PROCEEDINGS 2026-31
Data Science For Public Policy Program

RTD Webinar on AI-Driven Solutions for the Philippine Education Sector

Stakeholder Insights and Policy Proposals

---

18 August 2025 | 4:00-6:40 PM

Lilian Jimenez-Marfil
DSPPP Research Analyst

UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

ISSN 2718-9295 (PRINT)
ISSN 2718-9309 (ONLINE)

PROCEEDINGS 2026-31
Data Science For Public Policy Program

RTD Webinar on AI-Driven Solutions for the Philippine Education Sector

Stakeholder Insights and Policy Proposals

---

18 August 2025 | 4:00-6:40 PM

Lilian Jimenez-Marfil
DSPPP Research Analyst

UP CIDS PROCEEDINGS
2026-31

UP CIDS Proceedings is published by the

University of the Philippines
Center for Integrative and Development Studies

Lower Ground Floor, Ang Bahay ng Alumni
Magsaysay Avenue, University of the Philippines
Diliman, Quezon City 1101

Telephone: (02) 8981-8500 loc. 4266 to 4268 / (02) 8426-0955
Email: cidspublications@up.edu.ph
Website: cids.up.edu.ph

cids.up.edu.ph

ISSN 2718-9295 (Print)
ISSN 2718-9309 (Online)

Cover Image Credit

Photo courtesy by DSPPP

Table of Contents

Get your policy papers published.

Download open-access articles.

The Philippine Journal of Public Policy: Interdisciplinary Development Perspectives (PJPP), the annual peer-reviewed journal of the UP Center for Integrative and Development Studies (UP CIDS), welcomes submissions in the form of full-length policy-oriented manuscripts, book reviews, essays, and commentaries. The PJPP provides a multidisciplinary forum for examining contemporary social, cultural, economic, and political issues in the Philippines and elsewhere. Submissions are welcome year-round.

For more information, visit cids.up.edu.ph.
All issues/articles of the PJPP can be downloaded for free.

Get news and the latest publications.

Join our mailing list to get our publications delivered straight to your inbox! Also, you'll receive news of upcoming webinars and other updates.

bit.ly/signup_cids

We need your feedback.

Have our publications been useful? Tell us what you think.

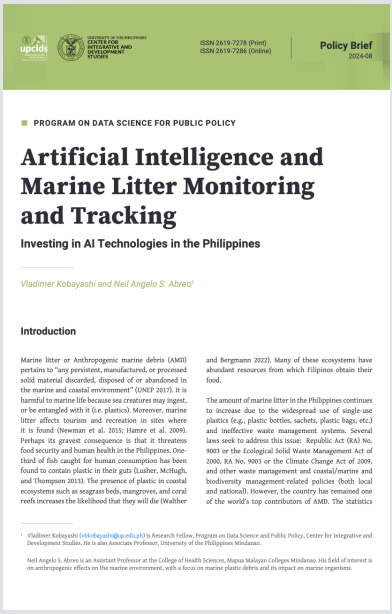
bit.ly/dearcids

Download related policy papers for FREE

cids.up.edu.ph/collection-database

DISCUSSION PAPER

Data science vs. Dynasty: Uncovering and Shattering the Structures of Political Dynasties in the Philippines through Data Science



POLICY BRIEF

Artificial Intelligence and Marine Litter Monitoring and Tracking-Investing in AI Technologies in the Philippines

About the Roundtable Discussion

This roundtable discussion on "AI-Driven Solutions for the Philippine Education Sector" was organized by the Data Science for Public Policy Program (DS4PP) of the UP Center for Integrative and Development Studies (UP CIDS) in collaboration with the CharityPhilippines.Org (CPO), headed by Dr. Margarita Lavides, research fellow of the DS4PP since 2022. CPO co-hosted Ms. Eleni Ilkou's site visits in the Philippines and introduced her to its partner non-government organizations (NGOs) for purposes of her research on the abovementioned subject.

Dr. Ebinezer Florano, DS4PP's Convenor, welcomed the more than six hundred attendees to this webinar. He stressed that this collaboration directly aligns with DS4PP's mandate to explore and promote the application of data science in addressing critical public policy challenges given the unique educational landscape faced by the Philippines.

Furthermore, Dr. Florano emphasized the relevance of the topic as it addresses issues such as limited access to quality resources in remote areas; bridging the digital divide; and providing personalized support for diverse learners. These can be addressed through the strategic use of artificial intelligence (AI).

He also mentioned how DS4PP aims to foster dialogue and identify actionable strategies for leveraging AI to improve educational outcomes. With the webinar, Dr. Florano underscored how it could offer valuable insights and spark meaningful conversations on how we can collectively advance data-driven solutions for public policy.

Presentation

Eleni Ilkou

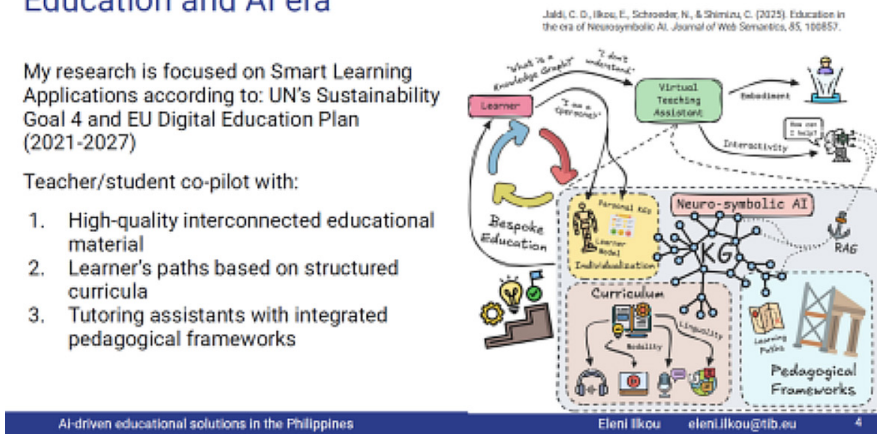
Researcher, TIB - Leibniz Information Center for Science and Technology
Hannover, Germany

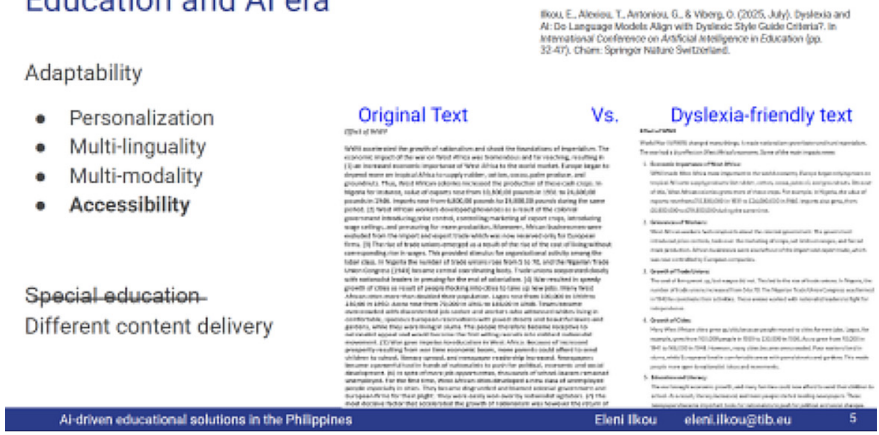
Eleni Ilkou's research focused on the applicability of AI in the education sector. She has published articles in top-tier conferences and journals, on bridging semantic technologies, AI, personalized learning, and language models to enhance adaptive education. Ms. Ilkou introduced herself and the general aim to achieve individualization. In her presentation, she showed how the education sector models the curriculum into different modalities, such as podcast videos and audio, as well as different languages to interconnect everything while grounding the knowledge in high quality resources.

Her presentation provided key insights from onsite visits to eight NGOs in Manila and Bohol, which are all actively engaged in delivering educational solutions. Drawing from direct engagement with local educators, stakeholders, and practitioners, she offered an in-depth examination of the current landscape. Her study explored how AI technologies can meaningfully address real-world educational challenges in these contexts. The discussion highlighted both the potential and the limitations of potential AI-driven solutions, grounded in the specific realities observed during fieldwork. She also exposed the critical role of a participatory design based on empirical data and ethical frameworks in shaping inclusive and sustainable interventions. The session concluded with practical recommendations for researchers, policy makers, and NGOs aiming to develop context-sensitive and impactful AI solutions for the Philippines education.

In her presentation, Ms. Ilkou also discussed the NGOs she visited onsite in May 2025 to understand real life problems and develop solutions that benefit the students, teachers, parents and schools. These NGOs were: (1) CharityPhilippines.Org, (2) Resources for the Blind, (3) the Jeremiah 33:6-7 Foundation, (4) Stepping Stone, (5) Caritas Manila, (6) Share a Spoon, (7) Tahanan ng Pagmamahal Children's Home, and (8) IDEA Philippines.

In the presentation, Ms. Ilkou highlighted the recipe for success of NGOs, first of which is strong leadership who promote values and set plans. Moreover, she emphasized that maintaining the location and the basic finances should not be a matter of annual goals. Ms. Ilkou stressed that an NGO is built from team effort, and behind a successful NGO is a group of people dedicated to community service. Lastly, successful NGOs are flexible, while respecting its main goals.





The presentation also tackled some opportunities arising from her fieldwork, mainly on the use of:

- Spelling, wherein children and individuals with visual impairment often face difficulties in remembering spelling and distinguishing between homophones;
- Text-to-audio chapters, with audio books linked to specific chapters, phrases, or traditional resources and offering more accessible educational materials;
- Automating Individual Learning Plans (IEPs), with automated recommendation systems for educators to assist in creating IEPs for students with and without special needs; and

- Identifying support areas, where data-driven approaches algorithmically identify the area of support needed to reduce school drop outs.

While there are opportunities, there are still challenges in the Philippines, including unstable internet connection, unreliable electricity and telecommunication signal in some parts of the country, and the lack of physical and digital resources.

The presentation noted that AI tools can be used in a variety of ways to assist educators and learners. Some of the most popular tasks include (1) grammar checking and correction, (2) text summarization, (3) the generation of educational material, (4) learning analytics and visualization, (5) learning management systems (LMS), (6) lesson planning, and (7) automatic grading.

Implementations of AI in education were presented, specifically highlighting the Education Center for AI Research (E-CAIR) by the Department of Education (DepEd). These involve (1) developing AI-driven tools that enhance teaching, learning, and school administration; (2) optimizing education voucher distribution; (3) using computer vision to screen stunted and wasted learners, enhanced detection and screening of learners with disabilities; and (4) natural hazards mapping of public and private schools. Moreover, also mentioned were E-learning companies interested in the Philippines, such as Khan Academy targeting one million learners by December 2026.

Ms. Ilkou also highlighted the Philippines' research funding in AI, which amounted to PhP 54 million in 2024 and P2P 87 million in 2025. Quoting Maria Mercedes T. Rodrigo's keynote in AIED, the Philippine AI research budget is small compared with countries like China (investing about US$ 8.2 billion), Saudi Arabia (with US$ 10 billion), and Germany (with US$ 3.51 billion).

Some more out of the box solutions related to AI in the Philippine education system are: (1) low costs and low demand on resources applications; (2) the digitalization of resources in Filipino; (3) the potential for the Philippines to lead advancements in AI for countries transitioning to an English system, without having English as native language; and (4) the deployment of AI through mobile apps or chatbots, instead of laptops and other technical equipment. While there are strong opportunities, few risks have been acknowledged, which include over-reliance on AI, privacy concerns, the lack of literacy, and ethical considerations.

Overall, Ms. Ilkou's presentation concluded with the following takeaways:

- AI in education is here to stay. The priority for educators and policy makers is on AI literacy and training;
- Data-driven, science-backed implementations are needed;
- Digitalization and stable internet are prerequisites for AI-driven solutions;
- AI tools can be useful but should be critically used and evaluated;
- Filipinos are already creating significant educational impact helping their local communities. There needs to be more support for their efforts; and
- Emphasis could be put on out-of-box solutions for AI-applications in the Philippines.

The Panel of Reactors

Dr. Reinald Pugoy

Director, UP Open University ICT Development Office
Associate Professor and Graduate Program Chair, Science in Information
UPOU Faculty, Information and Communication Studies (FICS)

Dr. Pugoy agreed with Ms. Ilkou's statement that AI is indeed here to stay. According to Dr. Pugoy, advancements and the data we produce help AI improve its accuracy. What makes Ms. Ilkou's work remarkable is not only the rigor of the research, but also the humility and courage to immerse in the grassroot realities of NGOs where the needs of ordinary people are most visible.

Dr. Pugoy applauded Ms. Ilkou's work for articulating an underexplored research area, focusing on AI adoption in non-native English-speaking contexts within the developing world. As Dr. Pugoy pointed out, AI research remains dominated by the Global North, where English is usually the default medium.

According to Dr. Pugoy, in the Philippines, the adoption of AI is not simply a technical matter as it intersects with issues of equity and access. For him, the presentation could inspire the Philippines to position itself as a leader in shaping AI for societies where English is secondary and where digital divides remain stark.

Dr. Pugoy also commended Ms. Ilkou's fluency in the languages of AI, computer science, and education--giving the study both the technical depth and pedagogical richness. According to him, this is the kind of bridging needed to design AI not only as an abstract technology, but as an applied human-centered solution.

Moreover, the field observations from the different NGOs remind us that AI's promise becomes meaningful only when grounded in people's live struggles. The work highlights both opportunities like spelling aids, automated IEPs, and text to audio tools, as well as challenges like unstable internet and unstable electricity. This why, Dr. Pugoy reaffirms the takeaway that AI adoption in the Philippines requires out of the box thinking.

Dr. Pugoy also noted that Ms. Ilkou's presentation is not only about technology but also sustainability, ethics, and societal responsibility. There must be something concrete to move forward, that embodies the insights

gained from Ms. Ilkou's study. As Dr. Pugoy mentioned, the next steps forward would be to increase AI literacy across the nation for more effective AI adoption. The design, development and deployment of AI, with respect to the current limitations in the country, entails going beyond conceptual framing and moving into solutions that directly respond to the identified needs of Filipinos. It is crucial to enable collaboration between the academe and r civil society to ensure that AI adoption is co-created and co-owned by the communities that it aims to serve.

Dr. Pugoy underscored that this type of work can position the Philippines not just as a site for applications, but as a source of leadership in AI for education in the Global South where the wider world can learn from.

In closing, Dr. Pugoy thanked Ms. Ilkou for reminding us that AI is not only a frontier of innovation but also a frontier of justice. By situating AI research in the Global South and at the grassroots level with the NGOs, she challenged us to see that the next breakthroughs in AI for education may well come from contexts such as the Philippines.We have the calling to serve the Filipino nation by learning to adopt, adapt, and preach the responsible and safe use of AI.

Dr. Vladimer Kobayashi

Research Fellow, DS4PP
UP Mindanao Professor and Program Coordinator, Data Science

Dr. Kobayashi expressed his gratitude to Ms. Ilkou as she gave a glimpse into the local realities of learners with different special needs, some of whom are facing domestic abuse and experiencing socioeconomic challenges. The presentation highlighted the infrastructure gaps stemming from limited resources. These, according to Dr. Kobayashi, limit the potential towards advanced educational technologies.

Another challenge posed was the deficit in digitalization, wherein the absence of digital student records, examinations, and teaching materials in many schools prevent a smooth integration of AI solutions.

There is also the need for data to train context-sensitive and culturally-sensitive AI models. Ms. Ilkou's presentation highlighted the language and accessibility issues, where many students learn in non-native or low resource languages.

Without localized content, AI tools may actually reinforce exclusion rather than inclusion, adding to strong social pressures and dropout rates.

As Dr. Kobayashi mentioned, Ms. Ilkou also reminded us that educational dropouts often stem not just from academic failure but from broader social issues. Amidst these challenges, Dr. Kobayashi maintained that there are opportunities that our country can leverage.

Dr. Kobayashi reiterated that adopting AI can provide personalized learning such as text to audio resources, automated individual learning plans, and tools for identifying areas where learners need support. He emphasized that for students with special needs or those in remote areas, AI can be transformative. AI can be deployed through low-cost mobile applications. There is no need for expensive infrastructure, since we only want affordable and feasible solutions in the Philippines

For Dr. Kobayashi, Ms. Ilkou's study can become a pioneer in adopting AI for countries that do not have English as their mother tongue. Similarly, other Third World Countries can also take leadership roles in localized AI solutions that reflect their unique cultural and linguistic realities. Affirming Dr. Pugoy's point, Dr. Kobayashi affirmed partnering with NGOs and international donors to implement community-driven projects can provide a framework for sustainable success.Hhuman commitment is the backbone of technological progress.

Finally, Dr. Kobayashi highlighted the UP CIDS as an institution, emphasizing that no educational innovation can thrive without supportive and forward-looking policies. The government must prioritize provision for stable internet and electricity to enable digital access in rural and disadvantaged areas. He also highlighted that policymakers must mandate and fund the digitalization of school records, curricula, and assessment systems to ensure AI integration is systematic. There also needs to be clear and evolving national policies to safeguard data privacy and prevent algorithmic bias.

Dr. Kobayashi stressed the need to promote AI literacy among teachers and students within the next five to ten years, minus the risk of over reliance and severe misuse. He also highlighted that there must be support for local innovation among researchers to look inward and provide solutions that are homegrown innovations, rather than always looking up to western countries.

In conclusion, Dr. Kobayashi described that AI is not a magic solution, but a tool that must be combined with infrastructure investment, ethical guidelines, and above all, human compassion. In the Philippines, the challenge lies in not just accessing technology, but ensuring that this technology serves equity, accessibility, and dignity. The opportunities are immense but they demand collective action. Policymakers must enable educators to adapt, technologies to innovate, and communities to support. With this, Dr. Kobayashi maintained that AI education can indeed become not just a dream, but a shared reality. Policy must act as both a shield and a catalyst that is shielding learners from harm while catalyzing opportunities that are inclusive and equitable in education.

Open Forum

Mr. Ezekiel, a DepEd researcher, exclaimed that they are promoting the use of AI, however, there is no AI policy framework for related DepEd tasks to guide their advocacy. Taking from Dr. Kobayashi's statement that a policy should be both a shield and a catalyst, Ezekiel asked how can this be done in DepEd? He further asked Ms. Ilkou on what should be the key considerations if she were part of the DepEd top management?

Ms. Ilkou recommended following something that exists already and sees which elements are not adapted in the Philippine community. According to her, the Philippines might need to introduce extra steps and requirements in particular cases. For instance, AI might require more familiarization by the teachers related to digital tools such as existing AI frameworks that are implemented in the United States or Europe. The digital deficit and accessibility for technical resources are elements that have to be considered, as well as equal distribution of skills. She noted that these have something to do with a family's socioeconomic background and not so much as their location. She also added that teachers and students in the same school have different skillsets that are related to their digital skills. This may point to some schools needing donations for laptops, smartphones, and tablets.

Meanwhile, on the question about the top management, Dr. Pugoy said that practically, there should be focus on AI literacy and on developing tools that are free to use. He referenced Ms. Ilkou, saying that there are also skill gaps in terms of how these technologies are evolving and how we are coping and learning. Dr. Pugoy stressed the need for lifelong education for teachers and learners on AI, as they improve relatively fast. According to Dr. Pugoy, it is not practical to teach new tools every time. Instead of simply being taught a particular lesson teachers and learners should be taught how to learn. For him, the crucial element that needs to be highlighted is to advise the DepEd officials on this matter.

Another participant, Jacob Salazar, stated that, "observably, AI may carry cultural or output biases since it is mainly developed in the Western contexts." He asked for suggestions to ensure that these AI contexts are localized for the Philippines and that AI outputs reflect the Filipino curriculum and Filipino values.

Ms. Ilkou responded by describing the problem as a practical issue and a research direction that is very interesting for many researchers to investigate.

From her own research, this cultural bias mentioned by the participant is present in their latest study. Accordingly, topics on slavery and imperialism, the LLMs like ChatGPT do not give answers or it produce gibberish outputs AI hallucinations, according to her, have to be considered. She also cautioned against blindly accepting AI outputs. Ms. Ilkou proposed associating textbooks and curricula with AI models in localized versions, by deploying something from scratch to train the AI to understand and reflect on these data. However, she noted that there is no guarantee of success. Cultural elements and biases are fine lines that are difficult to detect, hence, the model may refuse to answer or produce gibberish answers.

Roxanne Selmo inquired on how teachers can verify the integrity of student outputs, especially that AI tools are already accepted in the academe. She asked "to what extent can we allow AI tools for them? To what extent should AI-generated work be allowed in academic settings?"

Based from his own experience, Dr. Kobayashi mentioned that a possible solution is to come up with an AI policy that is consistent and transparent to students. He highlighted that UP has a policy on the use of AI tools. Dr. Kobayashi stressed that we cannot completely rely on AI as it tends to hallucinate. According to him, there is a need to double check the sources and sites where its answers came from. Dr. Kobayashi mentioned that he uses LLMs and generative AI, but he still double-checks his students works. For Dr. Kobayashi, what is important is honesty in using AI. On the teachers' part, there are tools that can detect if the work is AI generated. There are also tools that counter the paraphrasing that can impress teachers, so there is the need to triangulate. According to Dr. Kobayashi, he encourages his students to not over-rely on AI, but to understand that it must resonate with the user and that the user has to be honest in their work.

Chat comments from participants

- AI also hallucinates. Need to double check the veracity of its output sometimes.
- AI sometimes provide invalid information, need to double check and verify the given information.
- DOST is just one (1) agency doing R&D and AI solutions—not representative of our country's total investment in AI and not directly comparable to China's et. al. Key institutions such as DICT, DOST,

DepEd, CHED, TESDA, DTI, DOLE, and PSA are driving these AI efforts (on government side).

- Appreciation for the work being done by NGOs in government earnest effort to make education for all types of learners by making AI and facilities accessible to all kinds of learners.
- With the advancement of technologies and AI generation in today's society, how can we lessen the surge of fake information in media platforms?
- So far, many local educators refer to Language model AI when they refer to AI. AI Literacy is important before creating regulating AI as a policy. There is a need to familiarize first and even toy and explore the available tools for teachers.
- Students have been utilizing AI tools on their own. The teachers should be abreast with the use of tools.
- How do we shift the conversation from catching students who use AI, to teaching students how to use AI properly (with ethics and Filipino values)?
- Kudos to UP for initiating the forum on AI and the discussion on the attendant issues and problems useful for policy making.
- AI-resistant activities are a must.
- AI Checkers are not reliable, I think.
- We can actually demonstrate in class how to use those available AI tools; see how they can be explored by the students; and demonstrate their limitations.
- Asking the students to explain their work especially with work that seems too good to be true.

Synthesis and Closing Remarks

Dr. Florano provided a brief synthesis to conclude the webinar that provided a clearer picture of the potential of artificial intelligence to revolutionize education in the Philippines. The insights shared by Ms. Ilkou, Dr. Pugoy, Dr. Kobayashi and some of the members from the audience highlight the urgent need for innovative data-driven solutions to address unique challenges. To highlight the three (3) takeaways:

1. **AI offers targeted solutions**

   AI can be instrumental in personalized learning experiences, addressing specific learning needs and bridging resource gaps in the Philippines, especially in underserved communities. The use of AI in the education sector has two faces: a good and bad one. Higher education institutions are more concerned on instilling among students the need for integrity in using AI. According to Dr. Florano, we are still at a loss whether we are going to have heavy-handed regulations or just laissez-faire.

   The presentation of Ms. Ilkou enlightened us that there is a place for AI solutions, especially for those with learning deficiencies. Dr. Florano also highlighted the challenges in Philippine education, such as the country's low proficiency in reading and mathematics. He proceeded to ask: "Can we design an AI that will help us improve, not just the ranking, but more on the learning part?" Dr. Florano mentioned that we have already managed to accelerate the use of the internet's digital materials and this might have contributed to that. According to him, we can design more AI learning materials that will help us solve this problem and advance our knowledge in the creative thinking aspect. He lamented that the Philippines rank 63rd out of 64 countries in terms of creative thinking. With this, he inquired on how AI can help with that. Dr. Florano also stated his appreciation for researchers in the higher educational institutions and for the DepEd and its center for AI research. He recommended that perhaps this center can look at AI's role beyond helping students with special needs, and extend to regular students with learning difficulties in specific subject areas.

2. **Ethical consideration**

   Dr. Florano also acknowledged the worries on the over-reliance on AIthat is potentially stifling creative thinking. He remarked that balancing

AI must prioritize ethical considerations, including data privacy when sharing data algorithmic bias and ensuring equitable access to AI driven educational opportunities. He highlighted this point with a question: "How can we make AI more responsive to our educational needs, but at the same time, not over relying on AI and jeopardizing our stakeholders and learners?"

3. Collaborative effort

Dr. Florano thanked CharityPhilippines.Org and the DepEd Center for AI Research. According to him, there is a need to collaborate as a whole society. Dr. Florano made a call on tech developers to join and make AI work in a positive way for a whole of society approach.

The overall message is that AI, when thoughtfully implemented and ethically considered, can truly empower learners, bridge existing gaps and propel the Philippine educational system forward.

Center for Integrative and Development Studies

Established in 1985 by University of the Philippines (UP) President Edgardo J. Angara, the UP Center for Integrative and Development Studies (UP CIDS) is the policy research unit of the University that connects disciplines and scholars across the several units of the UP System. It is mandated to encourage collaborative and rigorous research addressing issues of national significance by supporting scholars and securing funding, enabling them to produce outputs and recommendations for public policy.

The UP CIDS currently has twelve research programs that are clustered under the areas of education and capacity building, development, and social, political, and cultural studies. It publishes policy briefs, monographs, webinar/conference/forum proceedings, and the Philippine Journal for Public Policy, all of which can be downloaded free from the UP CIDS website.

The Program

The Program on Data Science for Public Policy (DSPPP) aims to build the data science knowledge and capacities of academics, researchers, and policymakers, as well as, decision-makers from various sectoral stakeholders, and apply this learned skill to public policy and governance. DSPPP strives to engage a community of researchers within the university and encourage the pursuit of interdisciplinary problem-oriented research using high-level quantitative analysis. It seeks to convene multidisciplinary teams of social scientists, humanists, and scientists to research issues in the public sector.

UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

Lower Ground Floor, Ang Bahay ng Alumni, Magsaysay Avenue
University of the Philippines Diliman, Quezon City 1101

Telephone (02) 8981-8500 loc. 4266 to 4268
(02) 8426-0955

Email cids@up.edu.ph
cidspublications@up.edu.ph

Website cids.up.edu.ph