 12 sections; for **Grades 1-6**, 1 set for every 6 sections; for **Grades 7-10**, 1 set per 8 sections of 45 learners; for **Grades 11-12**, 1 set per 5 sections of 40 learners, including a 2-classroom size ICT laboratory. For **multigrade schools, schools that cannot set aside a dedicated computer room, and Alternative Learning System (ALS),** a modular/portable setup of a number of Laptops and/or Tablet is being discussed.

SITUATIONER – CONNECTIVITY

Out of 46,739 public schools nationwide, only about 12,163 or a mere 26% are connected to the Internet. 7,804 or 20% of these are elementary schools and 4,359 or 54% are high schools. 74% or 34,589 schools have no Internet. **About 12% or 5,743 have also no electricity.**

Of the total 20,280,274 students nationwide, **the 26% connected schools have a population of 9,421,467 students** or about 46.46%. 7,758,083 or 53.90% of these are elementary students, and 1,663,384 or 28.25% are in high school. Also, **there are still 439,271 students who go to schools without access to electricity**

The number of unconnected schools seven (7) years after DICP's implementation indicates that many areas remain unserved by telco facilities, making internet subscription impossible even with the availability of the equipment and budget. Yes, we have deployed internet-ready computers in our schools, and yes, we have allocated funds for internet subscriptions, but sadly **internet connections and signals are not**

available in far flung areas, in the mountains and in the islands where most of our schools are located.

For the fortunate ones who are connected online, internet connectivity is undertaken in various ways: 1) 32.28% or 3,927 are connected via USB Modem, 2) 31.58% or 3,841 are wired, 3) 28.18% or 3,428 are wireless, and 4) 7.61% or 925 via satellite.

88.04% or 10,708 schools source the payment of their internet connections from the Department thru their MOOE or DICP. The rest of the schools avail of their school funds, Special Education Fund (SEF), Local Government Units (LGU), Parents Teachers Associations (PTA), private donations ands other government agencies.

PLDT, Smart, Globe, Digitel, Bayantel, Cable TV and WIT Satellite are among the service providers of internet connections. **A monthly average of P1,623.46 is spent for internet connection.**

TODAY'S CHALLENGES

Today's information and communications technology platforms, systems and standards should serve the entire needs of the Education Department from the central office in Pasig City down to all public schools. **All of its offices, schools, learning centers, as well as administrators, teachers and employees should be well-equipped and connected at all times**.

Systems and solutions should ease operations and provide transparency to the public. The availability of information in real-time helps us make informed decisions that is crucial not only for teaching and learning, but also for operational intelligence and information security.

ICT should no longer just be a subject taught in our classrooms, but an efficient tool used at all times in teaching, learning, managing and operating the entire sector.

DepEd needs an immediate, reliable, and targeted solution that will connect not just 74% of all unconnected public schools but also provide the 26% connected schools their needed bandwidth **at a speed and quality that**

will allow meaningful use of the internet and other connections at all times.

Our Education Divide can only be answered through E-Learning. Digital Education gives us the ability to quickly deploy educational content of international standards, scaling this to the furthest barangay in the mountains or in the most isolated place in an island, in the shortest period of time. This will only be realized with the appropriate computer equipment, information and management systems, and information security. But most importantly, **a reliable and sustainable connectivity is the essential to all this**. Optimum Digital Education can be attained once all Digital Infrastructure is in place.

In the coming years, we expect that the "new normal" operating model for a lot of educational institutions in the world will be students-and context-centered. That is, schools will change the way they interact with their students based on the context of the exchange. They will offer a seamless omni-channel experience, through a smart balance of human and machines.

The pace of change is increasing and shows no sign of slowing down. We must make sure that we are well-positioned to succeed in the future generations.

There are macroeconomic trends sweeping the world, and technology-driven influences buffeting every learning initiative. **DepEd will not and should not stand still in the ICT sector.** It should be a major player in this rapidly changing landscape. But whichever technologies we will adopt, we will ensure that **we devise a clear strategy to move forward, and we will need every willing hand**, in order to succeed.

And when do we need this? When do we start? Yesterday seems to be the most appropriate answer.

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ALAIN DEL B. PASCUA

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