



Senior high school: What do additional years of basic education schooling buy?

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The Enhanced Basic Education Act of 2013 (Republic Act 10533), commonly known as the K to 12 Law, expanded the Philippines' basic education to include a two-year senior high school (SHS) program. Early assessments highlighted many internal and external challenges that may have limited the program's immediate success. Several legislations have already been proposed to expand, streamline, or strengthen the program to ensure its alignment with demands beyond SHS.

This *Policy Note* summarizes new early evidence on the impact of the SHS program on the timing of school attendance and employment, quality of employment, and even marriage, fertility, and child health. While the results presented in this paper may be encouraging, it is important not to overlook the many implementation gaps that must be addressed.¹

Where we want to go

The Philippines' SHS program, first implemented in the school year (SY) 2016–2017 as part of the country's K to 12 curriculum, allows students to choose a specialization based on their ability and interests and the school's program offerings. Students may choose a specific strand from one of four tracks: academic, technical-vocational-livelihood (TVL), arts and design, and sports. In addition to track-related courses, all students are

Salient Points:

- ▶ The senior high school (SHS) policy shifted the age schedule of school attendance and employment among children required to attend SHS.
- ▶ While other labor market outcomes are not distinctly superior over junior high school (JHS) graduates, children induced to attend SHS tend to earn higher wages and are more likely to be employed in middle-skill jobs compared with JHS graduates.
- ▶ While switching back to K to 10 [Kinder to Grade 10] or limiting SHS to those attending college may be financially more rewarding in the medium term, the K to 12 [Kinder to Grade 12] program may be a superior option in the longer term based on projections.
- ▶ SHS education may have important intergenerational implications as females induced to attend SHS are more likely to delay marriage and childbearing, while their children are likely to be healthier.

¹See, for instance, Brillantes et al. (2019)

grounded with a core curriculum that includes courses on languages, literature, communication, mathematics, philosophy, natural sciences, and social sciences. These core courses have been moved down from the first two years of college in the old college curriculum.

According to the Department of Education (DepEd 2016, p.2), the overarching goal of the SHS curriculum is to produce graduates who are “holistically developed; equipped with 21st-century skills; and prepared for the future, be it in the pursuit of higher education or acquisition of middle-level skills, or geared toward employment or entrepreneurship”.

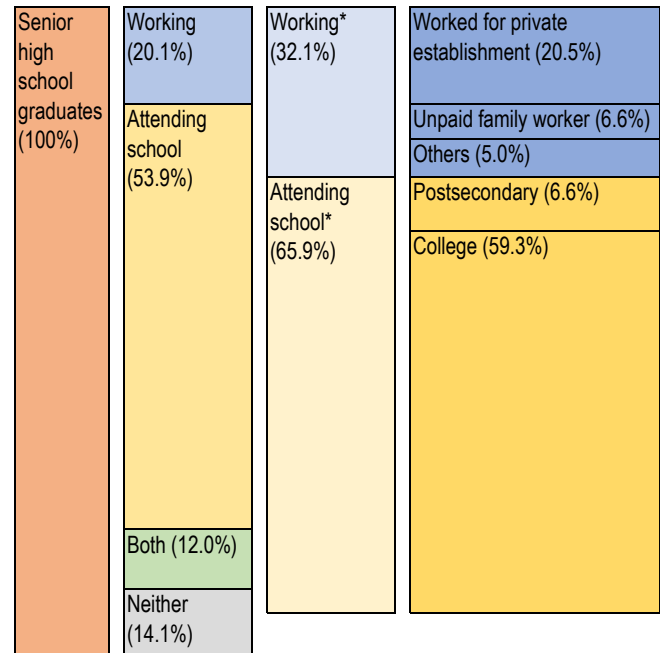
What we think we know

But what paths do SHS students actually take after graduation?

Estimates from the 2019 Annual Poverty Indicators Survey (PSA 2020), a nationally representative survey conducted almost yearly in July, show that more than half (53.9%) of the earliest cohorts of SHS graduates were attending school. About a fifth (20.1%) were working, while about a tenth (12.0%) were both attending school and working. The remaining portion (14.1%) were not involved in either activity. Among those who reported being employed, about 3 in 5 said they worked for a private establishment, while about 1 in 5 worked as unpaid family workers. Meanwhile, among those who reported studying, 9 in 10 said they were pursuing a college education, while the rest were doing postsecondary training (Figure 1).

This significant transition to higher education among SHS graduates is likewise observed in the Philippine Labor Force Survey (PSA 2012), as shown in Figure 2. Among those born between 1999 and 2002 (i.e., the first cohorts expected to attend SHS), about 40 percent have attended postsecondary or tertiary education by age 20, leaving about 25 percent with SHS as their highest school attainment. This outcome is expected, as a college education is a universal aspiration among Filipino families (David and Dumdum 2016) with attractive financial returns (e.g., Gerochi 2002;

Figure 1. Where were the SHS graduates?



* Includes both working and attending school
 Note: Values may not add up to the total due to rounding.
 Source of basic data: PSA (2020)

Abrigo and Orbeta, forthcoming). Indeed, a similar share of the college-attending population may be observed among those born between 1995 and 1998, the immediate cohort before the earliest SHS cohort.

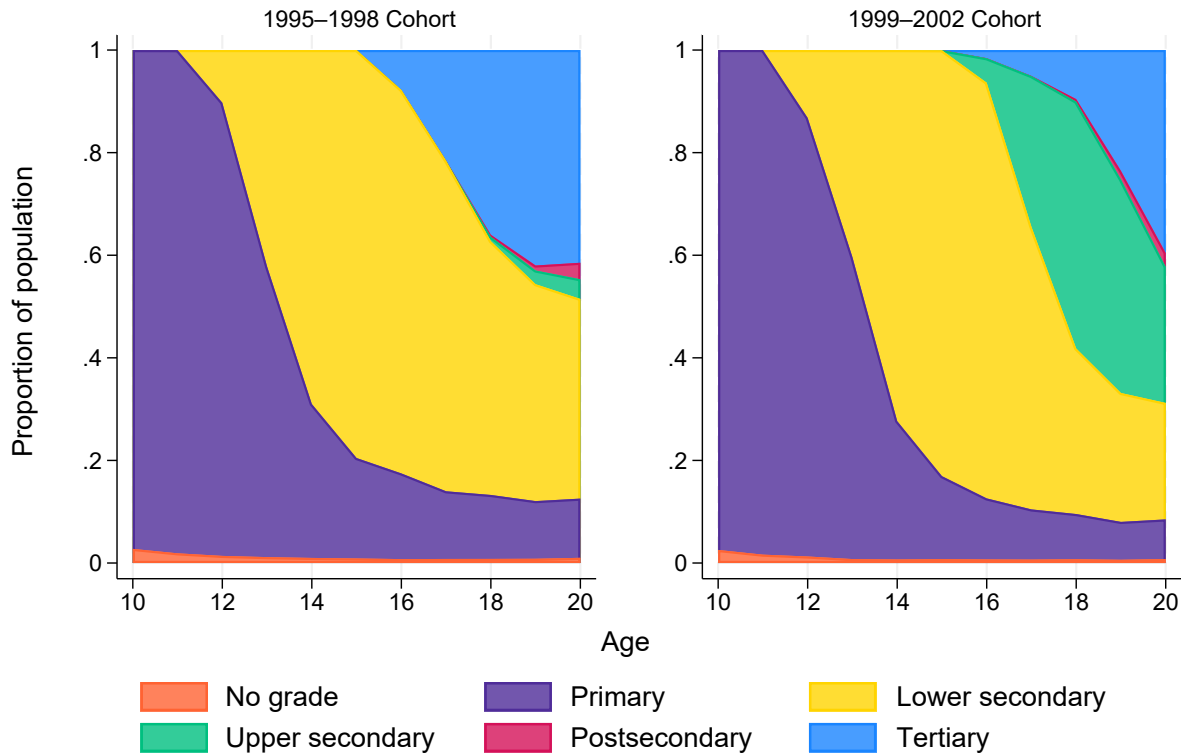
While much attention has been placed on the continuing trend in college attendance despite the specialized tracks in the SHS curriculum, little has been said about those who could benefit greatly from the program. These children would have stopped schooling with 10 years of basic education without the additional 2 years required in senior high school.

How have the additional years of required basic education affected their lives?

Where we really are

Providing answers to such a seemingly simple question may not be very straightforward. On the one hand, those who have stopped schooling at junior high school (JHS) could have entered the workforce earlier

Figure 2. School transition among pre-SHS and SHS cohorts



SHS = senior high school

Note: The pre-SHS cohort in the figure refers to those born between 1995 and 1998, while the SHS cohort refers to those born between 1999 and 2002.

Source: Authors' calculations based on PSA (various years)

and amassed greater work experience despite having lower schooling credentials than those who continued to SHS. On the other hand, other factors beyond schooling and work, such as child living conditions, the COVID-19 pandemic, and other concurrent government programs, may influence life trajectories. To understand how the SHS policy affected families' lives, it is crucial to isolate the causal impact of the additional years of schooling from the influence of these other potential confounding variables.

Serendipitously, the way the SHS policy had been rolled out provides an opportunity by which the effects of the policy may be properly assessed. Based on the 2013 K to 12 Law and its implementing rules, SHS was set to be implemented nationwide starting in the SY 2016-2017. Since this information was not

publicly known before 2013, parents had no way of timing their childbirth to ensure their children would be born before 1999 and thereby exempt from attending SHS. Consequently, being born to a cohort who would eventually be required to attend SHS is only a matter of chance for children born within a few years of each other.

If this is indeed true, then households with children born between 1995 and 1998 (i.e., the pre-SHS cohort) and between 1999 and 2002 (i.e., the SHS cohort) would have very similar characteristics, which have been observed when compared in 2003 and 2015. This natural experiment allows an apples-to-apples comparison between children who stopped their education at JHS and those who continued to SHS, with the only significant difference being those born from 1999 onwards were more likely to attend SHS.

School attendance and employment timing

Figure 3 summarizes the impact of being born to the SHS cohort on the probabilities of attending school and having a job by single-year age group among siblings born between 1995 and 2002 in the 2005 First Quarter to 2022 Second Quarter (Q2) Labor Force Survey. The estimates are capped at age 22, coinciding with the oldest SHS cohort in the 2022 Q2 Labor Force Survey.

Children born starting in 1999 were more likely to attend school after age 15, with the difference between pre-SHS and SHS cohorts peaking at ages 17 and 21.² A closer inspection of the data reveals that the first hump is due to younger cohorts attending SHS, while the second hump results from the delay in college attendance induced by the additional two years of SHS.

Exposure to the SHS policy decreases the probability of having a job after age 15. This result may be linked to the shift in the age schedule of school attendance.

² Ducanes and Ocampo (2019) found similar results among 16–17-year-olds.

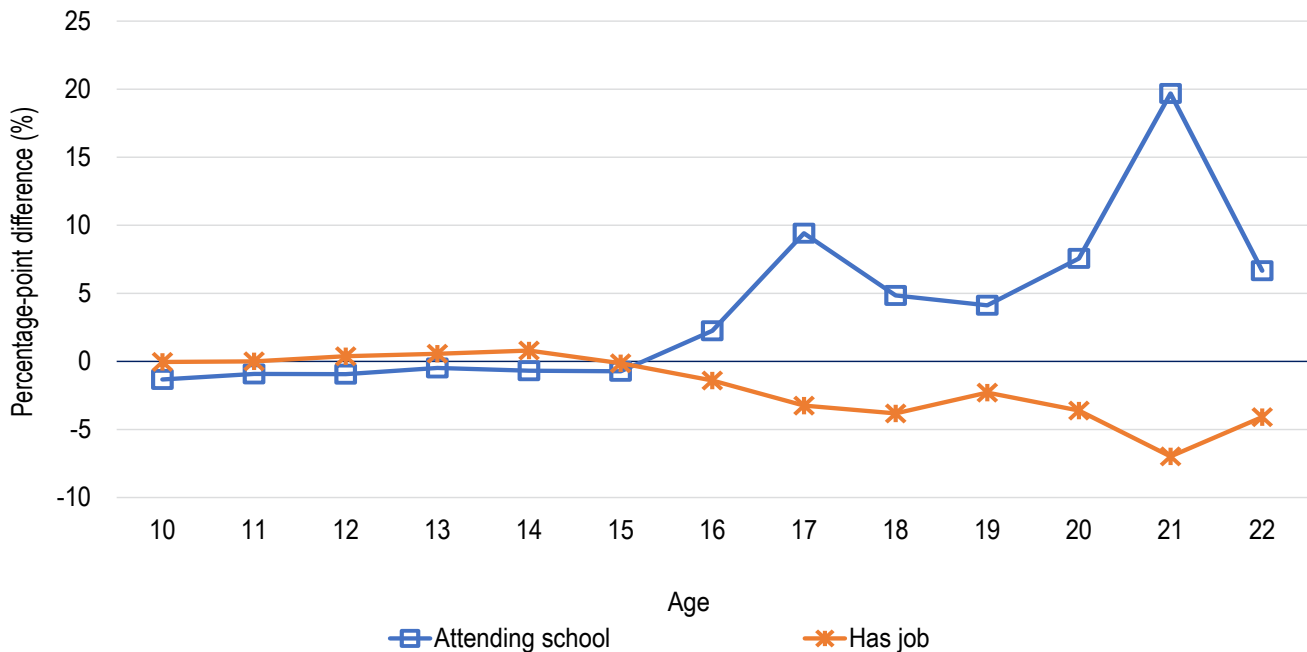
Since children from SHS cohorts are more likely to attend school after age 15, their chances of engaging in work diminish.

It is instructive to highlight that there appears to be no difference in the probabilities of attending school or having a job until age 15. This result is expected since the SHS policy affects only those who graduated from JHS, typically around age 15 or 16. This provides a useful countercheck that the estimated impacts are due to the SHS policy and not because of any other interventions.

Labor force status and employment quality

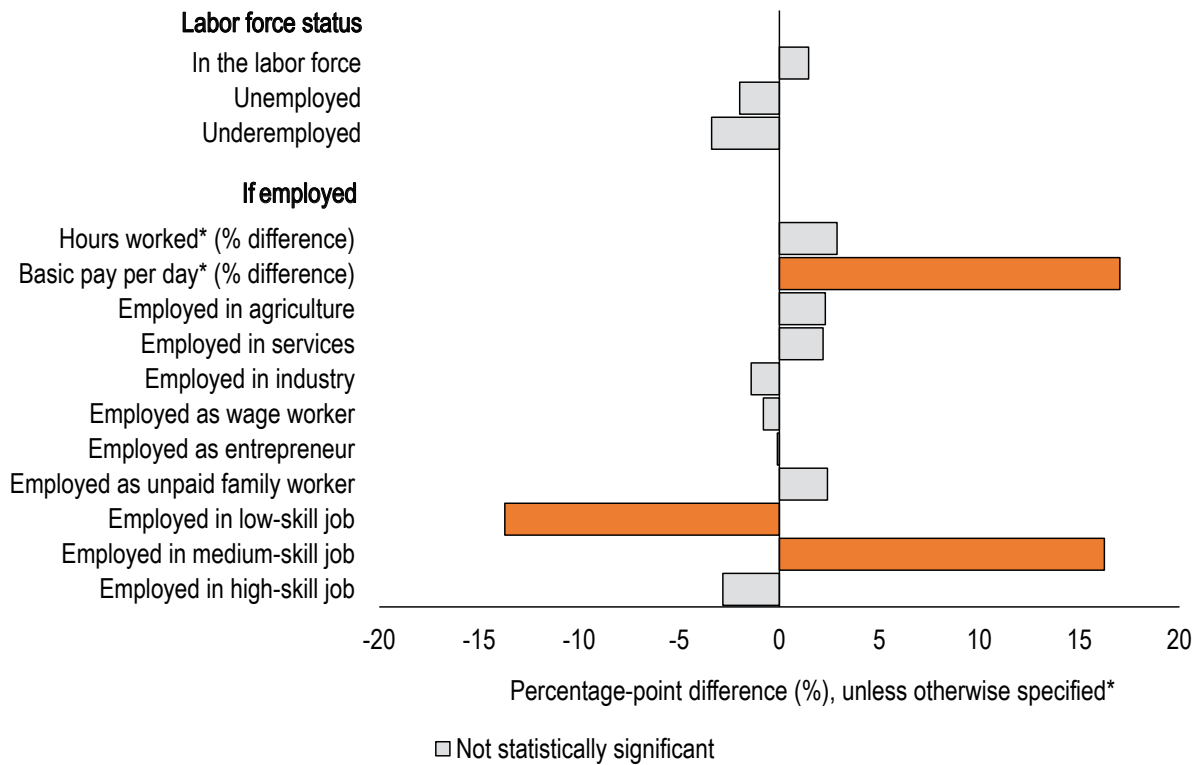
As previously mentioned, if there are any winners from the SHS policy, it is likely to be those children who were induced to take additional years of training but would have otherwise stopped with 10 years of basic education in the old curriculum. Figure 4 summarizes the employment impacts on this population. The estimates were based on the Labor Force Survey sample of (a) nonminor children aged 19–22 who

Figure 3. Effect of exposure to SHS policy on the propensity of school attendance and having a job



SHS = senior high school
Source: Authors' calculations

Figure 4. Effect of SHS attendance on selected labor outcomes



SHS = senior high school
Source: Authors' calculations

(b) finished JHS, or its equivalent in the old curriculum, (c) were not attending school at the time of the survey, and (d) had never attended postsecondary or tertiary education.

Those induced to attend SHS were statistically as likely to be in the labor force, unemployed, or underemployed as JHS graduates. Among those employed, they are also likely to work similar lengths of time per week. The probability of being engaged in agriculture, industry, or services, as well as being a wage worker, entrepreneur, or unpaid family worker, are also not statistically different between those induced to attend SHS and JHS graduates.

However, those induced to attend SHS enjoy an 18.6-percent wage premium relative to JHS graduates.³

³ Orbeta and Potestad (2020), using a different methodology, found similar result, although more muted effects.

This outcome is likely due to differences in the occupation types where they are employed. Those induced to attend SHS were 13.7-percentage points less likely to be employed as a low-skilled worker and were 16.2-percentage points more likely to be in medium-skill⁴ employment. Low-skill occupations perform simple and routine manual tasks, such as those by street sweepers, farm laborers, and house helpers. On the other hand, medium-skill jobs typically require advanced literacy and numeracy skills and good interpersonal communication skills, such as those performed by customer service clerks, sales associates, and craft and trade workers.

Financial benefit-cost analysis

It is essential to underscore that while those induced to attend SHS may benefit from higher wages compared with JHS graduates, such additional

⁴ Low skill and medium skill correspond to broad Skill Level 2 in the International Standard Classification of Occupation (ISCO-08).

benefits must be appreciated in light of the additional costs associated with SHS attendance. For example, the government had to hire additional teachers, develop new modules, and construct more classrooms to accommodate SHS students. Households have to extend providing pocket money to their children attending SHS. There is also the opportunity cost of time for SHS students who could have already been working had they stopped at JHS but were instead still attending classes.

Figure 5 presents the projected net financial benefits of attending SHS. At the individual level (Panel A), considering the opportunity costs of attending SHS, including foregone wages and direct public and private schooling costs, a lifetime 10-percent wage premium over JHS graduates from ages 23 to 65 translates to a 9.2-percent annual rate of return for attending SHS. Given the estimated 18.6-percent SHS premium for workers aged 19 to 22, this may be a lowball figure. For comparison, the annual dividend

rates from the Modified Pag-IBIG 2 (MP2) Savings ranged only between 4.6 and 8.1 percent over the last decade.

Shifting back to the old K to 10 or a modified K+10+2 program, wherein only select college programs require SHS education, may be beneficial in the medium term when projected costs and benefits are aggregated at the population level (Panel B). The lower total costs of providing SHS to fewer students may outweigh the projected additional labor income from those induced to attend SHS. However, K to 12 may be a superior option in the longer term as SHS graduates in their prime age reach critical mass and can contribute more through their labor.

Beyond finances: Marriage, fertility, and child health
 The impact of SHS attendance may go beyond employment, as shown in Figure 6. Applying the same natural experiment described earlier but using data from the 2017 and 2022 National Demographic and

Figure 5. Projected net financial benefits

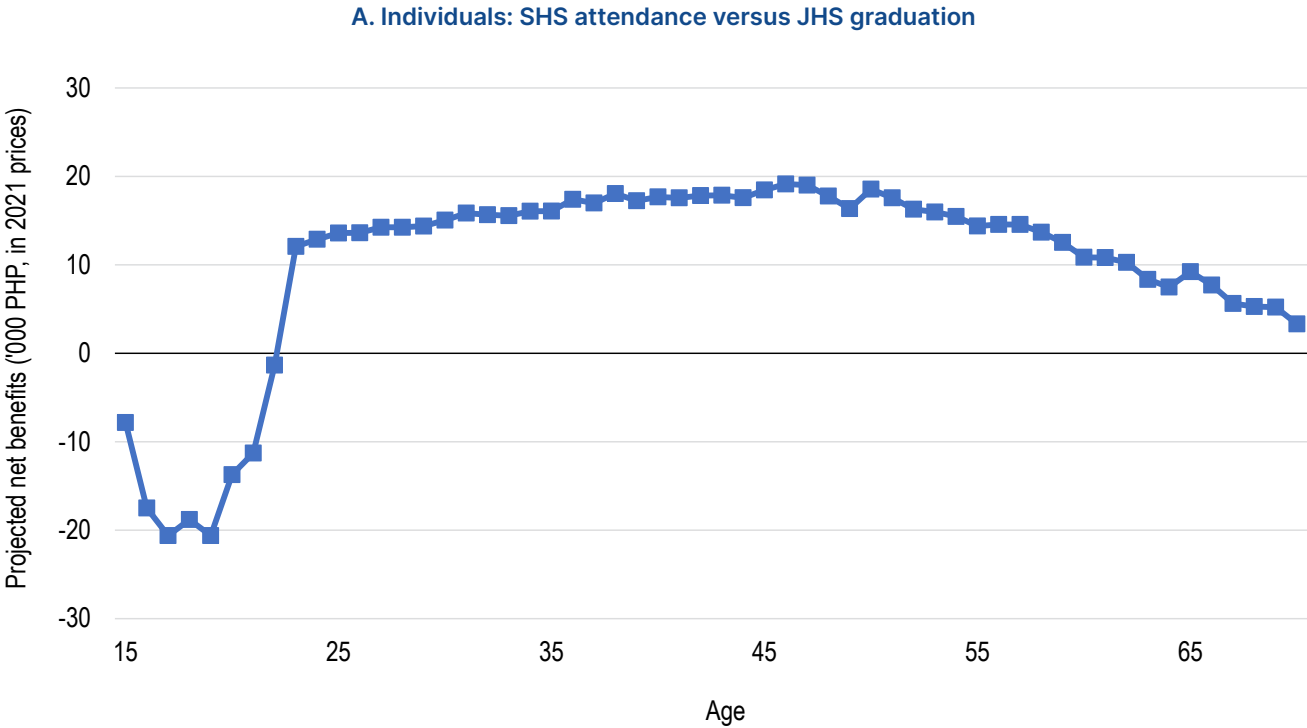
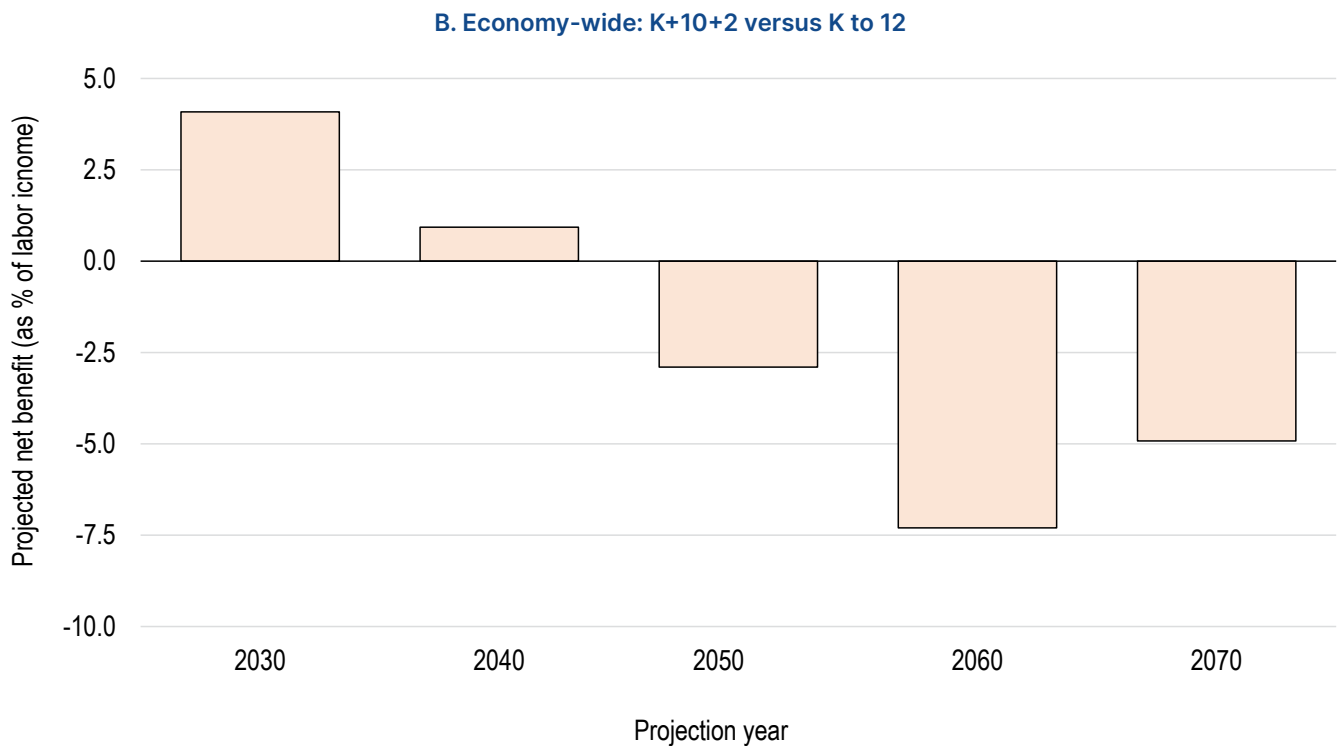


Figure 5 (continued)



SHS = senior high school; JHS = junior high school; K+10+2 = compulsory Kindergarten and 10 years of basic education plus 2 years of SHS for those pursuing select college programs; K to 12 = Kinder to Grade 12
Note: Estimates in Panel A refer to projected net benefits of SHS attendance relative to JHS graduation. Estimates in Panel B refer to projected aggregate net benefits of a K+10+2 program, wherein half of the college-attending students go through SHS, relative to a K to 12 program. Projected net benefits are calculated as the difference between projected labor incomes and schooling costs between the specified scenarios.
Source: Authors' calculations

Health Surveys (PSA 2018, 2023), the evidence suggests that females who were induced to attend SHS are more likely to delay marriage and childbearing. In addition, children born to these mothers are less likely to be reported as having fever or diarrhea in the recent past and are also less likely to die before reaching age one. These suggest that children born to SHS-educated parents are generally healthier than those born to JHS graduates.

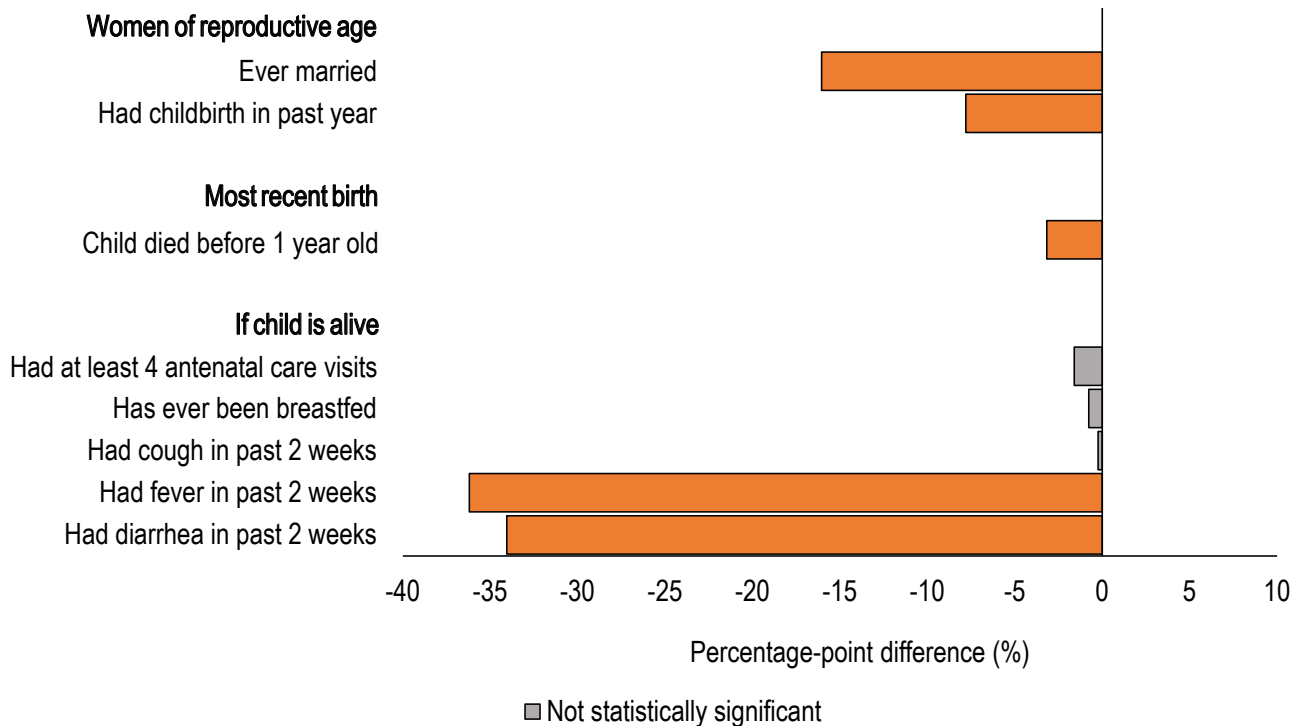
These observations may be important for several reasons. First, the returns to SHS education reported earlier may be severely undervalued, as it only considered projected direct financial flows and does not include positive spillovers, such as on child health. A more holistic benefit-cost analysis would

also account for such externalities—both positive and negative—in examining the social returns to human capital investments. Second, SHS education may have valuable intergenerational economic contributions. However, these are often overlooked in public discussions. Finally, this opens a new research agenda on the impact of local education reform on outcomes not commonly considered but have important implications for families' quality of life.

How we can move forward

The new pieces of evidence presented here appear to be largely in favor of SHS education. But these do not necessarily imply that the implementation of the SHS program had been perfect. Indeed, previous studies documented many implementation challenges,

Figure 6. Effect of SHS attendance on marriage, fertility, and child health



SHS = senior high school
 Source: Authors' calculations

including inadequate human resources, limited SHS track and strand options for students, and poor coordination with external partners (Brillantes et al. 2019; Gamboa et al. 2020). Early research also documented poor confidence among SHS students in finding a job after graduation, while employers hesitated about hiring SHS graduates (Orbeta et al. 2019). Longstanding issues on schooling quality remain significant in SHS. For example, students struggle with different reading and writing competencies (Urbano et al. 2021) despite many opportunities for assessment across the school cycle (Magno and Piosang 2016).

Several recommendations have been put forward to address these challenges, many of which are systemic in nature and extend beyond the scope of SHS or the education sector. Three main themes are highlighted in the next section.

Address gaps in service delivery

The appreciation of students of the SHS program has been documented to depend on teaching quality, subject relevance, and learning resources and facilities available (Orbeta et al. 2019). However, an early process evaluation conducted in 2018 showed that the available physical and human resources in many locations were inadequate (Brillantes et al. 2019). Despite improvements over the years, strand offerings in SHS remain highly concentrated. As of SY 2022–2023, DepEd (2023) administrative data show that about half of schools offered only 1 of 4 possible tracks, with the academic track available in 91.3 percent of senior high schools. While those offering strands in the TVL track increased to 59.4 percent, those with strands in the Arts and Design and Sports track remained sparse at 2.7 percent. Expanding strand offerings across schools, requiring competent teachers, quality instructional guides, and machinery,

if needed, should be an immediate priority to improve students' learning experiences and expand their future career options.

Strengthen linkages with future pathways

The key promise of the K to 12 curriculum is to prepare graduates for future endeavors, whether pursuing additional education or training, being employed, or being self-employed/providing employment (DepEd 2016). However, the results of several studies cast doubt on SHS graduates' college readiness (e.g., Wenceslao 2022; Mamba 2023) or workforce acceptability (e.g., JobStreet.com 2018; Orbeta et al. 2019), at least among the earliest SHS cohorts. Although these issues may be multifaceted, deeply entrenched, and extensive, strengthening backward and forward linkages to inform the SHS curriculum's design and delivery could alleviate many of these issues. This may involve several strategies, such as (i) expanding local school boards to include employers who can inform educators of the skills needed in industry and can direct students to workplace immersion or training opportunities; (ii) delineating and underscoring progression in the core subjects taught in JHS and SHS and as essential preparation for college; and (iii) mapping SHS competencies and contrasting them with those of JHS graduates in the country's civil service and private employment, among many others.

Educate well but do not oversell

Unfamiliarity with the SHS program may have led to the wait-and-see approach by certain employers when considering hiring SHS graduates and dissatisfaction among some parents with the SHS (c.f. Brillantes et al. 2019; Orbeta et al. 2019). As summarized in this Note, those induced to attend SHS tend to earn higher wages, are more likely to be employed in middle-skill jobs, and have healthier children than JHS graduates. Effectively communicating these potential benefits to parents and caregivers of future SHS students may dispel folk beliefs that SHS is only a waste of family resources. Along the same vein, (i) strengthening the SHS work immersion program, such as by ensuring SHS-taught competencies align with work immersion opportunities, or by extending work immersion

contact hours; and (ii) promoting certification of technical-vocational skills, such as by providing assessment fee vouchers, or by making national certification integral to TVL and some academic track completion, may aid in demystifying SHS-level skills to employers, such as bookkeeping for Accountancy, Business and Management strand students. However, care must be given to not oversell SHS, especially as an answer to all ills in the education sector. There is no single cure-all after all.

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Based on existing research, this *Policy Note* was written for the Second Congressional Commission on Education (EDCOM II), a national commission tasked to undertake a comprehensive national assessment and evaluation of the performance of the Philippine education sector. It is published under the PIDS Policy Notes Series in view of the valuable perspectives it provides on the policy and institutional responses to the challenges faced by the sector.

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Michael R.M. Abrigo is a senior research fellow, while Aniceto C. Orbeta Jr. is the president of PIDS. The views expressed in this publication are those of the authors and do not necessarily reflect the views and policies of PIDS or any of the study's sponsors.

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