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Costs, Benefits, and Policy Tradeoffs

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Education ranks among the biggest industries in the Philippines today. Indeed, the 1987 Constitution stipulates that the state should assign "the highest budgetary priority" to education. The Department of Education (DepEd), which supervises primary and secondary schooling in the country, receives a bigger percentage of the national budget than any other department of government, and with almost half a million teachers, constitutes almost half of all employees in the civil service. This does not include those teachers and students in private schools, or those involved in higher education.

That so many resources are invested in education raises the question whether the money is well spent. Is education achieving the goals that society set out for it? Could resources be aligned in such a way that more benefits can be derived and accrue to the nation at large? The data needed to answer these questions are not exactly plentiful, and tend to be scattered in different places. In heaven, Thomas Green (1994) notes, there will be no need for policy, as whatever is wanted will be available in limitless supply. Policy is the attempt to adjust "the conflict between different goods, all of which must be pursued, but which, taken together, cannot all be maximized" (Green, 1994, ¶ 2). In other words, there is an opportunity cost associated with every policy decision. Good data can give a better view of the educational situation, and thus can inform policy making so that scarce resources can be spent optimally. Ironically, developed countries have very good data on education, while developing countries like the Philippines that most need data to inform policy do not have them.

In this paper, I examine the available information about the education industry in the Philippines. First, I review the main sources of data on the topic, including both traditional repositories of data and new media such as the internet and CD-ROMs. I comment on the contents as well as the usefulness of each. I then proceed to look at the costs and benefits of education to Philippine society. Direct costs include all resources spent in education. In particular, I focus on two key areas of spending—capital expenditures and expenditure on teachers' salaries—which together represent almost all educational expenditures. I then consider the benefits that accrue to Philippine society by assessing several indicators for the production of human capital, including scores on national and international achievement tests, persistence and completion rates, and employment in the marketplace. Throughout the paper, the need to make tradeoffs between one area of spending and another, between quantity and quality, will be seen, highlighting the policy dimensions of education.

Sources of Data

The overall picture the literature gives of educational data is that they are collected mostly in categories requested by international agencies for cross-national comparisons, but which data local planners seem not to have enough skill to make full use of. This is seen in the manner data are organized and presented by international and local instrumentalities, respectively.

Cross-national Data

The international organizations at the forefront of collecting educational data include the United Nations Education, Scientific, and Cultural Organization (UNESCO), the World Bank, and the Organization for Economic Co-operation and Development (OECD). The OECD, a

grouping of twenty-nine mostly developed nations, has been collecting such data among their member countries for some time, but realized the need for similar data from their counterparts in the developing world. In 1997, the World Education Indicators (WEI) was launched to collect educational data from eleven developing nations. Seven other countries subsequently joined the program. Included are such large countries as China, Brazil, and the Russian Federation, as well as smaller countries like the Philippines and its neighbors in Southeast Asia. The purpose of WEI was to develop mechanisms and instruments to make comparative quantitative assessments possible.

Investing in Education (OECD, 2000), the first WEI publication, (henceforth, IIE), and *Teachers for Tomorrow's Schools* (UNESCO/OECD, 2001), the second in the series, reflect not only a purposeful collection of data, they also show careful effort at ensuring comparability. The data include general demographic and economic indicators; schooling characteristics, attainment, and outcomes; and expenditure in different areas of education. To the end of comparability, UNESCO developed the International Standard Classification of Education (ISCED), so that school systems of varying lengths and divisions can be looked at from a common metric. As in all good data collection, there also were extensive definitions of coverage, terms, and variables. Relevant statistics such as GDP per capita were converted using purchasing power parities (PPP), again for the purpose of comparison. This carefully developed set of data makes it easy not only to compare countries, but to compare variables for trends and relationships.

The websites of the UNESCO Institute for Statistics, the World Bank, and OECD contain other databases, though they do not always collect those relevant to education all in one place. OECD has started the Programme for International Student Assessment (PISA) to determine the quality of educational outcomes. Unlike TIMSS, the Third International Math and Science Study,

this assessment is not narrowly subject-specific. PISA represents an important step, such that all the education indicators can be linked to concrete outcomes. Unfortunately, the Philippines is not included in the program at present.

Other than the above, international funding agencies also have a number of publications related to cross-national comparisons of education. While still on the macro policy level, they tend to be more project-based, tied or related to particular programs of the agencies involved, and tend to be written by consultants and scholars rather than as organizational reports. Included is a volume on private contributions to the financing of education in East Asia (Bray, 1996), and a working paper on education decentralization in three Asian countries (Behrman, Deolalikar & Soon, 2002).

The cross-national data mentioned above, especially those in the WEI series, provide the best indicators of the economics of Philippine education. There is a caveat, however. While some data are up to the minute, the most recent collection for a good part of the data was done in 1997, just before the Asian financial crisis, from which economies like the Philippines are just struggling to recover. As such, the present situation might be somewhat different from what is presented.

Local Philippine Data

Data used or published within the Philippines, on the other hand, reflect more limited statistical and data analysis skills. For example, the DepEd administers national achievement examinations to students at the end of elementary and high school (the NEAT and NSAT, respectively). As recently as the year 2000, however, the different forms of each exam were not statistically equalized. As such, there was no way of comparing different editions of the tests, and no way of knowing whether achievement is going up or down (Gonzalez, 2002).

Another indication of limited statistical skills is seen in the way data is presented. Among the largest data collection efforts in Philippine education of recent memory culminated in *A Profile of the Filipino Teacher* (2001). This survey of Philippine public school teachers is more properly called a census, receiving a total of 419,954 responses. The book presents data from each school division as one chapter, each chapter highlighting in narrative form aspects of the survey that seemed important for that particular division, and ending with policy recommendations for each. I was able to secure a CD-ROM of the data. In that media, the data was still organized and aggregated by division and by survey question. One advantage is that where the book presents selected data, the CD-ROM has complete numbers for each question. (For this paper, I had to manually total relevant statistics from separate tables for each of 143 school divisions.)

The aggregation to the division level was done ostensibly because "each of the country's 143 schools divisions is a unique and distinct organization" (Senate Committee on Education, 2001, p. xiv). That is true, but on the other hand, it is also true that policy making is not presently made at the division level; education-related laws are passed in the national legislature, and policies are set nationally and regionally. And for all the dividing into divisions, the portraits looked generally similar, as were the recommendations for each. It is quite evident that the well-suitedness of the data to regression and other statistical modeling techniques was not properly appreciated, and so the opportunity of mining more information out of them is lost.

In the Philippines, data seem to be used piecemeal, to achieve their effect by sheer magnitude ("There is a shortage of x number of textbooks"), but not taken together to see how different aspects of schooling come together towards the overall goal. This is partly because of

limited data analytic skill, as noted above, but also because detailed narrative is sometimes more convincing than abstract numbers, understandable by the common folk.

An example of a narrative account on Philippine education is *An Unfinished Symphony*, written by Andrew Gonzalez, FSC (2002). The book recounts his term as secretary of education during the unceremoniously aborted administration of President Joseph Estrada. There are parts of the book that read like an *apologia pro vita sua*, defending his actions in office. On the other hand, the narrative also shows the inner workings and the policy strategies employed in the education bureaucracy, how money is appropriated and spent, and aspects of how corruption was dealt with.

A good companion volume from the other side is *Robbed: An Investigation of Corruption in Philippine Education* (Chua, 1999), released by the Philippine Center for Investigative Journalism. The book details the corruption at every level of the system, and in just about every transaction, from procurement, to recruitment, to reform. For example, up to 65% of expenditures for textbooks were lost to payoffs, and under-deliveries ranged from 30 to 60%. Details from this down-below view of Philippine education alert an observer as to which macro indicators might not be accurate or reliable. The global perspective, combined with the local point of view, gives a more complete picture of the Philippine education industry.

Inputs into Education

The picture provided shows the reality that in developing nations, resources are always limited. The Philippines spends a bigger percentage of its national budget on education than any OECD or WEI country (28.3%). However, a big percentage of a very small pie remains a very small piece. In 1997, just before the economic downturn in the region, GDP per capita for the

Philippines was US$3,520 using PPPs. The range for this figure in OECD countries was $6,350 to $30,140, with the average at $18,788. Even among WEI countries, the Philippines was on the lower end of the range (OECD, 2000). Complicating the situation is the country's high rate of population growth (~2%), as more people have to share the very small pie. Given such limited resources, the need becomes especially acute to make tradeoffs in educational spending.

Capital Expenditures

Among the tradeoffs noted in IIE is that between current expenditures and capital expenditures. Another way they put it is that it is a matter of "balancing present and future needs" (p. 110, OECD, 2000), where current expenditures equal the present, and capital expenditures equal the future. However, in the case of the Philippines, capital expenditure is borrowing from the present to pay for the past.

Prime examples of this catching up with the past are the Philippines' perennial lack of classrooms and textbooks. It is tragi-comic to see a chart showing need for and supply of classrooms starting from 1998, and projecting a zero backlog by the year 2001 (Chua, 1999). Based on a class size of 56 pupils, the shortage at the end of 1998 was 14,615 classrooms. At present, in spite of construction efforts, the shortage has grown to forty-five thousand classrooms (Bondoc, 2003). And these do not even account for the provision of desks and chairs for students. The shortage of these stood at two million at the beginning of 2001 (Gonzalez, 2002). For that matter, a survey of the Third Elementary Education Project (Nebres, 2003) reports that 55% of schools have no electricity, 84% have no running water, and 62% have no toilets.

Textbooks, also considered capital expenditures in that they have a use life of more than one year, are also lacking. In 1998, the textbook to student ratio stood at 1:6 in elementary and 1:8 in high school. For the school year 1999-2000, the number of textbooks needed to achieve a

1:1 ratio stood at seventy million. All these show that current capital expenditures are being used not to make provision for the future, as it is catching up with the past.

One reason for these shortages has to do with the pace at which funds are released by the government. It takes as long as two years before budget allocations for textbooks are released by the national government. But the greater problem remains to be how efficiently money is spent. The government Department of Public Works and Highways, which is in charge of constructing classrooms, builds basic two classroom school houses at the cost of P300, 000. On the other hand, non-governmental organizations such as the Filipino Chinese Chambers of Commerce and Industry build the same type of structure at half the cost (Gonzalez, 2002). Evidently, the government rate includes the amounts that go to bribes and kickbacks. The same is true with textbooks. In 2001, DepEd implemented more transparent bidding procedures that have resulted in savings of 30 to 40 %.

The task now at hand is to make sure that there are no ghost deliveries. NAMFREL, a non-governmental watchdog group, currently has a program to make sure that textbooks are actually delivered to schools. The incremental fashion in which textbooks are delivered also means that schools sometimes have textbooks by different authors. DepEd has started the redistribution of textbooks, to make sure that students in the same classroom are not each reading textbooks of different titles. The textbook to student ratio is now down to 2:1, and a 1:1 ratio is in sight (Nebres, 2003).

Current Expenditures

Teachers' salaries account for the bulk of current expenditures. As a result of recent increases, teacher remuneration accounts for 90.3% of the current DepEd budget (Nebres, 2003). IIE (OECD, 2000) indicates that Philippine teachers' salaries are quite high relative to average

income in the country, 2.3 times the salary of the average worker. However, this rosy figure is mediated and is qualified by a number of factors.

Difference between gross and net income. On paper, teachers' incomes are relatively high. On the other hand, the amount they actually take home is actually much lower. In the national survey of public school teachers (Senate Committee on Education, 2001), about 65% of teachers reported gross salaries below P10,000 per month. Queried on the amount they actually took home, almost 75% took home below P10,000, with 26.6% reporting take home pay below P5,000.

This disparity between gross and net income arises because teachers need to pay facilitation fees to those who process their salary and need to buy their own instructional materials, among other things. It is not helped, either, by the slowness of the bureaucracy. Like other expenditures, teacher salaries take time before they are released. The modal answer on when new teachers get their first paychecks is three to four months (Senate Committee on Education, 2001). The teacher thus left without an income is forced to borrow from a number of teacher loan associations, which charge exorbitant interest rates. Thus, a new teacher falls into a vicious cycle of debt. As if late releases were not bad enough, Chua (1999) notes that crooked superintendents sometimes take a new teacher's first paycheck as "payment" for having helped the teacher secure his or her position.

Flat salary profiles. Apart from the many deductions, there are virtually no salary increments for Philippine public school teachers over the course of their careers. WEI collected data on teachers' starting salaries and salaries for teachers with fifteen years experience (see Table 1). While experienced teachers in neighboring countries are rewarded with salaries that are higher by 30 to 60%, experienced teachers get only about 2% more than new hires.

Table 1 about here

Teachers can, however, earn bonuses of up to 30% of their salaries (UNESCO/OECD, 2001). The reason why increases are not built into basic pay might have to do with the relative age of the teaching force. The Philippines has an older corps of teachers than in any WEI country. More than 60% of teachers are above the age of forty, and almost 40% are above fifty. Higher amounts in basic pay tied to years of service would become a constant budgetary burden, whereas bonuses do not always have to be given. On the other hand, flat pay and infrequent bonuses can lead to low morale and affect quality of instruction.

Comparing different statistics. IIE (OECD, 2000) considered the ratio of teachers' salaries to GDP per capita in asserting that Philippine teachers are relatively well paid compared to teachers in other countries, as well as to workers in their own. However, the Philippines GDP is artificially low (to be discussed in a later section), which makes the above ratio artificially high. Other statistics can help give a truer picture. Table 2 shows not just ratio to GDP per capita, but also to poverty threshold and minimum wage. A teacher's pay is actually below the poverty threshold, part of the reason why many teachers are single or female, whose husbands provide a second source of income for the household. It is also the reason why many teachers have to resort to other sources of income.

Table 2 about here

Tradeoffs of higher pay. Finally, higher pay for teachers comes at a price for the country as well as for the teachers themselves. The choice to pay current teachers more not only constrains spending on capital expenditures, it also keeps the DepEd from hiring new teachers

(Behrman, Deolalikar & Soon, 2002; OECD 2001). The shortage of teachers was placed at 35,000 in early 2001 (Gonzalez, 2002). This in turn leads to much higher teacher-student ratios. The ratio stands at 1:36 and 1:40 for primary and secondary education, respectively. High as these ratios already are, they remain understated. A number of teachers actually serve in non-teaching, administrative capacities because there are no budget items for staff, and because only 46% of all public schools have principals. In urban centers, class sizes routinely go as high as sixty (Nebres, 2003).

Not only do Philippine teachers have to deal with larger class sizes, they also have to teach many more hours (Table 3). With 220 school days a year, Philippine teachers teach 1,176 hours a year, topped only by teachers in Sri Lanka.

Table 3 about here

Table 4 about here

This burden on Philippine teachers is magnified all the more if class size and hours of instruction are taken together. Data on annual student contact hours (Table 4) show that Philippine primary school teachers have almost 14,000 more total student contact hours than the next nearest country. For secondary teachers, the number is 20,000 hours more.

There are several functions, then, that are being balanced where teachers are concerned: increasing salaries, decreasing class sizes, and changing total hours of instruction. Spending in current expenditures, in turn, need to be balanced with spending on capital expenditures, and tradeoffs made.

Policy Tradeoff: An Example

One tradeoff that policy makers in the Philippines chose is to provide basic skills by focusing on primary education. In fact, among all developing member countries of the Asian Development Bank, the Philippines spends the highest percentage of total educational expenditures on primary education (Behrman, Deolalikar & Soon, 2002; OECD, 2001; Nebres, 2003). In general, students become more costly to educate as they grow older, as learning at higher levels call for more expensive equipment and facilities. As such, one would expect that primary education takes a smaller percentage of expenditures relative to percentage of students at that level.

Table 5 shows, however, the policy decision that the Philippines made. Normally, if a country has 60% of students in elementary school, elementary schools would receive less than 60% of all expenditures. On the other hand, secondary schools which serve 25% of all students would receive more than 25% of the budget, because more resources are needed to educate students at that level. The Philippines chose to focus on basic skills, allocating more money to primary education than one would normally expect.

Table 5 about here

This policy choice came at the expense of secondary education, which received the smallest percentage of educational expenditures among Asian Development Bank developing member countries. This under funding of secondary education, in turn, resulted in the transferring of costs to households. A study shows that in 1986, households accounted for about a third of total costs in secondary education (Bray, 1986). This trend has continued, as seen in Table 6, where households have assumed a larger share of costs in percentage and absolute terms. This burden on households has, in turn, caused more and more families to send their children to

public high schools (Table 7), one reason why the teacher student ratio is even higher in secondary schools than it is in primary schools.

Table 6 about here

Table 7 about here

As can be seen, one particular policy choice has far reaching effects in terms of demographics and enrollment patterns. But the larger, more important question is what these different policy choices have returned to society in terms of human capital developed.

Outcomes from Education

Resources are spent on education, and returns are expected from it. The outcomes can be measured directly and indirectly by such indicators as scores on national and international achievement tests, persistence and completion rates, and the ability to find employment.

Scores on Achievement Tests

As previously mentioned, scores on the national achievement examinations are not comparable from year to year. However, comparability might not be necessary in this regard, as mean scores in English, Science, and Math consistently hover in the region of fifty percent (DepEd, 2003). And the population of test takers only includes those who have persisted to sixth grade and to fourth year high school. There is still a large population of dropouts who, had they taken the test, would have brought the average down further. Comparative international assessments of achievement such as TIMSS give much the same picture. In 1995 and 2000, the Philippines ranked fourth and third to the last respectively among the more than forty countries in the study.

Persistence and Completion Rates

The long view indicates that the Philippines is succeeding in educating more of its citizens (Table 8). While only about a third of the oldest generation finished secondary school, more than half of the latest generation has a high school diploma. Nevertheless, of the youngest age bracket, that is still 43% who do not finish high school; and this in a relatively short primary to secondary sequence that only lasts ten years.

Table 8 about here

Most recent data indicate that fully a third of students do not finish elementary, and only forty-eight out of every hundred students ever complete high school (DepEd, 2003). Overall, the school expectancy rate for Filipinos (i.e. years in school from primary to tertiary) is twelve years; this is much lower than the OECD average (~16.4).

An interesting piece of data in Table 8 is that more Filipinos complete college than even those in OECD countries. Given the foregoing achievement data, the quality of such college degrees might be suspect. A way to qualify their worth would be by looking at their value in the marketplace.

Employment

Human capital theory argues that more education results in greater productivity. In turn, greater productivity should bring about greater returns in terms of more job options and higher earnings. Further, the better educated person presumably has more skills, and in difficult job markets should have greater flexibility and be able to find alternative occupations. Ironically, in the Philippines, an inverse relationship exists between amount of schooling and employment

(Table 9). Almost all those unschooled participate in the work force in one way or another, while the highest unemployment rate exists among those who have college degrees.

Table 9 about here

Table 9 does not necessarily imply poor rates of return to education. Those who have finished college certainly are employed in higher paying professions than those who did not go to school. That is, they belong to different job markets. Finishing college is still more likely to result in greater peso earnings for an individual than not attending and finishing college.

However, the high unemployment rate (12%; South East Asian neighbors: 2-6%) has to be cause for concern. There are at least two possible reasons behind this. One is underutilization. That is, there is a mismatch between people's occupation and their education. The evidence indicates that course taking does not match available local market demand (Cortes & Balmores, 1992).

Figure 1 about here

The second reason is that the market for highly-skilled labor is absolutely not big enough for all those who wish to enter it. This has to do with the general condition of the Philippine economy. Figure 1 shows that GDP is much lower than gross national income (GNI), and that the gap is growing larger over time. This means that a large portion of national income is generated outside the country, confirming the government's inability to generate jobs or attract investments to the Philippines. Thus, many skilled Filipinos find their employ as engineers in the Middle East and as health professionals in the United States and Europe. (For that matter,

Filipino teachers give up the profession to be nannies and house help in other Asian countries.) The number of overseas Filipino workers stands at over one million.

Discussion and Conclusion

The government hails Filipino overseas contract workers as *bagong bayani* ("new heroes") for the billions of dollars in foreign exchange that they remit every year. But the phenomenon of the migrant Filipino merely highlights the reality that the arena is now the global economy, and the country's inability to compete for jobs and investments. For many years, the biggest selling point of the country has been its ability to provide highly-skilled, English speaking workers at relatively low wages. These "low wages" by developed nations' standards are high by Philippine standards, and are necessary first steps for the country towards development.

It seems from this study, however, that the country is fast losing what edge it might have in producing human capital. The DepEd does not seem able to keep students in the system until graduation. Worse, those that make it to the end do not necessarily possess the needed knowledge and competencies. This isn't necessarily the fault of the education department. From the outset, it is already an under funded bureaucracy asked to serve an ever growing constituency. Scarcity of resources forces it to make difficult choices between different goods, not all of which can be funded as desired. Tradeoffs are made between the present and the future, the future and the past. The results often end up pleasing no one.

Yet, there clearly are improvements that the education industry can make. That corruption takes out half of the education budget means that the DepEd can theoretically have

twice the resources available to schools, teachers, and students. Weeding out graft and increasing efficiency will make those resources available for the education of many.

It should also be noted that education cannot do it alone. If there is something this paper shows, it is that each part is related to all others in economic systems and industries. One of the best ways of encouraging greater educational achievement might simply be providing a market for it. By tending to all aspects of the economy, the Philippine government can create a climate conducive to investment and to job growth. Then it would be possible to tell the new heroes that their job overseas is done, and that it is time for them to come home.

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Tables and Figures

Table 1. Salaries for new teachers and those w/ 15 years experience, in PPP US$, and percent difference. (1997).

	Salary – Starting / Minimum Qualifications	Salary – 15 years experience	Percent Difference
Philippines	8210	8382	2.05
Indonesia	2768	3992	30.66
Malaysia	6550	10876	39.78
Thailand	6412	15759	59.31
OECD – Primary	18486	31186	40.72
OECD – Upper Secondary	20527	29114	29.49

Source: OECD, 2000.

Table 2. Ratio of teachers' salaries to various indicators.

	Poverty threshold	Minimum wage	GDP per capita
1985	0.9	1.1	2.0
1988	1.2	1.6	2.4
1991	1.1	1.3	2.4
1994	1.2	1.3	2.5
1997	0.8	1.4	2.3

Source: Chua, 1999; Nebres, 2003; NSO, 2003.

Table 3. Hours of instruction per year (1998).

	Primary	Lower Secondary	Upper Secondary	Overall Range
Philippines	1117	1176	1176	
WEI average	869	812	819	542 – 1260
OECD average	801	716	662	464 – 996

Source: UNESCO/OECD, 2001.

Table 4. Annual student contact hours (hours of instruction x class size) (1997).

	Primary	Secondary
Philippines	40919	49453
WEI average (excluding Philippines)	22446	20209
WEI range (excluding Philippines)	9404 - 27169	12055 - 29527

Source: OECD, 2000.

Table 5. Proportion of enrollments and expenditure (1997)

	% of all students at all levels	% of total expenditure on education
Pre-primary	2.8	0.1
Primary	59.7	60.4
Secondary	25.1	20.6
Vocational	1.2	2.6
Tertiary	11.2	16.2

Source: OECD, 2000.

Table 6. Cost sharing in Philippine secondary education

	1986	1994	1994 index (1986=100)
Government	66.5	57.3	132
Households	33.5	42.5	195
Total	100.0	100.0	154

Source: Bray, 1996.

Table 7. Private sector enrollment share (percent)

	1980	1985	1990	1995	2000
Primary		6.0	6.7	7.4	7.3
Secondary	47.8	41.0	36.4	30.8	21.1

Source: World Bank, 2003; Nebres, 2003

Table 8. Percent who have completed particular levels of schooling, by age range (1997).

Age	Lower secondary	Upper Secondary		Tertiary	
	Philippines	Philippines	OECD	Philippines	OECD
20 – 24	73	57	72	26	23
25 – 34	69	56	65	26	22
35 – 44	66	53	55	18	19
45 – 64	44	35	42	18	13

Source: OECD, 2000.

Table 9. Labor force participation and unemployment rate by level of schooling (1997):

	Labor force participation	Unemployment rate
No schooling	99.1%	2.5%
Primary	89.3%	3.5%
Lower secondary	70.5%	5.8%
Upper secondary	67.1%	6.5%
Tertiary/University	63.6%	8.9%

Source: OECD, 2000.

Figure 1. Philippine GNI and GNP, 1987-2002 (in billions of pesos).