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TOPIC BRIEF | April 2020

Education Policy and Strategy for Scaling EdTech in Philippine Schools



A central policy and strategy for information and communication technologies is needed in the Philippines to keep up with demand and educational reform.

The Philippines: Evolution of education policy and strategy

Educational institutions have always struggled to keep up with changing technologies and their potential impact on teaching and learning. Experimentation and technology integration are often driven by innovators and early adopters before policy directives require it. This is the case for the Philippines as well, where there is demand for use of technology, but the system is already struggling to cope with a range of educational reforms including expansion of the system from Grades 1 to 10 to include kindergarten through Grade 12 (K–12), and to transition to using the mother tongue as language of instruction. Efforts to improve quality and broaden access are addressing consistent problems of poor performance and high dropout rates in an effort to produce graduates who have both the knowledge and skills necessary to thrive in a knowledge-based economy. Although technology has been a government priority since at least 1996 when computer equipment distribution began, there is yet to be a definitive central policy and strategy for information and communication technology (ICT) in education despite several attempts.

- In 2001, the Department of Education (DepEd) created the “Department of Education Information Technology Framework” which identified the “action areas for ICT-integration in the basic education system from 2000 to 2005.” Among the areas included were school computerization, teacher training, IT curriculum development, multimedia content development, financing, and monitoring and evaluation. The document was presented to the then IT and E-Commerce Council (ITECC) but was considered an unofficial document.¹
- In 2004 DepEd and the Foundation for Information Technology Education and Development (FIT-ED), in consultation with different education stakeholders from the public and private sector and civil society groups, developed the *National Framework Plan for ICTs in Basic Education*² covering the goals and strategies of the department from 2005 to 2010.

¹ Tinio, V., (2002). Survey of Information & Communication Technology Utilization in Philippine Public High Schools. Retrieved from <http://www.fit-ed.org/downloads/ICT%20Utilization%20Survey.pdf>

² National Framework Plan for ICTs in Basic Education (2005-2010) Harnessing ICTs for Quality Basic Education for All, 2005, Department of Education, <http://www.fit-ed.org/downloads/National%20Framework%20Plan%20for%20ICTs%20in%20Basic%20Education.pdf>

EdTech Policy and Frameworks Timeline



2001

Department of Education (DepEd) created the Department of Education *Information Technology Framework*



2004

DepEd and FIT-ED developed the *National Framework Plan for ICTs in Basic Education*



2009

DepEd crafted the *Five-Year ICT for Education Strategic Plan* with funding support from the Australian Agency for International Development



2012-2018

K-12 reform was the focus but the *DepEd Computerization Program* and the *DepEd Internet Connectivity Program* continued

Basic technology access and use have been scaled through sustained government initiatives and collaboration with other partners.

- New leadership of DepEd placed the National Framework Plan under review and instead crafted a *Five-Year ICT for Education Strategic Plan* with funding support from the Australian Agency for International Development (AusAID, now the Department of Foreign Affairs and Trade). Completed in 2009, the plan's vision was "an ICT-enabled education system that transforms students into dynamic life-long learners and values-centered, productive and responsible citizens."³
- From 2012 to 2018, the K–12 reform was the main focus of the department. No new, formal ICT plan was created to follow the previous 5-year plan. Nonetheless DepEd has deployed multiple technology initiatives, primarily the DepEd Computerization Program (DCP)⁴ and the DepEd Internet Connectivity Program (DICP)⁵ to address the lack of ICT infrastructure in schools. Additionally, DepEd began to improve management information systems of the department, with the implementation of the Enhanced Basic Education Information System (EBEIS) and the Learning Resources Management and Development System (LRMDS).

Lack of an overall framework, therefore, has not prevented advances in access and use through government initiatives and collaboration with other partners. Is an overarching policy and strategy necessary? What would it change? This brief attempts to answer those questions by reviewing the current situation along with global practices.

International findings

Governments formulate ICT in education policies for many reasons, including the desire to raise awareness, to stimulate demand, and to attract necessary resource investments while guiding and prioritizing those investments for maximum inputs. While the body of evidence on the efficacy of such policies is relatively slim, there have been many efforts to understand what goes into development, implementation, and monitoring of policies to drive the effective use of technology for education. The debate includes whether or not governments establish a dedicated coordinating institution.

Among the first efforts was the United Nations Educational, Scientific, and Cultural Organization (UNESCO), which developed and published a comprehensive **ICT-in-Education Toolkit** for policy makers, planners, and practitioners.⁶ The toolkit provided the steps to analyze the current situation; systematically plan for key aspects of technology integration, and develop a master plan. Later, a five-country case study of how ICT policies or a 'master plan' transform education described a "Knowledge Ladder" linking education reform, ICT, and economic

³ Draft DepEd ICT4E Strategic Plan, 2008. https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/philippines_ict4e_strategic_plan_summary.pdf

⁴ DepEd, Republic of the Philippines. (2010, June 10). DepEd Order 78 of 2010. Guidelines on the implementation of the DepEd computerization program. Retrieved from <https://www.deped.gov.ph/wp-content/uploads/2010/06/DO-No.-78-s.-2010.pdf>

⁵ DepEd, Republic of the Philippines. (2009, May 15). DepEd Order 50 of 2009. Launching the DepEd internet connectivity project and directing all public high schools to subscribe to internet connectivity services. Retrieved from <https://www.deped.gov.ph/2009/05/15/do-50-s-2009-launching-the-deped-internet-connectivity-project-and-directing-all-public-high-schools-to-subscribe-to-internet-connectivity-services/>

⁶ UNESCO. (n.d.). ICT-in-Education toolkit. Retrieved from <http://www.ictinedtoolkit.org/user/login.php>

and social development. An important contribution was highlighting considerations of scalability and use of technology not just for productivity but for knowledge creation.⁷ The publication concludes that with the information therein “educational decision-makers can craft ICT policies that support education transformation and move the country toward an information economy and knowledge society” (UNESCO, 2011, p. 218)

In 2005–2007 the Asian Development Bank funded a regional study to examine the factors driving effective use of technology in education in Bangladesh, Nepal, Mongolia, and Samoa.⁸ Again, all of the countries that contributed to the analysis were countries with an ICT policy, and the report concluded that “appropriate ICT policies and strategies are at the core of an enabling environment for ICT” (Watson, 2007, p. 2). The study highlighted the importance of addressing “intangible” factors for implementing policy alongside the more tangible ones, like hardware

More recently, the World Bank’s Systems Approach for Better Education Results (SABER) program documented and analyzed policy documents from over 80 countries.⁹ The resulting SABER-ICT Policy Framework highlights eight themes particularly critical to the effective use and spread of education technology, many of which match those highlighted in the UNESCO Toolkit: the importance of a shared vision and thorough planning, including a clear line of authority and accountability of a lead implementation agency as well as engaging the private sector. The SABER-ICT Policy Framework adds elements reflective of modern educational priorities challenges, notably: prioritizing pro-equity and inclusion approaches as well as promoting ethical practices, child safety, and data security. As part of this effort, the World Bank sponsored studies of countries with and without ICT policies and coordinating bodies. A case study of the Philippines in 2012¹⁰—a country with no central policy or coordinating body—found that relative to countries with a policy and strategy:

- ICT in education planning and implementation benefit from coordination and a holistic approach. A national ICT in education agency can help with this.
- National ICT in education vision and standards can help align activities of various actors—especially in the absence of related policy guidance or a national coordinating agency.
- Government must strike a healthy balance between encouraging institutions to support ICT in education efforts while helping to ensure a general coherence between such efforts.

Finally, a recent four-country case study and its resulting framework commissioned by Omidyar Network, now Imaginable Futures,¹¹ stressed the importance of factors that drive the equitable scaling of the impact of education technology, not just its access and use. It again concluded that countries that scale EdTech equitably have a clear vision and strategy from the highest level of the education system that serves as a collective roadmap. Additional policy drivers include: performance standards that set high expectations, incentivize improved performance, and legitimize EdTech content development; a curriculum that requires basic technology literacy for all teachers and students; and equitable opportunity sources of funding for all schools to make EdTech purchases and implementation support (not necessarily one-size-fits-all distribution).

Researchers including those from SABER have put forward suggestions for “future-ready” education technology policies that stress co-creation and contextualization of policy efforts in the day-to-day experience of relevant communities; situating education technology visions alongside broader



Addressing
“intangible” factors
is critical for
implementing policy
(Watson, 2007)

- Demand
- Perceptions and misconceptions
- A vision for change
- Political stability
- Regulatory transparency

⁷ UNESCO. (2011). Transforming education: the power of ICT policies. <http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Dakar/pdf/Transforming%20Education%20the%20Power%20of%20ICT%20Policies.pdf>

⁸ Watson, J. (2007). From policy to pupil: how governments encourage ICT in Education. Report by submitted by RTI International under ADB TA No. 6278-REG. Retrieved from <https://www.adb.org/sites/default/files/project-document/65347/39035-reg-tacr.pdf>

⁹ Trucano, M. (2016). SABER-ICT Framework Paper for Policy Analysis: Documenting National Educational Technology Policies Around the World and Their Evolution over Time. World Bank Education, Technology & Innovation: SABER-ICT Technical Paper Series, no. 1. World Bank, Washington, DC.

¹⁰ Vergel de Dios, B. (2016). Building and sustaining national ICT/education agencies: Lessons from the Philippines. (World Bank Education, Technology & Innovation: SABER-ICT Technical Paper Series, no. 15). Washington, DC: World Bank. Retrieved from: <http://documents.worldbank.org/curated/en/344311488908487127/pdf/113217-NWP-PUBLIC-ADD-SERIES-Agencies-Philippines-SABER-ICTno15.pdf>

¹¹ Omidyar Network. (2019a). Scaling access and impact: Realizing the power of EdTech, Executive Summary. A report for Omidyar Network’s Education initiative. Washington, DC: Omidyar Network. Retrieved from https://www.omidyar.com/sites/default/files/Scaling_Access_Impact_Realizing_Power_of_%20EdTech.pdf

sector goals, such as the sustainable development goals; and embracing technology advances (e.g., big data, machine learning, artificial intelligence, or social media) proactively as an opportunity to use technology to support policy development and renewals.¹²

From action to policy in the Philippines

In the absence of a national policy and strategy, the activities of innovators and special interest groups have defined what EdTech integration looks like in schools, sometimes independently and sometimes in partnership with DepEd. Groups like Globe Telecommunications and Ayala Foundation work with the DepEd central office for general guidance, and with the regional and division offices for program implementation. For example, from 2015 to 2018—in parallel to the DCP—Globe Telecommunications helped establish 218 “Global Filipino Schools” at one secondary school in each division. Each school received a package including internet connectivity, tablets, virtual reality goggles, modems, mobile phones, and teacher training on ICT integration and digital citizenship. Globe Telecommunications intended each school to be “a case study on how technology can be used in school.”¹³ In April 2019, Globe officially turned over all the schools under the program to DepEd, though they still actively support and engage with the schools directly. Globe has carried out their own impact studies and hopes that the handover process will be an opportunity to monitor how technology improves teaching and learning. This is an opportunity for experience to feed into national strategy development. Although it demonstrates a positive partnership model, the lack of a coordinating body for ICT in education may mean that these lessons are lost or not aligned with other initiatives in curriculum development, teaching and learning, or educational assessment.

Program and Policy Implementation at the Local Levels

Support for the K–12 reforms and the ICT infrastructure programs of DepEd is evident at the regional and division levels. In DepEd’s Cordillera Administrative Region, for example, deployment of hardware packages is in full swing, with the regional office taking the lead in monitoring achievements and progress of the division offices under them. They are also actively supporting the Last Mile Schools Program with deployment of computer packages because the region has a high proportion of these schools relative to the country.

Implementation of these programs falls directly under the division offices, led by an IT services department or division ICT coordinator, so they are the ones tasked with achieving targets based on initiatives coming from the central office or other education stakeholders. Currently the DCP remains the only overarching framework, along with the recently launched “*Digital Rise*” initiative. Digital Rise was first announced during the DepEd 2018 ICT Summit, then the 2019 Cyber Expo. It has since been shared through social media such as Facebook and an official video (available at <https://www.youtube.com/watch?v=zb-ruBHV2Go>). At the division level, these initiatives—though not written as policy—materialize as the implementation of DCP in last-mile schools, the promise of the central office of additional equipment and new ways of working through technology, like Facebook Workplace.

Because of the autonomous nature of division offices, they also have their own policies and programs that enable and encourage ICT use in different aspects of education at their discretion. According to a survey of division offices and elementary schools carried out in August 2019,¹⁴ 117 divisions have incorporated their ICT plans in their general division improvement plan, while 64 divisions say that they have separate ICT plans. Of the 405 elementary schools surveyed, 233 schools say they have included their ICT plans in their school improvement plans, while 82 schools have separate ICT plans formulated. Thus the absence of a clear national policy or framework on EdTech has not prevented schools from implementing ICT in education. For example, in Baguio City, they are using ICT for a classroom observation tool used to conduct performance reviews

¹² Zagami, J., Bocconi, S., Starkey, L., Wilson, J. D., Gibson, D., Downie, J., ... Elliott, S. (2018). Creating Future Ready Information Technology Policy for National Education Systems. *Technology, Knowledge and Learning*, 23(3), 495–506. doi:10.1007/s10758-018-9387-7

¹³ Interview with Miguel Bermundo, Head of Globe Citizenship, Globe Telecommunications.

¹⁴ Tinio, V., & Pouezevara, S. (2019). Survey of ICT coordinators and elementary teachers regarding ICT in Philippine schools. Unpublished raw data

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of teachers. They have also embraced the use of ICT to streamline other processes in their schools. According to the assistant schools division superintendent of Baguio City, Soraya Faculo, “Internally, even without an overarching policy to cover everything, there is a challenge to each division to innovate. People come out with their own innovations. And all our efforts including innovations have to do with improving customer service in the end.”



The K–12 Curriculum, and DepEd Digital Rise Program

While there seems to be a lack of awareness of an overarching central policy or framework in EdTech, DepEd has clearly kept this in mind as it moves forward with the implementation of the K–12 reforms. In August 2019, DepEd issued comprehensive policy guidelines on K–12 implementation.¹⁵ The guidelines touched on the importance of ICT use in education, including the following examples:

- Acknowledging pedagogical approaches that are “constructivist, inquiry-based, reflective, collaborative, differentiated and integrative,” which lend themselves to the use of ICT in education. (Paragraph 13).
- Describing the K–12 graduate as “a holistically developed Filipino” who is “equipped with information, media and technology skills, learning and innovation skills, life and career skills and communication skills” for the 21st century. (Paragraph 18).
- Integration of ICT skills and competencies in the curriculum to “equip learners with skills that will enable them to cope with the technological demands of our time.” (Paragraph 29)
- The need to create an ICT framework that will cover “ICT integration, tools and systems to support curriculum implement and sector management, digital learning resource repositories, teacher training and various e-tools and information systems that support the delivery of basic education.” (Paragraph 38).

It is unclear whether the ICT framework being referred to in the final point is the DepEd Digital Rise or something else.¹⁶ Again, this is not yet written as a formal policy document or a traditional time-bound plan with actions and targets. However, Digital Rise recognizes the impact of ICT on the implementation of the K–12 curriculum in four areas: “digital literacy skills, ICT-assisted teaching, ICT-assisted learning, and automation of organizational and operational processes.” It also identifies specific goals that the department sets for itself in terms of providing enabling infrastructure for enhancement of digital literacy and other specialized skills, access to e-learning resources, development of open educational resources, continuous training and certification for ICT coordinators and teachers, and establishment of a DepEd Enterprise Resource Planning System (DERPS). This initiative is being implemented by the office of Undersecretary for Administration Alain Pascua, with the support of the ICT Services Office under Director Abram Abanil. Throughout 2019 they expanded dissemination of the initiative details and training on an open educational resources component, but there are not yet policy guidelines related to implementation.

DepEd and Department of Information and Communications Technology (DICT): Possible Areas of Policy Convergence

There are clear signals from the central level that ICT in education is a strategic priority. These signals include the organization of the ICT summits and expos, the ongoing funding of the DCP, launch of Digital Rise, and partnerships with private sector to expand access to last-mile schools. Current Secretary of Education Leonor Briones has been very vocal in support of technology in education, most recently articulating a need to keep up with advances in artificial intelligence and continue to improve learning facilities under the Sulong EduKalidad initiative.¹⁷

However, these initiatives are led by multiple departments under different leadership within DepEd. Outside of DepEd there is also the Department of Science and Technology (DOST), which has been active in supporting research and development of EdTech tools. The recently-established DICT may also have a role to play in ICT in education policy and strategy. Mandated to be the “primary policy, planning, coordinating, implementing, and administrative entity that will plan, develop, and promote the national ICT development agenda,” DICT has several national plans and programs that will directly

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¹⁵ DepEd, Republic of the Philippines. (2019, August 22). DepEd Order 21 of 2019. Policy Guidelines on the K to 12 Basic Education Program. Retrieved from https://www.deped.gov.ph/wp-content/uploads/2019/08/DO_s2019_021.pdf

¹⁶ Digital Rise Program, DepEd Tayo Facebook page, <https://www.facebook.com/depedtayo/photos/a.723105318110844/743877039367005/?type=1&theater>

¹⁷ Secretary Briones Speech on the launch of Sulong EduKalidad <https://www.deped.gov.ph/2019/12/04/sulong-edukalidad>

benefit DepEd schools such as the **Free WiFi for All Project** that aims to provide free connectivity in all cities and municipalities, and the **National Broadband Plan** that will provide greater bandwidth for government use. DICT has initiated efforts to engage with DepEd to forge agreements for partnership and collaboration. DICT is embarking on a new policy strategy called **Digital Philippines** as a way to bring the benefits of ICT to Filipinos. One of its components is the **Digital Classroom**. DICT will be coming up with policies based on establishing model classrooms that can in turn be replicated all over the country. DICT acknowledged that it must work closely with DepEd in this area, as well as with other stakeholders that have had considerable experience in EdTech. Coordination will also help clarify the roles of each department and other stakeholders and prevent duplication of efforts, which results in a waste of time and resources. Finally, the **Philippine Roadmap for Digital Startups, 2015 and Beyond**, aims to improve the ecosystem for digital innovators. Education is an area with significant growth opportunities for entrepreneurs, and it is surprising that this sector is not active in the Philippines, compared to other countries in the Asia/Pacific region.

Insights, Analysis, and Recommendations

Vergel de Dios (2016) recognized that one reason for not creating a coordinating body or another framework was that it might add an unnecessary level of bureaucracy. However, global experiences suggest there are more benefits to having a strategy and a coordinating body than not. The following recommendations aim to be realistic and practical, adding value but not work.

1. Expedite the creation and dissemination of an ICT in education vision and strategy, coupled with implementing guidelines, in consultation with stakeholders including other government agencies. If Digital Rise is intended to be this framework, then make the program official policy through a DepEd memorandum or order and have it endorsed by other government agencies and even the executive branch, if possible, to lend it the highest credibility. Even if Digital Rise is not the official ICT framework, then DepEd address the lack of awareness and clarity of what Digital Rise is within all levels of the department.
2. Use the policy or framework as a basis for regional and division offices to do their own local planning based on the thrusts set out by the framework. However, DepEd should provide planning and implementation support to divisions and schools, with appropriate levels of resourcing. This implementation support must now move beyond just digital literacy or digitizing traditional teaching materials. Basic skills are acquired by a majority of teachers who are now ready to move to higher level uses of technology to improve learning.
3. Create a multisectoral (including other government agencies like DICT and DOST, private sector, nongovernmental organizations, donors; national and sub-national) coordinating body to monitor implementation of the strategy to ensure that ICT in education meets the broader goals of the basic education sector as well as higher education and industry. The coordinating body would ensure that initiatives from regions, civil society, private sector, or other arenas are harmonized and capitalize on one another and result in lessons learned over time. This coordinating body is not meant to add bureaucracy, but instead relieve some of the monitoring and communication pressure from DepEd by sharing that coordination role and involving expertise that may lie outside of the current DepEd staff.
4. Form a research unit that would generate and share evidence of effective ICT integration practices. DepEd lacks a systematic review of EdTech programs and interventions implemented so far, to help it categorize and create typologies of programs according to success factors and challenges. The research unit may also take on developing and maintaining a robust monitoring system, including an online ICT project registry. This research unit could exist outside of DepEd and be coordinated through the multisectoral body described above to not add bureaucracy. A source of funding would be needed, potentially a combination of government grants and partnerships, but ultimately the government must consider the cost of not understanding what works and scaling best practices, given the considerable investment in computer hardware that is going to schools every year.

This topic brief was prepared by Liezl F. Dunuan, under a subcontract issued to the Foundation for Information Technology in Education (FIT-ED), Philippines. It is based on document review and interviews with officials and staff of the DepEd's regional and division offices in the Cordillera Administrative Region and Baguio City, DICT, DOST-Science Education Institute, the United Nations Development Programme Philippines office, two private telecommunications companies (Globe and Smart), two private EdTech service providers, and two non-profit organizations working in EdTech. Relevant policy documents were also reviewed. Carmen Strigel (RTI International) contributed to the international policy analysis section. The brief was edited by Sarah Pouzevara (RTI) prior to publication. (21 April 2020).