



UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES
PUBLIC POLICY MONOGRAPHS

Key Issues in Curriculum, Assessment, and ICT in Basic Education

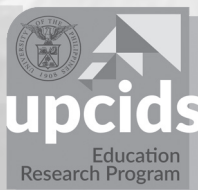
DINA OCAMPO
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Introduction

The relationship between research and policy development may be represented in different ways, depending on the porousness of the boundaries separating the communities which formulate the policies and those which create the knowledge that can potentially be relevant to this process.¹ One view stipulates that research may inform policy or policy may lead to research. This view of this research-policy relationship, however, appears to be too simplistic and uncharacteristic of the complex process of policy formulation. An alternative description of this relationship depicts two distinct and oftentimes separate processes which may or may not intersect. Finally, another view illustrates a more collaborative process wherein both communities participate in the research and policy processes.

The University of the Philippines Center for Integrative and Development Studies' (UP CIDS) Education Research Program (ERP) has opted to enable the collaborative process. The emphasis is on shaping a research agenda which could potentially inform basic education policy formulation. By inviting key discussants to identify policy gaps and policy implementation issues in basic education, the UP CIDS ERP aims to craft a five-year research agenda—spanning from 2018 until 2023—that will be responsive to prevailing issues arising from reforms in the educational system, specifically in the following areas:

- (1) Basic education governance, finance, school improvement, and their information and communications technology (ICT) applications;
- (2) Basic education curriculum, assessment, and their ICT applications; and
- (3) Basic education instruction, teacher professional development, and their ICT applications.

The round table discussions on these topics included academics, researchers, teachers, education leaders, policymakers, school leaders, civil society members and other stakeholders. Their perspectives and suggestions about research and policy gaps that need to be prioritized were articulated and documented during a workshop following the presentation of the key discussants.

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¹ Boswell, Christina, and Katherine Smith. "Rethinking Policy 'Impact': Four Models of Research-Policy Relations." *Palgrave Communications* 3, no. 1 (December 2017). <https://doi.org/10.1057/s41599-017-0042-z>.



The K to 12 Basic Education Program: Emerging Issues of Concern

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Introduction

As one of those fortunate enough to have a front seat view of how the K to 12 came to be, I could not help but be nostalgic and recall the times of sleepless nights, of workshops too many to count, of several discussions made animated by the leadership of Undersecretary (Usec.) Dina Ocampo, of endless Program Committee meetings starting from 9:00 a.m. to 9:00 p.m.—and sometimes even beyond that—just to meet deadlines.

I also recall the many times when Usec. Ocampo shared with us her imaginary ceiling where eureka moments were at its most lucid, and that meant more work for K to 12. “It was the best of times, it was the worst of times,” as Charles Dickens rightly put it. The many inches of eye bags I have accumulated are proof of the countless hours I also put in, as did my colleagues. But everyone understood the enormity of the task that we did for the Filipino children.

As there are too many things to talk about in the K to 12 program, allow me to just zero in on some important features of the curriculum and try as best I can to capture some of the questions that we have encountered, and of course, some of the initiatives that we are doing to strengthen the program.

I wish to point out that initial work on the K to 12 program was done prior to 2013 when I came to the Department of Education (DepEd) four months ahead of Usec. Ocampo. It was during her stint that the reform came in full swing and work started right after she assumed office, hence the race to finish the curriculum.

Because there were several stakeholders that were involved in the crafting of the curriculum, it was but natural that competing curriculum ideologies and conceptions are put forward in debates and discussions representing what school is for and what constitutes subject matter. Due to several reasons, curriculum developers are sometimes confronted with contradictory views on education and the direction it should be taking. Resistance to new policies often appear at the source of the curriculum renewal process, i.e. at the level of policy formulation. The greater involvement of stakeholders brings in a broader range of opinions, views, interests, and expectations, which may often be conflicting. Managing conflicting opinions (including vested interests) and different interpretations about the desired change about policy can be a challenge (UNESCO 2002).

This was evident in the development of the senior high school (SHS) program. In the end, it was the Department that decided which content to include in and exclude from the curriculum.

At the outset, it is premature to say that the educational reform thus far is a success or a failure. Any judgment would easily be dismissed as an oversimplification of a much complicated project of a national scale. The most logical thing to do if we are to examine the current educational initiative, is to assess some of its promises. Allow me to then share with you some of the reflections the Bureau of Curriculum Development (BCD) have taken note of and tried also to address.

The K to 12 Curriculum

On decongestion, contextualization, and curriculum flexibilities:
The case of curriculum relevance

The passage of Republic Act (R.A.) No. 9155, also known as the Governance of Basic Education Act of 2001, recognizes the urgent need to empower schools and learning centers to “encourage local initiatives for improving the quality of basic education.”

Likewise, the adoption of Indigenous Peoples Education Curriculum Framework, through Department Order (D.O.) No. 32, s. 2015, highlights the mandate of the DepEd to “ensure that the values, needs and aspirations of a school community are reflected in the program of education’ and that ‘[s]chools and learning centers shall be empowered to make decisions on what is best for the learners they serve.”

One of the root causes of the unsatisfactory achievement of our students was traced to an overcrowded curriculum. It is said that overcrowded curricula can hinder or delay the development of critical competencies (UNESCO 2002). No less than the former Secretary of Education, Brother Armin Luistro, FSC, said in the Catholic Educational Association of the Philippines (CEAP) Davao Assembly in 2014 that there exists some disconnections, overlapping of content, and even misleading curriculum, particularly in Sports and Arts subjects, referring to the old curriculum. Hence, curriculum decongestion for elementary and junior high school curriculum is one of the major features of the K to 12 Program.

However, one of the issues raised was that the K to 12 curriculum was not decongested. In fact, as representatives in CEAP Davao 2014 pointed out, there are so many learning competencies in a particular learning standard, that it takes more time for the teacher to finish teaching the competencies than it would take to teach the standards.

As stipulated in D.O. No. 8, s. 2015, standards is broadly defined as something against which other things can be compared for the purpose of determining accuracy, estimating quantity or judging quality. It is a broadly stated expectation of what one should know and be able to do. Standards could either be content or performance that are expected to be actualized usually within a grading period or quarter. Competencies, on the other hand, pertains to the knowledge, understanding, skills, and attitudes that students need to demonstrate in every lesson or learning activity.

While it is expected that the teacher should be able to exercise flexibility in terms of teaching the learning competency in order to attain the standard, several teachers in the field have become so used to teaching the competencies.

While the unpacking of competencies from the learning standards is considered a blessing to some teachers because it guides them on the essential content, processes, skills, and values to be highlighted in classroom instructions, most of them see it as a curse, because it limits the promise of curriculum flexibilities. Teachers are expected to actualize these “numerous competencies” which in most cases are “faithfully delivered” in the pretext of “compliance,” thus sacrificing quality instruction over quantity delivery. Simply put, the coverage of the subject matter tends to take priority over in-depth learning.

Consequently, numerous number of competencies paralyze the potency of curriculum contextualization as a distinct feature of the K to 12 curriculum. This is, if true, a sad state in public schools as teachers being the “gatekeepers” of quality instruction becomes the “guard who steals” relevant learning opportunities.

With this, we are faced with the question of exploring the feasibility of reducing the number of competencies so as to provide instructional space for teachers to navigate or retraining teachers to contextualize the curriculum and learning resources. Educational outcomes will not improve if teachers are not cognizant of the space that allows them to contextualize the curriculum.

So far, what has been done to localize and contextualize the curriculum to make it respond to students’ needs, interests, and culture? What lessons can be gleaned from different countries when trying to enhance quality and relevance of learning content to local cultural and economic realities?

Perhaps one of biggest challenges of a 21st-century curriculum developer is the reality that most of the problems we face today are created in the light of globalization—whether it is environmental, economic, political, or socio-cultural in nature—and that we need to deal with them in the very same way they were created—in a holistic and collaborative manner. This leads me as a curriculum developer to explore the viability of further blurring the distinctions between subjects, as what has been done by some first world countries, and creating a more flexible and integrated curriculum that creates problems in the classroom, which could be addressed through application of all the skills from the various disciplines.

By virtue of contextualization and differentiated instruction, I am also keen on further reducing the curriculum guides for some subjects to content, content standards, and performance standards. While I understand that this entails retooling, teachers are given more flexibility in terms of budget of work and strategies to be used this way. This shall also allow them to employ deeper levels of contextualization.

Pertinent to this, we need to document the efforts of and challenges faced by each school, division, and region in terms of employing the provision in R.A. No. 10533, that is, the contextualization of the curriculum. After seven years of implementation, there is now established data to examine how this important feature of the curriculum is manifested in the classroom in response to our mandate to uphold inclusion at all levels of basic education.

Seamless curriculum and the spiral approach

The K to 12 curriculum is seamless and uses the spiral progression approach. It starts from the simplest concepts to more complicated concepts through grade levels in spiral progression. The proponent of this, Jerome Bruner (1976), says that this is done to solidify understanding over periodic intervals for students to learn, rather than simply memorizing equations to pass a test. This means that students learn best by building on their current knowledge and through the repeated experience of a concept.

The K to 12 curriculum is not divided into elementary school and high school, the way it used to be. There is now ‘vertical articulation,’ or a seamless progression of competencies. Though this spiral progression is very much evident in the curriculum, its implementation needs closer scrutiny as many Science and Math teachers are having a hard time implementing it to the extent that some have reverted to teaching the Science subjects as it was done before, that is, there is a concentration of subject per Grade level again (e.g., Grade 7 General Science, Grade 8 Biology, etc.).

Given the low scores in the National Achievement Test (NAT) for school year 2017–2018, particularly in Science and Math, there is a need to review the spiral progression approach and how this approach is observed by the teachers in teaching Science, Technology, Engineering, and Mathematics (STEM), although it will be unfair to attribute the low scores in STEM solely to the approach of the teacher.

Moreover, an initial review of the curriculum in elementary and secondary levels reveals that many competencies are overlapping and repetitive in subjects such as Araling Panlipunan and Languages. There is then a need to go back to the curriculum guides and address this observation.

When the medium fails to deliver its message:
Rethinking MTB–MLE implementation

Globalization radically changed the socio-economic and political landscape of international affairs. Though it delivers various opportunities among sovereign nations in the world, it likewise generates threats that puts peril on the lives of the people, one of which is its homogenizing tendency in terms of culture and identity.

This is consistent with what Smith (2003) pointed in his paper entitled *Curriculum and Teaching Face Globalization*. Here he emphasized that,

“...globalization engenders “new kinds of identity crises,” among them the erosion of national identities and the unprecedented losses of indigenous languages and cultures under the homogenizing pressures of global capital” (p. 36).

The said cultural threat can directly be countered only if content, processes, standards of relevant learning areas are configured and delivered appropriately.

Numerous international studies have pointed out that low learning outcomes, low participation rates, and high drop-out rates could be attributed to the language of learning in school. Filipinos have twelve (12) major languages and around 163 minor languages, and the problem of what language should be adapted as the language of learning for children’s improved academic performance remains to be the subject of debate.

The 2003 UNESCO position paper champions children’s rights, cultural identity, languages, and values. This position was underscored by the report of the Presidential Commission on Educational Reform (2000) which states that (1) success in a bilingual educational system is best achieved by ensuring that the child first becomes literate in his mother tongue before attempting to acquire literacy in another language, and (2) children who learn and write in the mother tongue before learning another language are more successful second language learners than their peers who did not become literate in their first language. These beliefs support the implementation of the Mother Tongue-Based Multilingual Education (MTB–MLE) in the country.

The K to 12 MTB–MLE thus aims to build proficiency by using the child's dominant language as the language of learning in Kindergarten to Grade 3. The other language is used in instruction and learning materials of other learning areas. Through this, learners retain their ethnic identity, culture, heritage, and values.

However, conundrums arise when the medium becomes the ‘content’ of classroom instruction. Several undocumented reports have raised concerns over the confusions created among learners and teachers whenever a ‘dominant language’ is being taught in a multi-culturally diverse community. What concerns me more however, is the message that is being communicated to the Filipino learners that they should learn a language alien to them. This, I think, is a form of cultural appropriation that needs an immediate solution if we are to remain faithful to the ideals and principles of the MTB–MLE. That is, to value cultural diversities by preserving the cultural traditions and identities of our learners. Doing nothing will have dire and irreversible consequences to our learners and to the nation as well.

Thus, I wish to pose these questions:

- How do you teach a language that has many variations?
- Does the teacher have the capability to teach the variations?
- What materials have been developed in the teaching of Mother Tongue?
- How can we effectively and efficiently capacitate our field implementers, most of whom are teachers, in the MTB-MLE delivery?

I guess, the point is that the teaching of Mother Tongue as a subject and its use as a medium of instruction becomes a challenge when the essentials (minima) are not in place and teachers are not capacitated.

As we speak, there are several efforts by the Bureaus and the field offices to complete the 25 languages.

On Kindergarten

The issue of what particular age level should kids start Kindergarten has been the subject of much debate last school year. While several DepEd issuances have been released, the effect of the changes in these policies to learners must also be studied.

The use of technology in the classroom

Subjecting to the realities of the changing times, people from the educational sector and education stakeholders seriously and diligently need to inquire into the premise, promise, and perils of the use of technology in teaching and learning. There is a crucial need to commit to identifying, through rigorous research, the amount, timing, and the manner of learners' exposure to these technologies in order to strike a balance between keeping them abreast of these innovations that grant them leverage on the global job market, and ensuring that they understand the rich value of 'unplugging,' which enables them to have real engagements with the world, so that they can truly live and make genuine impact. Through the curriculum, the students must not only be taught what these technologies are and how to use them, they also need to know how to temper their amount of utilization.

Additionally, since the DepEd is planning to distribute tablets to students in Senior High School and later on in the lower years, what is the appropriate age for the students in the elementary to be provided the tablets? Moreover, will the use of these tablets redound to improved educational outcomes knowing that these tablets will only be used for a certain period of time in the classroom and considering the typology and lack of energy resources prevalent in the communities?

Firming up Values Education in the K to 12 curriculum

The recent local and international events have also led me to think about how the education system could further safeguard our democratic institutions and the perceived moral degeneration. I understand that one of the ways to accomplish this objective is to incorporate very important messages on democracy and, most importantly, human dignity into the curriculum, which necessitates a Values Education Framework anchored on the national motto: *Maka-Diyos, Makatao, Makakalikasan, at Makabansa*. We need to revisit our commitment to the 1997 Values Education Framework, reflect on its relevance and responsiveness, and come up with a new framework that suits the intricacies of the K to 12 curriculum. At the moment, the Bureau is mapping the values across the K to 12 curriculum to find out if it adheres to and supports the national motto mentioned.

Likewise, the need to strengthen values education program intends not only to uphold our national ideals but more importantly to aid our learners as they confront personal issues and challenges. Relative to this is the alarming suicide rate among our learners and teachers, which bring to mind consolidating our present efforts to promote emotional resilience and come up with a unified program to strengthen the socio-emotional skills of our personnel and learners.

The relationship between values and technology need to be closely examined as well. Allan Goodman, president of the Institute of International Education, said “[m]oral judgment and ethics could be as revolutionary as artificial intelligence in this next revolution, just as the internet was in the last revolution,” he further said that those building technologies can potentially transform societies at scale may be the ones who most need a strong moral grounding.

How can the K to 12 curriculum maintain that balance between emphasis on technology or rise of the machines and retain strong moral grounding?

Development of our students’ industrial and other practical skills

The present Elementary Edukasyong Pantahanan at Pangkabuhayan (EPP) already introduces learners to the different EPP components such as Home Economics (HE), Industrial Arts (IA), Agri-Fishery Arts (AFA), and Information and Communications Technology (ICT) as exploratory subjects. In Grades 7 and 8, Technology and Livelihood Education, the learners will again explore these four (4) components then move on to specialization subjects during Grades 9 and 10. As early as Grade 9, these learners may be able to acquire a National Certificate (NC). If the learner proceeds to Senior High School and takes up the Technical-Vocational-Livelihood (TVL) track, the learner may again acquire one or more NCs, depending on the specialization taken up.

Additionally, in Junior High School, Technology and Livelihood Education (TLE) provides opportunities for students to explore, as early as Grade 7 and 8, skills that they can further cultivate in Grades 9 and 10. While it promises to promote mastery of skills in a particular TLE specialization, I consider that there is a need to rethink this framework as it somehow prevents our learners from learning all the practical skills they need in their daily lives.

I strongly believe that the learner does not need so many NCs after graduating from Senior High School. At the most, he will be able to make use of two NCs to land a job and find gainful employment. As such, the Bureau is looking into the possibility of introducing EPP subjects that focus more on basic life skills; in Grades 7 and 8, exploratory by sector, and by Grades 9 and 10, exploratory by specialization. Then, when the learner moves on to senior high school, that is when he will take up the full specialization.

The K to 12 curricular exits

Now that there is workable data for an impact evaluation, we must determine the successes and pipelines in the implementation of the K to 12 Basic Education Program, with regard to preparing our learners for the curriculum exits: employment, entrepreneurship, and higher education. There is a need to pursue tracer studies to establish where the first cohorts ended up. In terms of pursuing higher education, one of the questions that may be explored is whether they ended up taking courses in college that are in line with their specializations in Senior High School. For those who pursued employment after SHS, there is a need to document their experiences and establish generalizations as to whether the program indeed prepared them for work. Finally, we also need to establish indicators to see if those who pursued entrepreneurial specializations ended up successfully venturing into business. This also leads me to exploring various support systems to help these graduates put up their own business so that they can easily contribute to the economy.

Senior high school tracks

With the graduation of the first batch of senior high school learners in May 2018 came several conflicting messages and practices from the higher education institutions (HEIs), state universities and colleges (SUCs), and local universities and colleges (LUCs). At the outset, the Department of Education and the Commission on Higher Education (CHED) have worked together to ensure that the K to 12 graduates are college-ready, which is why the K to 12 curriculum was aligned with the College Readiness Standards through the offering of core subjects. However, several complaints were received by DepEd from many universities and colleges disallowing the application for entrance examination of K to 12 learners because the learners' chosen track is not aligned with the course that they will take up. Even as CHED issued another memorandum exhorting the HEIs and LUCs to allow these learners to take the entrance examination, others did not heed the memorandum.

Another issue that cropped up is the practice now of some universities and colleges to offer bridging programs to those K to 12 graduates whose track is different from the course they will take up in college. While this poses problems to SUCs and LUCs in terms of funding, some unscrupulous HEIs use this bridging program to charge extra tuition fees.

Initial results of work immersion

As part of our goals to prepare our students for the challenges of the real world, work immersion was put in place in the SHS curriculum. After the graduation of the first of SHS students, there is now available data to use for conducting an initial evaluation of how the immersion in the workplace has prepared the Senior High School graduates for the world of work. Moreover, guidelines and safety measures for our learners who undergo the program must also be carefully studied. We can use the data collected by Schools Division Offices (SDOs) and schools to see if the program indeed equips our graduates with life skills to qualify them for employment.

Conclusion

The K to 12 story is still an unfinished one. While there are many potential gains that the K to 12 program offers, there are, as any major undertakings tell us, several challenges that we face surrounding its implementation. Moving forward requires collaboration with the academe and other stakeholders and the openness to accept constructive criticisms that will enhance and strengthen the program.

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References

- Clark, Sheldon. 2010. "Jerome Bruner: Teaching, Learning and the Spiral Curriculum." *Community and Thought in Education* (blog). 2010. <https://sheldonclark.files.wordpress.com/2011/07/jerome-bruner-teaching-learning-and-the-spiral-curriculum2.pdf>.
- Colclough, Christopher. 2002. *Education for All: Is the World on Track?* Paris: UNESCO.
- Department of Education. 2015. "Adopting the Indigenous Peoples Education Curriculum Framework." DepEd Order No. 32, s. 2015, Department of Education, Pasig City, July 29, 2015. http://www.deped.gov.ph/wp-content/uploads/2015/07/DO_s2015_32.pdf.
- Gibb, Nick. 2015. "How E. D. Hirsch Came to Shape UK Government Policy." In *Knowledge and the Curriculum*, edited by Jonathan Simons and Natasha Porter. Policy Exchange. <https://policyexchange.org.uk/wp-content/uploads/2016/09/knowledge-and-the-curriculum.pdf>.
- Guzman, Allan B. de. 2003. "The Dynamics of Educational Reforms in the Philippine Basic and Higher Education Sectors." *Asia Pacific Education Review* 4 (1): 39–50. <https://doi.org/10.1007/BF03025551>.
- Hirsch, E. D., Joseph F. Kett, and James Trefil. 1988. *Cultural Literacy: What Every American Needs to Know*. 1st Vintage Books ed. New York: Vintage Books.
- "Philippine Agenda for Education Reform: The PCER Report." 2000.
- "Republic Act No. 9155 | GOVPH." n.d. Official Gazette of the Republic of the Philippines. Accessed February 13, 2019. <https://www.officialgazette.gov.ph/2001/08/11/republic-act-no-9155/>.
- Set Forth in Faith: Defining the Transformative Role of Catholic Education in a Changing World*. 2014.
- Smith, David Geoffrey. (2003). 2018. "International Handbook of Curriculum Research." In *Curriculum and Teaching Face Globalization*, edited by William Pinar, 35–52. Lawrence Earlbaum Associates Publishers.
- Wan, Tony. 2018. "The Most Important Skills for the 4th Industrial Revolution? Try Ethics and Philosophy." *EdSurge*. October 6, 2018. <https://www.edsurge.com/news/2018-10-06-the-most-important-skills-for-the-4th-industrial-revolution-try-ethics-and-philosophy>.



The Basic Education Research Agenda of the Department of Education and System Assessment in the K to 12 Basic Education Curriculum

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Introduction

The role of research in education provides several perspectives in understanding how teaching and learning practices and policy and planning address themes related to curriculum development, learning delivery and resources and education assessment. Research has critically linked classroom practices with national perspectives and support policy formulation to further enhance the quality of education.

Building on a culture of research, the Department of Education (DepEd)'s mandate to provide a complete, adequate, and relevant basic education service through the Department's Education Research Division (ERD) and Policy Research and Development Division (PS-PRD) probe internal processes and systems through empirical and evidence-based mechanisms to enlighten education issues.

In reference to the two divisions focusing on research in the Department, the Policy Research and Development Division (PS-PRD) develops and implements the national framework on planning, research, and policy development for the Department. The Bureau of Education Assessment is an office under the Curriculum and Instruction (CI) strand that develops a harmonized and standardized assessment mechanism for student learning, teacher effectiveness, leadership and management, and system efficiency and effectiveness; and provide policy recommendations based on assessment results and research to improve learning delivery, teacher quality, and education management.

The objective of this paper is to discuss the three (3) important Department Orders (DOs) that outline policy guidelines pertaining to research and assessment, namely:

- (1) *DepEd Order No. 39, s. 2016*, which embodies the Basic Education Research agenda (BERA) aimed to provide guidance to the Department of Education and its stakeholders, both at the national and local levels, in the conduct of basic education research to ensure its alignment with the DepEd's vision, mission and goals;
- (2) *DepEd Order No. 55, s. 2016*, which provides for the Policy Guidelines on the National Assessment of Student Learning for the K to 12 Basic Education Program; and

- (3) *DepEd Order No. 29, s. 2017*, providing the Policy Guidelines on the current System Assessment in the K to 12 Basic Education Program.

Since the objective of this roundtable discussion is to come up with an education research agenda for the University of the Philippines (from 2018 to 2023), the Bureau of Education Assessment (BEA) and Policy and Research Division (PRD-Planning Division) find it valuable to share the information about the current research agenda as a venue for disseminating the existing priority thrusts of the Department and to encourage research collaboration and knowledge-sharing among education stakeholders.

Presentation 1: The Basic Education Research Agenda (BERA) (DepEd Order No. 39, s. 2016)

Learning is the core of the Department of Education mandate. However, DepEd is not only a learner-centered government institution; it is also an organization that constantly incorporates the learning process in implementing education policies and programs consistent with its vision. To wit:

“We dream of Filipinos who passionately love their country and whose values and competencies enable them to realize their full potential and contribute meaningfully to building the nation.

As a learner-centered public institution, the Department of Education continuously improves itself to better serve its stakeholders” (DepEd Vision 2013; BERA).

We all know that doing research entails a lot of rigorous and systematic inquiry. Given this, research outputs can serve as a vital source of evidence-based information that can be used for planning, policy formulation, program development, budgeting, resource allocation, grants sourcing, and training for the Department and to those who have interest/high stake in education.

The Department sustains its progressive orientation by ensuring that its actions are informed by sound and relevant evidence from research.

Research thrusts

While there is a myriad of topics to probe in the education sector, the Department’s research thrusts are strategically geared towards supporting its mission, which is “to protect and promote the right of every Filipino to quality, equitable, culture-based, and complete basic education,” where:

- *Students* learn in a child-friendly, gender-sensitive, safe, and motivating environment.
- *Teachers* facilitate learning and constantly nurture every learner.
- *Administrators and staff*, as stewards of the institution, ensure an enabling and supportive environment for effective learning to happen.
- *Family, community, and other stakeholders* are actively engaged and share responsibility for developing lifelong learners” (DepEd Mission 2013).

Given the magnitude of priority concerns and areas for development in the Department, research will play a very important role in the overall management and administration of the basic education system.

Research themes

Emergent priority themes are captured in the said research agenda. In this document, the themes have been translated into questions to prompt scientific inquiry and yield significant findings that can improve the quality and delivery of basic education in the Philippines.

The research agenda identifies research topics that will fill in critical knowledge gaps and respond to pressing concerns in Philippine basic education, consistent with the Department's vision, mission, and target outcomes and in line with local and international developments in the sector. The six-year research agenda will be subject to annual, mid-, and end-term reviews. By articulating specific study areas, this document seeks to:

- (1) Build on gains from existing research;
- (2) Generate new knowledge on less explored but priority fields of basic education;
- (3) Systematically focus DepEd's attention on relevant education issues; and
- (4) Maximize available resources for research within and outside the Department.

After a series of consultations with internal and external education stakeholders, the Department was able to synthesize and finalize the contents of BERA under three (3) principles:

- (1) *Excellence*. Given the influence of research on education decisions and actions, quality research is expected. Excellence demands that the inquiry is relevant and researchable; methods applied are appropriate; and findings are logical, coherent, and supported by data. Although the research design may vary depending on the nature of the study, researchers must apply rigorous and empirical methods grounded on scientific inquiry.
- (2) *Integrity*. The highest ethical standards shall be applied to basic education research. Whether or not human subjects are involved, researchers must ensure that the study will not cause people harm. Research participants should have informed consent, must be cognizant about the general purpose of the study and should not be exposed to unusual risk. Consistent with the principle of excellence, integrity also requires honesty and accuracy in the collection, analysis, and reporting of data.
- (3) *Openness*. DepEd acknowledges the importance of collaboration in its work, including in research. Openness emphasizes the need to engage more partners in basic education research and to employ multi-disciplinary perspectives. The same likewise ensures truthful and timely dissemination of research results and data sets within the bounds of confidentiality to DepEd and other stakeholders for appreciation and application, as well as peer evaluation.

Research questions

Based on a review of the agency's policies and programs, surveys of research literature, and nationwide consultations with representatives of DepEd central and field offices, four (4) research themes or basic education topics were identified. These are:

- (1) *Teaching and Learning*, which responds to students and teachers' needs,
- (2) *Child Protection*, which focuses on the students,
- (3) *Human Resource Development*, which addresses concerns of teaching and non-teaching personnel; and
- (4) *Governance*, which centers on administration and stakeholder engagement.

It is expected that the findings generated from each theme will fuel evidence-based actions that strategically support the attainment of the Department's vision and mission, as well as target outcomes of ensuring:

- (1) access to complete basic education;
- (2) quality education; and
- (3) effective, transparent, and engaging governance of basic education.

While the themes generally support DepEd's overall mandate, each theme has unique contributions to the Department's target outcomes and mission. For instance, Child Protection directly enhances the access outcome, while Teaching and Learning squarely impacts on the quality of education.

In the same manner, the identified themes dovetail with the Department's mission, particularly its four key stakeholders. The themes were expanded into research questions to focus the investigation and shape the design of a study. All questions are illustrative and need not be phrased verbatim to allow flexibility in the research design. The stated research questions serve as concrete starting points for discussion and may evolve upon further analysis. It is thus possible to combine or reformulate research questions.

Each of the research themes is described below with a brief discussion of its general background and coverage. The themes have been expanded into research questions to focus the investigation and shape the design of a study. All questions are illustrative and need not be phrased verbatim to allow flexibility in the research design. The stated research questions serve as concrete starting points for discussion and may evolve upon further analysis. It is thus possible to combine or reformulate research questions.

Each research theme contains sub-themes that have been broken down into general research questions. Topics under each general research question have been identified to highlight more specific areas of interest, and not necessarily to limit its scope. Researchers are welcome to explore other topics that likewise address the identified sub-themes.

While the themes and questions appear as stand-alone areas of inquiry, the research agenda recognizes that many of the listed topics relate to each other. Moreover, the Department recognizes that the following cut across the four themes of the agenda:

- (1) Disaster risk reduction and management (DRRM);
- (2) Gender and development; and
- (3) Inclusive education.

Based on BERA, research questions under these areas have also been identified to cater to more specific concerns which are included in the later part of this paper.

Theme 1: Teaching and Learning

As the national institution mandated to provide quality basic education to all Filipinos, DepEd seeks to ensure that learning outcomes are achieved by maximizing the competencies of teacher and potentials of all types of learners. This theme covers the actors, activities, and fundamental aspects of teaching and learning in various contexts. Specifically, the research agenda looks into the strategies, best practices, and facilitating and hindering factors relative to five sub-themes, namely: instruction, curriculum, learners, assessment, and learning outcomes.

Instruction incorporates strategies to enhance the teaching-learning process. Particular attention is given to teaching various subjects in light of reforms under the K to 12 Program, and the growing

importance of honing well-rounded learners able to compete in the current as well as future economies. Key topics under instruction include, but are not limited to, the following:

| General research questions | Topics |
|--|--|
| What factors affect the teacher's delivery of the curriculum? | <ul style="list-style-type: none"> • Class size • Contact time • Materials and resources • Information and communication technology (ICT) in education • Language <ul style="list-style-type: none"> • Medium of instruction • MTB-MLE • Continuing Professional Development and support (i.e., coaching and mentoring, learning action cell (LAC)) • Classroom management (e.g., positive discipline) • Learning space/environment • Lesson planning and creation of instructional materials (IMs) • Teacher's profile (e.g., background, specialization, knowledge, motivation) |
| What teaching and learning strategies can teachers apply to ensure inclusive and learner-centered education? | <ul style="list-style-type: none"> • Inclusive education <ul style="list-style-type: none"> • Special education (SPED) • Indigenous peoples education (IPEd) • Madrasah education • Alternative Learning System (ALS) • Alternative delivery mode • Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) • Child-centered approach • Emerging good practices • ICT in education • Differentiated instruction • Individual learning styles and multiple intelligences • Collaborative learning • Classroom management (e.g., positive discipline) |

Curriculum will focus on the contribution of the new K to 12 curriculum on improving learning outcomes. With the integration of skills and competencies, such as DRR and CCA in the delivery of the new curriculum, looking at effectiveness is crucial.

| General research questions | Topics |
|--|--|
| How is the curriculum able to contribute in achieving learning outcomes? | <ul style="list-style-type: none"> • Contextualization • Various subjects • Spiral progression in the curriculum • Higher order thinking skills • Integration (e.g., DRR and CCA) |
| How is the curriculum responsive and relevant to learners? | <ul style="list-style-type: none"> • Contextualization <ul style="list-style-type: none"> • Localization • Indigenization |

This agenda will study the developmental, social, and behavioral effects of the teaching-learning process on *learners*, who are the primary clients of basic education. Key topics under learners include, but are not limited to the following:

| General research questions | Topics |
|---|---|
| What factors affect the learning behaviors of learners? | <ul style="list-style-type: none"> • Child development • External and internal environment • Teaching strategies • Multiple intelligences |
| What contributes to the values formation of learners? | <ul style="list-style-type: none"> • School influence • Community • Culture • Extra- and co-curricular activities |
| What makes a well-rounded, happy, and smart learner? | <ul style="list-style-type: none"> • School influence • Community • Culture • Extra- and co-curricular activities |

DepEd has defined the official K to 12 Assessment Framework (DepEd Order No. 8, s. 2015), which lays out current policies and shows the current thinking on the matter. As a key component of the teaching-learning process, *Assessment* requires further study to refine the details of the framework. Key topics under the Assessment include, but are not limited to, the following:

| General research questions | Topics |
|---|---|
| What factors affect the implementation of classroom assessment? | <ul style="list-style-type: none"> • Classroom assessment (i.e., formative and summative) • Emerging good practices • Teachers' expertise in constructing various types of assessments • Availability of assessment tools and resources (e.g., materials, manpower, environment, portfolio assessment) |
| How is assessment conducted and utilized in the Philippine education system? | <ul style="list-style-type: none"> • Levels <ul style="list-style-type: none"> • Classroom assessments • National assessments • International assessments • System assessments <p><i>(Additional explanation: This question refers to the process of conducting assessments, as well as its utilization in terms of policy formulation and implementation, resource allocation, training of teachers and personnel, review and improvement of curriculum and instruction, and progress tracking of learners.)</i></p> |
| How effective is Recognition of Prior Learning (RPL) in determining students to special programs? | <ul style="list-style-type: none"> • Basic Literacy Program • Accreditation & Equivalency Program • PEPT (Grade Level Placement) • Social programs |

The research agenda further examines *Learning Outcomes* by understanding what drives achievement, and by assessing and comparing the progress of learners across subjects, grade levels, and geographical regions. Key topics under Learning Outcomes include, but are not limited to, the following:

| General research questions | Topics |
|--|---|
| What factors affect the achievement of learning outcomes? | <ul style="list-style-type: none"> • Teacher’s profile (e.g., specialization, training, experience) • Learning environment • Learning resources • Language • Assessment • Governance |
| How does achievement of expected learning outcomes vary in terms of practices per region, division, and/or school? | <ul style="list-style-type: none"> • Regional, division, and school variation • School typology • Role of leaders • Geographic, political, and economic factors • Partnerships (i.e., LGUs, other private and public organizations and institutions) |

Theme 2: Child Protection

DepEd’s learner-centered approach recognizes that a child’s condition can significantly affect the achievement of learning outcomes. While the Department may not have the direct mandate and resources to address many of the social, economic, and personal issues of learners, it is committed to ensuring their well-being, particularly in situations where harm can occur in school or disrupt their studies.

The Department’s commitment warrants a separate section on *Child Protection*, particularly to address reported incidents of bullying, teen-age pregnancy, addictive behaviors, and child labour. While laws and policies are in place to address these, there is a need for in-depth studies on their prevalence and effects. There is also a need to assess the effectiveness of previous interventions, and the potential of new approaches to better protect learners in schools. Main topics under Child Protection include, but are not limited to, the following:

| General research questions | Specific topics | General topics |
|---|---|---|
| How can DepEd best address the following child protection concerns? | | <ul style="list-style-type: none"> • History of problem • Prevalence • Factors contributing to the problem (e.g., access to technology, environment) |
| Bullying | <ul style="list-style-type: none"> • Physical bullying • Emotional bullying • Cyber bullying | <ul style="list-style-type: none"> • Vulnerable segments (e.g., gender, location, economic status, persons with disabilities, children in conflict with the law, children at risk) |
| Teenage Pregnancy | <ul style="list-style-type: none"> • Reproductive health Education | <ul style="list-style-type: none"> • Effects (e.g. physical, mental, emotional, social) |
| Child Abuse | <ul style="list-style-type: none"> • Grave child rights violations (GCRVs) • SHS work immersion context | <ul style="list-style-type: none"> • Policies/programs/ interventions • Monitoring and evaluation of interventions |
| Addiction | <ul style="list-style-type: none"> • Substance abuse • Online gaming • Social media | <ul style="list-style-type: none"> • Partnerships |
| Media Consumption | <ul style="list-style-type: none"> • Internet • TV and film • Magazines • Radio | |

Theme 3: Human Resource Development

It is imperative that various strategies are developed to nurture the vast human capital involved in delivering basic education. Research questions will delve into three sub-themes: (1) teaching and non-teaching qualifications and hiring; (2) career development; and (3) employee welfare.

Primary focus is given to teachers due to their frontline role in reaching out to learners. Research questions probe into the teachers' existing qualifications and competency requirements vis-a-vis the needs of the K to 12 and special education programs such as ALS. The topics extend to teacher education institutions, particularly on ways to upgrade pre-service preparation and DepEd's role in providing continuous quality training. Similarly, developing the support structure of DepEd through its non-teaching personnel is an important area of inquiry. Key topics under *Teaching and Non-teaching Qualifications and Hiring*, include, but are not limited to, the following:

| General research questions | Specific topics | General topics |
|--|---|---|
| How effective is the professional development framework in the delivery of the K to 12 curriculum? | <ul style="list-style-type: none"> • Specialization • Quality of years of experience • Language proficiency • Academic skills • Psycho-social skills • ICT integration in teaching | <ul style="list-style-type: none"> • History of problem • Prevalence • Factors contributing to the problem (e.g., access to technology, environment) • Vulnerable segments (e.g., gender, location, economic status, persons with disabilities, children in conflict with the law, children at risk) • Effects (e.g., physical, mental, emotional, social) • Policies/programs/ interventions • Monitoring and evaluation of interventions • Partnerships |
| What qualifications and competencies are require for teaching in an inclusive learning environment? | <ul style="list-style-type: none"> • Skills for <ul style="list-style-type: none"> • Inclusive education • DRR and CCA • Teaching Beginning Reading • Qualification standards and criteria for hiring • Psychosocial skills • Interpersonal skills | |
| How can pre-service teacher education be improved to develop teachers who can effectively deliver the K to 12 curricula? | <ul style="list-style-type: none"> • Teacher education institutions • Core courses • Relevant non-core courses • Preparation on: <ul style="list-style-type: none"> • Contextualization of the curriculum • Integration (e.g., DRR and CCA) • Teaching Beginning Reading • Inclusive education | |

| General research questions | Specific topics | General topics |
|---|--|----------------|
| What qualifications and competencies are required of non-teaching staff to support the effective delivery of the K to 12 curricula? | <ul style="list-style-type: none"> • Qualification standards and criteria for hiring • Psycho-social skills • Interpersonal skills • Technical skills | |
| What are the issues and challenges in hiring public school teachers, and how can these be addressed? | <ul style="list-style-type: none"> • Localization law • Ranking system • Natural vacancies • Planned positions • Notice of organization, staffing, and compensation action • Political influence • Competition between public and private sector • Emigration and/or foreign contractual work • Entry levels • Qualification standards and criteria for hiring • Allocation of teacher items • Verification of eligibility documents | |

There is likewise a keen interest on the *Career Development* of both teaching and non-teaching personnel in order to surface and address their capacity-building needs, and to examine various dimensions and determinants of their professional growth. Specific questions attempt to validate reported challenges to personnel movement and progression. Key topics under Career Development include, but are not limited to, the following:

| General research questions | Topics |
|--|---|
| How can selection, retention, assessment, development, promotion, and recognition be enhanced to support DepEd employees in different career stages? | <ul style="list-style-type: none"> • Career path and progression • Personal considerations • Quota System • Item reclassification • Mentoring • Training and development • Patronage and corruption • Results-Based Performance Management System (RBPMS) • Scholarships and grants • Succession planning |
| What kind of capacity-building activities are necessary and most effective in addressing development needs and improving the work performance of teachers and other DepEd personnel? | <ul style="list-style-type: none"> • Overall training program • Specialized training program • Process of capacity-building • Training strategy • Selection process • Practical application • Monitoring and evaluation • Other development options <ul style="list-style-type: none"> • Classroom training • Coaching and mentoring • Experience |

Understanding career development also includes studying the nature and effectiveness of existing *Employee Welfare* provisions. The Department seeks to explore monetary and non-monetary strategies as well as non-traditional mechanisms to keep its personnel, especially teachers, motivated to perform well. Key topics under Employee Welfare include, but are not limited to the following:

| General research questions | Topics |
|---|--|
| What mechanisms are the most appropriate to promote the welfare of all DepEd employees? | <ul style="list-style-type: none"> • Professionalization • Salary • Benefits • Incentives (e.g., awards and recognition, cash and non-cash rewards) • Non-cash compensation (e.g., service credits) • Protection and safeguards • Grievance mechanism • Teaching load and ancillary services • Employee wellness (e.g., physical, emotional, spiritual, mental) • Hazard pay • Risk insurance • Monetization program • Gender and development |
| What motivates teaching and non-teaching personnel to sustain commitment and passion to high-quality teaching, learning and work performance? | <ul style="list-style-type: none"> • Intrinsic and extrinsic motivation |

Theme 4: Governance

Managing the largest bureaucracy towards educating the nation's future requires efficient and effective operations. The Governance theme of the research agenda, which covers planning, finance, program management, transparency and accountability, and evaluation, underscores DepEd's commitment to ensure that its structure, systems, and processes contribute to the achievement of basic education outcomes.

The Department has already provided internal guidance (DepEd Order 13, s. 2015) for the development of effective and efficient policies. With this in place, DepEd's next concern is to ensure that these policies are implemented and translated into appropriate programs. Because it governs a very large sector with complex interrelationships, the Department often encounters challenges in its *Planning* process. This section deals with standards and policies that ensure the achievement of the Department's goals. Key topics under Planning include, but are not limited to:

| General research questions | Topics |
|---|--|
| How can DepEd determine effective and efficient standards for critical education resources for schools, community learning centers, and other delivery units? | <ul style="list-style-type: none"> • Processes/tools <ul style="list-style-type: none"> • Typologies and classifications • Planning considerations for non-formal education • Comprehensive School Safety or Disaster Risk Reduction and Management in Education • Critical resources <ul style="list-style-type: none"> • Teachers, teaching-related, and non-teaching personnel • Education facilities (e.g., laboratories) • Tools and equipment • Water, Sanitation, and Hygiene (WASH) • School sites • Health and nutrition • Operating budget |

| General research questions | Topics |
|---|---|
| How can DepEd improve its planning process across levels? | <ul style="list-style-type: none"> • Strategic planning (e.g., contingency planning) • Operations planning • Data management • Monitoring and evaluation • Policy research and development |

Financial Management is a critical component in the governance of basic education. Relevant research areas include meeting government budget, accounting, and auditing requirements without compromising efficiency. This highlights the need to closely examine the effects of financial management not just on program managers, but also on the intended beneficiaries. Key topics under Finance include, but not limited to the following:

| General research questions | Topics |
|---|--|
| How can DepEd improve its process in the sourcing, acquisition, disbursement, recording, and reporting of program and project funds, consistent with applicable laws, policies, rules, and regulations? | <ul style="list-style-type: none"> • Policies and practices • Issues and challenges • Timeframe • Budget deliberation and complete staff work • Budget execution • Evaluation and policy amendment • Computation of Maintenance and Other Operating Expenses (MOOE) to provide implementing units with accurate funding needs |
| How does financial performance affect key stakeholders in DepEd? | <ul style="list-style-type: none"> • Fund managers • Target beneficiaries • Community • DepEd internal stakeholders |

Program Management focuses on how DepEd can best develop, implement, monitor, and evaluate programs, projects and activities. While evaluation is discussed separately, this section focuses on the core implementation phases of program management. After the core mandate of teaching, program management is essentially the next most important function of DepEd. Key topics under program management include, but are not limited to, the following:

| General research questions | Topics |
|---|---|
| How effective is DepEd's overall program management system? | <ul style="list-style-type: none"> • Program and project development • Operational efficiency • Coordination and provision of technical assistance • Monitoring and feedback • Capability-building • Personnel selection • Support structures and processes • Sustainability and mainstreaming • Networking and linkages |
| How can we maximize external partnerships locally and abroad to facilitate the delivery of basic education? | <ul style="list-style-type: none"> • Bilateral and multilateral agreements • Public-Private Partnerships (e.g., Build-Operate-Transfer, Build-Lease-Transfer, Build-Transfer) |

The Governance theme encompasses *Transparency and Accountability* in various levels of DepEd's operations. At the central and field offices, the Department aims to consider ways to incorporate accountability in the budget process for the achievement of targets and outcomes. Studies can delve into how mechanisms such as the transparency board and grievance procedures promote transparency and accountability in schools. Key topics under Transparency and Accountability include, but are not limited to, the following:

| General research questions | Topics |
|--|--|
| What factors affect transparency and accountability in DepEd operations? | <ul style="list-style-type: none"> • Accounting and auditing rules and regulations • Procurement law • Transparency reporting • Implementing units • Fiscal autonomy • Manpower and resource requirements • Process audit • Engagement of stakeholders |
| How effective are internal business processes in allowing the public to monitor and document the performance of DepEd? | <ul style="list-style-type: none"> • Compliance to laws, policies, rules, and regulations • Government Accounting and Auditing Manual (GAAM) • R.A. No. 9184 (Procurement Law) • DepEd Order/Memorandum • Recording and reporting of implementing units • Fiscal control • Audit • Manpower • Penal clause/accountability • Engagement of stakeholders |
| How can schools effectively respond to grievances from teachers, learners, parents and the community? | <ul style="list-style-type: none"> • Policies and practices • School structures (e.g., School Governing Council, Child Protection Committee) • Nature/types • Issues and challenges • Resolution |

A separate section is dedicated to *Evaluation*, which by itself offers a multitude of topics. In this document, *Monitoring* is treated as part of management, as it provides timely information for periodic decisions that need to be made while implementing various programs, policies, and activities. Evaluation, on the other hand, aims to determine if the undertaking produced its intended result in the best way possible so that decisions can be made to continue, discontinue, or revise the said undertaking at the appropriate stages of the cycle. Key topics under Evaluation include, but not limited to:

| General research questions | Topics |
|--|---|
| How effective have DepEd policies, programs, and projects been in meeting their stated objectives? What are the unintended consequences? | <ul style="list-style-type: none"> • Decentralization of basic education governance • Private school regulations • Private sector partnerships • Community engagement and participation • Civil society organization (CSO) engagement in governance • Human Resource Training and Development • Early Language, Literacy, and Numeracy (ELLN) – (formerly, “Every Child a Reader Program”) • Multi-grade schools • Regional Science High Schools • Special Science Elementary Schools |

| General research questions | Topics |
|---|--|
| | <ul style="list-style-type: none"> • Science, Technology, Engineering, and Math Program • Strengthened Technical-Vocational Education Program • Library Hub • MTB-MLE • Alternative Delivery Modes (ADMs) • School-based initiatives implemented in various versions in different divisions • Temporary Learning Spaces (TLS) |
| <p>How can DepEd maximize the benefits gained from the evaluation outputs and expertise from within and outside the Department?</p> | <ul style="list-style-type: none"> • Research utilization • Partnerships and joint undertakings • Issues and concerns • Roles and responsibilities • Capability-building • Incentives |
| <p>How can DepEd improve its evaluation process?</p> | <ul style="list-style-type: none"> • Evaluation standards • Professionalizing evaluation discipline • External accreditation of schools and other units |

As mentioned earlier in the presentation, cross-cutting and emerging education social concerns will be considered in developing research questions under all of the four themes. To inform policies and programs on these concerns, also listed are research questions specific to each cross-cutting theme:

Disaster Risk Reduction and Management (DRRM)

- *Prevention and Mitigation*
 - How effective are current prevention and mitigation measures in DepEd offices and schools?
 - How are prevention and mitigation practices integrated in the curriculum?
- *Preparedness*
 - How are prevention and mitigation practices being translated into disaster preparedness and awareness in DepEd offices and schools?
 - What are the factors that contribute to risk reduction and preparedness?
- *Response*
 - How do education response practices ensure the protection of our students, teachers, and non-teaching personnel?
 - How do we address gender considerations during disasters?
- *Rehabilitation and Recovery*
 - What are the factors affecting the effective delivery of learning continuity in schools?
 - How effective are rehabilitation and recovery interventions of the Department in delivering learning continuity in schools?

Gender and Development (GAD)

Research questions under GAD may delve into gender mainstreaming in and gender-responsiveness of DepEd structures, policies, programs, and projects.

Inclusive Education

- How ready is DepEd in providing an inclusive learning environment?
- What are the perceptions of internal and external stakeholders on inclusive education in the Philippine education system?

Support fund for education research

In light of the adoption of BERA, mechanisms were set up to support researchers. The Department established an institutional facility to fund internal and external research studies on basic education through the Basic Education Research Fund (BERF) managed by the Policy and Research Division, Planning Office of the Department. This fund may be used to capacitate DepEd personnel in managing and conducting education research. Importantly, the research agenda can orient and advise policy-makers on matters that necessitate policy actions.

Dissemination of research

DepEd will ensure wide dissemination of the research results through publication, conferences, forums, and other platforms. Orientation materials will be prepared and distributed to national and local events. Likewise, the research agenda dissemination will cover DepEd internal and external stakeholders with the intention of getting the active participation of research institutions and academe.

Call for collaboration

The Department recognizes that basic education research is not its sole mandate. The research agenda aims to inspire and guide the Department and its external stakeholders to undertake empirical studies to better understand and advance basic education in the country. Academics and researchers can find the agenda prospects for scholarly study and discourse. For institution leaders and administrators, the agenda presents trends and issues that can provoke new insights or fresher perspectives and practical solutions through research. Further, this research agenda can orient and advise policy-makers on matters that necessitate policy actions.

Presentation 2:

System Assessment in the K to 12 Basic Education Curriculum in the Department of Education

Assessment plays an important and critical role in the overall educational process. It determines whether or not the educational objectives of the Department or the learning progress of an individual student are achieved. The results of assessment shall be used as basis for policy action and to quantify judgments on the current state of learners' academic performance/progress and can also be used as basis for research undertaking.

The major challenge in the education sector today is how to equip the learners with the 21st Century Skills. These skills contain sets of abilities that students need to develop in order to succeed in the information age. These 21st Century Skills are abilities that are embedded in the existing K to 12 Basic Education Curriculum that learners must acquire. These include:

- a) *Communication Skills* refer to the ability to express one's self clearly and collaborate with others.
- b) *Information, Media, and Technology Skills* refer to the ability to gather, manage, evaluate, use, and synthesize information through media and technology;
- c) *Learning and Innovation Skills* refer to the ability to think critically, analyze and solve problems, create and implement innovations, and generate functional knowledge.
- d) *Life and Career Skills* refer to intrinsic and socialized personal values, ethics, and attitudes for life after basic education and learning within the workforce.

The national assessment of student learning is an integral part of DepEd's assessment framework. It aims to:

- a) Monitor the Philippine education system and schools for public accountability;
- b) Assess the effectiveness and efficiency of the delivery of education services using learning outcomes as indicators;
- c) Provide information that will guide decisions on instructional practices;
- d) Determine if learners are meeting the learning standards of the curriculum;
- e) Measure students' aptitude and occupational interest for career guidance; and
- f) Assess prior learning for placement, accreditation, and equivalency (DepEd Order No. 55, s. 2016).

Based on the priority areas of the research agenda, the conduct of system assessments is an important mechanism in providing evidence-based information that define student's achievement, assess and compare the progress of learners across subjects, grade levels and geographical regions. DepEd Order No. 29, s. 2017 stipulates the Policy Guidelines on System Assessment in the K to 12 Basic Education Program. It provides groundwork to ensure that continuous improvement in the basic education system are taking place.

In the context of the K to 12 basic education program, reforms in curriculum and instruction had been introduced that provides new standards that the education system must attain at different grade levels and key stages in terms of content knowledge and performance standards. Hence, to effectively perform its function to ensure that continuous improvement of teaching and learning processes, this policy articulated how system performance will be assessed. This policy provides the basis for the conduct of various strategies and processes for the following purposes:

- (1) Establish baselines for the basic education system and implementation of the K to 12 curricula in schools in terms of teaching and learning;
- (2) Monitor the implementation of the K to 12 curricula in schools in terms of teaching and learning;
- (3) Measure effectiveness of instructional reforms that are part of the K to 12 basic education program;

- (4) Generate reliable data for purposes of international benchmarking;
- (5) Provide bases for the improvement of programs for learner development, curriculum implementation, and school effectiveness; and
- (6) Provide evidence that will aid policy formulation, planning, and programming at the division, regional, and national levels.

The use of information generated on the basis of the policy on system assessment must benefit all learners and must be able to reflect their diversity and unique contexts. Internal and external assessments are intended to reflect such diversity at the system level. They should be able to illustrate and nuance system performance in the context of diverse learning environments. To assess the continuous improvement of teaching and learning processes, data on learning outcomes will serve as proxy indicators of system effectiveness and efficiency.

The Bureau of Education Assessment (BEA) under the Curriculum and Instruction (CI) strand of the Department is mandated to develop a harmonized and standardized assessment mechanism for student learning, teacher effectiveness, leadership and management, system efficiency and effectiveness; and provide policy recommendations based on assessment results and research to improve learning delivery, teacher quality and education management.

At present, various system assessment programs of the Bureau include the following:

| Key stage | Assessment program | Program description |
|-------------------------|--|---|
| Kindergarten to Grade 3 | Early Language, Literacy, and Numeracy Assessment (ELLNA) <ul style="list-style-type: none"> • EGRA (Reading Assessment) • EGMA (Numeracy Assessment) (Administered to Grade 4 three weeks after the 1st day of class) | <ol style="list-style-type: none"> 1. Determine if learners are meeting Grade 3 learning standards 2. Analyze patterns in language development together with other language, literacy, and numeracy assessments to develop appropriate intervention programs 3. Formulate evidence-based policies and plans for Mother-Tongue Based-Multilingual Education (MTB-MLE) instructional practices and learning environment provision that impact learning (19 mother tongues). |
| Grades 4 to 6 | National: National Achievement Test (NAT 6) (Administered to Grade 7 three weeks after the 1st day of class) | Assessment that covers 21st Century skills using learning areas as content (English, Science, Mathematics, Filipino, and Araling Panlipunan). <ul style="list-style-type: none"> • determine if learners are meeting the learning standards; • help provide information to improve instructional practices; • Assess/evaluate effectiveness and efficiency of education service delivery using learning outcomes as indicators • Provide empirical information as bases for curriculum, learning delivery, assessment and policy reviews, and policy formulation. |

| Key stage | Assessment program | Program description |
|----------------|--|--|
| | <p>International: Southeast Asia Primary Learning Metrics (SEA-PLM)</p> <p>(Administered to Grade 5 students; Sampling – selected by international contractors)</p> | <p>The test aims to measure how Filipino learners fare versus other Southeast Asian Learners, and to monitor and evaluate the successes of implementation of reading, writing, mathematics, and global citizenship/ civics education in the K to 12 system.</p> |
| | <p>International: Trends in International Mathematics and Science Study (TIMSS)</p> <p>(Administered to Grades 4 and 8 students; Sampling – selected by international contractors; TIMSS 2019 will only be administered to Grade 4 students)</p> | <p>The study measures the mathematics and science ability of Grade 4 (and Grade 8) students. The intention is to improve teaching and learning of mathematics and science by providing information about student achievement in relation to different types of curriculum, instructional practices, and schools.</p> |
| Grades 7 to 10 | <p>National: National Achievement Test (NAT 10)</p> <p>(Administered to Grade 11 three weeks after the 1st day of class)</p> | <p>Assessment that covers 21st Century skills using learning areas as content (English, Science, Mathematics, Filipino, and Araling Panlipunan).</p> <ul style="list-style-type: none"> • determine if learners are meeting the learning standards; • help provide information to improve instructional practices; • Assess/evaluate effectiveness and efficiency of education service delivery using learning outcomes as indicators • Provide empirical information as bases for curriculum, learning delivery, assessment and policy reviews, and policy formulation. |
| | <p>International: Program for International Student Assessment (PISA)</p> <p>(Administered to 15-year old students; Sampling – selected by international contractors)</p> | <p>PISA aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year old students, who are approaching the end of their compulsory education.</p> |
| | <p>International: Trends in International Mathematics and Science Study (TIMSS)</p> <p>(Administered to Grades 4 and 8 students; Sampling – selected by international contractors; TIMSS 2019 will only be administered to Grade 4 students)</p> | <p>The study primarily measures the mathematics and science ability of Grade 4 (and Grade 8) students. The intention is to improve teaching and learning of mathematics and science by providing information about student achievement in relation to different types of curriculum, instructional practices, and schools.</p> <p>Learning Domains: Mathematics: Number, Algebra, and Geometry Science: Earth Science, Biology, and Chemistry</p> |

| Key stage | Assessment program | Program description |
|-----------------|--|---|
| Grades 11 to 12 | National: National Achievement Test (NAT 12) (Administered to Grade 12 three weeks after the 1st day of class) | Assessment that covers 21st Century skills and the core Senior High School learning areas of Languages, Humanities, Communication, Mathematics, Science, Social Science and Philosophy. <ul style="list-style-type: none"> • Determine if learners are meeting the learning standards; • Help provide information to improve instructional practices; • Assess/evaluate effectiveness and efficiency of education service delivery using learning outcomes as indicators • Provide empirical information as bases for curriculum, learning delivery, assessment and policy reviews, and policy formulation. |

Here are some additional information on the international large-scale assessments (ILSAs):

| | PISA | SEA-PLM | TIMSS |
|------------------------------|--|---|---|
| Sample size (Field trial) | 28 schools 2,162 students (actual) | 16 schools 1,928 pupils (actual) | 20 schools 1,145 pupils (actual) |
| Sample size (Main survey) | 187 schools 7,269 students (actual) | 16 regions 119 divisions 176 schools 7,040 pupils (max. of 40 per school) | 16 regions 95 divisions 184 schools 5,591 students |
| Mode of assessment | Computer-based assessment | Paper-and-pencil test | Paper-and-pencil test |

The following are other assessments that are administered to learners:

| Other assessment programs | Description |
|---------------------------|---|
| Career Assessment | Target learners: Grade 9 students Specific Objectives: <ol style="list-style-type: none"> 1. To provide guidance to individual learners for their future educational and career choices; and 2. To provide a basis of profiling learners' aptitude in the four Senior High School tracks; <ul style="list-style-type: none"> • Academic <ul style="list-style-type: none"> • Accountancy, Business, and Management (ABM) • Science, Technology, Engineering, and Mathematics (STEM) • Humanities and Social Sciences (HUMSS) • Technical-Vocational-Livelihood • Sports • Arts and Design |

| Other assessment programs | Description |
|---|--|
| Accreditation and Equivalency (A&E) Assessment | <p>The A & E Tests are nationally administered tests that aim to measure the competencies and life skills of those who have not attended or finished the formal elementary or secondary education.</p> <p>These assessments will allow the learners to obtain certification of completion at different exits in Basic Education, which may be used to access further education, job promotion, entry to job training and employment.</p> <p>For test passers of elementary and junior high school levels, certificates for Grades 6 and 10 shall be given.</p> |
| Grade Level Placement Test–Philippine Education Placement Test (PEPT) | <p>PEPT is a nationally administered assessment for learners in special circumstances.</p> <p>The result of this assessment will allow these learners to :</p> <ol style="list-style-type: none"> 1. Establish that students have met learning standards for specific grade levels; 2. Determine the appropriate grade level of learners in special circumstances in the formal school system; 3. Assess competencies in academic areas gained through informal and non-formal means for entry or re-entry to formal school; 4. Assess competencies in academic areas for entry and re-entry to formal school. |

Current Initiatives of the BEA on Assessment

- (1) Assess development of 21st Century Skills
- (2) Assess subject-matter learning
- (3) Assess development of subject-specific skills
- (4) Develop and implement web-based data management system
- (5) Develop and implement computer-based testing programs
- (6) Conduct of relevant research studies to improve learning delivery, teacher quality, and education management
- (7) Continuous participation to international large-scale assessments
- (8) Monitor the utilization of test results for policy decision and formulation
- (9) Develop and implement Data Management System
- (10) Continuous improvement on assessment programs and research projects

Conclusions and recommendations

Research agenda must also be reviewed periodically to make it more relevant and responsive to the priority needs of the Department.

Hence, in order to keep abreast with the challenges and demands on globalization, industrialization, and competitiveness, the Department must be able to clearly identify its strengths, weaknesses and educational gaps in order to specifically address priority concerns and make appropriate steps. Some

policies must be reviewed and reformulated, other strategies may be adjusted or existing processes and procedures/mechanisms must be continuously improved/enhanced.

The Bureau of Education Assessment will continue to provide evidence-based information through its various assessment programs and quality researches as bases for policy review/formulation to improve teaching and learning. Similarly, results of national assessments should be disseminated from the national down to the school level and should be utilized to support planning process, policy formulation and implementation, resource allocation, training of teachers and personnel, review and improvement of curriculum and instruction, and monitoring and evaluation of progress of learners.

With all of these, the important role of conducting research and assessments cannot be undermined.

References

- Department of Education. 2016. "Adoption of the Basic Education Research Agenda." DepEd Order No. 39, s. 2016, Department of Education, Pasig City, June 10, 2016. http://www.deped.gov.ph/wp-content/uploads/2016/06/DO_s2016_039.pdf.
- . 2016. "Policy Guidelines on the National Assessment of Student Learning for the K to 12 Basic Education Program." DepEd Order No. 55, s. 2016, Department of Education, Pasig City, June 30, 2016. http://www.deped.gov.ph/wp-content/uploads/2016/06/DO_s2016_55-3.pdf.
- . 2017. "Policy Guidelines on System Assessment in the K to 12 Basic Education Program." DepEd Order No. 29, s. 2017, Department of Education, Pasig City, June 5, 2017. http://www.deped.gov.ph/wp-content/uploads/2017/06/DO_s2017_029.pdf.



Research Agenda on Curriculum and Assessment

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I will share today a research agenda that will focus on curriculum and assessment from my lens as a teacher educator. I attempted to identify themes for this research agenda against a backdrop of the prevailing discourse on current developments in both the local and global educational arena. It is also framed on current local societal scenarios, which have implications on education. Allow me to name a few. We are all witnesses to current events that dictate the need to highlight that effective citizenship should be anchored on critical and sound analysis of all angles of historical events. Likewise, we see the pressing need to foster physical and mental health regardless of age. Stress management must be a requirement in living a balanced lifestyle that manages work, study, and other spheres of our lives. Moreover, there is a need to strengthen virtues and values, which are not easily taught, but rather caught.

This presentation of a research inquiry on curriculum is also mainly grounded on the Global Education 2030 Agenda. While global in its perspective, the 17 Sustainable Development Goals (SDGs) covered in this agenda essentially captures what Philippine education should likewise be focusing on.

To this end, an important research thrust is to examine the nature and level of integration of the seventeen core sustainable development goals in our curriculum (UNESCO 2018). These SDGs are the following: No Poverty; Zero Hunger; Good Health and Well-Being; Quality Education; Gender Equality; Clean Water and Sanitation; Affordable and Clean Energy; Decent Work and Economic Growth; Industry, Innovation, and Infrastructure; Reduced Inequalities; Sustainable Cities and Communities; Responsible Consumption and Production; Climate Action; Life Below Water; Life on Land; Peace, Justice and Strong Institutions; and Partnership for the Goals.

All of these SDGs are essential considerations in our curriculum delivery. The concept of sustainability, while not a new focus on research, requires a closer examination on the realm of learning outcomes and to what degree these are achieved. Deeper inquiry should focus on the level of application of each of the SDGs in the curriculum in varied sorts of learning settings (i.e., formal, non-formal, and informal) as adapted in distinct local situations. What developmentally appropriate curricular delivery modes at all levels show satisfactory outcomes? It would assist curricular evaluation if there were defined levels to be achieved by the learners such as basic for the lower levels and expertise for the higher levels.

In line with the curriculum, themes of inquiry should examine this basic but general question: In what ways does the curriculum for all levels develop and foster learner agency so that the Sustainable Development Goals for 2030 are attained?

I would now focus on more specific core SDGs. Good health and well-being is a crucial goal in today's fast-paced life and it is identified as SDG 3. We are witnesses to the consequences when this is not successfully attained. In line with this, there is a need to revisit, review, and examine to what degree our current curriculum address the following learners' capabilities (UNESCO 2017):

- Understanding of physical and mental health, emotional well-being, and related issues
- Knowledge of relevant preventive strategies to lead a balanced life towards positive physical and mental health (e.g., stress management)
- Creation of a holistic understanding of this to be able to process their values, beliefs, and attitudes and be able to communicate these to others
- Decision-making skills so that they act in accordance with promoting health and well-being
- Capacity to perceive when they or others need help and to seek for help when needed

Likewise, included as a core SDG goal is the promotion of peace and justice. Current developments in the global and local scenario dictate that we address this more explicitly in our curriculum. There is a need to look at how this is integrated in the curriculum and how it addresses learners' (UNESCO 2017) needs:

- Understanding of the concepts of inclusion, peace, and justice and the significance to uphold these
- Understanding of their contribution to conflict resolution
- Critical analysis of issues related to peace, justice, and inclusion
- Reflection of their roles in issues related to peace, justice, and inclusion

Moreover, there has to be an examination of curricular outcomes that address consumption and lifestyle practices of learners. Do learners understand how individual lifestyle choices affect the environmental, social, and economic realm? Can they differentiate between needs and wants and do they reflect on how their consumer behaviors affect others and the world?

We have to examine if our current standards and outcomes explicitly address these in the intended curriculum. How are the key competencies related to the SDGs reflected in our curriculum?

In line with this, UNESCO has identified necessary competencies to achieve the sustainability goals. These are to be delivered in developmentally-appropriate ways at all educational levels to target the interplay of cognitive, socio-emotional, and behavioral elements. Therefore, research should focus on an examination of the curricular incorporation of following key competencies, which are found essential for the attainment of the sustainability goals (de Haan 2010, cited in UNESCO 2017):

- *Systems thinking competency*: Ability to recognize and understand relationships; to analyze complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty
- *Anticipatory competency*: Ability to understand and evaluate multiple futures—possible, probable, and desirable; to create one's own visions for the future; to apply the precautionary principle; to assess the consequences of actions; and to deal with risks and changes
- *Normative competency*: Ability to understand and reflect on the norms and values that underlie one's actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions

- *Strategic competency*: Ability to collectively develop and implement innovative actions that further sustainability
- *Collaboration competency*: Ability to learn from others; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to and be sensitive to others (empathic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem solving
- *Critical thinking competency*: Ability to question norms, practices, and opinions; to reflect on own one's values, perceptions, and actions; and to take a position in the sustainability discourse
- *Self-awareness competency*: Ability to reflect on one's own role in the local community and (global) society; to continually evaluate and further motivate one's actions; and to deal with one's feelings and desires
- *Integrated problem-solving competency*: The overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive, and equitable solution options that promote sustainable development

These sustainability competencies have inter-disciplinary as well as multi-disciplinary relevance and applications. To this end, what is the nature of stipulation of the mentioned key competencies in our curriculum? Are they explicit or simply embedded in the statements? Of course, the delivered curriculum from the intended curriculum is another matter worth investigating. What are effective curricular programs that address these competencies?

Further, another research inquiry has to focus on the curricular delivery of our history to Filipino learners. What has to be essential elements of historical study that would empower students to view the bigger picture of what transpired in our story as a nation? This should shape the prevailing discourse in classrooms that consider both the strengths and weaknesses of main players in our history.

Finally, specific reforms embedded within current curricular reforms have to be examined: the institution of kindergarten as part of basic education; and the implementation of the mother tongue-based multilingual education (MTB–MLE) and senior high school.

These reforms were intended to appropriately address diverse students at their level, capitalize on the knowledge and capabilities they bring with them, and support their learning. This is highly evident in the MTB–MLE curriculum. Likewise, the kindergarten curricular framework is highly evidenced-based and if implemented properly, will achieve its objective to develop happy, young learners ready to meet the demands of primary school life. On the other hand, the senior high school curriculum provides options and opportunities to students through tracks that would best address their interests and capabilities and prepare them either for the workforce or for further tertiary studies.

Themes of research inquiry along these reforms should center on an examination of the alignment of the intended curriculum and the implemented curriculum. Specifically, evidences of learner-centeredness, developmental appropriateness and a balance among the three domains in the kindergarten curriculum delivery should be examined. The MTB–MLE curriculum, on the other hand, should be investigated in line with its effects on learner gains and level of attainment of grade level standards. What are best practices in line with its implementation? Similarly, delivery of the senior high school curriculum may be examined in line with its strengths, areas of improvement, and best practices. A tracking system for those who hurdled senior high school may give us a good picture of the outcomes of this program after graduation.

Assessment has varied functions and uses and data from this when used appropriately should support optimal learning. Themes of inquiry on assessment should focus on the level of its use and

functions and how the data is used to go beyond reporting results. We have to examine the degree by which assessment is used for the purpose of making informed instructional decisions and giving learners responsibility for their learning. A lot of assessment of learning is happening both in the school setting and at a nationwide-scale. Assessment as learning and assessment for learning can develop metacognitive skills of learners and direct instructional decisions. Voices of students have to be heard and assessments that take this into consideration are essential. How is assessment used and what are effective assessment practices that truly supports learning attain educational outcomes?

Reorienting our existing curricular thrusts to address the 2030 SDGs is imperative since our learners will have to find innovative solutions to creating a sustainable world. In the end, it is learner agency with a critical, reflective mind; a caring, compassionate heart; and a will that actively seeks to make the world a better place that we aspire to develop as educators.

References

- Rieckmann, Marco. 2017. *Education for Sustainable Development Goals: Learning Objectives*. Paris: UNESCO.
- Leicht, Alexander, Julia Heiss, and Won Jung Byun. 2018. *Issues and Trends in Education for Sustainable Development*. Paris: UNESCO.



Learning Analytics in the Philippine Context

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1. Introduction

Big data analytics is a field of research that uses data analysis to make informed decisions (Daniel 2015). It is characterized by large amounts of possibly ambiguous or noisy data collected at a high rate of speed from a variety of sources. The data is then analyzed to generate valuable insights about a specific domain.

When applied to educational contexts, big data analytics has at least three variants: academic analytics (AA), learning analytics, and educational data mining (EDM). AA usually has the coarsest grain size of the three, referring to data collected and processed at institutional levels for better administration, resource allocation, and management (Daniel 2015). Both learning analytics and EDM, on the other hand, begin with finer-grained, transaction-level data and use them in subtly different ways. Baker and Siemens (2014) cite several differences that distinguish EDM from learning analytics:

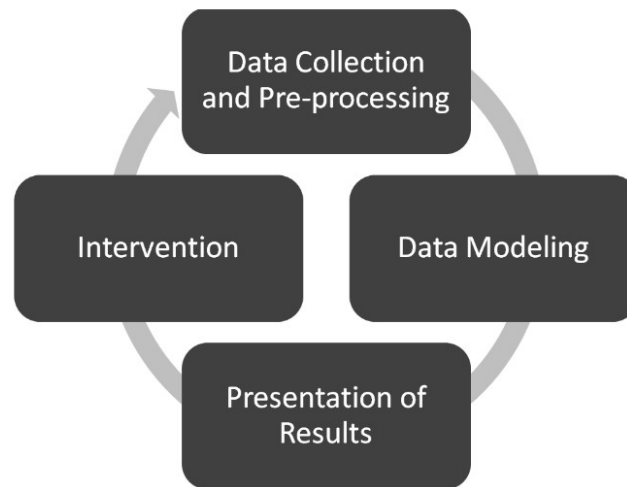
- EDM focuses on automated methods for discovery within data, while learning analytics makes use of more human-led methods
- EDM emphasizes modeling of specific educational phenomena and their interactions, while learning analytics emphasizes a more integrated, systems-based understanding of these same phenomena
- EDM seeks to build applications that will support personalized learning experiences, while learning analytics seeks to inform and empower administrators, teachers, and learners (Baker and Siemens 2014).

For simplicity's sake and to remain consistent with the terminology of Gašević (2017) this paper will use "learning analytics" to refer to all these different forms of big data analysis in educational contexts.

Before educational systems can use and benefit from learning analytics, however, an ecosystem capable of four key activities—data collection and pre-processing, modeling, presentation and visualization, and intervention—needs to be in place (Gašević 2017; *see* Figure 4.1 on next page).

1.1 Research questions

The questions arise: To what extent does Gašević's (2017) enabling ecosystem exist in the Philippines? How ready is the Philippines to embrace learning analytics and reap its benefits? Does the Philippines

Figure 4.1 Key activities in the learning analytics process

Source: Gašević 2017

collect enough data from enough sources at a fast enough rate to warrant the kinds of deep analyses for which learning analytics is known? Does the Philippines have the expertise to process the data, even if they had it? How data-driven are decision-makers when formulating policy?

1.2 Scope and limitations

This paper's main discussion points, adapted from the SEAMEO (2010) matrix, are national-level education policies; information, communication, technology (ICT) infrastructure and resources in schools; professional development for teachers and school leaders; ICT in education curriculum and pedagogy; assessment; and evaluation and research. These dimensions are the pre-conditions that determine the extent to which learning analytics can be applied to an educational system.

2. National-level education policies

A national-level ICT in education vision and related education plans and policies articulate the government's recognition of the benefits of using ICTs in education and its commitment to supporting efforts to realize these benefits. These commitments have a direct bearing on ICT investments in schools, what educational data is collected, how it can be accessed and processed, by whom, and for what purposes. It also determines the extent to which interventions can be created and deployed.

Based on its national-level policies, the Philippines envisions ICT as mediating changes in culture, policies, and practice. Its *Education for All Plan of Action* calls for ICT integration as well as the use of ICTs to enhance educational management at all levels (Philippines National Education for All Committee 2014). Furthermore, while not directly related to education, Southeast Asian countries are in the process of developing legislation regarding data privacy and protection, which have implications on analytics in general. As far back as 2005, the Asia-Pacific Economic Cooperation (APEC) network—which includes Indonesia, Malaysia, the Philippines, Thailand, and Vietnam—crafted a framework for the protection of personal information. Among the guiding principles of this framework were the prevention of harm, informed consent, the need for security and accountability, and the right to access and correction. The Philippines has already enacted data privacy laws that protect the right to privacy while ensuring the free flow of information.

What do these findings say about our readiness to engage in learning analytics? The national-level policy seems compatible with the use of learning analytics by advocating the use of ICTs for teaching and learning and school administration. Furthermore, national policies have been instituted to protect the privacy of users in general.

3. ICT infrastructure and resources in schools

ICT infrastructure and resources in schools refer to the computers, the Internet, related peripherals, and courseware that are available in schools for the use of the students, teachers, and administrators. The availability of these resources and the ways in which they are used determine the volume and variety of the data captured and the speed at which it is captured, if at all. It also estimates how possible or probable it is to deploy educational interventions that are borne out of learning analytics' outputs.

In the Philippines, schools have standalone computers, productivity tools, and computer laboratories with a limited number of printers and other peripherals as well as Internet access. The presence of ICTs in schools, however, does not guarantee access as student-to-computer ratios are high. Over 400 primary school students share a single computer. Given the present situation, it is therefore unlikely that students are able to use school ICT resources in substantial ways.

4. Professional development for teachers and school leaders

A skilled workforce is essential to the use of analytics, but it is also one of the most difficult resources to develop. It is estimated that the global public and private sector is only able to capture 30% of the value that big data offers (McKinsey Global Institute 2016).

Organizational inability to train, attract, and retain qualified analytics personnel is one of the major impediments to the success of analytics within organizations of all kinds—government, the private sector, and education.

In the Philippines, teachers and school leaders receive training in the use of ICTs to teach specific subject areas. Pre-service teachers take at least one course on educational assessment, measurement, and evaluation (SEAMEO 2015). In-service teachers are offered classroom assessment training twice a year.

Of interest regarding this dimension is the absence of any mention of training for learning analytics. Based on the source documents surveyed, the current focus of teacher and administrator training is, at best, at the level of using ICTs for teaching specific subjects or for tracking inputs to schools. In the Philippines, training supposedly includes item analysis and test score analysis (SEAMEO 2015), but learning analytics is not explicitly mentioned in pre-service or in-service training programs.

Several authors identify the development of learning analytics expertise as a priority and warn that simplistic data processing may lead to its misinterpretation and misuse, leading to negative consequences on stakeholders (Karnad 2014). If learning analytics is to be used correctly and effectively in Southeast Asia, teachers and administrators need training. The reports reviewed suggest, however, that this specific type of training is not widely available at the pre-service and in-service levels. Hence, the education workforce in developing countries in the Philippines is not well-poised to use learning analytics, even if the data were available.

5. ICT in education curriculum and pedagogy

Not all software captures for fine-grained, user-level data. Software has to be designed to collect user interactions. Computer-based learning environments must be built to log student data and to include

other educationally relevant attributes such as learning contexts, correctness, and timing. Curriculum and pedagogy determine whether such environments exist in schools and the extent to which students use them.

The Philippines' national curricula stipulates the use of ICTs in specific subject areas but these uses are generally isolated from one another. UNESCO's (2014) report showed that only 41% of primary school students and 87% of secondary school students were enrolled in classes that made use of computers, while 4% of primary school students and 28% of secondary school students had classes that made use of the Internet. Indeed, the same report showed that only 2% of teachers in the Philippines were trained to teach with ICTs.

Learning analytics typically leverages on the use of highly interactive learning environments such as tutorials, games, simulations, and the like. These environments produce rich data streams that can be mined for interesting patterns. The data suggests that teachers in the Philippines are either unable or reluctant to make use of these formats; hence, students in the Philippines do not have much exposure to them. The ways in which ICTs are used in most Philippine classrooms—primarily teacher-centric, with a focus on ICTs as subject matter in itself—do not lend themselves to substantial data collection and, hence, use of learning analytics.

6. Assessment

Assessments are used to determine how much of the intended and the implemented curriculum is actually achieved. They are an indicator of the effectiveness of teaching and the readiness of learners to progress. They are also indicators of the quality of an educational system (SEAMEO 2015).

In the Philippines, ICT use in assessment tends to be limited to the development, encoding, and recording of assessments, especially at the primary school level (SEAMEO 2015). Most assessments tend to be paper-based. This means that, while there are massive stores of student-level assessment data, much of it is not digital and therefore not in a form that can be easily mined.

Countries in Southeast Asia generally claim to use test results for policymaking (ACTRC 2015; UNESCO 2017a). The Philippines uses results to rationalize capacity building and skills development among teachers. There is a sense, however, that large-scale assessment data is underutilized (UNESCO 2017b). As mentioned in the section on professional development, teachers and administrators are not trained to process large data sets; hence, educational systems lack the human resources capable of performing the rigorous research needed to convert data into information.

7. Evaluation and Research

At first sight, evaluation and assessment appear synonymous. The two areas do overlap, but evaluation in this context differs from assessment in terms of focus. Evaluation refers to the examination of the effects of broader ICT in education policies on the identified areas for improvement while assessment, as discussed in Section 6, refers to the extent to which the goals of a curriculum were achieved. Research, on the other hand, refers to scholarly inquiry into an educational problem. Evaluating the effects of policy is a research endeavor that can result in a cost-benefit analysis of ICT investments, refinement of educational theory, and identification of best practices (SEAMEO 2010). It is here that learning analytics should be put to work.

At this point, the Philippines still lacks the capacity for evaluation and research but is undertaking initiatives to correct this situation. It has attempted to collect a variety of data on the basic educational system in a comprehensive and timely manner (Read 2017). These include enrollment, staffing, ICT

resources such as computers and the Internet, health and nutrition, exit assessment results, and others. Data tends to be coarse-grained though. It includes all resource inputs—not just ICT—and has a limited indication of resource usage. Learning analytics is one of the tools of evaluation and research. At this point, however, the Philippines lacks a culture of evaluation and research, which leads to an underutilization of these tools.

8. Conclusion

There are massive opportunities to improve education in the Philippines with the use of learning analytics. Rich sources of data such as social networking behaviors and discourse can augment formal assessments to come to better understandings of learners and their needs, and can help learning systems direct students to appropriate learning activities. Learning analytics can help overcome biases in education access by factoring in the effects of geography, gender, minority status, and so on to lead to more equitable learning environments. Finally, learning analytics can help policy makers and practitioners better manage educational programs and resource allocation.

The goal of this paper was to determine the extent to which the enabling ecosystem of learning analytics existed within the Philippines. The findings are somewhat grim. There is a national-level commitment to the use of ICTs in education, but the priority is on addressing internal digital divides through the improvement of telecommunications, increased technology deployment, and teacher training for ICT literacy and integration.

The computer-based learning environments in schools tend to consist of personal computers with productivity tools. There is little evidence that learning systems automatically collect the kind of fine-grained data that drives learning analytics. Most testing still uses pen and paper. Even when digitized data is available, the teachers and administrative staff lack the culture of evaluation and research and the specialized training to convert the data into meaningful information.

At this time, none of the pre-conditions to making full use of learning analytics seem to be present in the Philippines. We are still in the process of amassing policy, technology, and human resources as well as developing the culture to leverage learning analytics for wide-scale educational improvements. Fortunately, efforts continue to bolster ICT in education and develop related expertise within these countries. It is therefore reasonable to expect that we will become an active participant in the learning analytics community in the years to come.

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The volume can be downloaded for free at <http://dl4d.org/wp-content/uploads/2018/03/Learning-Analytics-Full-Paper-2.pdf>.

References

- Assessment, Curriculum, and Technology Research Centre. 2015. "Large-Scale Assessments for Use in the Philippines." Accessed 2018. http://www.best.org.ph/images/Docs/Report_Docs/Large_Scale_Assessments_for_Use_in_Philippines.pdf.
- Baker, Ryan, and George Siemens. 2014. "Educational Data Mining and Learning Analytics." In *Cambridge Handbook of the Learning Sciences*, 2nd ed., Keith Sawyer, ed., 253–74. Cambridge: Cambridge University Press.
- Daniel, Ben. 2015. "Big Data and Analytics in Higher Education: Opportunities and Challenges: The Value of Big Data in Higher Education." *British Journal of Educational Technology* 46 (5): 904–20. <https://doi.org/10.1111/bjet.12230>.
- Gašević, Dragan. 2017. "Include Us All! Directions for Adoption of Learning Analytics in the Global South." In *Learning Analytics for the Global South*, Cher Ping Lim and Victoria Tinio, eds., 1–23. Quezon City: Foundation for Information Technology Education and Development.
- Karnad, Arun. 2014. "Trends in Educational Technologies." Monograph. 2014. http://eprints.lse.ac.uk/55965/1/__lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_Centre%20for%20Learning%20Technology_Trends%20in%20Education%20Technology.pdf.
- Henke, Nicolaus, Jacques Bughin, Michael Chui, James Manyika, Tamim Saleh, Bill Wiseman, and Guru Sethupathy. 2016. "The Age of Analytics: Competing in a Data-Driven World." *McKinsey*. Accessed February 13, 2019. <https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/the-age-of-analytics-competing-in-a-data-driven-world>.
- Philippines National Education for All Committee. 2014. *Philippines Education for All 2015 Plan of Action: An Assessment of Progress Made in Achieving the EFA Goals*. Philippines: National Education For All Committee. <http://www.seameo-innotech.org/wp-content/uploads/2015/11/EFA%20V30.pdf>.
- Read, Lindsay, and Tamar Manuelyan Atinc. 2017. *Investigations into Using Data to Improve Learning: Philippines Case Study*. Washington, D.C.: Global Economy and Development Program, The Brookings Institution.
- Siemens, George. 2012. "Learning analytics: Envisioning a research discipline and a domain of practice." In *Proceedings of the 2nd International Conference on Learning Analytics and Knowledge*, 4–8. New York, New York: Association for Computing Machinery.
- UNESCO Institute for Statistics. 2014. *Information and Communication Technology (ICT) in Education in Asia: A Comparative Analysis of ICT Integration and E-readiness in Schools across Asia*. Quebec: UNESCO Institute for Statistics.
- UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific. 2017a. *Analyzing and Utilizing Assessment Data for Better Learning Outcomes*. Paris: UNESCO.
- . 2017b. *Large-Scale Assessment Data and Learning Outcomes*. Paris: UNESCO.



Basic Education Curriculum, Assessment, and Corresponding ICT

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Two of the most groundbreaking decisions made for Philippine basic education were Department Order No. 74, s. 2009, which was the institutionalization of Mother-Tongue Based Multilingual Education (MTB–MLE), and Republic Act (R.A.) No. 10533, also known as the Enhanced Basic Education Act of 2013. Having now undergone at least four to five years of implementation, these have helped pave the way for significant changes in the delivery of education for the primary, intermediate and secondary levels in terms of access, curricular content and pedagogical approach taken. The implementation of these of course have been met with a lot of challenges, be it in terms of public acceptance, allocation of financial, material as well as human resources and the overall response to change. Let me speak a little bit about the role of oral language in the reform.

On the role of oral language development

One of the major leaps in Philippine education is having recognized the role of language in learning, more specifically, learning literacy skills. Disability studies have shown that individuals who have experienced delays in learning language have also experienced difficulty learning literacy skills. It is therefore imperative that we are able to explore the various aspects of language learning such as (1) learning how to communicate using a language, (2) learning about a language's form, content use (Bloom and Lahey in Hermosa 2002) and (3) learning through a language.

In a study on literacy trajectories by USAID (Ochoa 2018) conducted in Ilocos, Cebu, and Laguna (December 2017) researchers investigated the relationship between the different languages and the factors that affect literacy learning in Mother Tongue (MT), Filipino and English. Furthermore, through this longitudinal study, Ochoa wanted to document the reading trajectory in each language to better determine the readiness of learners to use Filipino and English as languages of instruction, come fourth grade. While findings from this small-scale study prevent us from generalizing across the population, it does give us insight on how children from this research learned literacy across three languages: (1) there was a steady increase in the students' learning literacy in each language (MT, Filipino, and English); (2) students showed greater improvement in learning literacy in their MT more than the succeeding languages; (3) learners from Ilocos and Cebu were unable to catch up with the rate at which Tagalog-speaking students from Laguna were learning literacy skills in Filipino; and (4) learners from all regions did not display readiness for using English as a language of instruction. What then do these research findings prompt us to ask?

- What are the factors that contribute to better literacy learning in L1 as compared to L2?
- In what way should the implementation of Filipino and English as languages of instruction be adjusted given that students are not necessarily ready for this transition?
- What kind of bridging program will need to be put in place so that there is a smooth transition from using the MT to using Filipino and English as languages of instruction?

Perhaps it is also important to point out that there seems to be an assumption that learning a language is synonymous to being ready to learn through a language. In the same vein, this may perhaps explain why there is a major discrepancy between learners' level of Basic Interpersonal Communicative Skills and their Cognitive Academic Language Proficiency (CALP). The development of oral language in classrooms may be more devoted to developing communications skills that may be cognitively less demanding and which may be why students are less able to meet expectations when given cognitively demanding opportunities to respond. So this prompts one to ask:

- What is the nature/the kinds of talk engaged in by students and teachers in their learning community?
- What is the percentage of the student talk time and teacher talk time in a given learning session?

Other issues that continue to challenge teachers is the number of learners with diverse language needs in one classroom. This is no different from my experience in New York when my monolingual classmates were concerned that they had seven students with different languages in their classrooms. Perhaps, before the opening of a school year, it may be considered that students be assessed using a language screening tool that can help determine their level of proficiency, identify the language that the child can learn best in so that individual children can be grouped and instruction can be differentiated so that it can suit the students learning context and thus avoid a mismatch between the child's home language and the medium of instruction in the classroom.

Aside from developing oral language competencies is the importance of learning vocabulary. But it is not just about increasing the total number of words that we know of, it is also about learning words used in the different content area subjects (special lexicon for each) and of course the active use of these terminologies (Connor 2008).

On curriculum content

Moneva (2016) worked on a case study of one particular class, looking a little more closely into the implementation of the Integrated Language Arts curriculum for the first grade, third quarter in a school in Las Piñas. Analysis of video recorded teaching sessions and transcriptions of sessions held were used as basis for looking into the implemented curriculum. Documentary analysis was used for the ideal and intended curricula, while summative tests were used to analyze the assessed curriculum. An analysis of students' answers was made to describe the attained curriculum.

Results of the study showed that the MTB–MLE and Filipino programs, grammar was the domain that was taught most consistently while for English, it was vocabulary knowledge that received most emphasis. Moneva's research question focused on the level of alignment of the three subjects in the Integrated Arts Curriculum, specifically MTB–MLE, Filipino and English in terms of the ideal, intended, implemented, the assessed and the attained curricula. After having reviewed the results of this study, and given that there are fourteen domains of literacy, I wondered:

- Which domains of literacy are most/least prioritized in the teaching of the language subjects?
- Which competencies of these fourteen domains are attained by the students?
- What are the best practices of literature and skills integration implemented in classrooms that addresses these different domains of literacy?
- In what ways is the level of alignment of the three subjects (i.e., MTB–MLE, Filipino, and English) in terms of the ideal, the intended, the implemented, and the attained observed in various classrooms across the nation?
- Which classrooms can serve as exemplars and which classrooms can be subject to further analysis so that learning conditions can be further improved?
- In what ways has this kind of comprehensive assessment been done across subject areas and grade levels?
- What do the NAT results reveal about student achievement in light of this educational reform?
- Are there consistent forms and sources of evaluation (both quantitative and qualitative) to track student progress?

Focusing on assessment

One such tool on literacy assessment was developed by the Assessment, Curriculum, and Technology Research Centre (ACTRC 2016) in cooperation with the University of Melbourne with the support of Australian Aid. This is one particular study that I was involved in. The LearnARMM study was designed to track and analyze learning achievement of students in the rural and remote areas of the Autonomous Region of Muslim Mindanao. The objective was to gather baseline data of students who attended the alternative delivery mode program, and the DepEd Basic Education. The study was conducted in Lanao del Sur (where they speak Meranao), Maguindanao (where their MT is Maguindanaoan) and Tawi-Tawi (a place that uses Sama as their MT). After surveying existing assessment tools, we realized that there were no relatable materials for students from Muslim Mindanao. We needed to make our own. This assessment tool is based on developmental progressions containing stages of increasing competence that are reached by learners as they improve their knowledge and skills. The purpose is primarily to provide a starting point for instruction.

One of the major challenges in assessment is creating a tool that can measure what one sets out to measure. A tool for assessing both literacy and numeracy skills was developed based on the DepEd curriculum and validated before its administration in the target areas. It was designed to individually assess students and track their progress as they go up the grade levels. As part of the team that developed the first few instruments we soon realized that there was more to creating test items for each Math topic or literacy domain. It was not just a matter of creating items and putting them into one document. Several factors needed to be considered.

The making of the tests needed to be a collaborative effort. It was collaboration of translators, early grade consultants and literacy/mathematics content experts and early grade educators in the public schools. Each member of the team was crucial so that (1) the terminologies included in the test reflected what was used in their respective communities; (2) the items covered curriculum content, (3) the items were developmentally appropriate and contextualized.

Other factors that affected item construction included curriculum-based concerns: for Math, it merited an understanding of its specialized lexicon. Math has its own language. But for literacy it was necessary to be domain-specific. For the numeracy test, it was important to verify terms used for numbers, fractions, place value to name a few. But aside from knowing the exact terms used, it was

also important to keep the assessment objective in mind. In the same way that 25 cents of a dollar is called a quarter, that Sama language had an equivalent terminology, *dabunggul*. To find out if the child understands that a quarter is made up of 25 centavos, it would be more appropriate to use the Sama term, *duwampu-kalimasin*. Only a clear appreciation of the goals of assessment would prompt test makers to choose *duwampu-kalimasin* over the term *dabunggul*—and this is where the collaboration of translators, content area experts and early grade educators was necessary. Translators provided the options *dabunggul* and *duwampu-kalimasin*, content area experts analyzed the terms usefulness based on the goal of assessment, and early grade education in the public school confirmed if the chosen term is something that the students would be familiar with. For literacy, it was necessary to consult local speakers of the language who were also early grades educators because of their familiarity with the orthography of their Mother Tongue.

In terms of contextualization, it was necessary to create books that had pictures of students that looked similar to the way that they dress and situations that were similar to what they experienced. It was necessary to contextualize assessment in order for the tool to be effective for its purpose. The use of local names, local artifacts and local practices and experiences universal to all children were considered in the crafting of each item. Having experienced the process of making such a tool prompted me to ask:

- In what ways should this tool be translated and contextualized such that all MTs are represented and the growth of all learners may eventually be monitored and documented?
- What other curricular, cultural, and developmental factors would surface in the construction of assessment tools for other Philippine languages and the learners' varied contexts?
- In what way can such assessment tools inform us if basic education is being delivered effectively?
- Is there a way that these same assessment tools can inform us of student performance/progress and therefore be the basis for planning instruction?
- Are the purposes of assessment clearly understood and taken full advantage of?

One other research by ACTRC, The Science Curriculum Project (Care et. al. 2018), posed this question pertaining to student readiness in a content-area based classroom, “Do students have the prerequisite knowledge as they enter each chemistry quarter (Grades 7–10)?” What they realized was that students were facing new content, without having the prerequisite skills needed for learning. And that is where the failure cycle begins.

The same results are also true in terms of literacy learning. The recent conduct of the Philippine Informal Reading Inventory (Phil-IRI), non-readers have been identified to be frustrated learners (DepEd 2018). While informal reading inventories are used to describe the kind of texts students will be able to read at an independent, instructional and frustration level, describing learners as frustrated reveals a lack of understanding of the purpose of the assessment tool and the usefulness of the information that can be gleaned from it. It continues to follow a deficit model rather than face varying reading abilities with a growth mindset—which not only aims to address needs but also hones the learners' strengths.

The need for student support

A one-size-fits all approach to teaching learners puts the unique needs of learners on hold. While there are special education centers in every school, not all of these centers have the expertise needed to teach learners in need of specialized instruction (e.g. braille, sign language). It is however important to remember that not only learners with special needs will benefit from support services. Making sure that there is the provision for support services—be it specialized instruction/support in the classroom, afterschool assistance/instruction or counseling and guidance—will make for the holistic development of all learners.

Inclusive practices can be put in place so that all learners' needs are met. For examples, strategies that work for children with learning disabilities (e.g. use of visual-auditory and kinesthetic modalities; use of graphic organizers and mind maps) are also tools that regular learners will benefit from. We need to organize instruction so that different abilities are considered and provided the much needed support. For example, another research by USAID (BASA Pilipinas), explored a response-to-intervention model that addresses needs in various settings: whole class, small group, and individual sessions. The approach results from their study show that most gains noted were in the mechanical aspects of the reading process.

- While there is consideration for the level of support given to poor readers using the response-to-intervention model, what teaching approach was actually used in delivering instruction?
- Which domains were prioritized for each mode of delivery?
- Who is responsible for facilitating this process? Who monitors progress for those who receive specialized instruction? What kind of system must be put in place to provide guidance for providers of this service? In what way is the effectiveness of intervention monitored or refined?

One way that monitoring of teaching is achieved is through the Learning Action Cells (LAC). The LAC sessions serve as opportunities for teacher development as teachers go through workshop-type discussions. This has also been link to lesson study which looks into the convergence of resources and teacher knowledge such that planning and problem solving becomes a collaborative effort. As we look deeper into how children respond to instruction, we must also look into student engagement.

The drop-out rates are real (FLEMMS 2013). There is a need to look at how involved students are in the learning process cognitively, behaviorally, and emotionally. And maybe at some point, learners may be encouraged to be more agentic (Reeve 2012). But another aspect of classroom instruction that may help keep kids in schools is the availability of innovative learning materials. It is important to ensure the access to books—specifically high quality children's literature. Easy readers, chapter books and other forms of texts for children can be made available to help encourage a reading culture. Which brings me to the following questions:

- How can the development of a reading culture be realized?
- How can stakeholders participate in developing and sustaining a reading culture?
- Can such a culture increase readership in classrooms?
- In such an environment, how can learners help each other?
- In such an environment, how can learners help themselves?

These questions point us toward the need for the creation of a well-designed learning environment that reflects a teacher's educational philosophy that moves towards teaching with well-articulated intentions.

- Are we able to design classrooms that encourage inquiry, critical thinking and provide occasion for solving problems?

We need to move away from looking at ICT as just a different format of presenting text, but rather we must consider it with instructional design in mind. In an initial review of an existing digital enhancement of the lesson plans, a digital (animated) version of each lesson was created to help increase interest and attention of its young viewers. What was missing however from this innovation was the instructional design component that directs the use of ICT towards creating a more engaging learning environment. Therefore, rather than serve merely as a representation of text, what kind of learning object or device or technological feature can be incorporated in the delivery of the Teacher's Guides Lessons that encourages the creation of learning opportunities that children can respond to?

Teacher preparation

The success however of educational reform, relies heavily upon the human resources that drive the provision of general or specialized educational services to those who need it. Teachers (from both public and private schools) must be given the support necessary so that they can teach with the child in mind. We need teachers who:

- Understand the premises of the reform;
- Display adequate content knowledge, proficiency in the languages of instruction and the pedagogical knowledge to deliver instruction;
- Have the willingness to learn (sometimes on their own, e.g., Digital Teacher Professional development tools; or collaboratively, e.g., LAC sessions) for self-improvement; and
- Have the willingness to learn about children and how children learn (e.g. engage in action research)

That said, hopefully our inquiries can find answers that can help teachers work towards providing what is needed for the success of an educational reform that will make the Philippines a more literate society.

References

- Connor, Carol McDonald. 2008. "Oral Language Development Oral Language Development and Its Influence on Literacy." Presented at the Florida Center for Reading Research Florida Center for Reading Research And Florida State University National Reading First Research 2008. Accessed 2018.
- Care, Esther, Pam Robertson, Lea Pradilla, and Xerxes de Castro. 2018. *Targeted Assessments Supporting Inclusion*. Quezon City: Assessment, Curriculum and Technology Research Centre.
- Care, Esther, Alvin Vista, Lea Pradilla, Rebekah Luo, Claire Scoular, and Masa Pavlovic. 2014. *Longitudinal study of learning achievement of students in the Autonomous Region in Muslim Mindanao*. Quezon City: Assessment, Curriculum and Technology Research Centre.
- Davalos, Maria Beatriz. 2018. *Testing an approach to reading remediation for grades 1 and 2 learners – The Basa Pilipinas Pilot*. Manila: USAID Basa Pilipinas.
- Hermosa, Nemah. 2002. *The Psychology of Reading*. Quezon City: University of the Philippines Open University.
- Kucer, Stephen B. 2005. *Dimensions of Literacy: A Conceptual Base for Teaching Reading and Writing in School Settings*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates.
- Moneva, Louvena. 2016. "Isang case study: Pagkakatapat ng kurikulum sa pagbasa sa unang baitang" (Unpublished thesis). University of the Philippines Diliman.
- Ochoa, Cecilia. 2018. *Tracking literacy trajectories under DepEd's Mother Tongue-Based Multilingual Education (MTB-MLE) Policy*. Manila: USAID Basa Pilipinas.
- Philippine Statistics Authority. 2013. 2013 FLEMMS: Functional Literacy, Education and Mass Media Survey. Quezon City: Philippine Statistics Authority.
- Reeve, Johmarshall. 2012. "A Self-Determination Theory Perspective on Student Engagement." In *Handbook of Research on Student Engagement*, Sandra L. Christenson, Amy L. Reschly, and Cathy Wylie, eds., 149–72. New York: Springer Science+Business Media, LLC.



Summary of Workshop Output

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UP CIDS Education Research Program

To have a more in-depth interaction on the issues raised by the discussants, workshops were conducted. Two groups were formed for the workshop based on relevant topics: (1) curriculum and ICT integration, and (2) assessment and ICT integration. Each group collaborated and discussed to come up with a response to this question: What research should the University of the Philippines Center for Integrative and Development Studies (UP CIDS) Education Research Program (ERP) conduct in the next five years to help develop basic education policy formulation? The groups categorized policy needs according to urgency. Policies which need to be released within three years are categorized as “very urgent,” while policies which need to be released within five years are categorized as “urgent.”

Curriculum and ICT integration

The discussion revolved around K to 12 curriculum design and implementation with emphasis on kindergarten, mother tongue-based multilingual education (MTB-MLE), and senior high school. All research topics identified were considered very urgent.

These were the following:

- (1) How was the curriculum implemented in terms of the following:
 - a) Instructional delivery;
 - b) Learning processes;
 - c) Learning resources;
 - d) Learning environment;
 - e) Use of ICT resources;
 - f) Incentive provisions to schools and teachers with best practices;
 - g) Teacher preparation; and
 - h) Variation of languages (MTB-MLE)?
- (2) To what extent is the curriculum framework implemented in terms of:
 - a) Design
 - b) Content
 - c) Philosophy
 - d) Implementation

- e) Assessment
- (3) What curriculum innovations are evident?
 - (4) What is the role of ICT in the delivery of programs?
 - (5) For MTB-MLE, what curriculum innovations have been implemented in terms of:
 - a) Language mapping;
 - b) Distinguishing class models;
 - c) Context-sensitive;
 - d) Two mother tongues in class;
 - e) Challenge of a linguistically-diverse context;
 - f) Bridging Grades 3 to Grade 4;
 - g) Materials development;
 - h) Cultures;
 - i) Policies on teacher innovation; and
 - j) Implementation evaluation?

Assessment and ICT integration

The group on assessment and ICT discussed varied topics of different degrees of urgency. The most urgent research that the group identified was on policy for inter-agency development of an admission tool to address issues related to admission of senior high school graduates to tertiary education.

Research considered very urgent is on the crafting of an ALS assessment policy while those considered urgent are on (1) policy on ICT infrastructure for analytics and provision of funds thereof, and (2) assessment of socio-emotional learning.

APPENDIX

Participants

Basic Education Curriculum and ICT Integration



Standing, from left to right: Junette Fatima Gonzales, Rowel Padernal, Leonor Diaz, Anthony Ocampo, Malcolm Garma; *seated, clockwise:* Alona Encinares, Aurelio Vilbar, Greg Pawilen, Flordelita Male, Rey Valenzuela, Agnes Panem, Romylyn Metila, Eugene Penales

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Basic Education Assessment and ICT Integration



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