USAID
FROM THE AMERICAN PEOPLE

Policy Brief

EQUIP2
Educational Quality Improvement Program
Policy ▪ Systems ▪ Management

School Effectiveness: Improving the Use of Financial Investments in Education

Introduction

The global economic recession has had severe impacts on developing countries. As global economic growth declined from 5.2 percent in 2007 to approximately -0.6 percent in 2009, economic growth in developing countries fell from 8.3 percent to 2.5 percent (International Monetary Fund, 2010). As the lowering of foreign direct investment, export revenue (including tourism revenue), and remittances have impeded economic growth and employment in developing countries, there are indications that progress towards the Millennium Development Goals (MDGs) is slowing, and in some cases, has reversed. In this context, governments are increasingly looking to save costs and identify cost-effective interventions that improve education without using large amounts of resources.

In a time when ministries of education need cost-effective solutions, research conducted by the United States Agency for International Development (USAID)-funded Education Quality Improvement Program 2 (EQUIP2) identifies various ways in which schools can more efficiently use existing resources to improve student learning. A series of EQUIP2 studies, which looked at time loss in schools across five countries, found that in many cases poor management of schools leads to the equivalent loss of more than 50 percent of the school year. The primary causes of lost time are schools opening late or closing early, teacher and student absenteeism, poor management of time during the school day, and time-off-task in the classroom. These time losses severely diminish the amount of instruction students receive in a school day. This policy brief calculates the estimated dollar value of time loss in 3 of the 5 countries where data was available in order to show policy-makers how poor management detracts from opportunities for students to learn.

Opportunity to Learn

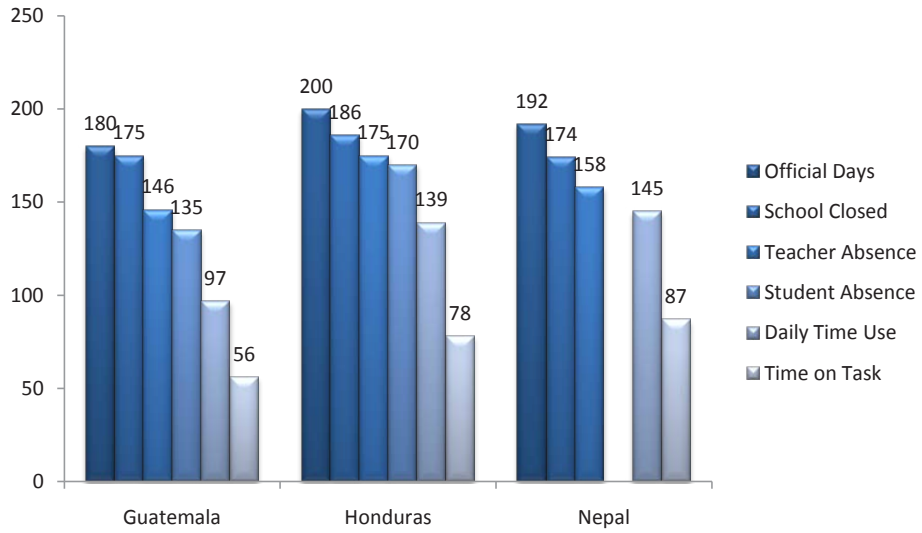
EQUIP2 has defined 12 factors that affect a child's opportunity to learn (OTL). The opportunity to learn begins when school is open, teachers and students are present, and classroom time is managed so that the time spent on instruction is optimized. Simply stated, more effective schools do a better job ensuring a basic opportunity to learn. This study examines the following five factors which can be used to measure some aspects of school effectiveness:

- Percentage of Days School is Open
- Teacher Attendance Rates
- Student Attendance Rates
- Percentage of Days Available for Instruction
- Percentage of Time-on-Task in the Classroom

Equivalent Days of Schooling

EQUIP2 collected school-level data in Guatemala, Honduras, and Nepal to measure each of the five OTL factors listed above. These factors are used as the basis for calculating the yearly equivalent amount of days lost. In each country's sample schools, as depicted in Figure 1, teachers and students were engaged in instructional activities for the equivalent of less than 50 percent of the available days for instruction (Moore, DeStefano & Adelman, 2010).

Figure 1. Equivalent Days of Schooling Available for Teaching and Learning



Source: Moore, DeStefano & Adelman, 2010

Guatemala, Honduras, and Nepal have official school calendars that respectively include 180, 200, and 192 days of instruction. This is represented by the first bar in each grouping in Figure 1. Each subsequent bar shows the number of equivalent days remaining after accounting for the time lost due to each OTL factor. For example, Guatemalan schools in the study sample were closed the equivalent of 5 days per year when they should have been open, reducing the available days for instruction from 180 to 175. When all factors are accounted for, Guatemalan schools in the sample had the equivalent of just 31 percent of the official number of school days devoted to instruction. The opportunity to learn in the schools researched in Honduras is equivalent to only 39 percent of the full school year. In sample schools in Nepal, the equivalent of 45 percent of available school days is used for instruction (Moore, et al., 2010).

The Cost of Lost Opportunity to Learn

The lack of opportunities to learn in these studies' schools translates into significant amounts of lost time. Lost time equates to wasted resources. To calculate the amount of resources lost because of inefficient use of time at the school level, EQUIP2 estimated the average expenditure per school based on each country's national primary school budget. Those estimates were used to quantify the dollar value of the time lost at the school level.

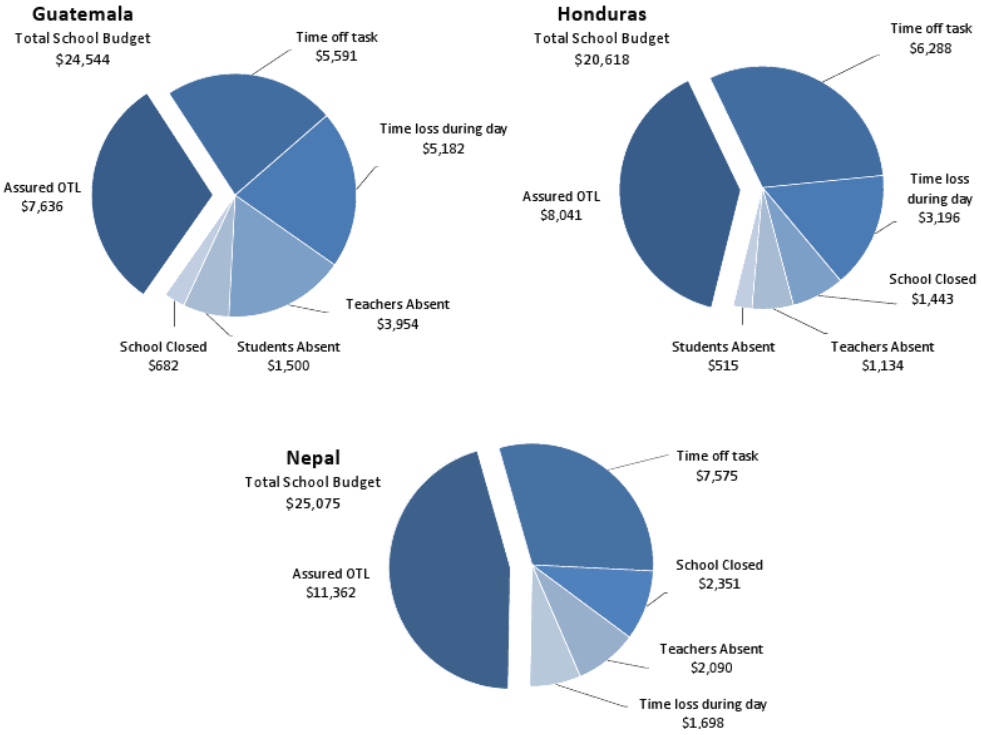
The Guatemalan sample consisted of 26 institutions, 20 of which were Save the Children-supported. On average, a school in Guatemala has an annual budget estimated at $24,544 (UNESCO, 2008). Of that, 69% is wasted because the equivalent of only 56 out of 180 possible school days are available as a basic opportunity for students to learn. Of the five OTL factors researched in this study, poor time-on-task (effectively time-off-task) accounted for the largest portion of equivalent time lost (41 days) and therefore the largest share of wasted resources (the equivalent of 23% of the budget). The time in the daily schedule not used for academic purposes equates to an additional loss of 21% of the budget (the equivalent of 38 lost days).

In Honduras, 33 institutions were included in the research, 27 of which were CARE-supported schools. In Honduras, 61% of the average annual school budget of $20,618 is wasted because the opportunity to learn actually provided in sample schools equates to just 78 of the 200 possible days for instruction (Honduras Ministry of Education, 2009). Again, time-off-task represents the largest portion of equivalent time lost (61 days) and therefore the biggest waste of education resources (the equivalent of 30% of the budget). Teacher absences by themselves waste 6% of the budget (the equivalent of 12 days per year).

In Nepal, 55% of an average school budget of $25,075 is wasted (UNESCO, 2008). Time-off-task equates to 30% of the budget (or 58 days of instruction) wasted and unplanned school closures waste an additional 9% (or 18 days of instruction). The Nepali sample consisted of 23 institutions, and does not include data on student attendance, so in fact over-estimates the opportunity to learn.

The data presented represents a sample of schools in a few countries around the world. The implications of such results on a national or global scale could be greatly more significant. Figure 2 shows what equivalent share of a sample school's budget goes to assuring opportunity to learn and what portions are wasted due to each type of lost opportunity to learn.

Figure 2. Equivalent Share of School Budget for Opportunity to Learn



Cost Effectiveness of Learning

Not surprisingly, the low provision of OTL at the schools in this study corresponds with low learning outcomes. Students in each of these studies' schools were given an early grade reading assessment that measures, among other things, oral reading fluency. Reading ability is both an outcome of OTL and a determinant of a student's future ability to learn and advance through their education (Moore, et al., 2010). A growing body of international evidence points to a minimum oral reading fluency of between 40 and 60 wpm for students who are emergent readers (Abadzi, 2006; Gove and Cvelich, 2010). By setting a target reading fluency of 60 wpm, it is possible to calculate the cost per student to reach this desired learning outcome. For each sample school, the cost to educate the students was calculated by multiplying the average annual national cost per student by the number of years the children were in school at the time of the assessment. That cost to educate the students was then divided by the percentage of students in the sample school that achieved the learning outcome. The results can be seen in the following table.

Table 1. Cost per Learning Outcome

	Average Cost per Student	% of Students Above 60 wpm in Grade 3	Cost per Learning Outcome (60wpm) in Grade 3
Guatemala	$90	31%	$726
Honduras	$226	66%	$855
Nepal	$55	13%	$1,050

In each case, the education system is using many more resources than necessary to obtain the outcome of students being able to read 60 wpm by Grade 3. For example, 2.5 years of schooling in Guatemala costs $90 per student (at the prevailing average cost). However, producing a Grade 3 student able to read 60 wpm cost eight times that amount. The lost opportunities to learn and the associated wasted resources considerably raise the cost of producing the desired learning outcome.

Increasing Cost Effectiveness

Inefficiencies in educational systems result in a significantly sub-standard use of time in classrooms, which leads to the inefficient use of resources, and hence, poor learning outcomes. However, by making small improvements to the provision of OTL, schools can increase instructional time with the resources currently available to them.

For example, on average, teacher salaries represent 90 percent of school budgets. Each day a salaried teacher reports to work, students receive one day of budgeted academic instruction. However, if a teacher does not report to work, the school receives no benefit for that day's expenditure of the teacher's salary. The school also loses the equivalent of one day of instruction for every one of the teacher's students. In this manner, teacher absences at the Guatemalan schools in this study equate to wasting $3,954 per year at each school (the loss of the equivalent of 29 days of instruction). If schools in Guatemala could increase the teacher attendance rate to 95 percent, it would equate to the more efficient use of some $2,761 and 20 more days of instruction.

It cannot be assumed that schools will be open, with teachers in attendance, and students ready to learn each day. The findings of these studies show quite the opposite; more often than not, these basic elements of education are lacking. School closures are frequent and irregular, teacher and student attendance rates are erratic, and time during the school day is often lost due to late starts, early dismissals, extended recesses and transition periods, and time-off-task. Efforts to improve education outcomes introduced in these inefficient systems are not likely to achieve the desired objectives. Insufficient amounts of opportunity to learn, or more simply, teacher-student contact time, need also to be addressed if resources expended to improve quality are not to end up wasted.

Conclusion

OTL factors have been directly linked to current and future student successes and should therefore be given priority by national and local governments, schools, and organizations that assist and track educational systems in developing countries. A more efficient use of instructional time will result in spending higher percentages of education budgets productively and lowering costs per learning outcome; additionally, it will result in the ability to more accurately determine the effectiveness of programs and interventions introduced to schools. The use of OTL as an indicator of efficient spending allows for the consideration of how to spend available resources differently, rather than seeking out additional funding for inefficient education systems.

References

Abadzi, H. (2006). *Efficient Learning for the Poor: Insights from the Frontier of Cognitive Neuroscience.* Washington, D.C.: World Bank.

Honduras Ministry of Education. (2009). "Management Objectives and Results by Institution." Viewed at http://www.sefin.gob.hn/portal_prod/data/2009/DGP/PresupuestoAprobado2009/egresos/r_fpr_objres_ges_50_.pdf

International Monetary Fund. (2010). "World Economic Outlook Update." Viewed at http://www.imf.org/external/pubs/ft/weo/2010/update/02/pdf/0710.pdf

Levin, H & McEwan, J. (2001). *Cost-Effectiveness Analysis*. Second Edition. New York: Sage Publications, Inc.

Moore, A.S, DeStefano, J. & Adelman, E. (2010). *Opportunity to Learn as a Measure of School Effectiveness in Ethiopia, Guatemala, Honduras, and Nepal*. Washington, D.C.: FHI 360.

UNESCO Institute for Statistics. "Finance Indicators by ISCED Level." (2008). Viewed at http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx?ReportId=172

USAID
FROM THE AMERICAN PEOPLE

EQUIP2
Educational Quality Improvement Program
Policy ▪ Systems ▪ Management

Acknowledgements

This paper was written for EQUIP2 by Caitlin Cetola (FHI 360), Joseph DeStefano (RTI), Dr. Audrey-marie Schuh Moore (FHI 360), and Elizabeth Adelman (FHI 360), 2010.

EQUIP2: Educational Policy, Systems Development, and Management is one of three USAID-funded Leader with Associates Cooperative Agreements under the umbrella heading Educational Quality Improvement Program (EQUIP). As a Leader with Associates mechanism, EQUIP2 accommodates buy-in awards from USAID bureaus and missions to support the goal of building education quality at the national, sub-national, and cross-community levels.

FHI 360 is the lead organization for the global EQUIP2 partnership of education and development organizations, universities, and research institutions. The partnership includes fifteen major organizations and an expanding network of regional and national associates throughout the world: Aga Khan Foundation, American Institutes for Research, CARE, Center for Collaboration and the Future of Schooling, East-West Center, Education Development Center, International Rescue Committee, Joseph P. Kennedy, Jr. Foundation, Michigan State University, Mississippi Consortium for International Development, ORC Macro, Research Triangle Institute, University of Minnesota, University of Pittsburgh Institute of International Studies in Education, Women's Commission for Refugee Women and Children.

For more information about EQUIP2, please contact:

USAID
Patrick Collins
CTO EGAT/ED
USAID Washington
1300 Pennsylvania Ave., NW
Washington, DC 20532
Tel: 202-712-4151
Email: pcollins@usaid.gov

FHI 360
Audrey-marie Schuh Moore
EQUIP2 Project Director
1825 Connecticut Ave., NW
Washington, DC 20009
Tel: 202-884-8187
Email: aumoore@fhi360.org
Web: www.equip123.net

This paper was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under Cooperative Agreement No. GDG-A-00-03-00008-00. The contents are the responsibility of FHI 360 through the Educational Quality Improvement Program 2 (EQUIP2) and do not necessarily reflect the views of USAID or the United States Government.