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# Teacher Professional Development on ICT in Education in the Philippines



## TPD

Teacher Professional Development



Any activity aimed to develop skills, knowledge, and expertise that help a teacher improve their practice.

## The importance of teachers in ICT integration

Whether technology in education results in improved student achievement remains one of the most highly contested questions in the field. Among the reasons the question is difficult to answer is that the conditions under which technology is introduced in teaching and learning are often varied, far from ideal, or not measured and reported consistently. Like any other teaching activity or tool, the teacher’s ability to use it in an impactful way matters. Without adequate teacher training in technological and pedagogical content knowledge (TPACK),<sup>1</sup> technology generally remains integrated at best for information and communication technology (ICT) skills development or to digitize traditional teacher-directed lessons or create digital worksheets or textbooks. How to carry out teacher professional development (TPD) effectively and efficiently is of considerable interest to education systems around the world. Specific standards for teacher learning have been developed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (the ICT Competency Framework for Teachers<sup>2</sup>) and the International Society for Technology in Education,<sup>3</sup> among others, which frame broad objectives for basic teacher training.

This topic brief describes how TPD on ICT integration is currently done in the Philippine education system and discusses issues and challenges. Some recommended actions to address the issues and challenges are put forth in the conclusions. We define TPD as any activity aimed to develop skills, knowledge, and expertise that help a teacher improve their practice. This may include any combination of formal, informal, facilitated, self-directed, or peer-supported activities of any duration.

<sup>1</sup> Technological Pedagogical Content Knowledge (TPACK): <http://www.tpack.org>; Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.

<sup>2</sup> The UNESCO ICT Competency Framework for Teachers is available at: <https://www.oercommons.org/hubs/unesco>

<sup>3</sup> The International Society for Technology in Education Standards for Educators are available at: <https://www.iste.org/standards/for-educators>

# TPACK

The basis  
of effective  
teaching with  
technology

Koehler & Mishra, 2009

## What does international literature say?

A well-established model in this field is TPACK, which stresses that digital literacy is not enough, nor is it sufficient to have content expertise or knowledge of effective pedagogy; teachers need to know how to effectively apply technology to the content and pedagogy of a subject area. TPACK requires “an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students’ prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones.”<sup>4</sup>

A review by Davies and West<sup>5</sup> found that when students’ use of technology mainly focused on gathering, organizing, analyzing, and reporting information, it has no impact on the students’ performance in standardized tests. Furthermore, increasing collaboration among teachers learning to use technology in teaching can result in better outcomes in professional development. Consequently, they recommend that the use of technology in schools focus on professional development programs that expose teachers to instructionally sound practices and more advanced ways of using technology in assessment and adaptive instruction. Best practice in TPD, more broadly, can be adapted to the specifics of technology for education (EdTech) to help move teachers from ICT access to its transformative use.



### TPD expert Linda Darling-Hammond and colleagues<sup>6</sup> recommend TPD that does the following:

- Uses **focused content**: Identify the specific, measurable purpose of the TPD (e.g., EdTech product selection, understanding EdTech evidence, using interactive media to support science instruction). This is consistent with global evidence that impact from technology happens when the technology is applied very specifically to a subject area. Ensure that the content focus is curriculum-relevant and builds on what teachers already know and do, or could feasibly do with the resources they have.
- Includes **active learning, feedback, and reflection**: Oddly, anecdotes abound describing teachers being trained in ICT in education before having hardware or software in the school or classroom. Teachers should be trained when they receive the materials they are expected to integrate so that they can learn by doing, practice, anticipate student challenges, and gain confidence.
- Supports **collaboration**: Training should allow teachers a chance to share with each other and grow together in a community of learning, particularly since there are few limits to what technology can do in the classroom. An initial one-time training might focus only on one aspect of ICT integration, but teachers should be prepared to become self-directed, explorative learners moving forward in expanding use of technology. Talk with teachers before, during, and after designing the TPD to set these expectations.
- Uses **models of effective practice**. Lesson plans, sample student work, and videos of a model teacher are important ways to build self-confidence and create the vision for ICT integration. Similarly, ongoing support from a coach or expert can help provide such models of practice and scaffold growth over time. Consider how principals and other school leaders can also provide coaching and facilitation of ongoing learning.

<sup>4</sup> Koehler, & Mishra, 2009, p. 66

<sup>5</sup> Davies, R. S., & West, R. E. (2014). Technology integration in schools. In Spector, M., Merrill, M.D., Elen, J., Bishop, M.J. (Eds.) *Handbook of research on educational communications and technology*, 4th ed. (pp. 841–853). New York: Springer.

<sup>6</sup> Darling-Hammond, L., Hylar, M. E., Gardner, M., & Espinoza, D. (2017). Effective teacher professional development. Palo Alto, CA: Learning Policy Institute. Retrieved from <https://learningpolicyinstitute.org/product/teacher-prof-dev>

## Foundations of technology TPD in Philippine schools

TPD on technology integration into the Philippine basic education system has historically been driven by two main factors: national curriculum goals and access to ICT hardware in schools. In 2002, the basic education curriculum was restructured, starting the gradual shift from learning about computers (computer education) to learning with computers. More than 15 years later, the current curricular goal of ICT integration is tied to the broader framework of 21st century learning and preparing for the modern workplace.

Despite these stated goals, evidence suggests that TPD remains limited to basic digital literacy and use of technology to digitize traditional lessons. In 2012, Tinio, Rodrigo, and Mapa<sup>7</sup> conducted a survey of the state of ICT use in Philippine public secondary schools, funded by the United States Agency for International Development. The study used UNESCO's "stages of adoption and use" model that promotes a continuum of skills consisting of "emerging," "applying," "infusing," and "transforming" stages.<sup>8</sup> Survey findings revealed that none of the 385 sampled schools reached the highest level of integration as defined by the framework ("transforming"), and only 11% were at the "infusing" stage. Most schools were at still at the "emerging" and "applying" stages. In a 2019 survey of 387 elementary school teachers,<sup>9</sup> the top four ICT trainings teachers had received were: introduction to ICT (65%), use of productivity tools (61%), use of basic internet tools (51%), and training on using ICT for teaching and learning (35%). Teachers hoped in the next 3 years to receive training on advanced internet tools and platforms such as blogs, wikis, social media, and Google docs (56%); multimedia creation (54%); programming (50%); and in using subject-specific software (49%). Many of them (55%) also wanted to know how to use ICT so that students are more engaged in learning. This was also the topmost need identified by ICT division coordinators and school ICT coordinators (56%) included in the survey.

The Department of Education (DepEd) supports these goals by providing computers to schools through the DepEd Computerization Program. For this program, as with previous initiatives like Personal Computers for Public Schools Program, teacher training has been limited to the user training bundled by the hardware vendors. Two industry partners with historically the most impact in this regard were Intel® and Microsoft® Partners in Learning. Between the two they were able to penetrate most school divisions in the country. Intel® Teach began in the Philippines in the early 2000s as a one-time ICT literacy training that trained teachers in using Microsoft Office® applications, email, and the internet and how to integrate them in teaching. It evolved into a broader program of ICT-supported inquiry- and project-based learning, coaching support to teachers, technology planning for school leaders, rewards and recognition schemes for outstanding practitioners, and a variety of opportunities for collaboration among participants.<sup>10</sup> Intel eventually phased out its education programs in the Philippines in 2013, although its TPD resources may still be used for free.

## Technology Training Timeline



### Prior to 2002

Learning about computers



### 2002

Curriculum emphasizes interdisciplinary and authentic learning with computers



### 2004 to 2011

- Smart Schools Program
- Personal Computers for Public Schools Program
- DepEd Computerization Program



### Early 2000s to 2011

Microsoft Partners in Learning



### Early 2000s to 2013

Intel® Teach



### 2019

Curriculum guided 21st century skills objectives and technology for preparing for the workplace

**DepEd benefits from a range of private sector and civil society partnerships for teacher training on ICT in education, including publishers, coalitions, and other government units.**

<sup>7</sup> Tinio, V., Rodrigo, M., & Mapa, D. (2012). *A survey of ICT integration in Philippine public secondary schools*. (A component report of the project, Understanding the State of the Art of ICT4E in the Philippines – An Assessment). Quezon City: Foundation for Information Technology Education and Development.

<sup>8</sup> Anderson, J. (2010). *ICT transforming education. A regional guide*. Bangkok: UNESCO Asia and Pacific Regional Bureau for Education.

<sup>9</sup> Tinio, V., & Pouezevara, S. (2019). Survey of ICT coordinators and elementary teachers regarding ICT in Philippine schools. Unpublished raw data.

<sup>10</sup> Sasing, M., Ubarra, C. & Balbin, C. (2008). Utilizing a pedagogical support system to develop Intel Teach communities of learning in the Philippines. In E. Mileisea (Ed.), *ICT in Teacher Education: Case Studies from the Asia-Pacific Region* (pp. 38–52). Bangkok: XXX.

The **Microsoft Partners in Learning Program** offered similar face-to-face trainings on ICT literacy and ICT integration built around Microsoft products and services. Key features of their activities were a peer mentoring system, an online platform for resource-sharing and collaboration, and a recognition program that rewarded teachers who performed exemplary work in integrating educational technology in teaching. By the 2010s, Microsoft’s programming in the Philippines transitioned from large-scale face-to-face trainings to community-building online and the cultivation of champions through its Education Ambassadors Program.

## Partnerships for TPD

These two programs left behind their own legacies. Several teacher training institutions adopted content from Intel Teach. After over a decade of presence in the country, Intel’s investment priorities shifted to globally accessible online learning, providing free access to courses on digital literacy skills, digital citizenship, project-based approaches, critical thinking, and digital collaboration. PIL established partnerships with local government units and non-governmental organizations. Microsoft continues to be an important provider of software and training for computers distributed through the DCP. DepEd still benefits from a range of private sector and civil society partners who design, implement, and finance other kinds of TPD. Active partners include media publishers, coalitions, and other government units. From the private sector, two major telecommunications companies are also providers of TPD: **Smart Communications** and **Globe Telecom**. Through the Smart Schools Program, which ran from 2004 to 2011, a total of 13,514 teachers were trained in using technology.<sup>11</sup> Smart also partnered with the University of Makati for a master’s degree program in instructional media design, benefiting 50 teachers total. Furthermore, through its School-in-a-Bag Program, Smart trains teachers on how to use the equipment and the digital learning resources that are provided in the kits.

## TPD Sources



**Knowledge Channel Foundation** certification for **Kindergarden to Grade 3** equivalent to 15 units in a master’s degree program



**Phoenix Publishing House** bundles and sells TPD training and products tailored to a school’s needs



**Coalition for Better Education** partners with corporations and universities to train teachers on project-based learning for students



**The Department of Science and Technology Science Education Institute (DOST-SEI)** developed interactive courses for grade 1 to 6 mathematics, training 1,300 teachers



**Digital Rise Program** trains teachers how to use and curate open educational resources

Globe Telecom provides ICT proficiency training to teachers through its Global Filipino Schools Program, along with donated computers and laboratory equipment. The training is conducted by Ayala Foundation’s Training Institute and aims to train teachers to deliver quality instruction and enhance the learning environment of students.<sup>12</sup>

Other groups in the private sector provide training for teachers and students through DepEd’s Adopt-A-School Program, and some coordinate directly with divisions and schools to deliver training. For example, **The Knowledge Channel Foundation (KCF)**, an educational television provider in the country, also provides TPD on how to use their broadcast media learning resources. Aside from this, KCF offers a certificate program for Kindergarten to Grade 3 teachers who teach in marginalized community schools, which is equivalent to 15 units in a master’s degree program. KCF also trains school heads and teachers on how to create positive learning experiences that engage learners and develop their 21st century skills.

**Phoenix Publishing House, Inc.**, bundles TPD and training for school heads with the products it sells to schools (mostly private schools). Based on an initial needs assessment and technology integration plan, each school’s unique package comes with the needed hardware (e.g., server, television, tablets), continuing TPD, training for the school principals, on-site technical support, and overall instructional support from a specialist assigned to the school. The teacher training covers use of digital resources, developing content, and 21st century pedagogical and technical skills. School heads are trained to develop a technology plan based on the school’s mission and vision and how to manage the school’s integration of EdTech, and they are part of the “Aralinks’ Leadership Academy”.

<sup>11</sup> <https://smart.com.ph/About/learnsmart/programs-projects/completed-programs/smart-schools-program>

<sup>12</sup> <https://www.globe.com.ph/about-us/newsroom/citizenship/global-filipino-school-program-reaches.html>

The Coalition for Better Education (CBE), a multisectoral and membership-based nonprofit organization, partners with corporations such as Microsoft, Smart Communications, Globe Telecom, and Meralco and links with tertiary educational institutions (TEIs) like the University of Makati, University of San Jose Recoletos, and the Cebu Normal University in training teachers. Catering mostly to public schools, CBE conducts teacher training on the effective use of ICT in project-based learning, as well as trainings on artificial intelligence and robotics. This training is eligible for credit in master's degree programs at partner TEIs. Teachers trained under this program are obliged to coach five other teachers in their school, division, or district on the effective use of EdTech, and support a virtual community of learning for all teachers who have been trained.

Among other government units, the **DOST-SEI** trained 1,300 teachers to use interactive courseware for Grade 1 to 6 mathematics, and **Department of Information and Communications Technology** operates the *Digital Classroom Project* and *TECH4ED* (Technology for Education, to gain Employment, train Entrepreneurs toward Economic Development) centers, which are sometimes located in DepEd schools. Divisions and schools also organize their own trainings by directly inviting resource persons for subjects like digital literacy, ICT integration, and planning for school heads. The trainings are conducted during their in-service training period in October, during term breaks or during teacher cluster meetings, known locally as Learning Action Cells (LAC).

## Future directions and online learning

DepEd's Digital Rise program, launched in 2018, is meant to support the information, media, and technology skills that are part of the Kindergarten to Grade 12 (K–12) curriculum. This includes training teachers to make and use digital open educational resources (OER) (see also the Open Educational Resources brief in this series). Training is demand-driven, meaning the central DepEd provides training content and trainers, but funds and participants are the initiative of divisions. Teachers trained under this program may be classified as either a “certified educator,” a “certified champion,” or a “certified transformer,” depending on their level of activity in training others, doing research, and creating resources.

DepEd's Bureau of Learning Delivery (BLD) has organized trainings for junior and senior high school teachers on using technology tools in developing instructional materials and lesson delivery. The focus was on the use of video, Web 2.0 tools, and free online learning management systems like Edmodo. BLD also developed a technology-enabled blended training on Early Learning Literacy and Numeracy Digital (ELLN Digital) for elementary teachers. Developed by the **Foundation for Information Technology Education and Development (FIT-ED)**, ELLN Digital consists of recorded lectures and computer-based activities on teaching basic skills in language, literacy, and numeracy. The digital component is meant to be combined with face-to-face LAC meetings in which teachers discuss the content and experiences applying it. The South East Asian Ministers of Education Organization's Regional Center for Educational Innovation and Technology (**SEAMEO- Innotech**) also offers short online courses for school heads and teachers, including an entirely online course in effective reading instruction methods and language for early grades teachers.

At least two higher education institutions offer online learning for teachers. The **University of the Philippines Open University (UPOU)** offers massive open online courses in the Philippines, including the following courses: *Teaching and Learning with Modern ICTs*, *Content Development in Open Distance e-Learning*, and *Learner Support in Open Distance e-Learning*. UPOU through its faculty of education also offers a fully online diploma program in language and literacy education. Mindanao State University–Iligan Institute of Technology (MSU-IIT) offers courses through “MOLE”—the MSU-IIT Online Learning Environment. Some faculty members of the College of Education make use of this platform for blended learning. Furthermore, MSU-IIT's College of Education was one of the TEIs that first adapted the Intel® Teach Curriculum for Preservice in its educational technology and methods courses. This course is aligned well with UNESCO's ICT Competency Standards for Teachers, which were ultimately adopted for the Philippines collaboratively by the Commission on Higher Education and UNESCO.

Most recently, DepEd Order No. 11 of 2019 on the National Educators Academy of the Philippines (NEAP) transformation specifies that TPD be made more programmatic, relevant, and tied to the career development of teachers. ICT integration is one component of the NEAP Superintendents Leadership Program and the School Heads Development Program. The Superintendents' Leadership Program is a 12-module program; 1 module is on ICT integration and governance, including the development of an ICT integration plan. The School Heads Development Program consists of 3 modules and also includes the development of an ICT integration plan for the school. NEAP intends to partner with academic institutions again to ensure these courses are credited in a graduate program. In its transformation, NEAP will also utilize the **Philippine Professional Standards for Teachers (PPST)** to streamline TPD to be relevant to teachers' career growth. This will replace the UNESCO ICT Competency Standards used previously. All professional development programs developed must be aligned with the PPST to be recognized by NEAP. However, the PPST are not explicit about what TPD for technology integration should be. For example, the PPST contains a category, “Positive use of ICT” under the “Content Knowledge and Pedagogy” domain and a strand on “Curriculum and Planning” that refers to teaching and learning resources, including ICT. And then there are content-specific strands such as “Strategies for promoting literacy and numeracy,” but no specific elaboration of how technology can best be used to transform instruction for these subjects.

## Lessons learned, issues, and challenges

Philippine teachers benefit from a variety of training providers offering professional development in a range of subject areas and via many different methods. This shared responsibility can be more effective by easing the burden on the central government and improving the relevance and timeliness of training for teachers with different needs and resources. On the other hand, trainings are generally supply-driven, and therefore the content, quality, and duration are at the discretion of the training provider. Early experience with technology-related training focused on basic ICT literacy or how to use standard software to digitize lessons, and gradually evolved to consider more advanced ICT pedagogy such as using technology to support project-based and inquiry learning approaches.

There is currently no national ICT strategy or policy (see the Policy and Strategy topic brief in this series), no education technology professional standards for teachers, nor any framework for effective TPD for technology integration. As a result, there is no way to know whether training providers are promoting a unified, evidence-based approach to TPD (such as TPACK), or a sufficiently progressive vision of technology integration. Some TPD activities are short, one-off activities with no follow-through and support during implementation, while others such as those provided by Intel and Microsoft or bundled with hardware purchases from private sector providers, include some ongoing support. Private companies, non-governmental organizations, and DepEd differ in how to approach the professional development of teachers related to EdTech integration. Therefore, this may result in a wide range of capacities among teachers.

From interviews, it was noted that among the key factors that helped create the successful conditions for effective TPD on the use of educational technologies are the following: Clear expectations for the use of technology; support from school principals; training for school principals and other stakeholders involved; continuous professional development and support either through coaching and mentoring or through an online facility; access to technology and internet.

## Recommendations

The following suggestions may improve effective uptake and use of technology through professional development::

- Draft a **5-year EdTech Professional Development (ETPD) agenda** for EdTech integration to guide new TPD activities. The ETPD agenda would add specificity to the PPST and prioritize the kind of ICT trainings to deliver. This would also provide a structure to which external providers could align their offerings. It would focus on what, specifically, teachers should know and be able to do with technology in the classroom. This would be guided by a descriptive *ETPD framework* that compiles evidence-based minimum standards on how teachers learn technology integration (e.g., how much time, methods, etc.).
- The guiding frameworks, while detailed and specific, also have to recognize that training is not one-size-fits all. A training needs assessment can help match teachers to the level of training they need or allow them to demonstrate existing capacity and be rewarded a level of competency. Target training efficiently through a **demand-driven system** controlled more at the school level, while the role of DepEd central would be incentivizing teacher upskilling through the salary and promotion schemes. The TET-SAT (Technology Enhanced Teaching Self-Assessment Tool) is an initiative by ministries of education in 13 European countries to establish a user-friendly and reliable tool to monitor teachers' digital competence and define a "personal competence profile." It builds on teacher self-reflection and empowerment to drive professional development needs over time.
- Allow private providers and teachers a menu of options to suit their training needs, but within the ETPD agenda and framework. NEAP should screen and accredit ETPD offerings to help define how the offering aligns with DepEd's agenda, to ensure quality and relevance, and link it to teachers' career development. NEAP may also then centralize a teacher competency information system (perhaps building on a model like the TET- SAT described above) that tracks and credits teachers for their TPD activities.
- Aim for new models of ETPD that are more holistic and continuous through on-the-job training, with appropriate follow up and continued support.



This topic brief is based on information from interviews with officials and staff of the DepEd Information and Communications Technology Service, BLD, NEAP, and DOST-SEI; head of the education programs of private companies; and faculty members from three higher education institutions in the Philippines engaged in teacher professional development. Relevant policy documents were also reviewed. This brief was prepared by Monalisa T. Sasing, under a subcontract issued to FIT-ED, Philippines. It was edited by Sarah Pouezevara (RTI) prior to publication. (23 April 2020).