

Atonu Rabbani

Associate Professor, Department of Economics
University of Dhaka

Yvrose Guerrier

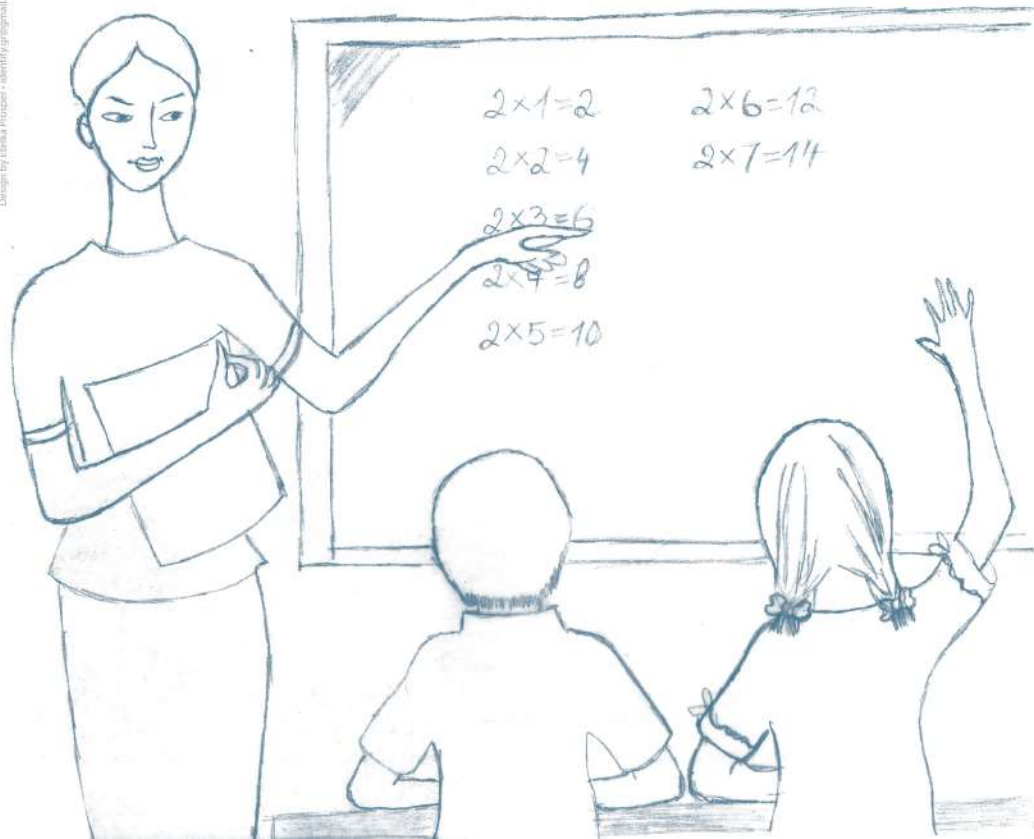
Head of Service
Ministry of Planning and External Cooperation

Benefit-Cost Analysis

Human Capital Investments in Haiti:

Benefit-Cost Analysis of Some Selected Education Interventions

Design by Eshia Procter - identitygrr@gmail.com



Human Capital Investments in Haiti: Benefit-Cost Analyses of Some Selected Education Interventions

Haiti Priorise

Atonu Rabbani

*Associate Professor, Department of Economics
University of Dhaka*

Working paper as of April 5, 2017.

© 2017 Copenhagen Consensus Center

info@copenhagenconsensus.com

www.copenhagenconsensus.com

This work has been produced as a part of the Haiti Priorise project.

This project is undertaken with the financial support of the Government of Canada. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

Canada

Some rights reserved



This work is available under the Creative Commons Attribution 4.0 International license ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)). Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

Attribution

Please cite the work as follows: #AUTHOR NAME#, #PAPER TITLE#, Haiti Priorise, Copenhagen Consensus Center, 2017. License: Creative Commons Attribution CC BY 4.0.

Third-party content

Copenhagen Consensus Center does not necessarily own each component of the content contained within the work. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that re-use and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

Academic Abstract

Education is one of the most important determinants of economic prosperity and can explain a significant variation in economic growth across countries. Moreover, human capital investment is also an important factor to explain socioeconomic gradient across individual and possibly one of the primary forces behind relative inequality in current society. To ensure long-term economic growth in Haiti and sustainable development Haiti needs to pay attention to its education sector and invest effectively in human capital by focusing on education.

Both intra and inter generational inequality starts early in life and early childhood education has received more attention in the economics of education literature. The dynamic complementarity in education investment also suggests that the returns on investment is more likely to be higher earlier such investment is made in life. However, it is also important that investment in human capital through education continues over the course of one's life. Supply side intervention such as enhancing learning outcomes of the children and demand side intervention such as conditional cash transfer can also show significant impact on educational outcome and also be cost effective that can guide public finance more efficiently.

Policy Abstract

Overview

Haiti remains the only developing country in the western hemisphere and one can presume that education and human capital investment can put the country in a long-term sustainable growth path. Haiti exhibits some of the challenges in educational investment common to many other developing countries. In this paper, we propose a series of interventions that addresses a dynamic process of investment in education for the citizens of the country. While it will require possibly a substantial mobilization of public and private resources, investing in skills and human capital formation is probably the only long-lasting strategy to take advantage of the changing labor market situations in the context of developing global issues in recent times.

We propose three interventions to address the human accumulation over a person's life. We advocate for early childhood education (ECE), which has been receiving attention in the education lately and Haiti has also included ECE as part of their education policy. The proposed intervention should reach out to 1.6 million children in Haiti with favorable benefit-cost ratios.

Implementation Considerations

Early Childhood Education (ECE)

ECE shows great potentials to raise workers' labor outcomes such as income and also non-labor market outcomes by reducing criminality and increasing mental welfare. ECE is gaining traction in recent times in many developing countries and Haiti has already included ECE as part of her education policy.

We are proposing USD 157 per student per year for the intervention. This should include the cost of actual intervention (operating cost) as well as development of the tools and curriculum and training (fixed cost). The intervention should aim about 260 thousand children between the age of four and five years. This can further be extended to include children of even earlier age at similar unit cost. We have further included additional 0.61 year of schooling because of increased demand for later life education from receiving ECE.

The benefit include about 35 percent rise in income at a later stage. The benefit can accrue because of additional schooling at later stage, raising the effectiveness of schooling altogether and also the additional human capital accumulation starting at an earlier stage of life. Calibrated for the average

income in Haiti, the accrued benefit can amount to about USD 320 per year over the work-life of a worker.

Next we propose an intervention that aims to raise effectiveness of education by addressing learning outcomes and competency rather than attendance and outcomes in achievement tests. The contemporary education economics literature suggests a number of such interventions and tracking and grouping pupils according to their prior achievements has shown some potential. We propose to provide such directed supplementary teaching to all enrolled primary level students in the first five years of schooling. A hundred dollar per year per student investment can raise student learning outcome by about two SD, that can map into USD 240 of higher income (to be discounted at appropriate rates). This can be aimed at about 870 thousand students enrolled between grades 1 and 5 (the first cycle of the primary level in Haiti). The main risk of this intervention is to find the facilitators or tutors to deliver the supplementary teaching to the students.

To address the low enrolment and high drop out rate at the secondary level (grades 6 to 10), conditional cash transfer can be effective in increasing students' enrolment and retention. CCT has been widely used and usually show promise in delivering its intended goals. CCT is usually targeted and more likely to have impact for the children from the low-income households. As such we propose to target students from the lowest two quintiles, which also coincide with the current poverty rate of about 40 percent in Haiti. CCT usually amounts to about 14 percent of household consumption and calibrating this to Haiti suggests about USD 111 per year per student. We also use the average impact in enrolment of about 13.5 percentage points from a baseline (it is a lower bound for the current level in Haiti). The simulation suggests the intervention can lead to one additional year of schooling. We use the average income of a person with lower secondary education to calibrate the benefit and compare this with the CCT cost. The main risk for CCT is leakages and mistargeting. Since this is a greater governance issue we ignore this for the time being.

Rationale for Intervention

ECE intervention has shown to have very high returns for a longer period of time and this has been evident in many different contexts such as USA, Bangladesh and Jamaica. As a matter of fact, ECE can actually mitigate detrimental effect in the economic outcomes because of the shortfall in other inputs such as nutrition. Because of dynamic nature in human capital formation and complementarity in investment at different points in a person's life, ECE can certainly prove to have high returns and a higher benefit cost ratios compared to other similar education (or non-education) interventions.

While it is important to start investing in human capital as early as possible, it is also important to continue the investment in human capital in later stages. Haiti has attained reasonable enrolment at the primary level (grades 1 to 5), however, there is lack of discussion regarding the quality of education. As such, competency enhancing intervention such as student tracking or teaching at the right level by grouping them based on their prior achievements can potentially be very useful. The quality of education is increasingly receiving attention during the post-MDG era and it is imperative that Haiti takes advantage of the effective interventions that aim to enhance students' learning outcomes.

This should further be supported by incentivizing households to send their children to school at even later stage, namely the secondary level (typically 6 to 10, even though Haiti considers first few grades as primary schooling). Conditional cash transfer (CCT) has been effective in many developing countries in Latin America and elsewhere (such as Bangladesh). A well-targeted program based on household income or consumption, possibly through some proxy means testing or even wealth ranking.

Cost Benefit Table

The BCRs for three proposed interventions are summarized below. We generally have strong evidence for effectiveness of ECE and CCT to deliver educational achievement in widely different contexts and Haiti can also benefit from such interventions. Teaching children at the right level may need some contextualization and will depend on availability of quality teachers.

Summary Table

Intervention	Benefit	Cost ^a	BCR	Quality of Evidence
Two-Year Early Childhood Interventions at the Pre-Primary Phase	114.53	6.93	16.5	Strong
Teaching children at the right level	235.30	26.75	8.8	Strong, but needs to be contextualized
CCT for Secondary Level Children	87.52	16.41	5.3	Strong

Notes: All figures assume a 5% discount rate, and are presented in billions, HTG.

INTRODUCTION..... 1

BACKGROUND AND CONTEXT..... 1

EDUCATION AS A DYNAMIC SKILL FORMATION PROCESS 3

PROPOSED INTERVENTIONS 4

GENERAL APPROACH TO MEASURING BENEFIT-COST RATIOS..... 5

ECE INTERVENTION 5

LEARNING ENHANCING INTERVENTION: READING AT THE RIGHT LEVEL 8

INCREASING ATTENDANCE AT THE SECONDARY LEVEL: USING CCT10

OVERALL DISCUSSION14

WORKS CITED16

Introduction

Human capital plays possibly the most important role in determining long-term economic growth, development and human welfare (Barro and Lee 2013). Over the last 60 years, human capital and skills have found a very well articulated theoretical foundation in many branches of social science and especially in economics, such as labor economics and economic growth (Lucas 1988, Becker 1994). Investment in education can also have significant positive externalities (e.g. peer learning and intergenerational transfer of skill) and hence education decisions based on private interest can lead to underinvestment in human capital from social point of view. There are also missing market implications, as children cannot write a “contract” with the parents to invest in their schooling and higher opportunity costs can lead households to pull children out of schools (Pitt, Rosenzweig and Hassan 2012).

Investing in human capital and skill formation has important policy implications as ensuring growth and development for countries such as Haiti that aspire to further sustainable human welfare and reach a stage to ensure meeting the basic needs to carry on with a dignified life for all their citizens. Investment in human capital through education is certainly an essential instrument to meet that objective and in this short paper we will focus on certain education interventions that potentially contribute to the economic development in the context of Haiti.

Background and Context

Haiti has the lowest per capita income among the countries in the western hemisphere and as such is an outlier in the region. The low income has also been accompanied by natural disasters (such as earthquakes and cyclones), which has definitely hindered economic and institutional development of the country (Scot and Rodella 2016). Lack of institutional development has possibly further inhibited building resilience against natural disasters creating a low income/development trap.¹ One should also note that the headcount poverty rate stood at 58 percent in 2012 according to the latest figure available from the World Bank with some impressive decline in the recent time with contribution from higher labor market participation (Scot and Rodella 2016).

¹ Haiti has experienced a quite turbulent history over the past decade and more with a political crisis as recent as 2004 and a devastating earthquake in 2010 (see Scot and Rodella 2016)

Haiti is committed to universal education and equal opportunities for children from all economic strata and geographic locations according to a law it has passed in 1982. It has recognized the importance of early childhood education (ECE) as pre-schooling is formally a part of the education system. The prescribed primary education is nine year long with two cycles. The second of the cycle (covering students between the age 12 to 14) is also considered lower secondary by certain schools. The formal secondary schooling ends at the age of 19. Institutionally, there is a dominance of private schools in terms of quality of education, however, the households are expected to bear the total cost of education. Donors and some religious organizations have picked some of the slack and many schools are established and maintained by donor initiatives. The quality of teachers is also a major issue and instructors often lack the basic teaching qualifications.²

The education sector in Haiti has problems commonly observed in other developing countries. Haiti has a literacy rate of about 64 percent for men and 57 percent women.³ The primary enrolment has improved considerably in the recent years but drop out and non-continuation is a big issue for Haitian education sector. About 50 percent of the students finish primary schooling and a much lower percentage continue at the secondary level. This is partly because the quality of education has been questionable and the education system has struggled with mobilizing quality teachers engaging the students (Lunde [2008], p.6). Private schools have also dominated the Haitian education system requiring parents and households to pay for their services. This has led to both non-attendance and more dropouts for the children who do attend schools. One can also observe the wide disparity in school attendance between rural areas and urban centers with typically lower attendance in the former regions.

In the end, schooling can be considered a human capital investment decision from the parental point-of-view. Hence, optimal investment decision will certainly depends on expected returns to education (Becker 1994). So, interventions or programs that aim to increase schooling uptake will require addressing either the supply side or the demand side (or both) of the education investment equation. The three interventions discussed in this paper will aim to address these.

² See Haiti Education Fact Sheet (2016) at <https://www.usaid.gov/haiti/education> (accessed on February 19, 2017).

³ It is very difficult to find reliable data for Haiti from surveys that are nationally representative. The literacy rate figures are from a USAID report cited at <https://haitipartners.org/about-us/haiti-statistics/> (accessed on February 19, 2017).

Education as a Dynamic Skill Formation Process

Education is a dynamic process in the sense that the process of skill formation (where “skill” is used as a broad sense of the word) takes place over a long period of time and can start even before birth. In utero environment can have lasting impacts on a child’s life, however, we here mostly focus on more formalized educational interventions.

One of the main principles of effective education is to acknowledge the inter-temporal complementarity over the life of a person. In plain words, such complementarity means investing in human capital earlier in a person’s life will lower the cost of investment in later life and it will also increase the return on later-life investment (Heckman 2008). For example, a well-designed early childhood development intervention will better prepare the children to absorb schooling later (so cost of attaining the same level of competency will be lower) and will also allow them to reap the benefit of the same level of schooling at the later stages of their lives. This basically suggests the rate of returns will have a downward gradient over the course of life of a person as it progresses. This relationship has been well articulated by “Heckman Equation” (see (Cunha, et al. 2006; Heckman 2008).

This is an important guiding principle I am going to use in this paper to assess three different education interventions and estimate the benefit cost ratios contextualized for Haiti using the information available. As argued before education as human capital investment is essential for long-term goal of sustained economic growth and social development for any country. Haiti has some telltale signs of underinvestment in education commonly found in other developing countries. School completion is generally low and private sector plays a more dominant role in providing access to education and households are often expected to pay the full cost of schooling. While the quality of private school may be acceptable (with low teacher absenteeism, for example) This creates a barrier to access from the demand side and has generated unequal school attendance and achievement in Haiti.

Moreover, there is also need of quality inputs for education. The primary factor of production for education is qualified teachers, which is in short supply in Haiti. By some account about 80 percent of the graduates from Haiti leave the country to find work somewhere else (Beine, Docquier and Rapoport 2008). This further depresses demand for education and contributes towards low school attainment. A comprehensive solution to the Haiti’s education system will require including some of these issues and in this paper we address three of those issues.

Proposed Interventions

We evaluate and assess three education interventions based on the recent literature based on rigorous evidence we have about possible effectiveness of those programs. This restricts us to the interventions for which we have credible evidence on impacts of learning and skill formation on labor market outcomes. For one intervention (early childhood education), we have long follow-ups and estimates of effects on earnings on the children who received the intervention (García, Heckman and Prados 2016). It has also been tried in different contexts beyond developed countries such as Jamaica (P. Gertler, J. Heckman, et al. 2013) and assessed in Bangladesh (Hamadani, et al. 2014). The education policy in Haiti also recognized this and identifies the pre-K schooling as part of the national education program.

Unfortunately for other interventions (such as competency enhancement through teaching at the right level), we have to extrapolate using estimates on impacts of learning outcomes on earnings and linking learning outcomes with the proposed interventions. Having said that, conditional cash transfer (CCT) to boost education at different levels of schooling are common programs that have been tried in many difference contexts (Fiszbein and Schady 2009). In this paper, I propose the CCT at the secondary level, which has shown potentials to encourage school attainment at the secondary level (Khandker, Pitt and Fuwa 2003). This may even have further demand-side effect on lower level of education at the primary level.

A much talked about issue, specially during the MDG era, was the issue of quality of education and learning outcomes as oppose to school attendance and even outcomes in the achievement tests. Economics of education has been focusing more and more on these issues lately. So I have chosen to propose tracking and complementary teaching based on prior achievement of the students as a mean to foster learning and competency (Banerjee, et al. 2007, Duflo, Dupas and Kremer 2011; also see JPAL 2016). These take advantage of longer contact hours and also relative of homogeneity of a classroom that can help the teachers to customize the teaching materials to meet the needs of the students.⁴

To summarize, we rely from the life-cycle approach to skill formation and dynamic complementarity that suggests early childhood education (ECE) should be emphasized and has the potential to high benefit cost ratios (Cunha, et al. 2006). We will also focus on two other interventions that addresses retaining

⁴ As the anonymous reviewer of this paper suggests, the effectiveness of the competency enhancing interventions will depend a lot on contexts and also availability of complementary factors. One important precondition of making education intervention effect is to have quality teachers, which has not been addressed in the paper. This will be discussed in the concluding section.

students at the secondary level with conditional cash transfer (CCT) and also an intervention that explicitly addresses learning outcomes or competency (Fiszbein and Schady 2009).

General Approach to Measuring Benefit-Cost Ratios

We essentially rely on published works that allow us to focus on benefits of education in terms of labor market outcomes in terms of earnings and added cost of schooling (where applicable) and the costs of the direct interventions. The general formula for BCR is

$$BCR(k) = \frac{\sum_{t=0}^T (1+r)^{-t} \text{Benefit}(k)_t}{\sum_{t=0}^T (1+r)^{-t} \text{Cost}(k)_t}$$

where, r is an appropriately chosen discount rate. Higher discounting will reduce the benefits, which are usually further into the future and put more weights on costs that are usually more immediate. We have used three different rates 3, 5 and 12 percent. For the education interventions, we measure all the flows in annual frequency and fix T to 55, which is the current retirement age for many jobs in Haiti, starting from the age 16, the legal age of employment. All the benefits and costs are measured in constant dollar as of 2017. We also assume a per-capita income growth rate of 2.7 percent per annum. Both the flows in the numerators and denominators will vary by the types of interventions generating different BCR for each intervention.

ECE Intervention

As argued before the dynamic complementarity suggests that education interventions at an earlier stage in life will imply a higher return in future. Also, any earlier investment will also have a longer period for a person to take advantage of. Labor economists have estimated impacts of ECE interventions in different contexts and found long-term impacts of ECE on increasing earnings, better health behavior and reducing crime (Garces, Thomas and Currie 2002, García, Heckman and Prados 2016). ECE can also mitigate detrimental effects of other factors such as nutritional deficiency that can reduce cognitive faculty among children with lasting effects throughout the life of a person.

Here we propose a simple intervention where children at the pre-K level receive ECE for two years in a small group of 25. The intervention will require two trained ECE facilitators along with a helper in appropriate children-oriented settings. This can include a child friendly classroom with two trained

teachers and possibly a helper. The intervention includes teachers led cognitive stimulants involving toys and development of social skills through games. We have carried out a detailed designing and costing through multiple consultations with ECE specialists for Bangladesh Priorities paper (Rabbani, 2016). We believe the basic design is applicable more generally and the intensity is typically at par with, if not more than, ECE interventions typically discussed in the literature and evaluated in the literature.

Table 1: Assumptions made for Evaluating ECE

Assumptions	Values	Sources
Average income per worker 2017, HTG	66,679.79	From 'Based on forecasts of GDP and population growth' ^a
Exchange Rate USD/HTG	67.7	From Google as of 23/01/17
Average income per worker 2017, USD	984.93	Estimated from above two cells
Real Annual Growth Rate	2.7%	Haiti Priorise assumption ^a
Treatment Effect	35.0%	Jamaica study ^b
Increase in income	344.59	Multiplying effect and average income
ECD Cost, BDT	12,450.00	From Bangladesh Study, Standard Design ^c
Exchange Rate BDT/USD	79.15	From Google as of 23/01/17
ECD Cost, US\$	157.30	Estimated from above two cells
Extra year(s) of primary schooling induced by ECE program	0.61	Jamaica Simulation Paper, p.22. ^d
Inflation Rate	0.13	Source: Forecast from Trading Economics
Cost of an extra year of schooling	179.78	Primary level, per student per year in 2003
Population:50% of 4 and 5 year olds	258,261	Haiti Priorise assumption ^a

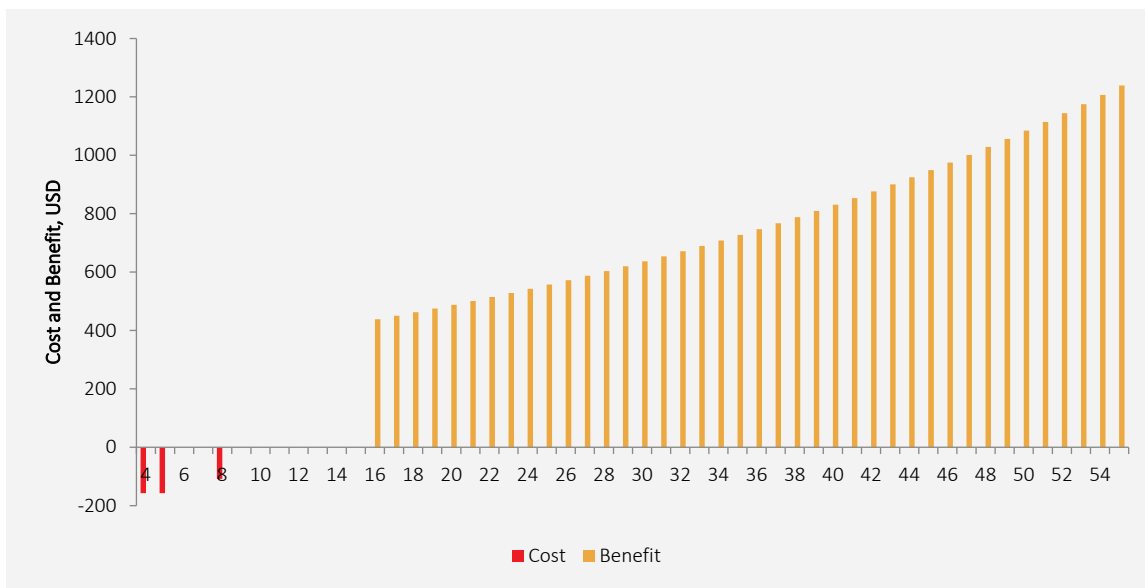
Notes. ^aThe information provided by Copenhagen Consensus Center file. ^bGertler, et al. (2014). ^cRabbani (2016). ^dGertler, Heckman, et al. (2013).

We report the assumptions required for the ECE benefit-cost analyses in Table 1. The nominal income in Haiti as of 2017 was about 985 in 2017 current dollars, which is expected to grow at a 2.7 percent rate in real terms. The ECE can have an impact of 35 percent in earnings (Gertler, Heckman, et al. 2014). This is a total effect that can also include impact of the interventions in reducing incarceration that can have further effects on labor earnings (see Bhuller, et al. 2016)).

The intervention is targeted for 4 and 5 year old children in Haiti (two years of pre-K). The current demography of Haiti has about 516 thousand children aged 4 and 5 years. We assume that the program will feasibly reach half this population i.e. about 258 thousand children per year. With a unit cost of 79 dollars per student per year and also additional schooling caused by increased productivity of later life education by 0.61 year we have a total cost per year of 7.1 billion HTG per year at a low rate of

discounting of 3 percent and 6.9 billion HTG at a moderate discount rate of 5 percent (the costs of the interventions are mostly immediate hence, a higher discounting has small impacts on the present discounted value of cost, see Figure 1).

Figure 1: Cost and Benefit Flows for Early Childhood Education (ECE)



On other hand we have increased income of about 35 percent from ECEs. We assume that a person begins to reap the labor market benefit when he or she starts working at the age of 16 until a conservative assumption of retirement at the age of 55. The total present value of benefit over the lifetime for one cohort of workers will be about 203.3 billion HTG suggesting a BCR of 28.6 at a discount rate of three percent. At five percent rate of discount, the present discounted value of the future benefits is 229.1 billion HTG for the same target group of children. This suggests a BCR of 16.5. Similarly, we have a BCR of 3.6 for 12 percent of discount rate.

This shows a sufficiently high BCR that rationalizes possibly the government and the donors to invest in ECE in the context of Haiti. As the literature suggests, ECE can potentially mitigate some of the detrimental effects caused by underinvestment in other dimensions such as nutrition (see Gertler, Heckman, et al. 2014; Hamadani, et al. 2014). The results are also inline with our prior BCR estimates from Bangladesh and even developing countries such the US which already has sufficiently higher investment in human capital (Cunha, et al. 2006).

Learning Enhancing Intervention: Reading at the Right Level

In the post-MDG era, there is special attention in quality of education and how to ensure that.⁵ Over the last two decades combined efforts of the governments, private or NGO sectors and donors have primarily focused on school attendance. This has helped bringing children to the school and surging enrolment. However, completion remains an issue with lots of children dropping out of school before finishing the mandatory level of schooling. Haiti is no exception to it. In this section, we recognize that education has high opportunity cost and unless there is a use for the investment (i.e. returns), it will lack incentive for the households to invest on the children.⁶

The recent literature on economics of education has identified many potential pedagogical innovations that can address learning outcomes and competency of the students. Such interventions can help students increase their test scores and signal abilities commensurate with the demand in an ever-changing labor market. Grouping students into groups according to their learning level has shown much potential to address the lack of competency achievement among students. There are concerns such grouping can deter peer learning (Epple and Romano 2011). However, wide heterogeneity can make schools and teachers to address specific learning needs of the students more difficult and even ineffective.

One way to reduce students' heterogeneity it to track students according to their prior achievement levels (as measured through, say, test scores in language and/or mathematics), group them according to their prior performance and supplement the regular teaching with special classes. Apart from theoretical justification of proposed intervention of tracking students' prior achievements and "teaching them at the right level", we also have some rigorous evaluations from Kenya and India basically supporting the potential effectiveness of these programs (see Banerjee, et al. 2007, Duflo, Dupas and Kremer 2011).

We use information from prior cost-effectiveness analyses and carry out the benefit cost ratio for tracking students and supplementary teaching at their levels (see JPAL 2016). We further had to link the effects on student's test scores, a measure of student's achievement, to labor market outcomes to estimate the benefits of the interventions. The assumptions are presented in Table 2.

⁵ For further description on the goal, please see <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁶ There may also be a missing market aspect as parents' views on returns to schooling may be different from that of the children and it is not possible for children to write a contract with their parents to take the optimal investment decisions from the children's point of view.

Table 2: Assumptions for Assessing Benefits and Costs for Student Tracking

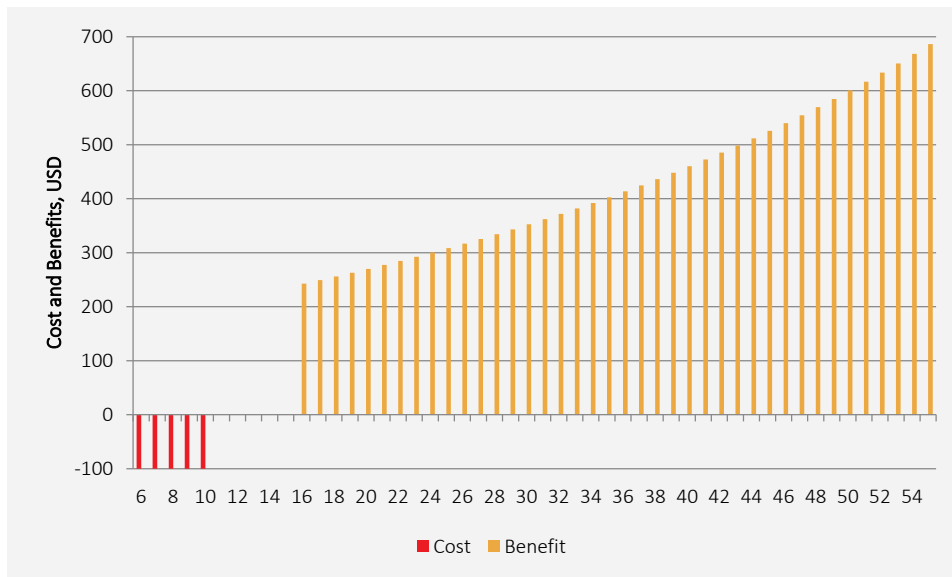
Assumptions	Values	Source
Monthly Income for Primary Education, 2012 HTG	5,636	Source: DHS 2012
Unemployment Rate	23.8%	Source: CCC Personal Correspondence
Annual Income adjusted for inflation and unemployment rate, 2017 HTG	72,747	Haiti Priorise assumption ^a
Exchange Rate USD/HTG	67.7	From Google as of 23/01/17
Average income per worker, USD	1,075	Estimated from above two cells
Wage Returns for One SD Literacy Score	8.8%	Source: Table 5, Model 4 Hanushek and Zhang (2009) pp.128-9.
Average effects of structured pedagogy [SD Literacy/Art]	1.97	Source: JPAL/IPA Education CE Analyses.
Gross Annual Growth Rate	2.7%	Haiti Priorise assumption ^a
Inflation Rate	9.0%	Source: Forecast from Trading Economics
Population, Children in Grades 1-5	1,241,839	Haiti Priorise assumption ^a
Primary Enrolment Rate	70.0%	See Torchenaud (2016)
Total Primary Enrolment	869,287	Calculated

Notes. ^aThe information provided by Copenhagen Consensus Center file.

We use the month income for a Haitian with primary education as of 2017 as a benchmark value and use 2.7 percent real growth rate as before. We assume tracking and supplementary tutoring will take place over the entire primary level (for the kids between ages 6 and 10 or grades 1 through 5). The cost-effective analyses suggest that an investment of 100 USD per year can allow an increase in achievement test by 1.97 SD (see JPAL [2016], also Table 2). The program will target about 1.24 million children of the relevant age group who are in school. Thus, we focus on the children who are currently enrolled in the school. This amounts to about 870 thousand children.

For benefit we use estimates of Hanushek and Zhang (2009) to link competency in literacy with the labor market returns of about 8.8 percent for a SD increase in literacy score and this suggests a gain of about 170 USD compounded over the working life of a person. We present the cost and benefit graphically in Figure 2. We discount these flows appropriately using

Figure 2: Cost and Benefit Flows for Student Tracking



We should again notice that the costs are immediate and the benefits accrue down into the future. At the annual discount rate of 3 percent total cost in present value amount to about 28 billion HTG. With an estimated benefit of about 402 billion HTG we get a BCR of about 14.5 for the complementary teaching by tracking students at their prior achievement level. At the 5 and 12 percent discounting we get BCRs of about 8.8 and 2.3. Focusing on moderate discounting then we get a reasonable return of 8.8 HTG for each HTG invested by investing in learning outcomes of the children by teaching at the right level suggests the supplementary teaching with more homogeneous classroom can have substantial returns on investment.

Increasing Attendance at the Secondary Level: Using CCT

In an ever changing world where technology and more sophisticated management practices are becoming important to be a productive member of the work force, it is important to continue with the human capital investment. Resource constraints notwithstanding, an investment plan just focus on primary attendance may not be sufficient for long-term economic development. However, like many developing countries, Haiti also suffers from low enrolment and high drop rates in later level of schooling.

Conditional cash transfer has been frequently used in many different contexts to increase enrolment and retention in school (Fiszbein and Schady 2009). In this section, we propose and explore to use CCT to reduce drop out at the secondary level in Haiti. We will evaluate the lower drop-out rates in a dynamic

setting with a continual conditional cash transfer over the students' ages between 11 and 15 (say, grades 6 through 10).

Table 3: Assumption for Calculating BCR for CCT at the Secondary Level

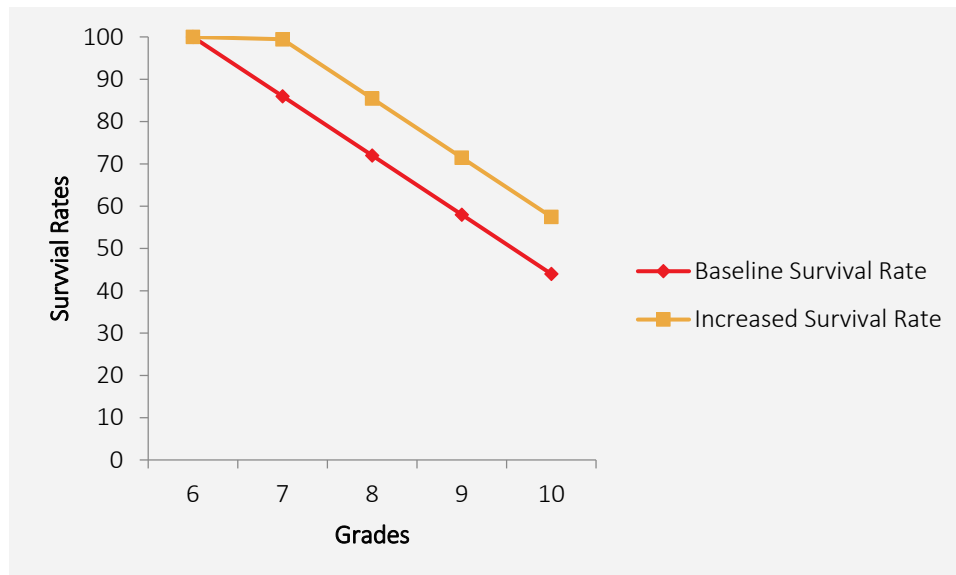
Assumptions	Values	Source
Monthly Income for Lower Secondary Education, 2012 USD	6,571.00	Source: DHS 2012
Unemployment Rate	23.8%	Haiti Priorise assumption ^a
Annual Income adjusted for inflation and unemployment rate, 2017 HTG	72,746.68	From 'Projections' Cell - E5
Exchange Rate HTG/USD	67.7	From Google as of 23/01/17
Average income per worker, USD	1,074.54	Estimated from above two cells
Gross Annual Growth Rate	2.7%	Haiti Priorise assumption ^a
Average consumption per worker, USD	859.64	Assuming 80% of the income is consumed
Mean CCT as % of Consumption	14.1%	Source: Fiszbein, Schady and Ferreira, 2009
Mean CCT level, USD	121.21	Calculated from above two cells
Additional Schooling	1.01	Calculated using lower hazard rates (see Figure 3)
Returns to Schooling	8.8%	Harmon et al. 2003
Population, Grades 6-10	1,189,347.79	Haiti Priorise assumption ^a
Bottom two quintiles	475,739.12	Bottom 40% of the income distribution

Notes. ^aThe information provided by Copenhagen Consensus Center file.

As reported in Fiszbein and Schady (2009), we can calibrate the required CCT for the context of Haiti. We find that on average CCT as percent of per capita consumption is about 14 percent across different studies (see Table 3). While aggregate consumption data is not available, we assume that about 80 percent of the income is consumed and for an average income of 987 USD as of 2017, we find the required CCT of 111 USD. We use this value as our benchmark CCT amount.

Among the children who start sixth grade (or “secondary” level of education), only 30 percent of the students eventually finish that level. We further take an average effect of 13.5 percent for CCT on enrolment and school attendance based on six developing countries including three that are in the Latin American region (Mexico, Ecuador and Chile). We show the potential dynamic effects of CCT in Figure 3.

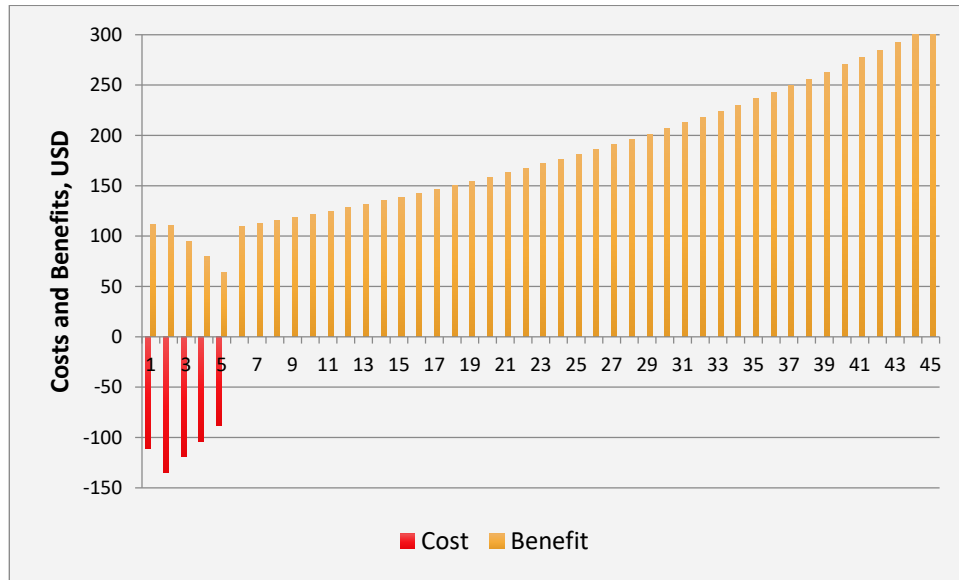
Figure 3: Simulated Effects of CCT at the Secondary Level



Note. The solid line shows a benchmark survival rate to each successive grade. This is calibrated to fit the current drop out rate and enrolment in Haiti. The dashed line shows the lower counterfactual drop out rates because of receiving CCT.

We simulate the increased retention for the CCT. We show a benchmark survival rate to represent the current rate of progression for the students to each successive grade. For the higher survival rates from CCT we estimate the additional probability at each grade level and add for a representative student to measure the additional level schooling which is about one year in this case. Both the direct cost of CCT and cost of additional level of schooling is weighted by the additional probability and discounted at different values to estimate the total cost of the program. One should note that we are starting from all the students in the targeted group (say, bottom two quintiles in the income and/or consumption distribution). We continue the CCT for the next five grades with the students who continue to remain in school at each subsequent grade (see Figure 3).

Figure 4: Cost and Benefit Flows for CCT for Secondary Schooling



Note: The costs include both the CCT and also costs for additional schooling. Wage benefits start accruing from 16 and end at 55.

Like the previous two cases, we show the costs and benefits over the life cycle for an average student. The costs incur for the first five years of intervention, while the transfer is considered a benefit of equal magnitude over the same period. Additional wage benefits start to accrue from the ages of 16 until 55. One should note that CCTs are almost always target a population with certain characteristics. The literature suggests the targeting is usually based on poverty status or location (e.g. urban as oppose to rural). Given the poverty rate in Haiti is around 40 percent, we propose to use a CCT to target poor households in Haiti or the bottom 40 percent of households according to household consumption and/or income level in the appropriate age group (11 to 15 years of age).⁷ This suggests a population of about 476 thousand students in Haiti. So including both the direct and indirect costs, at a discounting rate of three percent we estimate the total CCT cost of 17.0 billion HTG. At the same discount rate of three percent, the additional benefit suggests a 129 billion HTG with a BCR of 7.6, the lowest of the three education interventions we have evaluated in this article. Similarly, at five and twelve percent discount rates we find BCRs for CCT for secondary education in Haiti at 5.3 and 2.4 respectively.

⁷ Obviously, any intervention short of universal nature will probably entail some mistargeting and rent seeking. The people in charge of targeting may take some political economy advantage (say, vote buying). However, we ignore these political consideration for now.

Overall Discussion

There are newly emerging issues in global scale with higher level of uncertainty. Globalization as it has been experienced may face some regression and matching workers with the right types of work will certainly face more challenges. Haiti currently has the lowest level of income and the highest level of poverty within all the neighboring countries in the western hemisphere. Investment in education is essential for any country to have better potentials to assimilate into both local and offshore labor markets and it definitely necessary for the relevant stakeholders in Haiti to focus on creating an education infrastructure which will require building schools, develop quality teachers and manage them with the right incentives and encourage demand with school subsidy.

Table 4: Summary of the BCRs for the Propose Education Interventions

Intervention	Discount	Benefit ^a	Cost ^a	BCR	Quality of Evidence
Two-Year Early Childhood Interventions at the Pre-Primary Phase	3%	203.31	7.11	24.7	Strong
	5%	114.53	6.93	13.9	
	12%	22.96	6.41	2.6	
Teaching children at the right level	3%	401.93	27.76	14.5	Strong, but needs to be contextualized
	5%	235.30	26.75	8.8	
	12%	53.67	23.76	2.3	
CCT for Secondary Level Children	3%	128.70	16.98	7.6	Strong
	5%	87.52	16.41	5.3	
	12%	35.59	14.69	2.4	

Note. ^aCosts and benefit figures are in billion HTG (the local currency units).

In this paper, we have evaluated three different education interventions addressing human capital investment at different points of a person life. We have focused on ECE, which has potential to have very high rate of returns and have shown to have significant large impacts on later life earnings and in other dimensions such as reducing extra-legal activities and better health outcomes. This has been tried in Jamaica and can possibly be related to the Haitian context. One should note that ECE has been used to mitigate some of the detrimental effects of nutritional deficiency. Nutritional intervention can have potential to improve cognitive and learning outcomes of the students as well, however, in this report I have largely focused on educational interventions.

We have further focused on enhancing the quality of education by supplementary tutoring based on prior competency of the primary level students and also using cash subsidy to encourage students to attend

and remain in schools at the secondary level. Tracking student has shown some promise to enhance students' learning and competency and has been tried in few different contexts. However, this is one of the many tools that have been proposed. Education economists and practitioners have been learning a lot about different pedagogical innovations with similar cost-effectiveness (see JPAL 2016). One important factor that we have left out in the paper is the availability of quality teachers. Graduates from Haiti tend to migrate of the country taking the embodied training with them. This may impede or mitigate some of impacts of the proposed intervention.

We summarize the results in Table 4. The results somewhat follow a negative gradient over the life cycle, a relationship, which is reminiscent of *Heckman Equation* as suggested in the literature (Cunha, et al. 2006). A careful and deliberate investment in education will be essential to realize the potentials of the future generations for Haiti with more general implications for countries with a similar level of development such as Haiti

Works Cited

- Banerjee, Abhijit V, Shawn Cole, Esther Duflo, and Leigh Linden. "Remedying Education: Evidence from Two Randomized Experiments in India." *The Quarterly Journal of Economics* 122, no. 3 (2007): 1235-1264.
- Barro, Robert J, and Jong Wha Lee. "A new data set of educational attainment in the world, 1950–2010." *Journal of development economics* 104 (2013): 184-198.
- Becker, Gary S. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. The University of Chicago Press, 1994.
- Beine, Michel, Frederic Docquier, and Hillel Rapoport. "Brain drain and human capital formation in developing countries: winners and losers." *Economic Journal* 118, no. 528 (2008): 631-652.
- Bhuller, Manudeep, Gordon B Dahl, Katrine V Løken, and Magne Mogstad. "Incarceration, Recidivism and Employment." Working Paper, 2016.
- Cunha, Flavio, James J Heckman, Lance Lochner, and Dimitriy V Masterov. *Interpreting the evidence on life cycle skill formation*. Vol. 1, in *Handbook of the Economics of Education*, 697-812. 2006.
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. "Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya." *American Economic Review* 101, no. 5 (2011): 1739–1774.
- Epple, Dennis, and Richard Romano. *Peer Effects in Education: A Survey of the Theory and Evidence*. Vol. 1B, in *Handbook of social Economics*, 1053–1163. Amsterdam: North-Holland, Elsevier, 2011.
- Fiszbein, Ariel, and Norbert R Schady. *onditional cash transfers: reducing present and future poverty*. Washington, DC: The World Bank, 2009.
- Garces, Eliana, Duncan Thomas, and Janet Currie. "Longer-term effects of Head Start." *The American Economic Review* 92, no. 4 (2002): 999-1012.
- García, Jorge Luis, James J Heckman, and Duncan Ermini Leaf María José Prados. *The Life-cycle Benefits of an Influential Early Childhood Program*. Working Paper No. 22993, Cambridge, MA: NBER, 2016.

Gertler, Paul, et al. "Labor market returns to an early childhood stimulation intervention in Jamaica." *Science* 344, no. 6187 (2014): 998-1001.

Gertler, Paul, et al. "Labor Market Returns to Early Childhood Stimulation: A 20-year Followup to an Experimental Intervention in Jamaica." IRLE Working Paper No. 142-13, Berkeley, CA, 2013.

Hamadani, Jena D, et al. "Cognitive deficit and poverty in the first 5 years of childhood in Bangladesh." *Pediatrics* 134, no. 4 (2014): e1001-e1008.

Heath, Rachel, and A Mushfiq Mobarak. "Manufacturing growth and the lives of Bangladeshi women." *Journal of Development Economics* 115 (2015): 1-15.

Heckman, James J. "Schools, skills, and synapses." *Economic inquiry* 46, no. 3 (2008): 289-324.

JPAL. *Increasing Test Score Performance: What interventions are most effective at increasing student learning?* 2016. <https://goo.gl/r1h7cL> (accessed 1 29, 2016).

Khandker, Shahidur, Mark Pitt, and Nobuhiko Fuwa. "Subsidy to promote girls' secondary education: the female stipend program in Bangladesh." 2003.

Lucas, Robert E. "On the mechanics of economic development." *Journal of Monetary Economics* 22, no. 1 (1988): 3-42.

Lunde, Henriette. *Youth and education in Haiti: Disincentives, vulnerabilities and constraints*. Fafo Institute of Applied International Studies, 2008.

Pitt, Mark M, Mark R Rosenzweig, and Mohammad Nazmul Hassan. ""Human Capital Investment and the Gender Division of Labor in a Brawn-Based Economy." *American Economic Review* 102, no. 7 (2012): 3531-3560.

Rabbani, Atonu. *On Recognizing Skill Formation as a More Effective Development Strategy*. Copenhagen Concensus Center, 2016.

Scot, Thiago, and Aude-Sophie Rodella. *Sifting through the Data Labor Markets in Haiti through a Turbulent Decade (2001–2012)*. Washington, DC: The World Bank, 2016.

School Socio-Capitalism to the Rescue of Universal Access to Education in Haiti

Haiti Priorise

Yvrose Guerrier

Department Head, Ministry of Planning and External Cooperation (MPCE)

Universal access to education represents a major challenge that Haiti must meet. It refers to the chance for all to enjoy equal opportunities in education regardless of their social class, gender, ethnicity, and physical and mental disabilities. In the Strategic Plan for Development in Haiti (PSDH), this theme is taken into account through the program aimed at increasing access to pre-school, primary and secondary education.

In Haiti, even though a better rate of access to education may have been measured, it still falls short of world standards, and we still question the quality in the transmission of knowledge. In effect, the Net Enrollment Rate (NER)ⁱ in full primary education increased from 66.9% in 2011 to 75.5% in 2014ⁱⁱ. Thus, for the year 2014, about three out of four children in the age group 6-14 were enrolled in school. The global average in terms of NER is around 90%.

If the NER at the primary level attests to coming near to world standards, at the secondary level, it raises the issue of retention of students at school. Indeed, the NER at the secondary level for this same year (2014) is 13%ⁱⁱⁱ. So there is a great loss between primary and secondary education.

The issue of retention of students in school leads us to wonder about the motives that push students to continue their studies or even what strategies are put in place by schools to keep the students in school.

To answer these questions, let's take a look at the situation of school supply and demand in Haiti at the primary and secondary levels. Measures to address the issue of universal access to education and retention taken by the Haitian State, through the Ministry of National Education and Professional Training (MENFP), will also be presented.

The interest of the article, in treating the issue of universal access to education and school retention, falls within the framework of the Sustainable Development Goals (SDG) for education, which Haiti ascribes to, being a member country of the United Nations (UN). The objective of the SDGs in education is to "ensure quality, inclusive and equitable education and promote lifelong learning opportunities for all." This objective is aimed not only at access to quality education but also at school retention. It must be said that these two terms are intrinsically linked.

The aim of this article is to provide an alternative approach to Haiti in its quest for universal access to education.

School Supply in Haiti

Concerning Private School Supply

The school supply in Haiti is provided by the private sector and the public sector. It is predominantly private (88% in 2010-2011) in the sense that almost all schools are run by the private sector. According to a World Bank study, 95% of preschool children, 82% of primary school students and 75% of secondary and tertiary students attend the private education sector in Haiti.

Private schools have exorbitant costs. According to a *Nouvelliste* article entitled "School in Haiti, Truly Exorbitant Costs," published on September 16, 2014, the average cost for fees and tuition in Haiti at the secondary level is estimated at about 60,000 gourdes per year for a good school. This cost is estimated from the data collected in the congregational schools.

Incidentally, Duval (2005) describes congregational schools as "great schools," playing the role of advance man for the system by taking innovative initiatives in terms of pedagogical program. For his part, Fausner (2006) described congregational schools as "effective schools" with excellent facilities and quality teachers.

These high tuition costs reflect exclusion for children with limited economic means. The latter find themselves in the public sector.

Concerning Public School Supply

The public school supply, at around 20%, is characterized by teacher absenteeism, lack of school materials and infrastructure and lack of teacher qualification. Access to public schools for students with reduced economic means is easier. However, the public sector fails to absorb the demand for education. Furthermore, how many times has a parent, who mobilized transportation costs, among other costs, to send his child to school, saw him return from school without having taken courses because of teacher absenteeism? How often has a teacher, who has vowed to devote his life to public service as a public official, had to resort, in order to survive, to teaching the same course for the same amount of hours in a private school pending wage arrears? This summarizes some of the evils facing public school provision.

School Demand in Haiti

Household demand for education is not lacking in Haiti. Haitian households are aware of the positive externalities of education. Haiti is one of the countries in the region, according to some

specialists, where parents spend as much as they do for their children's education. For the poorest households, the high cost of schooling and the low public supply of school infrastructure forces them to keep their children at home even if they were already in school. This explains the high rates of educational wastage.

The financial factor plays a major role in school attendance in Haiti. According to Emmus V (2012), the Net School Attendance Rate (NAR)^{iv} at the primary level is 66% for the poorest 20% of households, while it reaches 92% for the richest households.

MENFP Measures

Concerning School Supply

The Programme de Scolarisation Universelle Gratuite et Obligatoire [Universal Free and Compulsory Education Program] (PSUGO, 2011-2016) implemented by the MENFP aims to provide schooling over five years to 1,500,000 children^v through a three-fold strategy: public primary schools, subsidies to non-public schools and the creation and construction of public schools.

Concerning School Demand

Support for demand is addressed through the establishment of a health-nutrition program in the form of the generalization of school canteens (major determinant of retention of children in school and acting as a social safety net).

School Socialism

Public school supply in Haiti, as described above, is principally characterized by ease of access due to the public nature of the school. The ownership of the means of the school's education production is collective. Access is carried out independently of social class, gender or membership to any group. An analysis of this situation suggests that public schools adopt a socialist approach to access to education.

School Capitalism

Private school supply in Haiti, as described above, is mainly characterized by a set of physical, material, pedagogical and technological endowments financed certainly by the parents of students, but constituting an attractive framework that can retain students at school. The private school, through interclass competitions, wins in national competitions, baccalaureate results, cultural events, fairs etc., builds a whole marketing package to attract customers, sell the school product and build customer loyalty. An analysis of this situation leads us to argue that the private school adopts a capitalist approach in the retention of pupils in school.

Haiti, Toward School Socio-Capitalism

Here, the concept of "school socio-capitalism," based on the concept of "social capitalism"^{vi}, reflects the idea of a redistribution of the school supply necessary to incite the population to a wider consumption of schooling and intended to stabilize the educational system.

This concept of "school socio-capitalism," in a wider sense, foresees a system of schools that is easy to access in terms of monetary costs and a school product in terms of education that is of excellent quality. Such a system must seek an effective managerial and organizational dimension in terms of leadership, innovation and pedagogical vision. Such a system must be built on adequate physical constructions.

The central idea defended in this article could be formulated thus: **"Let us be socialists in access to education and capitalists in the retention of pupils in school."** In other words, popularize access by providing better knowledge at lower cost and develop strategies to increase the student's sense of belonging to his/her school, that is to increase loyalty. How many schools have strategies in place to attract students but do not make enough effort to retain the student? With the chaos caused by the current age of technology, the student must provide a sufficient effort of concentration to stay in school and perform well. With the high cost of living in Haiti, the student's parent must be motivated enough to replenish his/her child's education budget. With the erosion of the value system in Haiti, previously centered on the idea that education is the key to success, the school must renew its approach and establish its institutional hegemony. But it requires the cooperation of the Haitian state. Are we still able to establish institutional guidelines to stop the hemorrhage of the least educated in the main spheres of the state? Yes? No? In the meantime, this acts as a powerful de-motivating factor in universal access to education...

ⁱ The Net Enrollment Rate (TNS) corresponds to the quotient of the population enrolled and of the official schooling age in relation to the enrollable population of the official schooling age.

ⁱⁱ Results of the 2013-2014 School Census (MENFP)

ⁱⁱⁱ Results of the 2013-2014 School Census (MENFP)

^{iv} The Net School Attendance Rate (NAR) at the primary level is the percentage of the primary school age population (6-11 years) attending primary school.

^v According to the Operational Plan (OP) 2010-2015

^{vi} An economic structure, designed to establish an acceptable balance between capitalism (economic regime based on private appropriation of the means of production) and socialism (economic regime based on the collective ownership of the means of production).

Cost-Benefit Analysis of Education Interventions

Haiti Priorise

Melissa Adelman

Senior Economist, The World Bank

As part of the Haiti Priorise project to identify and promote effective solutions to Haiti's development challenges, four papers analyze the costs and benefits of eleven education interventions which have received much attention (and in some cases shown significant promise) in developing countries. The eleven analyzed interventions vary substantially – from expanding access to good quality early childhood education to providing secondary school scholarships to girls. However, all eleven are found to have benefit to cost ratios over 1.0 at reasonable discount rates, and could therefore be justified as promising interventions to pursue in Haiti. How should we interpret these results?

In this paper, I first provide a brief snapshot of the broader context of the Haitian educational system into which these interventions would be introduced, then synthesize the findings of the four papers and discuss how these findings compare with actual domestic and international investments in education. Finally, I argue that turning promise into outcomes relies heavily on the quality of implementation, and that these cost-benefit analyses should be combined with realistic assessments of implementation feasibility in order to prioritize investments.

Education context in Haiti, briefly

As is well-known, Haiti faces many challenges in achieving universal access to quality education at all levels. While about 90% of primary school-age children were enrolled at the last household survey in 2012, only about 50% of children actually complete primary school, and far fewer complete secondary or beyond. Moreover, since 2012, economic challenges and several key policy decisions have threatened the gains made during the 2000s, raising the possibility that enrollment and achievement rates may have actually declined in recent years.

Beyond the headline statistics mentioned above, there is important variation within Haiti as access to education depends greatly on urban/rural location, household wealth, gender, disability, and other factors. For example, regarding gender, while girls drop out at a faster rate than boys after age 14, this difference appears to be largely driven by the fact that girls progress through school more quickly than boys, as more 15-19 year old women than men have at least some secondary education (Cayemittes et al; World Bank 2014 and 2016).

In terms of education financing and provision, the public sector continues to play a minor role at all levels. Public schools only educate about 6% of pre-school students, 23% of primary school students, and 26% of secondary school students, while the rest attend a wide variety of religious, community-run, and for-profit schools. Relatedly, public resources are estimated to account for only about 30% of total spending on primary education, while households account for about 60%, and international donors the remainder (World Bank 2016). Vocational and technical education is also largely privately financed and provided; however, the Government does play a large role in providing university-level education.

Eleven promising interventions, in context

With this as the backdrop, we turn to considering the eleven interventions analyzed in the four papers by Damien Echevin, George Psacharopoulos, Antonu Rabbani, and Melissa Torchenaud. I leave aside a discussion on the justification for focusing on these interventions and not others, as well as the fact that the level of specification varies widely, from the very specific (e.g. “introduce a civics course in the lower secondary curriculum”) to the very broad (e.g. “provide quality preschool education”). Instead, taking these interventions as described in their respective papers, the table below compares the estimated benefit-cost ratios at the 5% level.¹

Based on these estimates, we could simply conclude that investments in early childhood education and in the quality of primary education are among the most promising for Haiti in terms of expected net benefits. Despite several shortcomings of the cost-benefit analysis in each paper, this conclusion in fact lines up well with a range of broader analyses, including Heckman’s well-known investment curve and previous work done for the Copenhagen Consensus on the post-2015 development agenda (Glewwe and Kraft 2014).

How do these results compare to the actual distribution of education financing? This is not an easy question to answer given the limitations on existing data, but a 2014 analysis of international financing finds that roughly 80% is focused on primary education, with the remainder going to secondary (including vocational), pre-primary, and tertiary. Breaking down public spending by levels is even more difficult, and we are unable to say much beyond the fact that at least 30% (and likely much more) of the Ministry of Education’s budget goes to primary, while very little (likely well under 10%) goes to pre-primary (World Bank 2016). In addition to being based on incomplete data, these estimates are also attempting to hit a moving target – international financing levels in particular fluctuate greatly over time, but domestic resources do as well, as priorities change across administrations. Despite these caveats, we can (guess-)estimate that the primary level receives the majority of public education financing, but that this financing continues to fall short of actual needs, while pre-primary receives very little public money relative to its potential returns.

However, moving from identifying broad priority areas to a plausible proposal for financing and implementing interventions is exactly where much development work breaks down. I provide two specific examples based on the analyzed interventions. First, early childhood education investments are widely considered to have the types of large returns assumed by Rabbani only if the service being provided is of reasonably good quality. In Haiti, the starting point is a system with widely varying but on average very low quality provision and almost no public financing or

¹ All of the papers consider a 3%, 5%, and 12% discount rate, and the conclusions are qualitatively similar across all three.

oversight.² While the average annual operating cost per student used by Rabbani of roughly 160 USD is reasonable based on known costs in Haiti, the start-up costs (both financial and political) of asserting public authority in the sector, developing both pedagogical and bureaucratic management capacity, and improving physical spaces for classes in order to reach a minimal level of quality are likely to be very high. Moreover, even with expected high returns, identifying a reliable and recurring public source of financing for early childhood investments is a difficult task in a context where primary and secondary education are underfunded.

Second, the discussion around interventions to improve the quality of primary education relies on the assumption that the majority of children are in school. While this was true in 2012 as mentioned above, because public financing for primary education has fallen in subsequent years, enrollment rates are also at risk. Therefore, the extent to which the government will finance primary education, and with what resources, should be resolved as a matter of priority over and above other interventions. Beyond this challenge, considering the two quality interventions with the highest estimated ratios – mother tongue instruction and teaching at the right level – several factors suggest that effective implementation in Haiti would be costlier and generally more resource-intensive than assumed. First, regarding mother tongue instruction, the Ministry of Education has already directed schools to begin teaching students to read and write in Haitian Creole, rather than French, but anecdotal evidence suggests that most schools do not comply. Many reasons lie behind this – including parents’ preference for their children learning French and the lack of Ministerial authority over a largely private sector (Adelman et al 2015). These reasons imply that progress (which is being made) requires building consensus across stakeholders, developing new materials in Creole, and re-training teachers – all costly and time-consuming efforts that are not fully factored into the analysis. Beyond Haiti, most of the evidence from rigorous evaluations of interventions on education quality in developing countries (including on teaching to the right level) comes from interventions implemented by non-governmental actors, and efforts to scale up these interventions through government have met a range of difficult and sometimes unpredictable challenges, which entail substantial extra costs, effort, and time to overcome (Bold et al 2013; Kerwin and Thornton 2015; Banerjee et al 2016).

In addition to these examples, every other intervention analyzed across the four papers could (and should) be carefully considered for feasibility in light of the known challenges of the context. Regarding the conditional cash transfers analyzed by Rabbani and Torchenaud, a program would need to factor in the costs of not only setting up the basic systems effectively from scratch but also of achieving agreement on targeting, given that identity registration systems do not function and 70% of the population is either poor or vulnerable to falling into

² Very little reliable data exists on the ECE sector in Haiti, but field visits and anecdotal evidence point to classrooms of over 40 children with little to no materials as a common occurrence.

poverty (World Bank). Regarding vocational education, as rightly pointed out by Psacharopoulos, existing programs in Haiti and many other countries have run into the added costs of providing substantial remedial education because basic skills are so weak and of identifying labor demand because markets are largely informal and almost no labor market information exists (World Bank).

Table 1: Estimated Benefit-Cost Ratios across eleven education interventions

Education level targeted	Intervention	Author	Benefit-cost ratio at 5% discount rate
Pre-primary	Two-year early childhood interventions at the pre-primary phase	Rabbani	13.9
Primary	Teaching at the right level	Rabbani	8.8
	Mother tongue instruction	Echevin	7.4
	Training teachers	Echevin	4.4
	Private school subsidies	Echevin	3.3
	Free school uniforms	Echevin	2.0
Secondary	CCT for secondary school	Rabbani	5.0
	CCT for girls in secondary school	Torchenaud	6.9
Lower secondary	Adding a civics course to the secondary school curriculum	Psacharopoulos	4.9
Upper secondary	Providing 3-year vocational education program	Psacharopoulos	2.0
	Creating a gap year program of civics and vocational education	Psacharopoulos	2.5

Conclusions

Considering the findings of the four papers on potential education interventions in Haiti altogether, it is clear that in a context where attainment and learning are so low, almost any reasonable intervention could have substantial net benefits. More importantly, the results point to a focus on early childhood and primary education as most likely to provide the largest long-term benefits, consistent with the broader literature and other research on education in Haiti. However, what the papers do not address is how feasible it would be to implement any of the analyzed interventions, including a broader consideration of the costs and time required. This is where I very much hope the conversation will go, as Haiti's future will be shaped by the human capital it builds today.

References

Adelman et al 2015: <http://hdl.handle.net/10986/22064>

Banerjee et al 2016: <http://economics.mit.edu/files/11934>

Bold et al 2013: <https://www.cgdev.org/publication/scaling-what-works-experimental-evidence-external-validity-kenyan-education-working>

Glewwe and Kraft 2014: <http://www.copenhagenconsensus.com/publication/post-2015-consensus-education-perspective-krafft-glewwe>

Kerwin and Thornton 2015 :

<http://www.jasonkerwin.com/Papers/MakingTheGrade/Kerwin%20and%20Thornton%20-%202015%20-%20Making%20the%20Grade.pdf>

World Bank 2014:

<http://documents.worldbank.org/curated/en/222901468029372321/Reflections-for-evidence-based-policy-making>

World Bank 2016: <http://documents.worldbank.org/curated/en/239991467030775172/Mieux-d%C3%A9penser-servir-revue-des-finances-publiques-en-Ha%C3%Afti>

Haiti faces some of the most acute social and economic development challenges in the world. Despite an influx of aid in the aftermath of the 2010 earthquake, growth and progress continue to be minimal, at best. With so many actors and the wide breadth of challenges from food security and clean water access to health, education, environmental degradation, and infrastructure, what should the top priorities be for policy makers, international donors, NGOs and businesses? With limited resources and time, it is crucial that focus is informed by what will do the most good for each gourde spent. The *Haiti Priorise* project will work with stakeholders across the country to find, analyze, rank and disseminate the best solutions for the country. We engage Haitians from all parts of society, through readers of newspapers, along with NGOs, decision makers, sector experts and businesses to propose the best solutions. We have commissioned some of the best economists from Haiti and the world to calculate the social, environmental and economic costs and benefits of these proposals. This research will help set priorities for the country through a nationwide conversation about what the smart - and not-so-smart - solutions are for Haiti's future.



Haiti Priorise

Un plan de **développement** alternatif

For more information visit www.HaitiPriorise.com

C O P E N H A G E N C O N S E N S U S C E N T E R

Copenhagen Consensus Center is a think tank that investigates and publishes the best policies and investment opportunities based on social good (measured in dollars, but also incorporating e.g. welfare, health and environmental protection) for every dollar spent. The Copenhagen Consensus was conceived to address a fundamental, but overlooked topic in international development: In a world with limited budgets and attention spans, we need to find effective ways to do the most good for the most people. The Copenhagen Consensus works with 300+ of the world's top economists including 7 Nobel Laureates to prioritize solutions to the world's biggest problems, on the basis of data and cost-benefit analysis.