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Philippine Education: Situationer, Challenges, and Ways Forward

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Abstract

While the Philippine education system is in the middle of profound changes with the passage of RA 10533 or the Enhanced Basic Education Act of 2013, the country was rudely awakened by the poor results in its maiden participation in the 2018 Program for International Student Assessment (PISA) which tested 15-year-old students. This result was confirmed further by 2019 Trends in International Mathematics and Science Study (TIMSS) results which tested grade four students. Everyone's question is: What happened to the Philippine education sector? This paper answers this question by describing the three education subsectors as answers to three questions, namely: (a) where each of the subsectors is in terms of their primary outcomes, (b) what the primary reasons are why the subsectors are currently in that state, and (c) what the recommendations are on the ways forward. This report draws mainly from research done by the authors at the Institute and occasionally those done by other authors. The assessment shows that the country still has high attendance rates at all levels compared to countries of similar development states. It is, however, facing the challenge of low quality on the average even if it also produces high-quality graduates, many of whom have been working in global labor markets for decades now. Another problem is that education outcomes reflect students' socioeconomic status rather than equalizing. Finally, the Pandemic, which forced the country to remote learning mode largely unprepared like many countries, introduced another set of challenges in addition to its pre-pandemic problems. The country needs to learn from these experiences, rely more on data, and build rigorously validated evidence on what works for our educational system using our experience as educational outcomes are highly context-sensitive.

Keywords: Education, Philippines, Basic Education, TVET, Higher Education

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Philippine Education: Situationer, Challenges and Ways Forward

Aniceto C. Orbeta Jr. and Vicente B. Paqueo[1]

1. Introduction

The Philippine education system is currently undergoing profound changes and, at the same time facing tremendous challenges. With the passage of RA 10533 or the Enhance Basic Education Act of 2013, basic education has since undergone significant restructuring with the introduction of the senior high school program. These changes also necessitated the overhaul of the basic education curriculum and the accompanying adjustment of higher education. Tracking was also introduced into the senior high school program in preparation for three possible exits higher education, employment, or entrepreneurship. In addition, mother tongue-based multi-lingual education (MTB-MLE) was formally introduced in the primary grades. Even before these transitions can be fully completed, the results of the country's maiden participation in the Program for International Student Assessment (PISA) came out in December 2019, showing the country is last in reading and second to the last in mathematics and science among 79 participating countries. The 2019 Trends in International Mathematics and Science Study (TIMSS) reinforced these dismal results. The country participated again in TIMSS after 16 years of absence since 2003, and the country ranked last in both Mathematics and Science among 64 participating countries. Everyone's question is: what happened to the Philippine education system?

The paper highlights that country still has high attendance rates at all levels of the education system compared to countries of similar development state. This result is not surprising given that it recorded exceptionally high attendance rates for its level of development in the earlier decades of the 1970s. It is, however, facing the challenge of low quality on the average even if it also produces high-quality graduates that have been working in global labor markets for decades now. Another problem is that education outcomes reflect students' socioeconomic status rather than being an equalizer. Finally, the Pandemic, which forced the country to remote learning mode largely unprepared like many countries, produced another set of challenges in addition to pre-pandemic problems. The country needs to learn from these experiences, rely more on data, and build rigorously validated evidence on what works for our educational system using our experience as educational outcomes are highly context-sensitive.

This paper presents an overview of the Philippine education system covering basic, technical vocational education and training, and higher education. Specifically, it (a) describes where each of the subsectors is in terms of their primary outcomes, (b) provides the primary reasons why the subsectors are currently in that state, and (c) provides recommendations on the ways forward. This paper draws mainly from the research done by the authors at the Institute and occasionally those done by other authors.

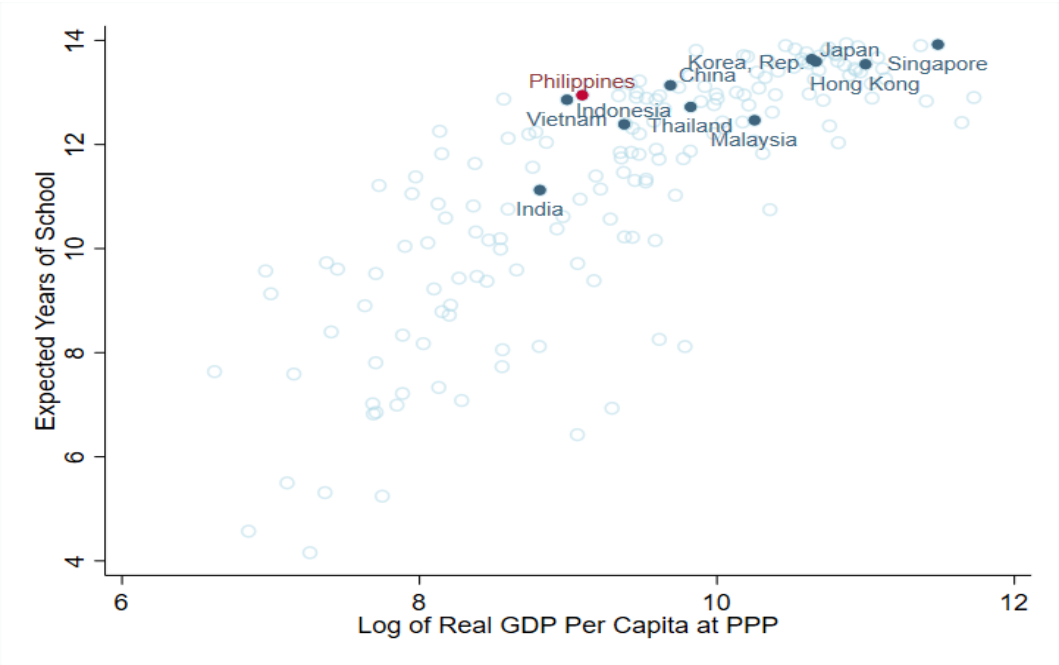
[1] President and Distinguished Visiting Research Fellow, respectively, of PIDS. Opinions expressed here are of the authors and not of the Institute. Research assistance of Kris Ann Melad, Nina Araos, and Zyra Diego are greatly appreciated. This paper has benefitted from the comments of the officers and staff of the Department of Education (particularly, Director Jocelyn Andaya), Technical Education and Skills Development Authority (particularly, Ms. Katherine Zarsadias and Mr. Regino Cloefe), the National Economic and Development Authority (particularly, Director Girlie Igtiben), and Philippine Business for Education (particularly, Executive Director Lovelaine Basillote). All errors are the responsibility of the authors.

2. Basic Education

Where are we now?

The country is at par with even richer countries in terms of school attendance. Figure 2.1, for instance, shows that in terms of expected years of education completed by age 18[2], the Philippines ranks among the top performers relative to middle-income countries with a similar level of GDP per capita. Moreover, CCT data attest to a near-universal attendance rate for elementary level even among the poor (Orbeta et al. 2021).

Figure 2.1. Expected years of schooling and Real Per Capita Income



Source: Human Capital Index 2020 Update, The World Bank; World Development Indicators, The World Bank.
Notes: The GDP per capita at PPP is in constant 2017 US$, which adjusts for inflation and cross-country price differences.

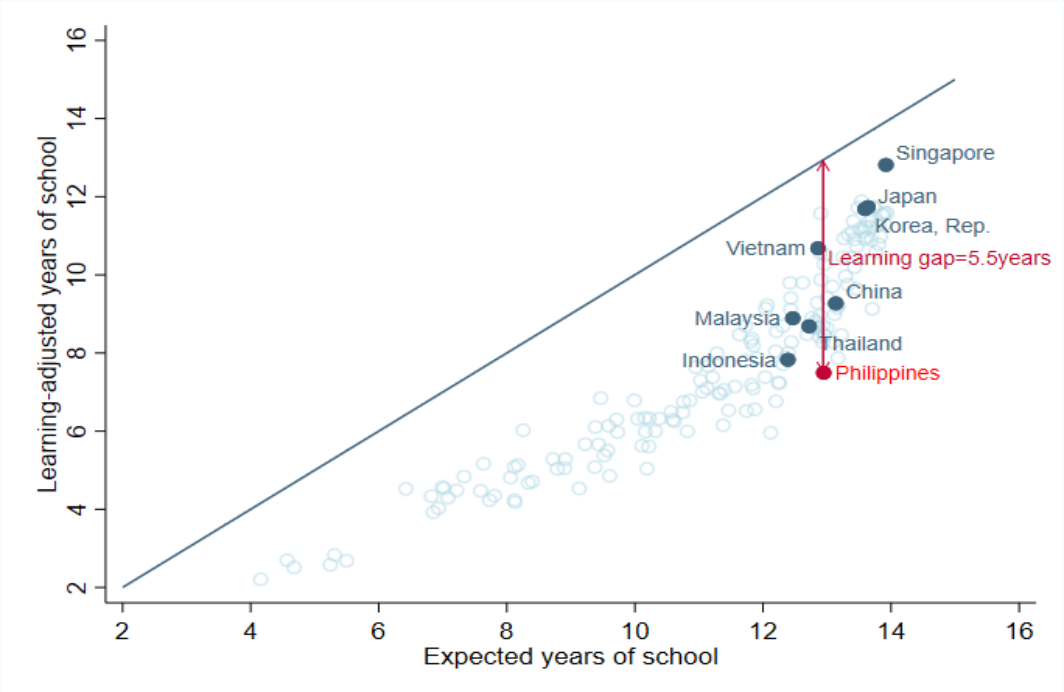
The country is way below potential in measures of learning. When the expected number of years of schooling is adjusted for the quality of education received for the years students spend in school, the Philippines has an estimated learning gap of about 5.5 years, as illustrated in Figure 2.2[3]. Thus, the learning gap is larger than its neighbors.

[2] Expected years of schools measures the number of years of school a child progressing through the current pattern of enrolment rates can expect to obtain by the age of 18, up to a maximum of 14 years. It uses total net enrollment rate published by the UNESCO Institute for Statistics (UIS)

[3] The quality measure used to adjust the expected years of schooling by The World Bank in its Human Capital Project is the harmonized test scores, which, for the Philippines used data [illegible]PI[illegible]18. For further reading on the methodology of the 2017 harmonized test scores, see Patrinos and Angrist (2018).

This finding can be interpreted to mean that an average Filipino student spent more time in school but less productively than their counterparts in comparator countries[4]. In addition, this also highlights that schooling does not always translate into learning (World Bank 2018).

Figure 2.2. Learning-adjusted years of school and GDP per capita



Source: Human Capital Index 2020 Update, The World Bank; World Development Indicators, The World Bank.

The country's performance in international large-scale assessments (ILSAs) confirms we have been in a learning crisis for a while now. The performance of our 15-year-old students in PISA, on average, is below expected given our level of income. Jordan, Morocco, and Indonesia have shown better performance of the upper-middle-income countries participating. However, a redeeming factor is that our private schools are performing better than expected given our level of income and better than public schools. This result is true for all three domains – mathematics, science, and reading (Figure 2.3a, 2.3b, 2.3c).

The results in TIMSS that tests grade 4 students are similar but even much farther down from the expected given our level of income (Figure 2.4a, 2.4b). Kosovo, Morocco, and Pakistan performed better than the Philippines of the upper-middle-income countries participating. Again, private schools are performing on or above expected given our level of income and better than public schools.

[4] Schooling does not always translate into learning (World Bank 2018). Filmer et al. (2018) explains how the measure of learning-adjusted years of schooling (LAYS) is a better indicator for learning over simply measuring the number of years spent in schools considering different countries with similar average number of schooling end with varied levels of learning outcomes. The learning adjusted years (LAYS) is measured as EYS x HTS/625 where EYS is expected years of school at age 18 and HTS is harmonized test scores.

Given that the tests were taken within one year apart, these provide a good snapshot of what is happening in the elementary grades in the case of TIMSS and junior high school in the case of PISA.

Figure 2.3.a PISA 2018 Average Score in Mathematics by Real GDP per Capita

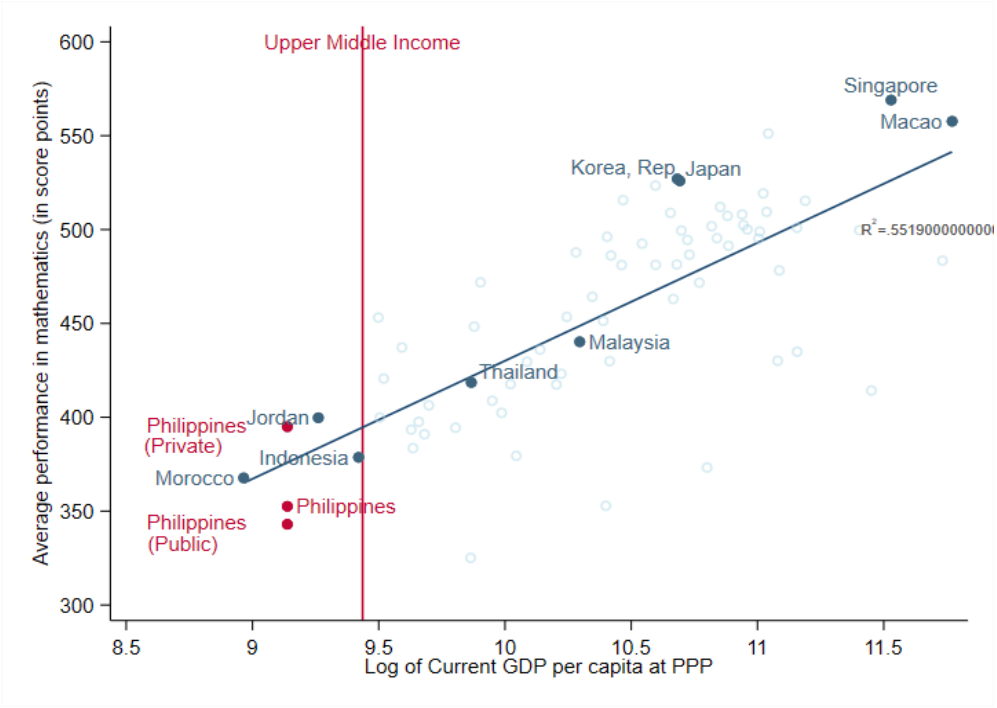


Figure 2.3.b PISA 2018 Average Score in Science by Real GDP per Capita

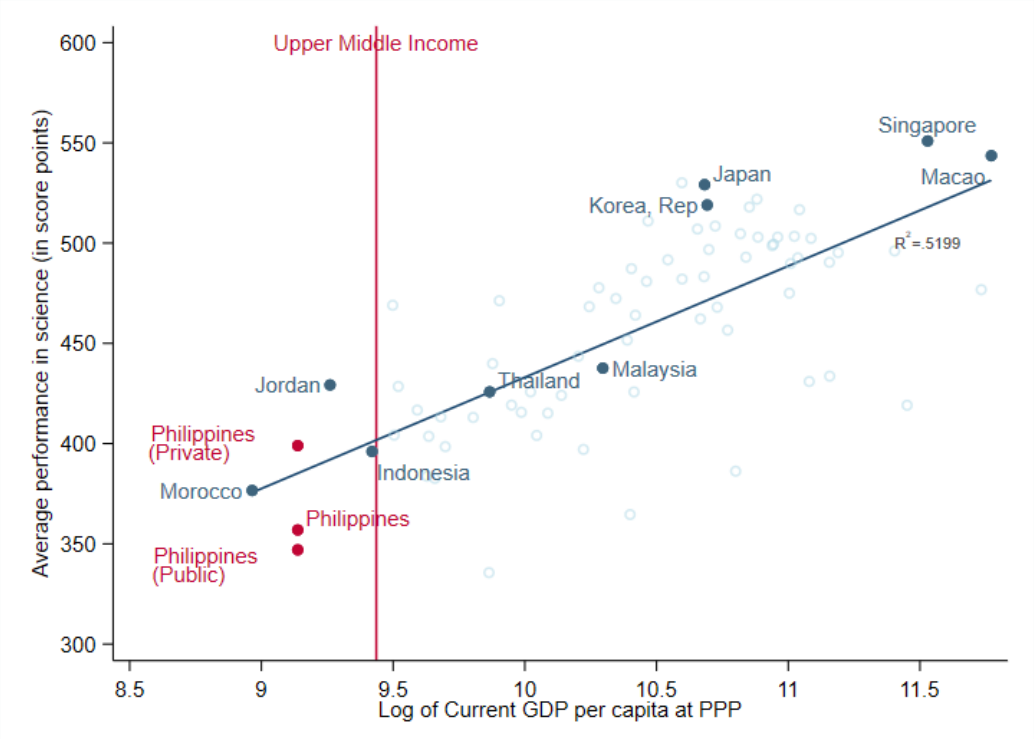


Figure 2.3.c PISA 2018 Average Score in Reading by Real GDP per Capita

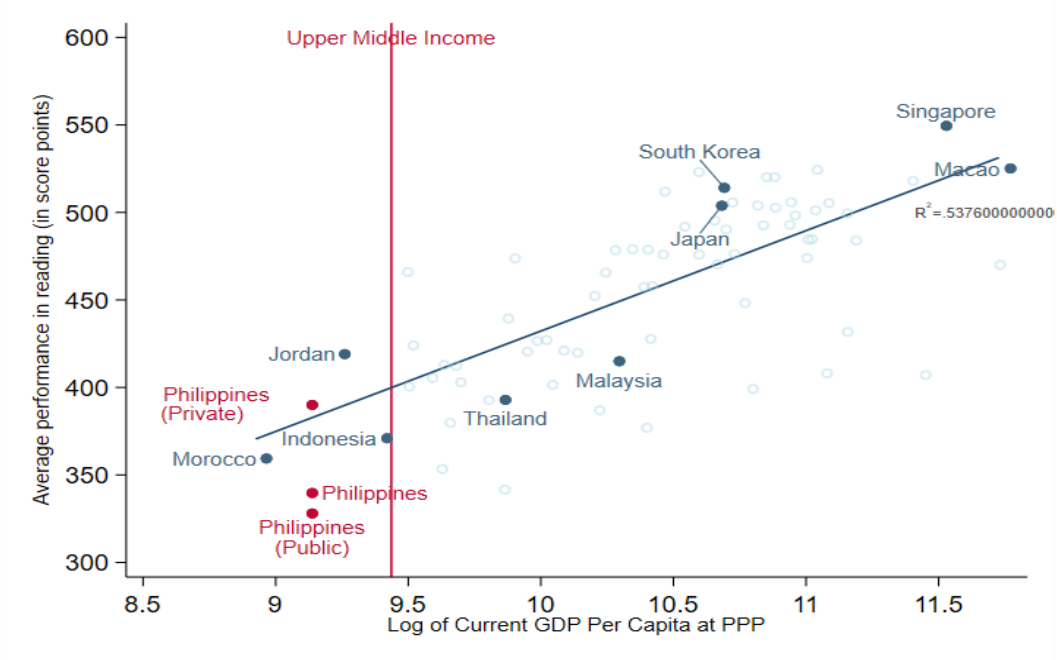


Figure 2.3.a TIMSS 2019 Average score in Mathematics of Grade 4 by GDP per capita

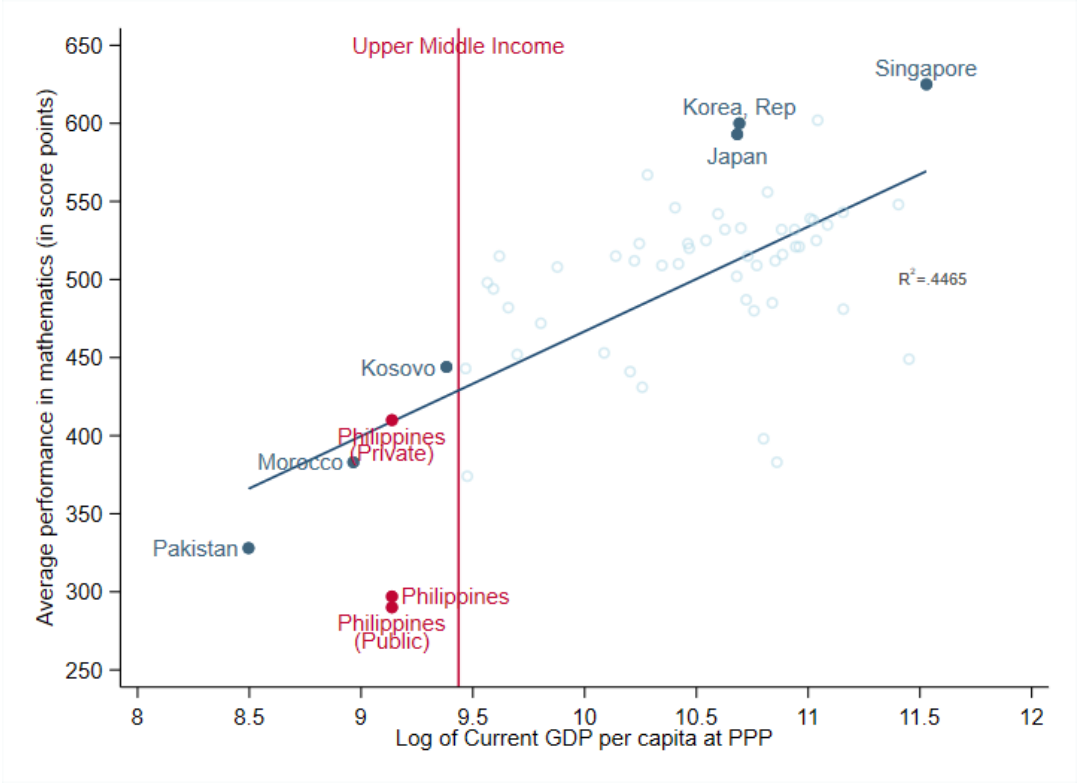
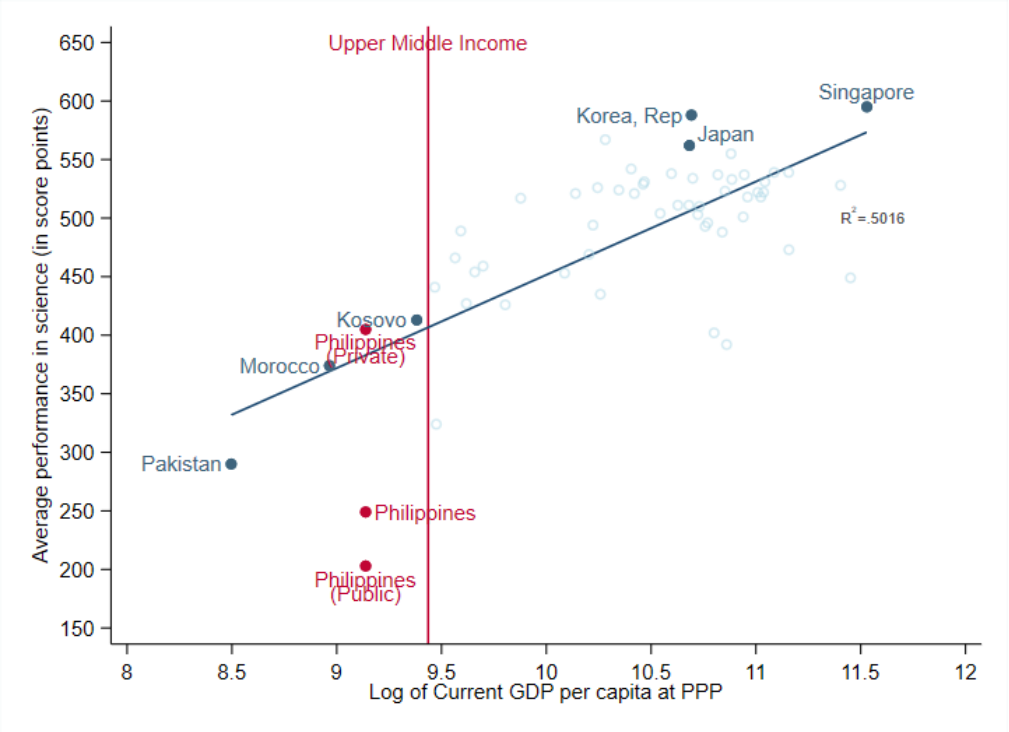


Figure 2.4.b TIMSS 2019 Average Score in Science of Grade 4 Students by GDP per capita



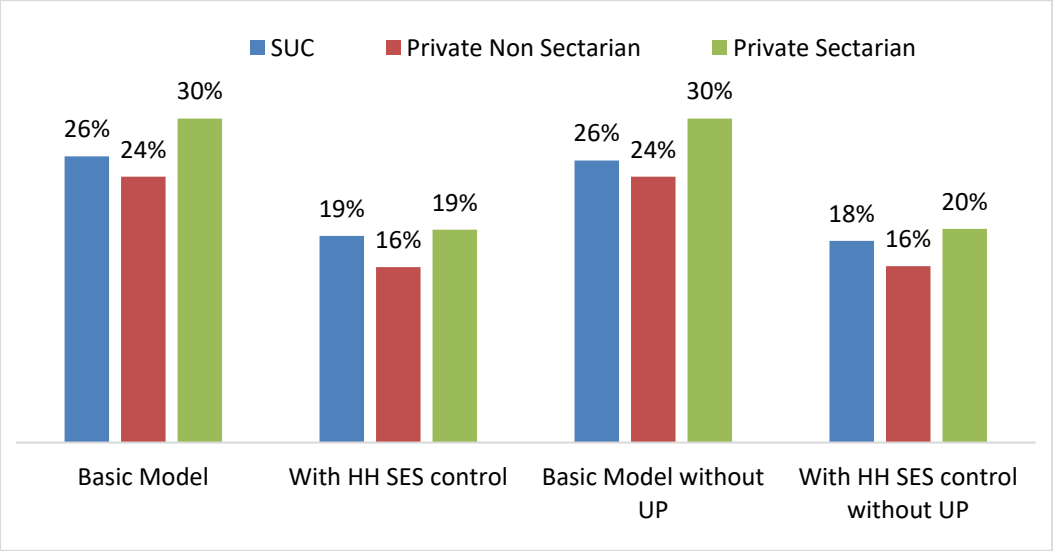
A vast proportion of our students are below minimum proficiency levels. The low average is not because everyone has low test scores. Rather, the ILSAs results show that an overwhelming proportion of students were below minimum proficiency levels pulling down our average test scores. The PISA test scores reveal that in reading, our average achievement score (340) is at proficiency Level 1a, which is one level lower than the minimum proficiency level (Level 2). Eighty percent of our students are below the minimum proficiency level (Level 2). Our average achievement score (353) is below Level 1 proficiency in mathematics. Eighty-one percent of our students are below Level 2. Finally, in science, our average score (357) is at proficiency is at Level 1a, and 78% achieve below proficiency level 2 (DepEd 2019).

In TIMSS, our average scores in mathematics (297) and science (249) are lower than the low benchmark of 400 or minimum proficiency levels. A vast majority of the Grade 4 students fell below the low benchmark. This is 81% in Mathematics and 87% in science (DepEd 2020).

Education continues to be a good investment. Using APIS 2013[5] and a Mincerian equation to compute the private rates of return shows that the rates are still remarkably high. This estimate implies that, despite all its problems, education is still a good investment. The basic model without covariates says returns can be as high as 30% for private sectarian schools and 24% for private non-sectarian schools (Figure 2.5). The returns decline to 16 to 19%, which remains high when one controls for household socioeconomic variables.

[5] APIS 2013 is the only round of APIS so far who asked abo[illegible]n [illegible]f HEI college graduates came from.

Figure 2.5. Annualized rates of return on wages by type of HEI, 2013



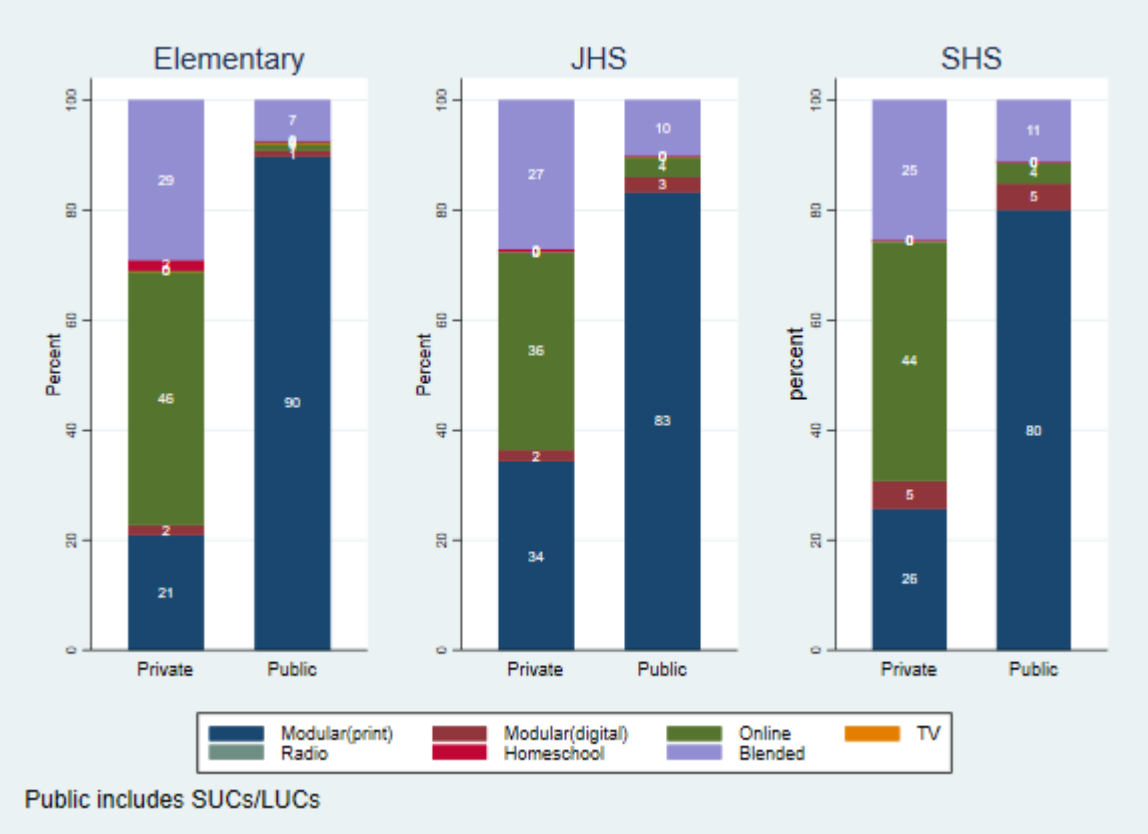
Source: Paqueo, Orbeta, and King (2020)

The response to COVID-19 Pandemic reveals unique challenges of remote learning. The response of the DepEd is laudable with the issuance of the Basic Education-Learning Continuity Program (BE-LCP) (DepEd 2020a). It streamlined the K to 12 curricula from the original 14,171 competencies to 5,689 labeled as the Most Essential Learning Competencies (MELCs). It also identified several learning delivery modes, including (1) face-to-face; (2) distance learning consisting of three types (a) modular distance learning (MDL), (b) online distance learning (ODL), and (c) TV/Radio-Based instructions; (3) blended learning, and (4) homeschooling. In addition, the learning assessments were adjusted to "meaningfully support learner development and respond to varied contexts" (DepEd 2020b, item 3).

The most recent enrollment data from the DepEd Planning Service reveals that most of the public basic education is on printed modules while private schools showed a considerable proportion doing online learning. The data shows that in terms of mode of learning, the modal group for public elementary is printed modules (90%) while for private elementary is online (46%) (Figure 2.6). The highest frequency in public schools for junior high school is printed modules (83%), while online learning (36%) for private schools. Similar modal groups are also found in the senior high school with printed modules (80%) in public and online (44%) for private. This pattern of learning modes chosen reflect (a) the connectivity issues the country is facing and (b) the differences in the nature of clientele in public and private schools. The significant proportion of online learning in private schools compared to public schools reveals that they serve those who have more connectivity at home. The connectivity issues that can hamper remote learning are discussed in PIDS (2020). For instance, it is mentioned that the latest household survey done by the DICT in 2019 showed that only 18% of households have internet access and only 24% have computers at home (PIDS 2020). The large disparity in access to computers across income groups is also highlighted using the APIS 2017. In addition, the outcomes of home learning also depend on the quality of home support as parents and guardians will become the primary teachers. It was also pointed out that there are only 26% of household heads have finished secondary s[illegible]s proportion rises to 69% in the richest

decile and goes down to 6% in the poorest decile. These results highlight the disparity in access to the internet, access devices, and home support required by remote learning. This also points to the likelihood that whatever learning loss with remote schooling will be more pronounced among the children in poorer households. Unfortunately, there appears to be no systematic measurement of learning during the Pandemic that would have provided information on what happened to learning during this large-scale experiment with remote education delivery. Of course, some learning is always better than no learning at all. However, we should also be aware of the likely differential impacts of remote learning delivery given these realities. Finally, we should not forget that this is in addition to the problems the country's educational system is facing even before the Pandemic.

Figure 2.6. Distribution of enrolment in basic education by modality, SY 2020-2021



Source of basic data: DepEd Planning Service

Why are we here?

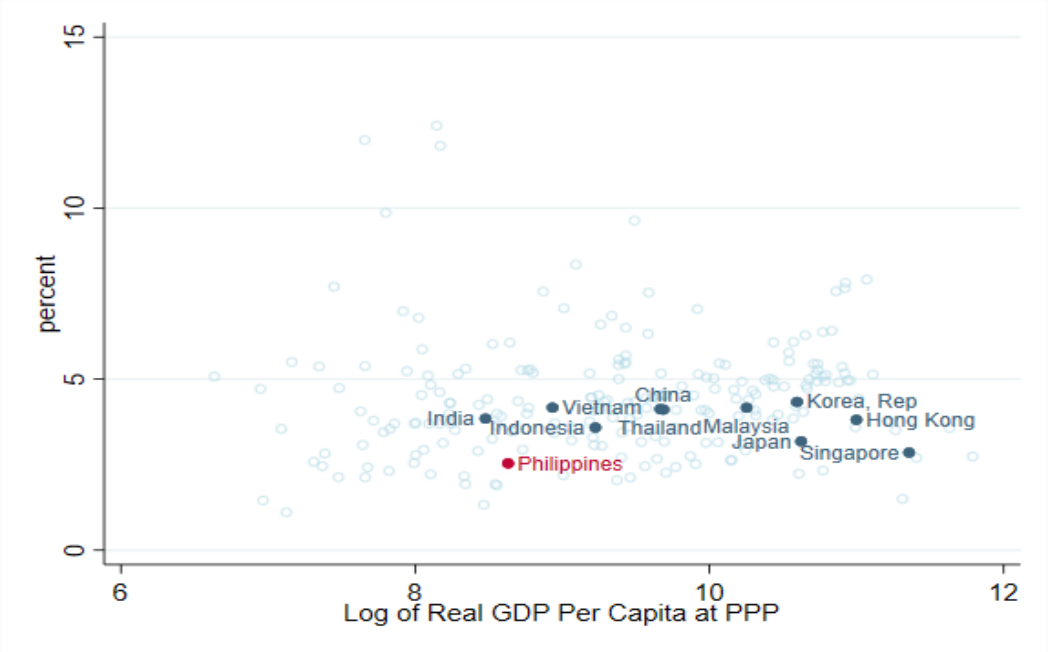
The system has focused on access to the neglect of quality. The focus on access leads to attendance rates at par with even richer countries. But this has led to the neglect of quality. In addition, we were unmindful that schooling does not always translate to learning (World Bank 2018).

There was a failure to inform the public about national achievement tests. Even though we continuously administer national achievement tests, the results are never granularly available for in-depth analysis and even less public discussion. When the PISA and TIMSS

results were released, they were a wake-up call. We could have been warned and acted earlier had we released, analyzed, and publicly discussed the NAT results we administer almost every year. Reliable measures of progress such as achievement test scores are important reminders of the progress of our education system. We need to inform the public about the conditions of the schools as test scores are not only the result of school characteristics, but are strongly related to families, peers, and other non-school inputs (Hanushek 2021).

The expenditure on education is not as high as our neighboring countries. Figure 2.7 shows government expenditures on education as a percentage of GDP. It shows we are not investing as much as our neighboring countries. While it is recognized that pouring more resources will not solve education problems, additional resources used wisely will ease the constraints on critical inputs that will improve quality.

Figure 2.7. Total government expenditure on education as a percentage of GDP by GDP per capita

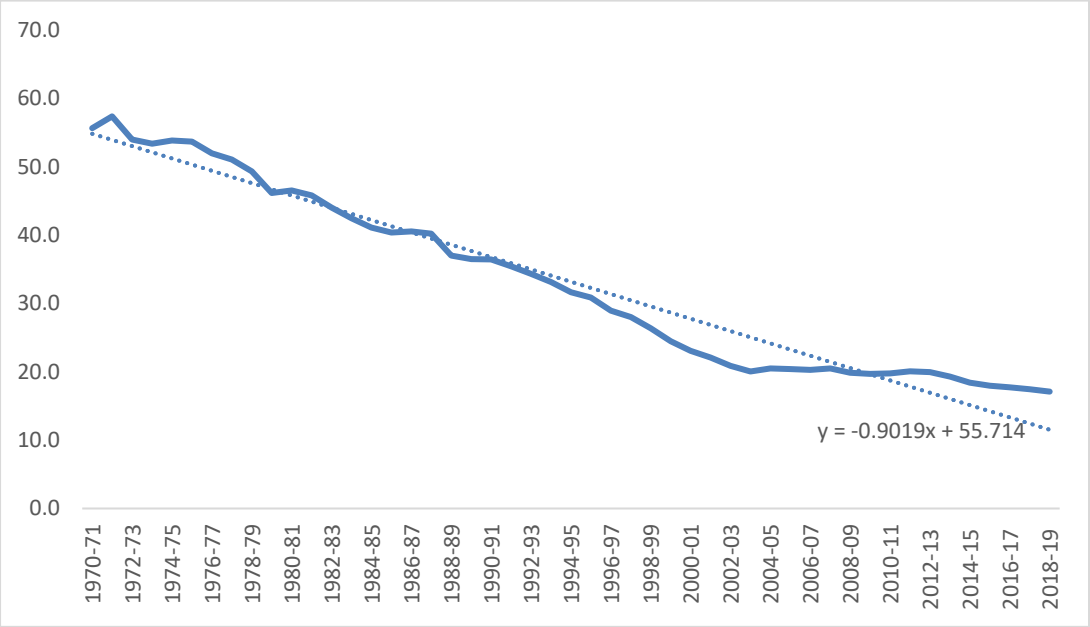


Source of basic data: World Development Indicators, The World Bank

Education policies have undermined better-performing private schools. Both PISA 2018 and TIMSS 2019 show that private schools have higher test scores than public schools. Instead of harnessing the strengths of the better-performing private schools, we manage our education system largely ignoring the constitutionally mandated public-private sector complementarity. DepEd manages the education system as if only one exists, i.e., DepEd schools (ADB forthcoming). This has resulted in the continuous marginalization of private schools through the years. This is exemplified by the decline in the private school share in secondary education. Figure 2.8 shows that in SY 1970-71, the share of private schools is 56%. This has steadily gone down to 17% in SY 2018-19. This shows a consistent decline of almost 1% per year. The saving grace is the public-private partnership programs, namely, the Education Service Contracting (ESC) for Junior High School, the Senior High School Voucher Program, and the Joint-Delivery Program for Senior [illegible]ool Technical-Vocational-Livelihood

Specializations (JDVP-TVL). These programs, however, have no well-defined long-term plan that is needed to guide private sector investments (ADB forthcoming).

Figure 2.8. Share of enrollment of private school in Junior High School, SY1970-71 to SY 2018-19



Source of basic data: PSA Philippine Statistical Yearbook, various years

The reasons for our dismal performance in ILSAs still need to be discovered, and understood. If there is one thing clear from the results of the ILSAs, it is that whatever we are doing up to now is found wanting. While we have some hypotheses based on research results, actual causal reasons still need to be discovered, contextualized, and validated. Determinants of quality and test scores are highly context-sensitive (Hanushek 2021). We need in-depth analyses of the results of ILSAs. The analysis of the World Bank for the three ILSAs – PISA, TIMSS and SEA-PLM has highlighted four issues, namely: (a) safe and inclusive learning environment, (b) investing in early childhood education and development and foundational skills, (c) strengthening the MTB-MLE policy and its implementation, and (d) increasing government education spending and equitable allocation (WB 2021). Our NAT scores, which we produce almost every school year, needs to be accompanied by school, individual, household, and community characteristics to make it amenable for determinants of test scores analyses.

The importance of the MTB-MLE policy and its implementation in student learning is not clearly understood. The study done by the institute researchers highlights the conceptual confusion among implementers and stakeholders and the implementation challenges of the MTB-MLE policy (Monje et al., 2021). Educating a child should harness the critical resource a child brings into his education besides his innate ability – his language of thinking and expression. Evidence has shown that starting a child's education using the language a child understands well is the best way to learn the second and third languages in the long run (Metilla et al., 2017).

Recommendations

General recommendations

Improving quality is key. We should focus more on improving quality because our attendance rates are already high. The DepEd current thrust on quality dubbed as Edukalidad[6] is a step in the right direction. But the challenge is always on the details. We need to find the right levers to improve quality faster. While it is common knowledge that there are three components in the education production function, namely, school, individual and households, and community factors (Hanushek 1978; Todd and Wolpin 2003), unfortunately, there is not much research which one has greater influence on student outcomes in the Philippine context. There is research using data from other countries, but Hanushek (2021) warns against generalizing these results because these are dependent on country-level institutional characteristics. He further argues that test scores reflect school quality and relate to families, peers, and other non-school inputs. We need to find effective levers using our own experience that will only be revealed by analyzing our data.

Data on school quality (such as test scores) and characteristics should be regularly made public. There are at least two important reasons for being transparent about school performance. One, public policy should be based on empirical analysis of the relationship between test scores, school, and home characteristics. Two, appropriate household decisions on schooling also need good information on school performance. Just as we regularly generate information and report on labor market outcomes, inflation, or national income accounts, we should regularly report on the performance of our schools on which the future of our nation depends. Public use files on test scores and school characteristics should be made available to analysts just as we make available public use files for our Labor Force Surveys and Family Income and Expenditure Surveys, among others.

Create an independent body overseeing the generation and reporting on key education statistics, particularly standardized test scores. The importance of standardized test scores in improving education outcomes, particularly for poorly performing schools, is emphasized in Hanushek (2021). Given the country's experience of standardized test scores not being publicly available for analysis at the student and school level, there is a good case for having an independent body managing the conduct of national achievement tests and generating other education performance indicators. The body should be composed of eminent persons in education. Like the statistical system, there should be a publicly declared schedule of release of education statistics that must be adhered to. As argued earlier, public knowledge of these critical education characteristics is essential for a well-functioning education market.

[6] Edukalidad has four reform areas dubbed as KITE, namely, (a) K to 12 curriculum review and update, (b) improvement of learning environment, (c) teachers' upskilling and reskilling, and (d) engagement of stakeholders for support and collaboration. The first three addresses school factors while the fourth addresses the household and community factors.

Identify clear indicators of quality and consistently measure the contribution of primary reform initiatives to improving these indicators. It is critical that indicators for quality be identified, e.g., the proportion of enrolled students meeting the minimum level of proficiency. Their marginal contribution to improving these quality indicators should guide budget allocation and the introduction or expansion of reform initiatives. In addition, the information on the marginal effectiveness of reform initiatives should be widely disseminated and updated as new evidence is produced.

DepEd must evolved from mostly teaching into a learning institution for teachers and administrators also. We do not have solid evidence of how to move forward on many education issues. If there is evidence, these usually use data from other countries that still require local validation because education relationships are highly context-sensitive. We need a system for generating knowledge that will inform education policy. Currently, DepEd is, for the most part, a teaching institution. Teachers are there to teach and impart content to students with the presumption that current ways are working. However, the results of the ILSAs are telling us the existing ways are failing. We need to know why. Several hypotheses need to be validated in the classroom. We should make our classrooms not just a venue for imparting content to students but also for generating knowledge on better classroom instruction for our teachers and school administrators. We should make our classrooms knowledge-generators that will inform education policy.

Towards this end, it would be good to identify representative sentinel schools that we continually monitor to provide rapid and consistent feedback on the education system's performance. These schools should provide more nuanced information critical to policy design and implementation over and above the normal administrative data that DepEd is currently gathering for all schools.

Finally, to facilitate the virtuous cycle of teaching and learning, schools will need to connect to nearby education colleges that can help set up teaching, learning, and improvement in pedagogy loops to build evidence on better ways of improving learning in schools.

Systematically develop remedial programs for students who are lagging. As mentioned earlier, there is a minuscule proportion of high proficiency students. The great majority of our students have below the minimum proficiency levels. This calls for a systematic remedial program to improve lagging students' performance and address learning losses. The accumulative process of education highlights the importance of addressing students who are lagging early and systematically. When basic education fails, this will make education in higher levels more inefficient and costly.

Research has shown that raising the performance of lagging students is effective in raising average test scores. For example, in a study of 13 education systems using 20 years of TIMSS data showed that the larger reduction in the test scores gap between low- and high SES students also accompanied steeper increases in overall test scores (Broer et al. 2019).

Orbeta et al. (2020) also finds that the incidence of grade repetition in the past is associated with lower test scores for 15-year-old stude[illegible]R[illegible]ition seems to have a scarring effect on

students. This also provides another reason why remedial programs are important to help prevent grade repetition.

We need to understand that teacher incentives work against lagging students. It is always easier for teachers to teach to the top of the class and ignore lagging students. Considering the plight of lagging students would make teaching much more difficult for teachers.

There are models in other countries that have dealt with this issue. One is teaching at the right level (TaRL) (https://www.teachingattherightlevel.org/). Rather than assume that students are of the same learning readiness, recognize their differences and directly deal with these differences.

Finally, the remedial programs will need to consider that the learning losses during the Pandemic will be much more severe for children in lower-income households.

Improving quality should start with early childhood development, even before basic education. In addition to education being cumulative, research has shown that early child development affect cognitive development, school start, academic performance, school completion, and avoiding crime. Early childhood nutrition interventions have been shown to lower the age of school start (Yamauchi, 2006), increase grades, reading comprehension, and non-verbal cognitive ability tests during adulthood (Maluccio, et al., 2009; Yamauchi, 2006), increase the likelihood completing high school, attend college and have higher earnings and avoid crime (Garces, et al., 2002). This is because nutrition deficiencies impair brain development (Prado & Dewey, 2014). In addition, starting school early is associated with higher test scores are age 15 (Orbeta et al., 2020).

Notably, the disparity in chronic malnutrition starts in the first 1000 days of life. Ulep (2021) has shown that even with negligible difference in chronic malnutrition at birth between income classes, this rapidly develops into a pronounced disparity between 6-24 months of life. Beyond 24 months, the gap in nutrition status by income classes is essentially maintained. The immediate implication is that nutrition intervention at school age has muted or no effects on chronic malnutrition although it has been shown to improve attentiveness and sociability, even though only temporarily (Tabunda et al., 2016).

Verify that automatic promotion is not practiced. While it has been denied that automatic promotion is official policy, the test results showing a huge proportion of students not having the required competence of the grade level they are in is a piece of compelling evidence that this may not be the case. For one, there are clear incentives why this officially frowned upon policy may not be vigorously enforced by school administrators and/or teachers. For instance, the study on performance-based bonuses may have encouraged misreporting of dropout rates (Monje 2019).

Expand utilization of better-performing private schools using vouchers. The recent research on Education Service Contracting, Senior High School Voucher, and Joint-Delivery Program for SHS TVL has shown that these programs effectively address educating issues (ADB forthcoming). These programs promoted efficiency, choice, and diversity of providers.

It promotes the utilization of private schools where test scores are higher. It also has a lower per-student cost than the per-student allocation in public high schools. It reduced congestion in public junior high schools except in some highly urbanized regions and in regions with few private schools. However, this program lacks a longer-term perspective needed to guide private sector investments.

Harness the use of technology for more learner-centered education. It is acknowledged that different individuals learn differently both in mode and speed. Thus, education that recognizes these differences best promotes learning (Christensen et al., 2011). However, personalized education is expensive. Technology has the promise of delivering more personalized education more efficiently and effectively. The better use of technology is not on mimicking lectures in delivering content but on promoting learner-centered education, increased interaction between teachers and learners, and enabling greater learners' control of their education. For instance, towards this end, technology can be harnessed to enable access to more varied content than the existing resources the school can provide. A case in point is enabling offering more tracks in SHS to lessen the likelihood that students are forced to enroll in tracks schools offer rather than what they prefer. Facilitating more rapid and personalized feedbacks is another important use of technology.

Clarify the primary objective of the MTB-MLE policy and address implementation issues. The objective and merits of the MTB-MLE policy of facilitating learner-centered education must be clarified and disseminated well. For instance, some believe that MTB-MLE is for language preservation rather than facilitating learning. Many, including teachers, are not convinced that using MT as a medium of instruction facilitates learning, including learning other languages. Neither is there an appreciation that besides his innate ability, the other most important resource a child brings into his education is his language of expression and thinking. These conceptual issues are confusing implementation. On top of these conceptual issues are procurement issues that led to the non-delivery of learning materials. These conceptual and implementation issues are listed in Monje et al. (2021). It is heartening to learn that in response to this challenge, DepEd is in the process of preparing clearer set of guidelines. As Monje et al. (2021) has warned, guidelines may not be implemented as designed. Thus, accompanying the clearer guidelines should be close monitoring of implementation to know that the guidelines are implemented as intended and in case there are deviations, sources are understood, and appropriate corrective actions are introduced.

Specific recommendations

The following specific recommendations are based on the findings in Orbeta, Melad and Potestad (2020).

Promote parental involvement. The correlation between parental support and test scores is strong. This is true in general but even more so for lagging students. We need to find ways to

encourage parental support. The experience during the Pandemic should educate us on how parental support can be encouraged.

Improve learning environments in schools. The incidence of bullying in schools in the country is one of the highest among participating countries in PISA (OECD 2019). Besides being inherently unacceptable, this was also found to be negatively correlated with test scores. Another factor that is positively correlated with test scores is the disciplinary climate in classrooms. Valuing disciplinary climate in classrooms must not be limited to schools but also society in general.

Review how learning time is spent in schools. Learning time is found to be negatively correlated with test scores. Curiously, the country has one of the longest learning times among participating countries in PISA, yet this did not help improve test scores. This calls for a review of how learning times are utilized in schools.

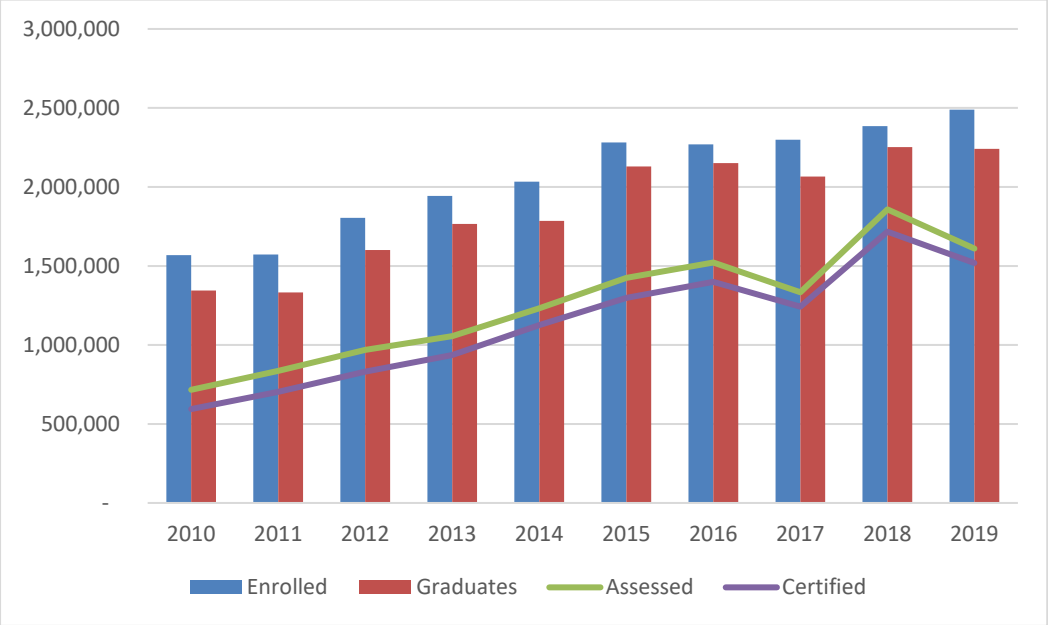
Understand why teacher qualifications are not correlated with test scores. Common sense has it that high teacher qualifications are supposed to improve test scores. Yet, the PISA data show no correlation. This calls for a review of teacher training as well as deployment. On the one hand, this calls for a review of the utilization of highly qualified teachers. On the other hand, this may also mean reviewing teacher certification systems and the quality of graduate education for teachers. It is noteworthy that PRC data shows that LET for elementary teachers has one of the lowest passing rates among the professional board examinations.

3. Technical and Vocational Education and Training

Where are we now?

Enrollment, graduates and the proportion certified are rising. TVET showed consistent improvement in enrollment, graduation, assessment, and certification. Enrollment grew to around 2.5 million in 2019 from about 1.6 million in 2010 (Figure 3.1). Similarly, graduation rose to 2.2 million in 2019 from 1.3 million in 2010. This implies a graduation rate of 90% in 2019, rising from 86% in 2010. In addition, the proportion of the graduates assessed grew to about 80% in 2019 from a little over 50% in 2010. Notably, the lack of training regulation (TR) that prescribes how to do competency assessment was one of the reasons for not taking assessment. The figure also reveals that the assessment passing rates are respectably high at above 80 percent.

Figure 3.1. Enrollment, Graduation, Assessment and Certification, 2010-2019



Source of basic data: TVET Statistics, various years, TESDA

There is an increasing proportion of graduates from community-based mode while those from enterprise-based training is extremely small. The distribution of enrolled and graduates by mode of delivery shows the apparent dominance of institution-based providers in earlier years (Table 3.1). However, in recent years, community-based training produces a larger share and even shows the highest share by 2019 (Table 3.1). The rise in the share of community-based enrollees and graduates is perhaps a reflection of the increasing emphasis on the equity objectives of TVET. Finally, another noteworthy trend in enrollment and graduation is that enterprise-based training (EBT) continues to contribute a tiny proportion of enrolled and graduates (Table 3.1). This continues to be the case even when many considered enterprise-

based training (EBTs) as the most responsive to industry needs and promoted various EBT schemes such as internship and dual training system (DTS).

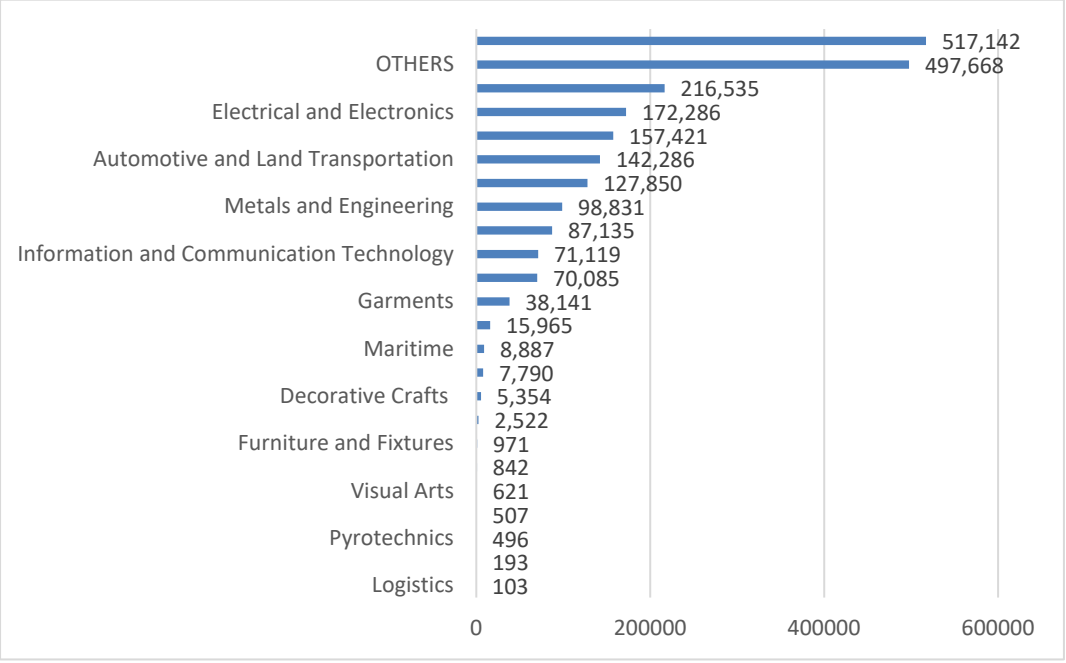
Table 3.1. VET enrollment and graduation by mode of delivery

	2010		2015		2019	
	Number	%	Number	%	Number	%
Enrolled	**1,568,617**	**100.0**	**2,281,389**	**100.0**	**2,488,922**	**100.0**
Institution-based	860,919	54.9	1,166,613	51.1	840,295	33.8
Enterprise-based	86,978	5.5	63,625	2.8	97,517	3.9
Community-based	620,720	39.6	1,051,151	46.1	1,109,245	44.6
Monitored	-	0.0	-	0.0	441,865	17.8
Graduates	**1,344,371**	**100.0**	**2,129,758**	**100.0**	**2,240,750**	**100.0**
Institution-based	671,488	49.9	1,036,290	48.7	701,042	31.3
Enterprise-based	73,352	5.5	57,002	2.7	86,842	3.9
Community-based	599,531	44.6	1,036,466	48.7	1,030,095	46.0
Monitored	-	0.0	-	0.0	422,771	18.9

Source: TESDA TVET Statistics (2015-2019); TESDA TVET Statistics (2008-2013)

The sectoral distribution of graduates appears to correspond to fast-growing sectors of the economy. Tourism, social, and community development continue to be in the top 3 (Figure 3.2). This is in response to the vigorous growth of tourism in the country in recent years (ADB 2021), at least before the Pandemic. On the other hand, information and communications technology shifted down from the top eight years ago (Orbeta and Esguerra 2016).

Figure 3.2. Graduates by Sector, 2019

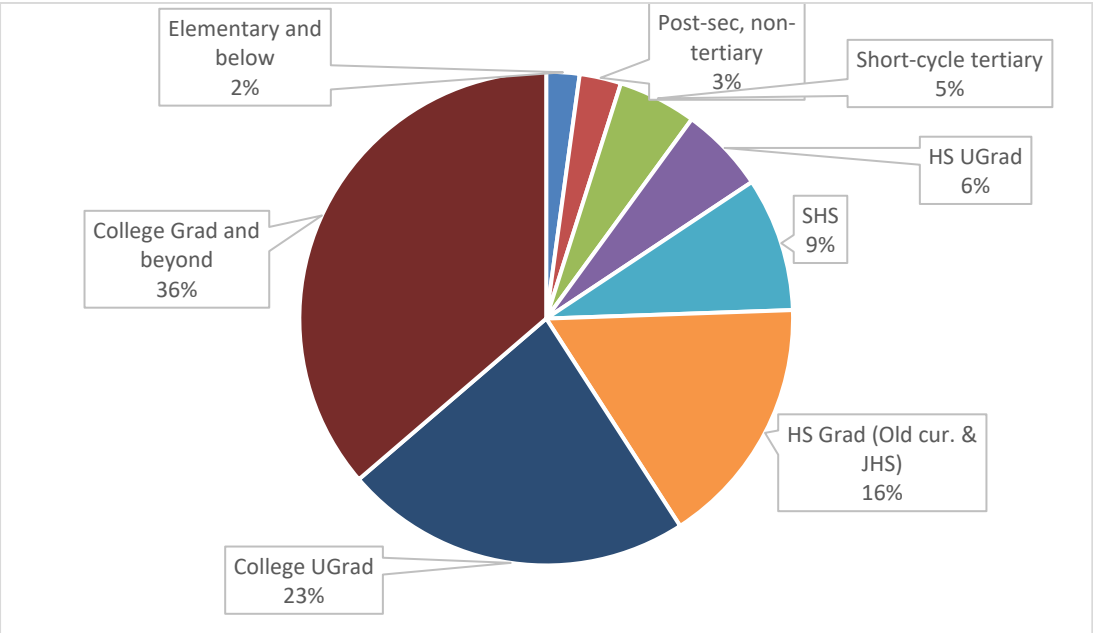


Source of basic data: TVET Statistics 2017-2019, Technical Education and Skills Development Authority

The composition and reason for taking TVE have shifted. It is common knowledge that high school graduates who do not want to pursue university education are the traditional

target of VET. However, the 2019 SETG covering 2018 graduates shows that it is no longer high school graduates that are the primary students of VET as is earlier observed in Orbeta and Esguerra (2016) covering VET graduates in 2012. Figure 3.3 shows that the largest group of VET graduates in 2018 are college graduates and beyond (36%). This is followed by university undergraduates (23%). The old curriculum high school graduates and the new curriculum junior high school (JHS) graduates are third at 16%.

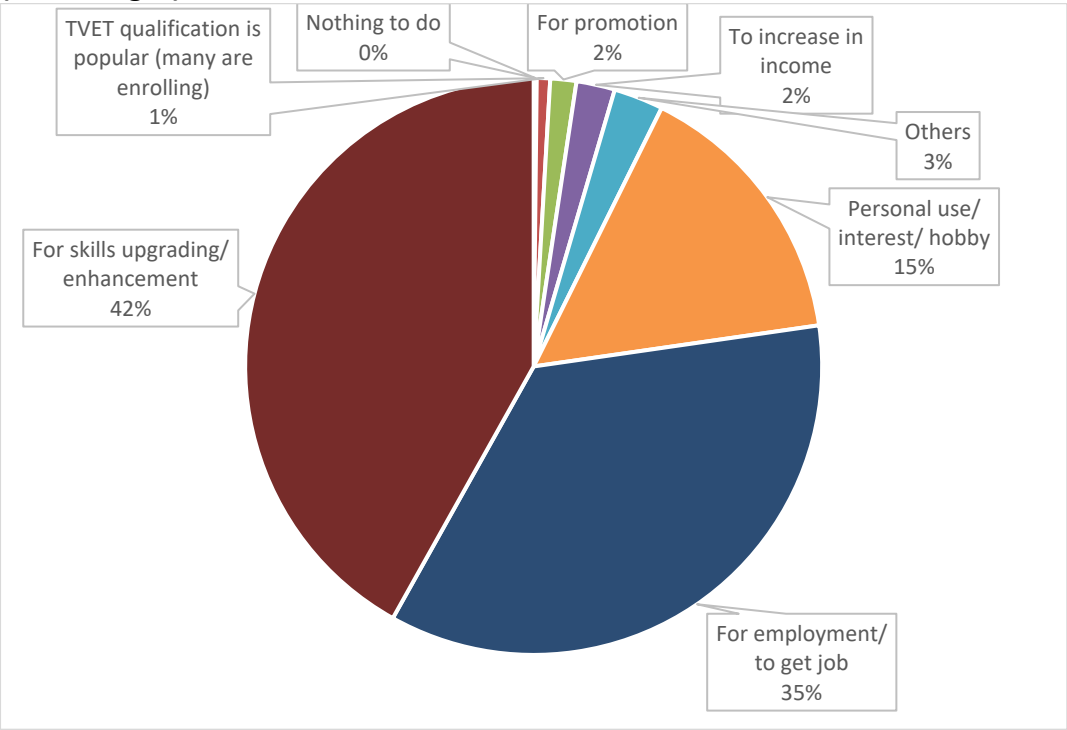
Figure 3.3. Distribution of VET graduates, by level of educational attainment prior to training, 2018 (Percentages)



Source: TESDA 2019 Study on the employability of TVET Graduates

The commonly given reason for taking VET is for employment. This is shown, for instance, in Orbeta and Esguerra (2016). However, recent data shows this is no longer the case consistent with the change in the composition of the TVET graduates. Figure 3.4 shows that skills upgrading/enhancement (42%) is the most popular reason for taking VET for 2018 graduates. This is followed by employment (35%). It is worth noting that for 2012 graduates, skill upgrading is only third at 7%. Also noteworthy is that personal use/interest/hobby (15%), which are reasons not related to skills upgrading or employment, grew in prominence from a mere 2% for graduates in 2012 (Figure 3.4).

Figure 3.4. Distribution of VET graduates, by reason of taking VET courses, 2017 (Percentages)



Source: TESDA 2019 Study on the employability of TVET Graduates

Why are we here?

EBT promotion activities are not doing enough; neither were the issues around it resolved. The lack of progress in promoting EBT is not for the lack of trying. We enacted laws on apprenticeships (PD 422), dual training (RA 7686), and, more recently, internship (RA 10869). We may have not exerted enough effort to understand the underlying incentives that have affected its uptake. EBTs have incentive incompatibility issues (Orbeta and Esguerra 2016). On the one hand, firms do not want to finance it if competitors poach trained workers. On the other hand, trainees may not have the resources to pay for the training. The strategic behavior of firms using EBTs to avoid paying commensurate wages and benefits may be challenging to monitor and, hence, difficult to enforce. This has resulted in an impasse on how to move forward the agenda of more EBTs.

Emphasis was on equity to the neglect of the efficiency objective. TVET has the dual objective of efficiency and equity as expressed in the National Technical Education and Skills Development Plan (NTESDP). The emphasis on equity in the financing of TVET has promoted community-based training, resulting in this mode becoming dominant among the modes of delivery. However, while laudable, the emphasis on equity objectives should not be allowed to diminish the pursuit of training that serves cutting-edge technology given the changing labor market needs with the advent of the Fourth Industrial Revolution.

Seeking employable skills and protection from labor market changes has encouraged college students and graduates to enroll in TVET. The rise in the proportion of college

students and graduates among the TVET trainees might be a response to the dynamic labor market they are currently facing and/or anticipating. Those with college degrees and beyond may no longer aim for employment but to add competencies to their repertoire of skills to enhance their employability in the face of changes in the labor market and technologies.

Recommendations[7]

Heighten the promotion, identify and address the issues preventing the expansion of enterprise-based training. It is widely accepted that because it is demand-driven and has better employment rates, EBTs is the preferred delivery method. In addition, EBTs have also been touted as the answer to job-skill mismatch given its nature of being demand-driven because firms conduct these. Finally, more EBTs are more attuned to rapid change in production technologies with the fourth industrial revolution (ADB 2021; Dadios et al. 2018). The recent emphasis on establishing industry boards is a step in the right direction. If this can be the venue to improve the private sector participation in TVET, this will make TVET more attuned to industry needs. TESDA has also recently implemented "EBT to the Max" with 1,876 training institutions and their partner companies participating[8]. The initiatives should provide valuable information on how to encourage participation of firms in EBT.

Keep training quality given the rising proportion of graduates from community-based training modality. Keeping the training quality high will be a challenge if community-based training continues to dominate VET output. With community-based training done mainly in communities where training resources may be scarce or even absent, safeguarding the quality of training will be a challenge. It is laudable that TESDA provides technical support for this training mode.

Ensure that 21st-century (or transversal) skills are in TVET implemented curriculum. TVET graduates are increasingly asked to deliver job-specific skills and allied competencies that will enable them to work better with other employees and with intelligent machines. UNESCO (2016) calls these 21st-century skills or transversal skills. These are group into six domains, namely (a) critical and innovative thinking, (b) interpersonal skills (e.g., presentation and communication skills, organizational skills, teamwork, etc.), (c) intra-personal skills (e.g., self-discipline, enthusiasm, perseverance/grit, self-motivation, etc., (d) global citizenship (e.g., awareness, tolerance, openness, respect for diversity, intercultural understanding, etc.), (e) media and information literacy (ability to obtain and analyze information through ICT and ability to critically evaluate information and media content), and (f) others (physical health, religious values, not falling into the other five) (UNESCO 2016, p6). The challenge is incorporating these skills in TVET. It is noted that TESDA has issued Circular No. 097 s. 2019 which specified that 21st Century Skills be part of the Competency Standards for Basic

[7] Drawn heavily from Orbeta (2022)
[8] See, for instance, https://www.tesda.gov.ph/Medi[illegible]il/20145

Competencies for all training. It needs to validate that these requirements are in the implemented curriculum and have the desired effects.

Balance the training needs for equity and the upgrading required for cutting-edge production technology. The dual objectives of TVET need to be fully understood. On the one hand, is the need to train workers who will support cutting-edge production technology for global competitiveness. On the other hand, TVET is also tasked with providing training for new entrants into the labor market and marginalized sectors. These twin objectives require different approaches, must be pursued with equal vigor, and one not sacrificed for the other. Balancing these twin objectives will constitute a challenge.

Develop capacity for flexible delivery of TVET that considers access capacities of clients. The need to develop the ability to deliver TVET in times of emergencies has been highlighted by Covid-19 Pandemic. It is common knowledge that more than 25 typhoons visit the country annually disrupting many activities, training delivery included. On the one hand, this calls for developing capacity for flexible training modalities. In addition to building the right infrastructure is developing teachers' ability to produce appropriate online content and deliver them using these new platforms. The experience with the TESDA Online Program provides the experience of developing the capacity to provide training during emergencies when it is impossible to conduct face-to-face training. It also is worth noting the experience of YouthWorks Philippines, which highlighted the challenges of Technical Vocational Institutions (TVIs) delivering remote learning for TVET students. The key informant interviews with TVIs revealed they could transfer the theory part of the training but are severely challenged with putting online the practical aspect of the training (Orbeta and Corpus 2021). On the side of trainees, the survey revealed the challenges of online access consist of lack of access devices and resources to fund connection to the internet. The project had to procure tablets and lend these to the participants to ease the shortage of access devices and provide connectivity allowance to enable training participants to access online training materials (Orbeta et al. 2021).

Develop capacity in TESDA for regulating and testing modalities to encourage private sector participation. The rapidly changing production technologies and their extensive effects on the labor market mean that the regulation function of TESDA will increasingly become complex. We also expect the primary function of TESDA to shift towards more regulating the TVET system and providing training and labor market information. Another critical capacity TESDA need is the ability to experiment and rigorously validate alternative modes of cooperating with and encouraging the private sector participation in all aspects of the TVET system. Finally, it has also been pointed out that TESDA needs organizational reforms, including public financial management and sustained quality assurance (Asian Development Bank, 2021).

Develop labor force indicators that better capture the TVET sector. The current labor force data does not fully capture the extent of TVET in the economy (Orbeta et al., 2021). While the labor force survey captures the highest grade completed, including post-secondary non-tertiary education, this only includes those who took their TVET training in TVIs. It does not include

those in the enterprise- and community-based training. As noted above, community-based trainees constituted 45% of trainees in 2019. This gap needs to be addressed to provide a more comprehensive picture of TVET.

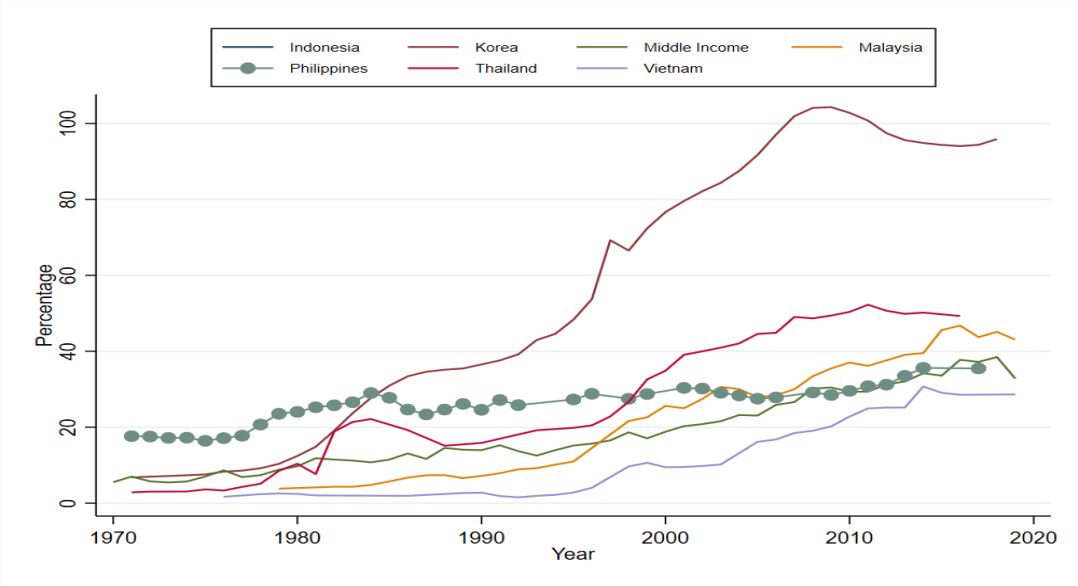
Develop and regularly publish more granular indicators of the training offering and performance of TVIs. Informed household decisions on pursuing technical education and firms' hiring decisions require good granular information. TESDA is providing aggregated information on the sector. However, these are not sufficient to inform households' and firms' decisions. Households and firms would need TVI- and training-level information to decide what training to pursue, which graduates to hire, and from which TVI. At the minimum, there is a need for TVI- and training-level information on training offerings, costs, passing rates in national certifications, and employment rates.

4. Higher Education

Where are we now?

Attendance is high given our income level. The enrollment rate in Philippine higher education is on par with middle-income countries' average (Figure 4.1). This is, however, rapidly eroding as neighboring countries continue to rise while the country's enrollment rate has stagnated, as shown in the figure.

Figure 4.1. Tertiary Enrollment (%) Comparison Between the Philippines, Regional Peers and the Average of middle-income Countries



Source: World Bank World Development Indicators

Quality is uneven, with very few universities are rated in the top 1000 universities of the world. Even if graduates have served in global labor markets for decades (King 2020), only a handful of universities landed in the top 1000 universities of the world. The passing rate in PBEs is below 40% (Figure 4.1). In terms of inputs, only half of the faculty have graduate degrees, and less than 20% have Ph.D. degrees. Less than 30% of the HEIs have accredited programs. This may have been carried forward with struggling quality in basic education.

Table 4.1. Quality Indicators

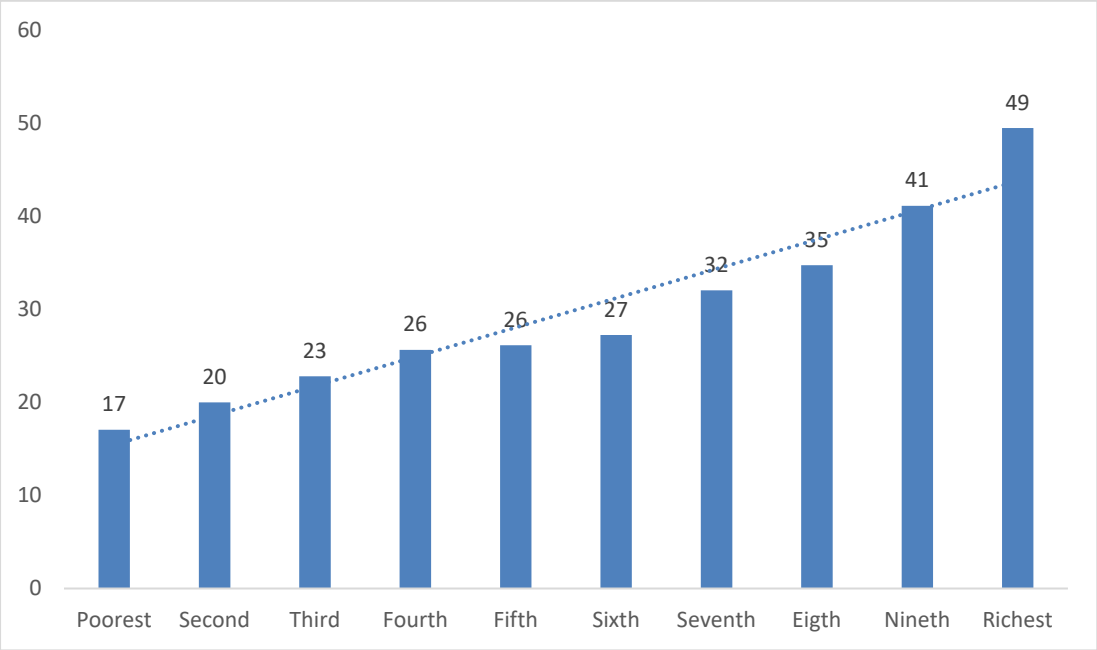
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Performance (% Passing) in licensure examination										
Across all disciplines **(Overall takers)**	36	34	36	43	39	40	39	38	37	38
Across all disciplines **(First-time takers)**	50	50	54	61	60	60	59	56	57	56
Faculty Qualification										
% with graduate degrees	45	50	54	50	53	53	53	54	54	54
% with PhD	10	11	13	11	12	13	13	13	14	17

Accreditation										
% of HEIs with Accredited Programs	20	20	22	22	24	25	27	28	29	29

Source: Commission on Higher Education (CHED)

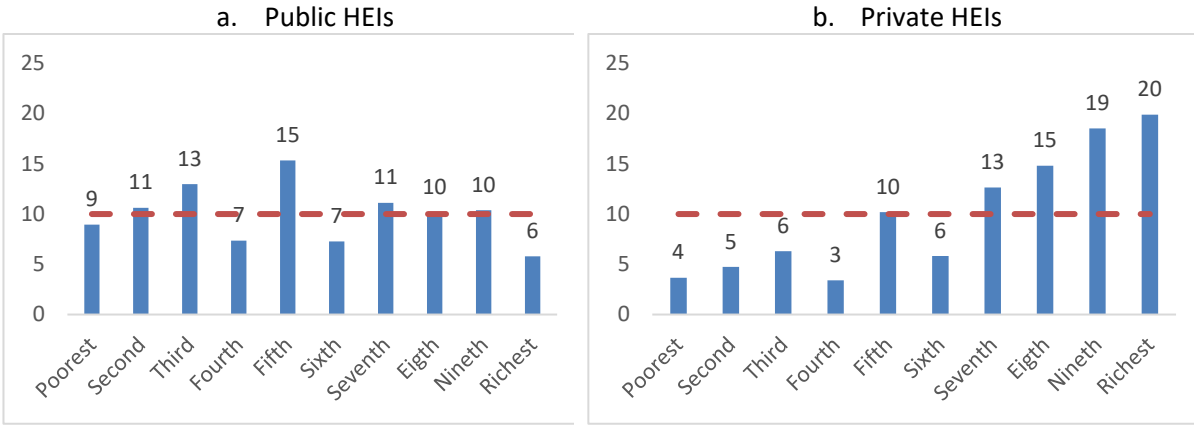
Inequitable access persists. Equity in access remains elusive. In 2019, while 49% of the richest decile attend higher education, only 17% from the poorest decile can do so (Figure 4.2). The poor are underrepresented even in public HEIs. It is entirely understandable that an even more skewed distribution in favor of richer students can be found in private HEIs (Figure 4.3b). The solution offered by the state is to provide free tuition in public state universities and colleges (SUCs) and local universities (LUCs). In addition, it also provided for tertiary education subsidy (TES) for the poor in private HEIs. It remains to be seen whether this will increase the participation of students from poorer households. The pre-implementation analysis has expected that this may exacerbate the inequities as the better academically prepared students from the richer families may bump off less prepared students from poor households in the competition for limited slots (Orbeta and Paqueo 2017). In the initial assessment of the program's implementation, the interviews with higher education leaders revealed doubts on the program's sustainability (Ortiz et al., 2019). It also noted birthing pains in the implementation.

Figure 4.2. Net enrollment rate in higher education by income decile, 2019



Source of basic data: APIS 2019 (18-21 year olds)

Figure 4.3. Distribution of enrollment in public and private HEIs, by income decile (2019)



Source of basic data: APIS 2019

Underdeveloped research and innovation system. The Science, Technology, Research and Innovation for Development (STRIDE) program assessed the Philippine innovation ecosystem by looking at five components, namely: (a) education and human capital development; (b) research and knowledge creation; (c) collaboration between universities and industry; (d) intellectual property, protection, licensing, and commercialization of technologies; and (e) start-up companies based on technological innovation using a survey of perception of ecosystem stakeholders (Klich and Dix 2020). From the stakeholders' perspectives, education and human capital development were deemed acceptable by global standards. However, it highlighted that STEM graduates lack exposure to research culture, and the training is too focused on getting students to pass board examinations.

In terms of university-industry collaboration in research and development, an earlier review revealed that we are still in an emergent stage in the common forms of collaboration such as (a) collaborative research and development (R&D), (b) commission research, (c) technology licensing, and (d) the creation of spin-off companies (Vea 2014). The study recommends (a) a massive S&T manpower-building program, (b) the creation of a university of science and technology, and (c) transforming existing public universities into research universities.

In terms of S&T manpower, Albert et al. (2020) find that we are not producing enough S&T graduates, and often S&T graduates are not doing R&D jobs and/or do not persist in jobs requiring S&T skills. It is noteworthy that Orbeta et al. (2016) pointed out that science graduates are paid lower compared to other college graduates.

The private education sector is steadily being marginalized. The share in enrollment of private HEIs has declined by 16 percentage points in the last 20 years or by about one percentage points per year from AY 1999-2000 to 2019-2020 (Table 4.2). It is worth noting that the share of private HEIs was even higher in earlier decades, reaching about 90% in AY 1970-71 (Orbeta 2002).

The growth in public schools comes from the satellite campuses of SUCs and LUCs. In the private sector, the growth comes from the non-sectarian group.

Table 4.2. Composition and Enrollment of Higher Education Institutions

	1999-2000		2009-2010		2019-2020	
	Number	**%**	**Number**	**%**	**Number**	**%**
Number of HEIs						
Total HEIs (including SUC Satellite Campuses)	1563	100.0	2,180	100.0	2,396	100.0
Public	391	25.0	607	27.8	667	27.8
State Universities and Colleges (SUCs)	107	6.8	109	5	112	4.6
SUC Satellite Campuses	159	10.2	389	17.8	421	17.6
Local Colleges and Universities (LUCs)	37	2.4	93	4.3	121	5
Others (include Special HEIs)	88	5.6	16	0.7	13	0.5
Private	1172	75.0	1,573	72.2	1,729	72.2
Sectarian	306	19.6	322	14.8	339	14.2
Non-sectarian	866	55.4	1,251	57.4	1,390	58
Enrollment						
Total Enrollment	2,373,486	100.0	2,774,368	100	3,408,425	100
Public	717,445	30.2	1,087,983	39.2	1,575,645	46.2
Private	1,656,041	69.8	1,686,385	60.8	1,832,780	53.8

Source: CHED

Why are we here?

Low quality starts from basic education. The low quality in higher education can be traced to low quality in basic education. The inputs in the form of low teacher qualifications also contribute to low quality (Table 4.1). The HEIs chosen self-regulation mechanism does not also cover much of the offered programs. Finally, Tan (2011) traced the poor-quality education to the government's populist policy which expanded the number of universities and their enrollment. She argued that given low income in the country, households and the government can only afford low-cost low-quality higher education.

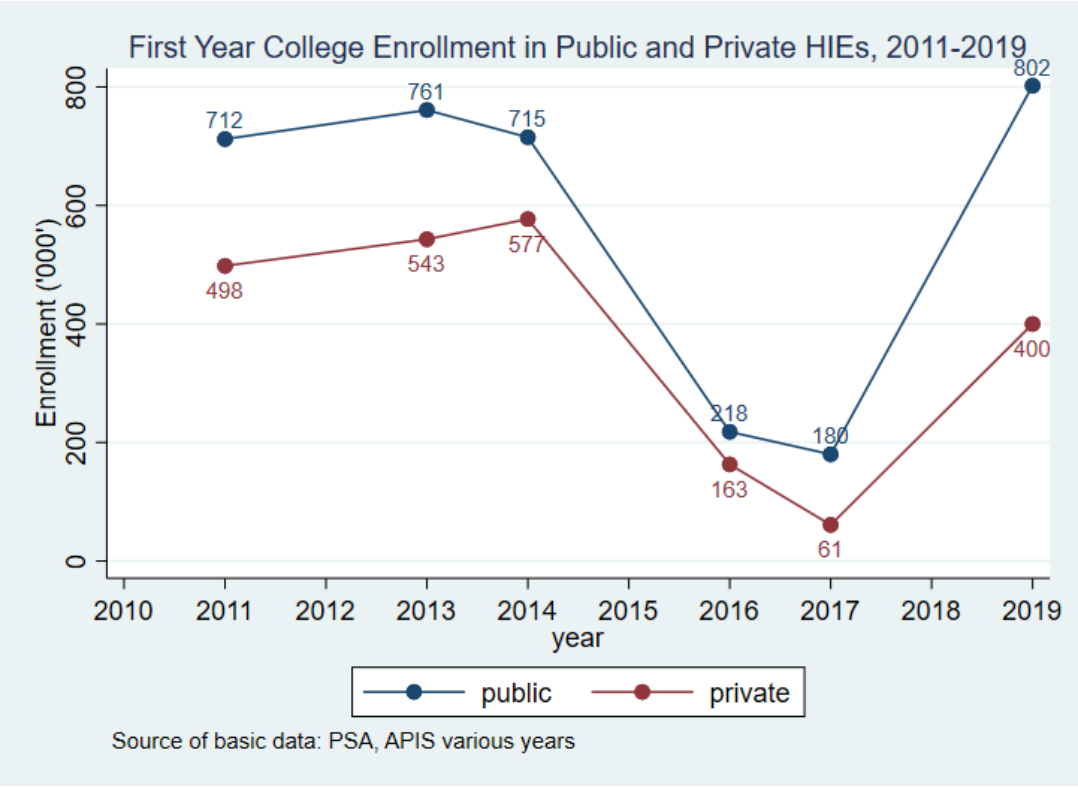
The recent changes in public financing programs will not solve the equity in access issue. The equity of access issue cannot be readily solved at the tertiary level since most of the poor do not reach college. This is the basic reason college education will always be skewed in favor of the richer households (e.g., Figure 4.2) even if we assume the same propensity to enroll in higher education across income classes. Recent financing reforms such as free tuition in SUCs and LUCs will not increase access for the poor as public HEIs do not have large proportion from poor households (Figure 4.3a). Increasing access for the poor need to start from basic education and/or large-scale affirmative action targeted at poor households with children who are high school graduates and willing to pursue and able to complete college education.

Education policy is marginalizing the private sector. The growth in the SUCs and LUCs is one reason why the private sector has a declining share. The growth in public schools comes from the satellite campuses of SUCs and [illegible]e private schools were also negatively

affected by the widening salary gap between teachers in public and private HEIs resulting from the salary standardization interventions affecting government HEIs. This has caused the migration of faculty from private to public HEIs.

The Universal Access to Quality Tertiary Education (RA 10931)[9] that provides free tuition in SUCs and LUCs is expected to reduce their share some more. It was pointed out in the initial assessment in Ortiz et al. (2019) that after the implementation of the SHS program in SY 2016-2017, which made JHS students go through SHS before going to college showed some indication of this. Figure 4.4 shows the Figure 3 in Ortiz et al. (2019) with updated data. It says that by 2019 the public HEIs have enrollment that is already 112 percent (802/715) of their pre-SHS enrollment (2014), while private schools have only 69 percent (400/577) of their pre-SHS enrollment.

Figure 4.4. First-year enrollment in public and private HEIs, 2011-2019



The lack of exposure to research culture and academe-industry linkages that are in still in an emergent stage. The drivers that are expected to spur innovation are absent. As mentioned earlier, the assessment done in Vea (2014) revealed that the country is in an emergent stage in the four forms of industry-academe collaboration, namely: collaborative R&D, commission research, technology licensing, and the creation of spin-off companies. STEM graduates lack exposure to research culture and their training are too focused on getting students to pass board examinations (Klich and Dix 2020).

[9] This law was approved by President Duterte over the objections of some economic team.

Recommendations[10]

Address low and uneven quality. There are clear indications that quality is highly uneven among the HEIs. Only a handful of the more than 2,000 HEIs are listed among the top universities in the world university rankings, and this is a mix of public and private HEIs. Enforce the standing rule of closing programs that successively do not result in passing professional board examinations. Encourage more HEIs to become Centers of Excellence (COE) and Centers of Development (COD). Promote voluntary accreditation.

Address inequitable access with better financing scheme. The free tuition policy in SUCs and LUCs under RA 10931 will not solve the inequitable access. As shown earlier, the students in public HEIs are not predominantly poor but come from the middle class and include children in upper-income classes. In addition, it may even worsen the inequity as better academically prepared children of richer households will outcompete less academically prepared children of poor households for limited slots in SUCs and LUCs (Orbeta and Paqueo 2017). The UniFAST law (RA 10867) proposal of using grants-in-aid to fully fund the education of children of poor households would be better targeted and much more sustainable. The experience of the Students Grants-in-Aid Program for Poverty Alleviation (SGP-PA), which fully funds children of 4Ps families that are eligible for college, provides evidence that children from poor households can catch up with their peers by the second year in college (Silfverberg and Orbeta 2017).

Develop the R&D culture in Philippine HEIs and address the underdeveloped innovation ecosystem. The lack of research culture in Philippine HEIs may be because of several reasons such as lack of funding and overload in teaching, leaving little time for doing research. In addition, even if research is done, it may not yield its full benefits if there is no functioning innovation ecosystem that transforms research into a product or idea commercialization (World Bank 2002). Hence, a fully functioning innovation ecosystem is critical for encouraging university research. The system will include: (a) knowledge-producing organizations in the education and training system; (b) the appropriate macroeconomic and regulatory framework, including trade policies that affect technology diffusion; (c) innovative firms and networks of enterprises; (d) adequate communication infrastructures; and € other factors such as access to the global knowledge base and certain market conditions that favor innovation (World Bank 2002, p24).

Promote the constitutionally mandated complementarity between public and private HEIs by harnessing the strengths of the private education sector. Instead of continuously marginalizing the private education sector, it would serve the education system better if ways of harnessing their strengths were found. This has been shown in better agility to respond to changing market demand and offering courses of comparable quality relative to the public HEIs but at a lower price. Implement well the tertiary education subsidy (TES) that targets poor students enrolled in private schools. Make tertiary education financing follow the student.

[10] Drawn from Bautista, Paqueo and Orbeta (forthcoming).

Develop and regularly publish more granular indicators of the performance of HEIs. Right decisions of households on whether to pursue higher education, which HEIs or programs to enroll in depend on good information about schools and programs. At the minimum, this should include HEI- and program-level passing rates in professional board examinations, employment rates of their graduates, and tuition fees.

Learn from the experience during the Covid-19 Pandemic to determine the appropriate role of technology in remote learning considering existing infrastructure and what can be expected in the new few years. The Covid-19 Pandemic and the decision of the President to prohibit face-to-face learning has forced the education system into remote learning delivery. Unfortunately, unlike in basic education, there is no readily available comprehensive data on the mode of learning prevailing in higher education. Suppose we use the data from the basic education shown earlier (Figure 2.6), which showed a tendency for higher proportion on online as one goes up the grades as the gauge. In that case, we can expect that higher education will have a higher proportion in online mode. This expectation is borne by the SWS survey showing a higher proportion of college students in online mode than those in lower grades (SWS 2021). Another factor that points to a higher proportion online among college students is that most come from richer households. Similarly, there may be a higher proportion online in private than public HEIs given the distribution by socioeconomic class of internet connectivity and availability of access devices in the household. However, information[11] from a cluster of HEIs serving low-income students revealed that what works for their clients is a low-tech approach to remote learning consisting of printed modules with remote coaching using a low-volume data plan. This range of experiences should provide CHED guidance on what will be effective for remote learning given the level of connectivity and availability of access devices in Philippine households. The Bayanihan 2 (RA 11494) allocated 3 billion to fund smart campus projects of SUCs. While they may be good over the longer term, these projects should also consider that online access to students today will not only consist of providing learning materials online but is also dependent on the internet connectivity and availability of access devices at home.

[11] Interview with PHINMA Education executives.

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