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Research Article

Balancing Progress to Equity: The Philippines' K-12 Education Digitalization Transition During Post-Pandemic Recovery

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ABSTRACT

The Philippines currently is nestled in its demographic golden age with more Filipinos who are part of the productive working force. With the growing population of the island nation, the expectations of a work-force-centric growth model are expected. It is however still in question if the Philippines can tap into this critical resource in its skill development and quality through its transition to K-12 education standard. With its economy highly reliant on dollar remittances abroad from its abundant overseas workforce, the urgency to maximize its economic value by producing a highly capable and skilled population is highlighted to ensure sustainable growth. To analyze this, innovation policy is studied from the initial years of the K-12 implementation phase to the post-pandemic recovery years of 2020-2022. It will look into the various updates in the education roadmap and how it had an impact on inequality in a post-pandemic recovery.

Keywords: *ASEAN inequality, Philippine Education, Education Innovation, Education Policy, Transition Studies*

Background

Philippine education reached a turning point in its history in 2016 when the government under the Aquino administration first headed the program in 2013 that intends to boost the quality of domestic education. The demand for quality education came from the mediocre turnout of Philippine education quality relative to other neighbours in the ASEAN as well as systemic shortcomings of the old education system in the country.

Most notably, Philippine education has had the notoriety of being the last to adapt to the K-12 system in the ASEAN. Because of this postponement, students who finish their studies lack at least 2 years in their total years of education compared to other students hailing from K-12 countries. This glaring incompatibility has not remained unnoticed as the Philippine government under the late President Benigno Aquino III, sought to finally transition to K-12 effectively adding two more years of education. The new structure gives students additional years to study areas of focus namely in the fields of Accounting and Business Management (ABM), Humanities and Social Science

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(HUMMS), Science and Technology (STI), and Technical Vocational Courses (TECHVOC).

Transitioning to the K-12 system aimed not only to give a more solid theoretical and academic grounding to young adults but also to give others the necessary tools to join the workforce through shorter skill-focused education in the technical and vocational fields.

Before the shift to K-12, there was little to no focus on vocational education and specialization at the high school level. Due to the missing years in the system, high school graduates lack the specialized skills for work and therefore necessitate a college education to compete for jobs locally. It has been long argued that the old system resulted in a glut of college graduates flocking to in-demand job roles as well as the rise of diploma mill colleges and universities. With a bottleneck of job opportunities in popular sectors, students are forced to take on jobs that are out of line or below their level of education and skill or underemployment as seen in the final report of the Philippine Statistics Authority for 2016 which was the official start of the K-12 system.

Likewise, due to the pressure of graduating in the tertiary level, access to education has been out of reach for most Filipinos therefore limiting those who are not financially capable of funding their education to low paying careers with little to no job security such as manual labour or the underground economy.

Education inequity is blamed for the inefficient and dogmatic educational governance and necessitated the K-12 program to be finally implemented in 2016. The K-12 system's goal as propagated by the Department of Education (DepEd), and the Commission on Higher Education (CHED) as the most important policy shift in education to solve the lingering problem of ensuring education quality, expertise-based workforce training, and international competitiveness of Filipino workers and students. Still, the lingering question remains if the K-12 system has had an impact in addressing education inequality in the Philippines almost a decade into its inception, and as such, is the main question the research will endeavor to discuss through the lens of transition education policies in the Philippine education system.

Overarching Question: "Did the Philippines succeed in the implementation of the K-12 program in aiding learning inequality during the post-pandemic recovery of 2020-2022?

Sub-questions:

1. What facets of the K-12 program have succeeded, needs improvement, and failed in its goals to alleviate the rampant inequality in access, quality, and sustainability?
2. How did the Philippine government advance the program despite the challenges posed by the black swan event brought upon by COVID-19 form 2020 onwards?
3. What can the Philippine government do to improve on the current K-12 program to solve widespread inequality though public policy?

Methods

The study will analyze and make use of secondary data sources from government agencies, non-government organizations, and other pertinent sources of data to be able to triangulate the findings to create rigorous mixed-method research. Primarily, it seeks to highlight the narrative of education inequality through an explanatory method by focusing on the state policy level, stakeholders of the policy agenda, and the development of the K-12 system that was aimed at solving the long-lingering problem of education inequality in the Philippines and its impact through the education transition progression towards digitalization.

Result and Discussion

Struggles of Philippine Education

Philippine education has been an ongoing story of persistent struggle and maldevelopment. Prior to the K-12 transition, the Philippines has been enamoured with multifaceted problems and concerns with regards to public school education.

Reacting on the policy side, the Philippine government has answered the challenges of education disparity in the country through the Basic Education Sector Reform Agenda (BESRA) under the Department of Education (DepEd).

Fundamentally, the broad policy initiative of the DepEd endeavors to solve the fundamental literacy gap in the country by improving

overall access and lessening drop-out rates across the public school system (Department of Education, 2006). The BESRA focused on the following mandates to ensure the programs are brought towards the target sectors and meet the demands of improving universal access to quality education with its "Education for All 2015" project.

1. Universal Coverage of Out-of-School Youths and Adults in The Provision of Basic Learning Needs
2. Universal Participation and Elimination of Drop-outs and Repetition in First Three Grades
3. Universal Completion of the Full Cycle of Basic Education Schooling with Satisfactory Achievement Levels by All at Every Grade or Year
4. Total Community Commitment to Attainment of Basic Education Competencies for All

To achieve these targets, BESRA specifies the operational targets through its key reform thrusts (KRT).

KRT1: Get all schools to continually improve
KRT2: Enable teachers to further enhance their contribution to learning outcomes
KRT3: Increase social support to attainment of desired learning outcomes
KRT4: Improve impact on outcomes from complementary early childhood education, alternative learning systems, and private sector participation
KRT5: Change the institutional culture of DepEd to better support these key reform thrusts.

In 2010, there were noted shortages in infrastructure, supplies, basic sanitation, class seats, and textbooks, and were the main focus of government programs from 2010-2014 (Bozkurt et al., 2020). The essential needs of schools have been severely lacking due to the lingering problems of the Philippine bureaucratic system. Despite the government's focus on improving the education system, its growth is being stunted due to bureaucracy (Reyes, 2016).

Even so, despite the challenges, the DepEd draws the key targets of BESRA around schools, learning, supporting interventions, teachers, and the agency's internal institutional system. BESRA was drawn following Republic Act no.9155, or the Governance of Education Act of 2001 and later further supported by the "Enhanced Basic Education Act of 2013 or Republic Act no. 10533" informally known as the "K-12 Law". Both policies were created by the Philippine government in the early and 2000's and 2010's to become the country's basic framework for basic public education nationwide and ensure the continued improvement and focus on national values and interest.

The goal is that the public education system will enable the next generation to have the right training and expertise to boost economic value and growth not only in formal education but also in informal and alternative learning systems ensuring accessibility for all. Naturally, the basic education system employed stresses the importance of the DepEd as the main agency aimed at educational governance and management of cluster schools and districts and the default top-down structure of the policy-making process implies the centralized and rigid policy-making structure (Lumanog, 2019).

BESRA, from its inception, has been used to guide policy formulation and planning to instigate key education reforms and projects. What is key in BESRA is its intent to bridge the essential needs of the education system by identifying critical improvement areas through a more decentralized operationalization of targets. This, however, did little to the imbibed institutional culture of the DepEd, with policymaking remaining as a top-down, linear, and monolithic process that gives little to no space for other actors and stakeholders to effectively impact education governance, resulting in a lack of democracy and transparency, resulting to lackluster performance (Molomoka et al., 2019). This was best characterized by Müller's analysis of the policy implemented in the Philippines that progresses from 5 steps.

1. Agenda Setting
2. Policy Formulation
3. Legislation
4. Implementation
5. Monitoring

The five steps according to the author has been seen extensively in the Philippines which was also evident in the DepEd being one of the

most important and largest government agencies in the country.

Exacerbating this concern of rigidity in the policy-making process, the Philippines is considered to have systemic corruption that has been the bane of Philippine education (Reyes, 2010). With the lack of transparency and accountability because of the absence of possible oversight measures by other parties or stakeholders, the policy-making problems have remained unsolved. Rife with mounting trials even before the implementation of the K-12 program in 2016, the DepEd remained on target and persisted with the rollout of its flagship project.

Onwards to the pandemic in 2020, the K-12 system has met black swan challenges that were brought upon by the COVID-19 pandemic due to persistent lockdowns and policy inconsistencies. The challenges it posed to the education sector have been new and unprecedented with hundreds of education firms filing for bankruptcy and closure in private schools from 2020-2021.

Comparatively, the Philippines has had one of the longest school closure periods from the period of March 2020 until October 2020 which only returned to full face-to-face classes on November 2, 2022 (Philippine Senate Economic Planning Office, 2022). Because of the lengthy absence, it has had a substantial impact on enrolment by modalities from 2020-2022 with many migrating to other modes of learning than the traditional school institutions. Additionally, schools both in the public and private sectors have drastically changed their teaching modalities to accommodate the challenges brought upon by the lockdowns and reduce the student transfers from private to public schools due also to the economic slowdown.

Responding to this predicament, the DepEd pushed for various learning methods exemplified with Modular Distance Learning and Online Distance Learning to make education accessible even with the social distancing regulations in place. Alternative learning systems were in place before the pandemic and rightfully have been the model from which distance learning education was patterned. Distinctly, alternative learning platforms were designed with adult learning in mind but have been modified to be effective tools for self-learning and distance education.

This was made possible with a significant focus on distance learning with a substantial use of digital platforms, media, and internet/computer-based learning tools. During the start of the modular and distance learning transitions, DepEd developed standardized materials such as modules, worksheets, and activity sheets to ensure the quality of learning in all public schools. However, the modules were developed by various school districts and private entities and therefore have had minor discrepancies regardless of the centralized monitoring and evaluation process conducted by the DepEd.

In this instance, the analysis of K-12's progress and impact should be split into two junctures before the pandemic and after the pandemic. The black swan effect of COVID-19, has had considerable ramifications in the progress of the K-12 transition and therefore will be essential for it to be treated as two separate cases and reconsider how K-12 should be evaluated in its impact and efficacy. The study will focus on the post-pandemic recovery and the performance of the K-12 and its influence in bridging progress to the many despite the problems that were encountered during COVID-19. Lastly, the research aims to not only describe but also recommend policymaking strategies for the smoother transition and development of the K-12 program evolution in the post-pandemic era and beyond by using theories of transition studies chiefly multi-level perspective.

Education Parity, Knowledge Accessibility, and Learning Sustainability

Education Parity

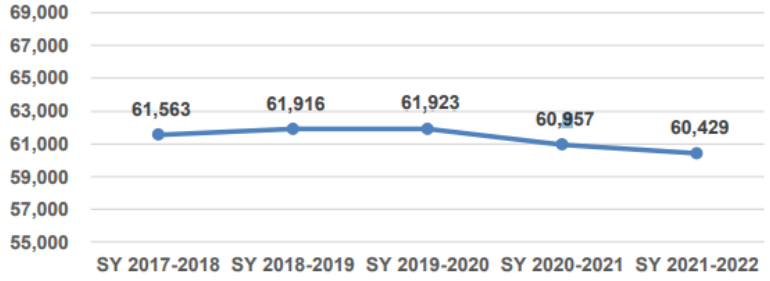
The Philippines currently sits on 113th in the latest United Nations Development Programme Human Development Index (HDI) Report with a high development classification in 2022 with the score of 0.71. During the pandemic years, the Philippines has steadily improved from 0.692 in 2021 and reaching its last peak in 2019 with 0.714. In Southeast Asia the Philippines are at par with Vietnam (107th) and Indonesia with (112th).

In comparison to other developing nations, the Philippines also had a high 98% adult literacy rate in 2020 which is above the recent average for the Asia & Pacific Region with 96%. In hindsight, the Philippines has reached a sufficient level of adult literacy yet has struggled to fully reap the benefits of an educated population. The K-12 program was drawn to be the precursor to advance public welfare with skill focused education and skills that hopes to bolster the adult workforce.

At the onset of the K-12 program in 2016, 37% of the national budget was allocated to social services with the DepEd's budget setting the highest that has surpassed 436 billion PHP. The intended budget was projected to be used to aid in the classroom deficiency, hiring of more educators, and procurement of learning materials. The budget targets to build

43,000 new classrooms, mass hire 62,000 educators, and procure 103.2 million learning materials. To help disadvantaged families for the K-12 transition 12 billion PHP were given to Grade 10 graduates of public high schools. The availability of schools in various education levels have plummeted from 2019 to 2022 which is a direct aftermath of the pandemic restrictions.

Table 1. Historical Data of Schools by Curriculum Offering



School Year	ES	JHS	SHS	JHS w/ SHS	K-10	K-12
SY 2017-2018	45,490	2,158	1,351	6,907	2,588	3,069
SY 2018-2019	45,410	1,973	1,406	7,169	2,701	3,257
SY 2019-2020	44,916	1,824	1,420	7,400	2,969	3,394
SY 2020-2021	43,765	1,787	1,403	7,490	3,065	3,447
SY 2021-2022	43,090	1,755	1,357	7,570	3,110	3,547

Source: DepEd

From the pre-pandemic high of 61,923 total schools only 60,429 remain with over 1,494 possible school closures. Out of the total schools nationwide, the DepEd raised that in 2022, only 3,547 schools are K-12 ready with 43,090 Purely ES, 3,110 for K-10 able, 1,755 Purely JHS and 1,357 Purely SHS. The K-12 distribution of school offerings in 2022 offer a different narrative of the where the program was during the post-pandemic recovery between the public and private schools.

Within the data acquired from the DepEd comparing public and private educational institutions, it can be conferred that private schools dominate the K to 12 categories as the public institutions cater to traditional levels predominantly in the purely ES category. On this level, private schools have proven to be more adept in being flexible with State Universities and Colleges as well as Private Universities being offered provisional license to operate K-12 offerings for the transition period and also to fill in the missing 2-year gap of college student intakes.

Regionally, the distribution of K-12 schools during the post-pandemic crisis stretched the resources of schools, and in 2022 during the 6th year of the K-12 program, the pandemic has not fully derailed the transition of the Philippines with more regions having the capacity to accept students and train teachers to handle the additional subjects and students

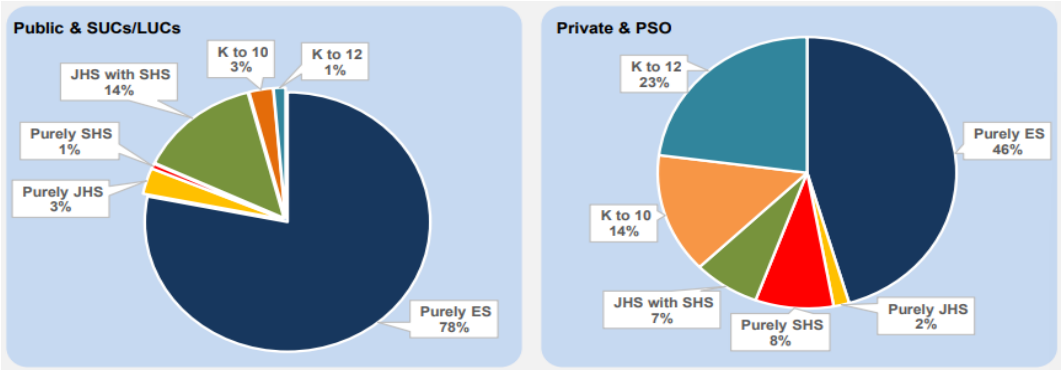


Figure 1. Distribution of Schools per Curricular Offering and Sector
Source: DepEd

Table 2. Regional Breakdown of Schools by Curricular Offering Classification

Region	Purely ES	Purely JHS	Purely SHS	JHS with SHS	K to 10	K to 12	Sub-Total
Region I	2,471	21	45	495	117	260	3,409
Region II	2,259	25	24	331	141	142	2,922
Region III	3,429	130	187	588	395	466	5,195
Region IV-A	3,794	318	293	534	578	628	6,145
Region IV-B	2,045	200	25	318	33	53	2,674
Region V	3,356	55	105	707	67	150	4,440
Region VI	3,836	60	54	665	251	201	5,067
Region VII	3,137	109	62	796	249	290	4,643
Region VIII	3,701	115	38	465	88	64	4,471
Region IX	2,225	66	47	387	43	63	2,831
Region X	2,161	49	60	377	270	184	3,101
Region XI	1,803	103	53	403	182	155	2,699
Region XII	1,697	120	38	353	150	167	2,525
CARAGA	1,761	41	24	385	75	75	2,361
BARMM	2,377	164	17	272	36	56	2,922
CAR	1,574	84	20	270	76	61	2,085
NCR	1,464	95	265	224	352	507	2,907
PSO	0	0	0	0	7	25	32
Grand Total	**43,090**	**1,755**	**1,357**	**7,570**	**3,110**	**3,547**	**60,429**

Source: DepEd

Over-all, the DepEd has been steady in its K-12 transition program despite the threats of the pandemic and its economic impact. Having the transition at a disadvantageous point may have slowed down the potential of the initiative but have been proven to be indefatigable in its pursuit.

On Knowledge Accessibility

Education accessibility has always been a critical area of concern with geographic and technological challenges that hamper progress. Commonly, access to the internet has been pinpointed as a sticking point that needs to be resolved for the quality of education to be improved at par with schools located in metropolitan centers. The Philippines has been on a steady increase of internet users with the penetration rate nearing 71% on the total of 107.3 million total population a year before the pandemic.

Table 3. Internet and social media use in the Philippines

	2015	2016	2017	2018	2019
Total population	100.8 million	101.47 million	103 million	105.7 million	107.3 million
Urbanization rate	49%	44%	44%	44%	47%
Internet users	44.2 million	47.13 million	60 million	67 million	76 million
Penetration rate	40%	47%	58%	63%	71%

	2015	2016	2017	2018	2019
Active social media users	40 million	48 million	60 million	67 million	76 million
Penetration rate	40%	47%	58%	63%	71%
Mobile social media users	32 million	41 million	54 million	62 million	72 million
Penetration rate	32%	40%	52%	59%	67%

Source: Hootsuite and We are Social

With one of the fastest-growing internet user bases in the region, the Philippines has had the notoriety of having one of the slowest connections in the region and the world. Comparing the pre-pandemic speeds of the Philippines to others in the region, it ranked dead last and 114th in the world in Mobile internet speeds and 108th in broadband speed. This lack contributes to the online education transition that was demanded during the pandemic.

Table 4. Comparative Internet Speeds in 2020

Broadband Internet Speed (download only)	Mobile Internet Speed (download only)
Global Average, 78.26 Mbps	Global Average, 34.67 Mbps
1st, Singapore, 208.16 Mbps	14th, Singapore, 56.95 Mbps
3rd, Thailand, 171.36 Mbps	60th, Viet Nam, 33.12 Mbps
40th, Malaysia, 81.46 Mbps	61st, Thailand, 33.04 Mbps
60th, Viet Nam, 54.67 Mbps	77th, Myanmar, 25.47 Mbps
84th, Lao PDR, 34.61 Mbps	82nd, Malaysia, 24.32 Mbps
108th, Philippines, 23.74 Mbps	96th, Lao PDR, 20.48 Mbps
110th, Cambodia, 22.87 Mbps	109th, Cambodia, 17.21 Mbps
114th, Indonesia, 21.28 Mbps	113th, Indonesia, 16.37 Mbps
121st, Myanmar, 1 8.78 Mbps	114th, Philippines, 16.17 Mbps

Source: Speedtest Global Index 2020

As mentioned, the Philippines has long been a laggard with internet speed in the region before 2020 and incidentally, the COVID-19 pandemic has been a catalyst for hastening the adaption towards the use of computers and digitalization. This sudden improvement was seen in computer availability and schools with internet connectivity. With internet-based education becoming the norm, the importance of connectivity, digitalization, and computer hardware was made the priority and incidentally have acted as a catalyst to improve long withheld improvement projects and measures for all schools in the country.

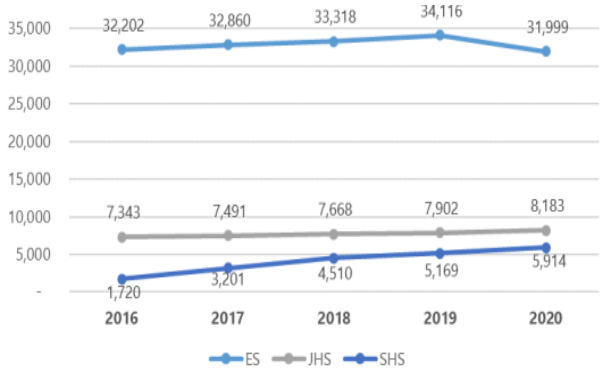


Figure 2. Schools with computers
Source: Department of Education

According to historical data, it is observed that from the creation of the K-12 program in 2016, there has also been a coinciding uptick in schools with computers nationwide significantly at the Senior High School (SHS) level. This sudden rise is attributed to the expanded learning courses and the expected rise of enrollees. On the contrary, the drop of computers in the Elementary School (ES) level is also due to the closures of private schools and therefore affected the total in 2020.

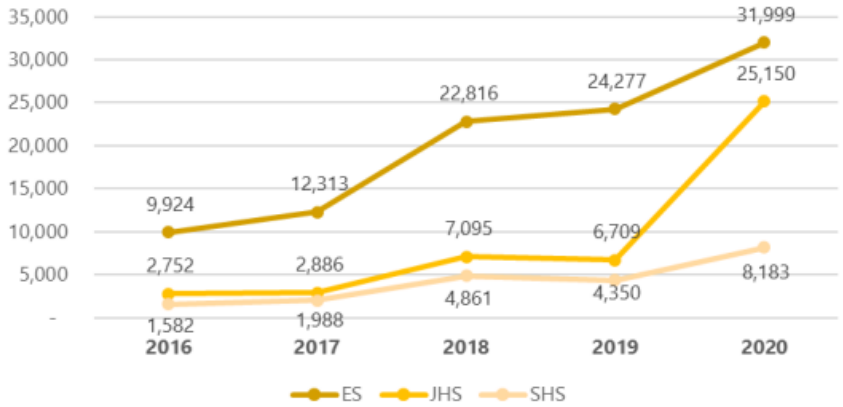


Figure 3. Schools with internet connectivity
Source: Department of Education

Internet connectivity has had the major leap with ES and Junior Highschool (JHS) having the noticeable improvement from 6,709 to 25,150. Overall, it is apparent that the move towards online, modular, and later on, blended learning forced learning institutions to go online and digitalize. The DepEd was successful in bridging this divide and has had a definitive impact on student learning during the times of the pandemic.

This on the contrary is not all on the positive spectrum as the numbers suggest that there is much more to be done. Based on the ratio of distributed computers in all regions, not all regions have a decent ratio of computer availability with Region VII having the worst ratio on average with Region IV-A having reached near optimal ratio in ES, JHS, and SHS. Nationally, Access to computers still has to improve for education to be equitable for all students. The discrepancy is also attributed to the budget constraints that some schools have experienced resulting in a "paralysis" in their program implementation (Mirasol et al.,2021).

The example mentioned herewith espouses the problem of policy inflexibility despite efforts of the BERSA initiative to give more power to schools and heads. Even with the authority being given to heads expanded, the problem remains on how resource allocation is centralized under DepEd's control. These problems however are more rooted in institutional culture and will not be solved in a short amount of time or a change of regime leadership. As this paper has shown, the plans are in place and targets are operationalized, yet, the impact has yet to be felt and time is needed to see if improvements are sustained over time.

Connectivity likewise has a vast room of improvement whereby only the NCR has adequate schools who have access to the internet with 97.9% for ES and 95.4% for JHS. SHS in 2022 was led by Region III with 78.7% which was considerably fast in comparison to other regions in the country.

The adaption of internet connectivity has been a necessity for its academic staff to handle online administrative tasks since the bulk of these tasks had to migrate to online platforms with the social distancing restrictions. Office work has to also coincide with the new demands with work from home becoming a norm therefore novel work structures had to be made to counteract the impending operational deficiencies prior and during the pandemic.

Table 5. Ratio of Distributed Computer Units SY 2020-2021

Region	ES	JHS	SHS
Region I	1:25	1:8	1:3
Region II	1:13	1:5	1:2
Region III	1:20	1:7	1:2
Region IV-A	**1:5**	**1:4**	**1:2**
Region IV-B	1:18	1:10	1:3
Region V	1:21	1:13	1:6
Region VI	1:32	1:10	1:5
Region VII	1:44	1:15	1:4
Region VIII	1:21	1:8	1:4
Region IX	1:27	1:12	1:4
Region X	1:30	1:9	1:4
Region XI	1:33	1:15	1:4
Region XII	1:30	1:10	1:3
Caraga	1:15	1:10	1:4
BARMM	1:26	1:9	1:3
CAR	1:34	1:10	1:3
NCR	1:33	1:8	1:4
National	1:19	1:9	1:3

Source: Department of Education

Table 6. Percentage of Schools with Internet Connectivity by Region, SY 2020-2021

Region	ES	JHS	SHS
Region I	83.3%	85%	74.9%
Region II	80%	85.6%	78.6%
Region III	77.6%	85.3%	**78.7%**
Region IV-A	79%	81.8%	71.5%
Region IV-B	69%	76.4%	77.7%
Region V	46.4%	60.7%	55.9%
Region VI	67.5%	74.5%	69.7%
Region VII	58.2%	73.9%	66.7%
Region VIII	54.9%	61.1%	60.1%
Region IX	51.2%	67.1%	56.5%
Region X	58.4%	59.4%	65.1%
Region XI	54.9%	58.9%	65.3%
Region XII	58.3%	64.8%	65.1%
Caraga	54.1%	69.4%	60.4%
BARMM	51.5%	50.8%	54.2%
CAR	76.2%	75.4%	69.2%
NCR	**97.9%**	**95.4%**	73.5%
National	64.2%	72.2%	67.3%

Source: Department of Education

Due to a black swan event that necessitated new ways, education innovation was no longer a matter of gradual development but an immediate area of concern. Public policy processes are challenged in these instances and were a litmus test for the DepEd on its

adaptability as an institution facing looming threats and unknown futures. The response that the agency has shown during the onset of the pandemic has been noteworthy given the wicked problems that the country has had while in the state of transition towards a completely historic development ushering the K-12 system. Access has been the foundation of the post-pandemic education transition and has anchored the K-12 program. While there is much to be covered, the DepEd has been laudable in its efforts to cover much-needed improvements in a short timeline.

On Sustainability

Public and private school education is governed by the DepEd which is the Philippine's primary government agency tasked on managing primary and secondary education. Principally, the DepEd has the sole responsibility of managing all public schools in coordination with the local government units of cities and municipalities. Education quality frequently is talked about due to the inequality gap of learners to teachers.

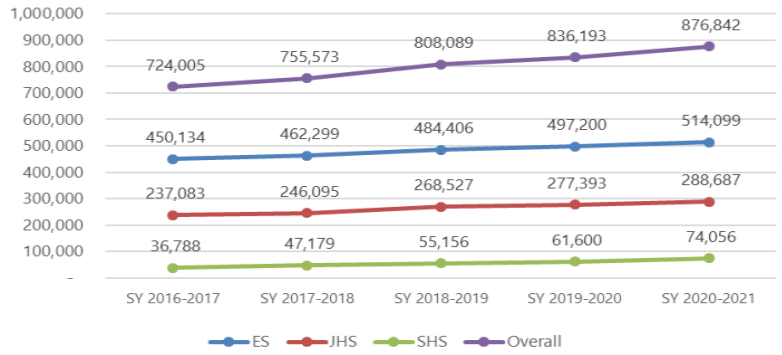


Figure 4. Historical Number of Teachers
Source: Department of Education

The agency has been making significant progress in hiring more teachers at all levels from the onset of the K-12 system. Maintaining a steady increase of 21% from 2016 to 2021 is a great indicator of the success in hiring talent across the various education levels. However, more consistency in this regard should be maintained to ensure long-term impact. To bolster this, public policy intervention is needed to effectively boost the recruitment of manpower without sacrificing quality and expertise.

Table 3. Inclusion and Exclusion Criteria

Region	SY 2016-2017	SY 2017-2018	SY 2018-2019	SY 2019-2020	SY 2020-2021
Region I	1:24	1:24	1:26	1:26	1:26
Region II	1:24	1:24	1:25	1:25	1:25
Region III	1:29	1:25	1:27	1:27	1:27
Region IV-A	1:30	1:26	1:27	1:27	1:27
Region IV-B	1:25	1:23	1:26	1:26	1:26
Region V	1:24	1:22	1:23	1:23	1:23
Region VI	1:25	1:26	1:28	1:28	1:28
Region VII	1:26	1:23	1:27	1:27	1:27
Region VIII	1:22	1:24	1:28	1:28	1:28
Region IX	1:24	1:26	1:26	1:26	1:26
Region X	1:27	1:25	1:27	1:27	1:27
Region XI	1:27	1:24	1:27	1:27	1:27
Region XII	1:27	1:26	1:27	1:27	1:27
Caraga	1:25	1:23	1:23	1:23	1:23
BARMM	1:33	1:28	1:52	1:52	1:52
CAR	1:20	1:20	1:26	1:26	1:26
NCR	1:32	1:23	1:28	1:28	1:28
National	1:26	1:24	1:26	1:26	1:26

Source: Department of Education

Reaching a significant increase while ideal also has adjacent problems that can harm student welfare. Commonly, vast increases in hiring and talent acquisition question the agency's ability to maintain talent quality. Mass hiring on paper may be a good show of policy impact, but it must ensure the long-term viability and sustainability of the public policy model.

The root of the education discrepancy in Philippine education is mainly because of its disparity between, private and public schools and universities. The former is not funded and supported by the government while the latter is supported by public funds and is free to attend to. Enrolment rates have been steadily growing however, during the COVID-19 pandemic, there was an onset of private school learners transferring to the public school system due to the prevailing economic slowdown as well as the closure of private education institutions that were not able to wither the pandemic crisis.

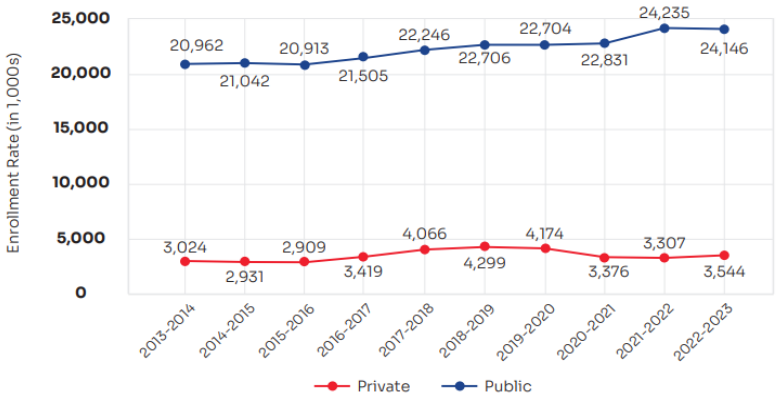


Figure 5. Enrolment Rates, 2013-2023
Source: Department of Education

The failure to adapt has been the reason for closures and without sufficient government backing, the finances of private institutions were left on their own. The capital expenditure and outlay to transition to an online setting also was detrimental to their conversion and therefore had a weighty impact on students and teachers pushing students to move to public education and teachers to seek employment in other fields than education.

Historical data also indicate that from 2013, there has been a steady rise overall with a sharp dip only during 2020which was brought upon by the pandemic. Also, net enrolment clearly shows the migration of students particularly in the elementary schools where a sharp dip was seen in enrolments. JHS and SHS on the other end of the spectrum had a stable net enrolment in the pandemic era. This indicator is a manifestation of how the pandemic has also changed the structure of learning with families opting to defer enrolment and self-study because of the uncertainties overall.

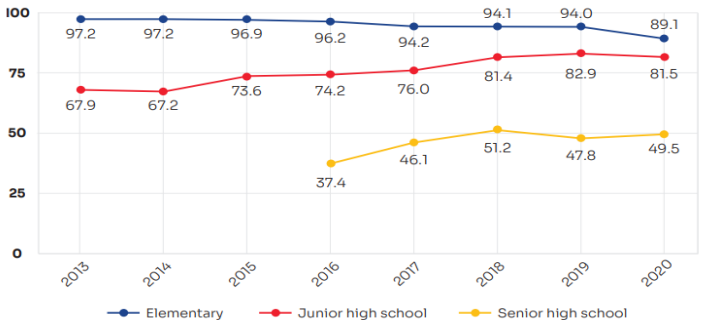


Figure 6. Net Enrolment Rate 2013-2023
Source: DepEd

Dropout rates highlight the trend emphasizing the sharp downturn in all levels with secondary JHS showing the most dropouts in 2020. The sharp decline also shares the uncertain future families faced and the lack of hardware and connectivity to continue their studies. Computers and connectivity being the most important aspect of distance learning not all were served under the DepEd computerization program while others were received late, in total, 1,042,575 devices were distributed to schools totaling 93% by May of 2020 roughly 2 months after the start of the lockdowns. This claim however was slammed by groups indicating that the computers distributed were incapable of doing online tasks and were not compatible with several institutions and schools, especially in public schools.

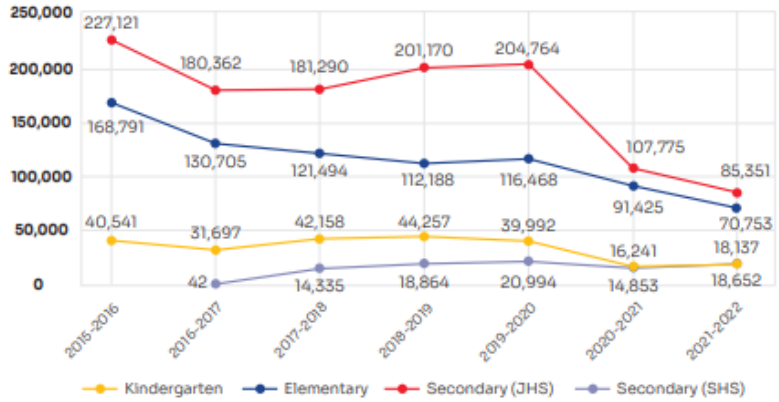


Figure 7. Historical Dropout Rates 2013-2023
Source: Department of Education

With questionable hardware and home connectivity families of students justified enrolment or dropping out in the middle of the year. K-12 has drastically taken a detour due to the pandemic rules and restrictions and have created unique institutional challenges. Even with the valiant efforts of the Philippine government and the DepEd students and the education sector did not remain unaffected. Though on paper the increase in education staff and maintaining the ratio of students to the availability of teachers remain stable, the sustainability and long-term improvement of the program needs time to be observed to finally see if the country has indeed reaped the benefits of the move towards K-12. While the pandemic has created unprecedented tests it also made the Philippines and its institutions to fast-track computerization and increase the access of connectivity for all.

K-12 and where is it headed?

Before the K-12 launch in 2016, the poverty incidence of Filipinos was at 26.3% (Philippine Statistics Authority, 2016). The baseline target of the DepEd is to make education available to the mass public and alleviate poverty with the K-12 system that will enable high school graduates with the necessary skills and training for alternative job routes.

The challenge of the K-12 system is two-fold; to solve unemployment and reduce underemployment. A study by the Asian Development Bank (ADB) has pinpointed the significant problems that the K-12 system has encountered.

1. Lack of systematic reviews of policies
2. Lack of autonomy and decentralization
3. Lack of evidence-based performance indicators and targets with continued monitoring and follow-through
4. Lack of 21st century-oriented learning and development in the curriculum
5. Lack of adaptive measures with an overreliance of one-size fits all approach in K-12 whereas it is not tailor fit to developing countries such as the Philippines
6. Lack of long-term investment planning linked to sustainable targets and realistic plans goals

7. Lack of new assessment tools to judge the comparative progress of students to monitor learning quality and parity among other school districts and institutions
8. Lack of a uniformed pedagogy in classroom practices that centre on students
9. Lack of adequate standards-based teacher training to gauge quality and align to international norms through evidence-based assessments and practice
10. Lack of continuous professional development among teachers tied with national quality standards for teaching
11. Lack of investments in teacher training on information and communication technology (ICT)
12. Lack of plan to recruit more teachers to join the ranks due to the lack of incentives and support to specialized teachers
13. Lack of modern educational materials such as textbooks and use of ICT resources among other learning sources

Analyzing the ADB's findings, it can be summed that the DepEd has made the right step towards reforms but has yet to fully integrate long-term and systematic institutional changes. At the basic level, the DepEd has aided critical gaps to learning and as part of the growth pains of the K-12 transition, there are remaining structural gaps that need to be addressed in governance and management, pedagogy design, teacher training, and resource management.

Studying and comparing the results of the Programme for International Student Assessment (PISA), the ADB findings are further justified with dismal scores in the 2018 and 2022 iteration of the test. The test focuses on Mathematics, Science, and Reading under the Organization for Economic Cooperation and Development (OECD). Filipino students have ranked 78/78 and 77/81 for 2018 and 2022 respectively.

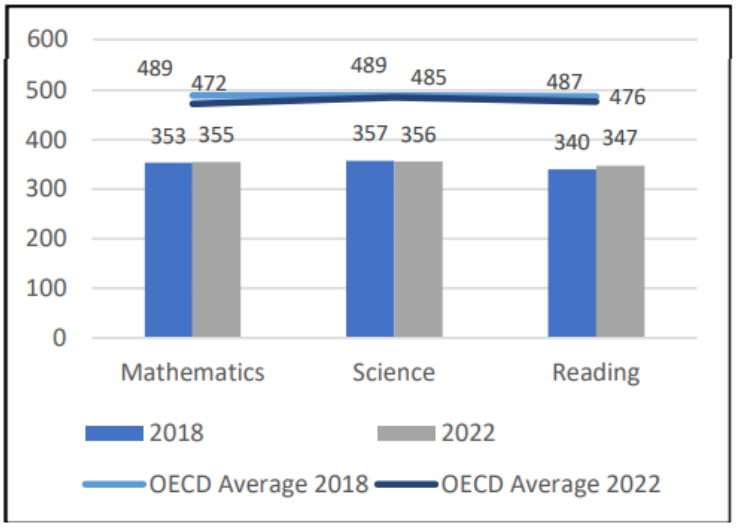


Figure 8. Philippine Performance in the 2018 and 2022 PISA Assessments
Source: OECD PISA 2018 and 2022

The weak performance of Filipino learners elicits concern which was contrary to what the K-12 was aimed to accomplish. While it is probable that these are part of the learning curve of institutions, learners are put in a precarious situation being at the receiving end of the transition without any safety nets in place to minimize the effect of the program changes.

Setting the comparison in other parts of the ASEAN with the latest iteration of the PISA report, the Philippines has ranked comparatively with Cambodia in its performance with Singapore, Vietnam, Brunei, and Malaysia on the upper tiers while Thailand and Indonesia completing the bottom half of the list.

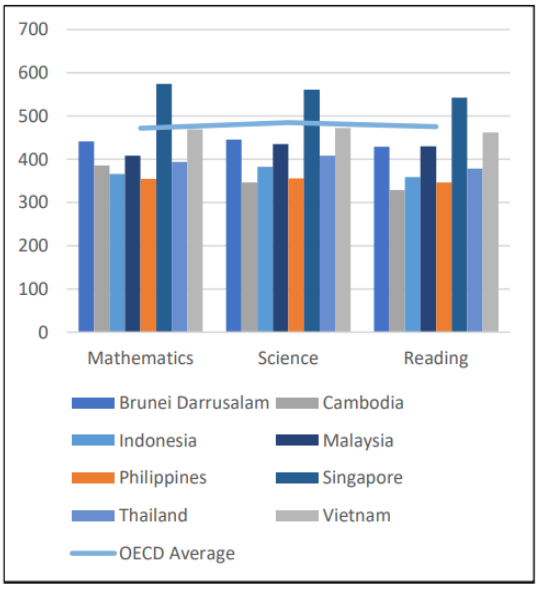


Figure 9. ASEAN Performance in the 2022 PISA
Source: OECD Pisa 2022

The ASEAN as a whole has not fared well compared to the OECD average with only Singapore comfortably above the threshold and ranked no.1 globally and Cambodia dead last at 81st. The Philippines languishes in the tail end and is only ahead because of its Reading and Science scores. Vietnam has pushed above its neighbors and even outperformed middle-income countries in the region such as the Philippines.

The performance of private and public schools in the Philippines shows the disparity between government-controlled schools in comparison to private institutions and only reinforces the notion of the lack of quality among public schools.

Table 8. Performance by School Type in PISA

School Type	2018	2022	2018-2022 (+-)	2022 Difference (Pub vs Prv)
Mathematics				
Public	344	345	1	59 ↑ (Private)
Private	392	404	11	
Science				
Public	348	344	-4	73 ↑ (Private)
Private	397	417	21	
Reading				
Public	329	333	3	83 ↑ (Private)
Private	388	416	29	

Source: PISA 2018 and 2022

PISA scores in 2018 and 2022 between public and private schools in the Philippines obviously highlight the painful reality of private schools outperforming public schools in all educational competency areas. Comparing the 2018 and 2022 scores, the private schools have shown improvement overall which is a good indicator of its adoption of the K-12 system while

public schools are left behind with marginal in mathematics and reading and even a lower turnout in science. Still, it has to be argued that due to black swan events such as the pandemic, K-12 has yet to be fully assessed under ideal conditions. While indeed the results have been a warning of a possible K-12 failure of implementation, scholars and experts should remain objective and give the efforts of the DepEd more time to mature and complete the transition and adaption in the post-pandemic era of digital learning and distance education.

Philippine Education Policy and Innovation Management

In order to fully study further nuances and elucidate the education dilemma of the lingering ails of Philippine education, a thorough discussion of the education sociotechnical system of Philippine education should be looked into relative to the policy making milieu.

Analyzing the present education conundrum demands a multi-faceted and multi-phase theory through the multilevel perspective of Transition Studies. Education in this narrative is seen under the pretense of sustainability. Using ICIS-MERIT's report, "Transitions" are a set of intermingling variables that affect each other, transitions are never linear and are naturally complex in nature with emphasis on lengthy periods of transition, and go through the following steps that if paired with the process of K-12 in the Philippines brings the following results:

Table. 9. 4 Stages of Transitions and the K-12 Experience

Stage	Definition	K-12 Status
Pre-development	The initial phase that is clear of institutional impact	Pre-2013 and technical working groups are created
Take-Off	Gradual introduction of transition with marginal changes	Intro of K-12 law in Congress and passes several readings and consultations with stakeholders
Breakthrough	Changes are systematized with structural manifestations of progress within the sociotechnical sphere	Empowerment of the DepEd and public and private schools shift 2013-2016 with staff training, infrastructure changes, and financial support from the government and remains in this status as of the writing in 2024
Stabilization	Changes trickle down and the transition reaches the optimum level of equilibrium	The K-12 program still has not reached the level of stabilization after the pandemic recovery in 2022 with its progress subdued due to the pandemic

The process of transition is seen in the change that is seen in different facets of the transition with institutional changes until it reaches stability (Rotmans et al.,2001). As evidenced, the K-12 transition remains in the breakthrough phase because of the shifting focus of policy solutions after the COVID-19 pandemic.

Policymaking at the level of the DepEd internally remains to be rigid and centralized with a top-heavy model even with the push towards empowering heads in the BESRA initiative. This on the contrary should not also be seen as a backward step for K-12 since it is a policy reaction to the pandemic that needs steady leadership due to the inherent weak institutional resources of provincial school districts that heavily rely on the government for support on logistics, manpower training and most importantly, hardware and infrastructure aid. The transition-arena in this regard is evident within the institutional structure of the DepEd and its efforts to reach out to stakeholders and school leaders.

The sociotechnical systems observed in the digitalization transition of Philippine education during the pandemic namely in the Landscape,

Meso, and Niche levels that according to Loorbach are the fields of prevailing social norms for Landscape, line agencies and actors in Meso, and the private communities, collectives and startups in Niche are evident but are limited in the K-12 transition.

Table 10. Sociotechnical System of the K-12 Transition

Sociotechnical System	K-12 Experience
Landscape	• Centralized governance that is reactive and rigid despite attempts to decentralize and empower school districts and heads
Meso	• Main actors in the meso level are school heads of school districts and institutions from the non-government collectives and concerned citizens as well as company engagements through CSR projects
Niche	• Top-heavy management with interventions from the central government and Congress with limited public engagement through invite-only technical working groups and consultations therefore limiting the propagation of novel ideas and niche bottom-up suggestions

The case of the K-12 transition in the Philippines is an example of reactive governance practices in an ideally reflexive governance institutional structure. Disappointingly, in reality and practice, the realm of public policy is left solely under government control with legitimization being limited because it is acting as the controller and the central entity in what should have been a decentralized policy-making process (Takagi, 2021).

Innovation development in this process is stifled and contained within the same names, groups, affiliated parties, and power networks. The absence of contending actors in the innovation arena contributes little to the K-12 transition evolution and development. With the DepEd as the central authority, the K-12 transition has been lagging in its implementation which also hurt schools that were in need of assistance during the pandemic period that led to school closures nationwide affecting students nationwide.

Public policy in the case of the K-12 project needs a revitalization after the pandemic. The normalization of new trends in education has to be imbibed through the standardization of best practices, institutionalization of consistent performance reviews, and the expansion of the sociotechnical area to niche actors who can contribute new ways of understanding K-12 education and finally tailor-fit the concept to the distinct needs of learners in the Philippines. The PISA scores while showing some progress needs to be addressed by improving and innovating in teaching standards, continuous training, and restructuring of dogmatic practices that should coincide with new 21st century learning needs and tools.

Conclusion

The K-12 transition has been a complex issue to solve with intertwined themes rooted on wicked problems that encompassed numerous administrations and regimes over the decades. With this, is the murky policy process that has been a detriment to the advancement of key policy and governance improvements. Despite the fact that DepEd and the government has made its case with their gallant interventions during the pandemic crisis, education should now focus on evolving the old template of the K-12 program to imbibe bottom-up niche perspectives, welcoming private industries and actors that can help in the innovation agenda of education and with those as a start, then change the landscape of education in the country that has been trying to catch up and failing time in again with global standards and norms.

The only way for Philippine education to breakthrough is for it to shed its old identities of leadership in the direction of an innovation centric institution guided not by politicians but by education practitioners and thinkers for future leaders.

Acknowledgement

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