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GIRLS' OPPORTUNITIES TO ACCESS LEARNING (GOAL)

Endline Research Findings

November 2010–November 2013

Submitted by:
American Institutes for Research®

A partnership with:
Forum for African Women Educationalists (FAWE)
Search for Common Ground

December 2013

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Acronyms

AGSP	Ambassador Girls' Scholarship Program
AIR	American Institutes for Research
EFA	Education for All
FAWE	Forum for African Women Educationalists
GER	Gross Enrolment Rate
GOAL	Girls' Opportunities to Access Learning
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IMF	International Monetary Fund
IR	Intermediate Results
M&E	Monitoring and Evaluation
MCC	Millennium Challenge Corporation
MDG	Millennium Development Goals
MOE	Ministry of Education
NER	Net Enrolment Rate
NGO	Non-Governmental Organization
PTA	Parent Teacher Association
SFCG	Search for Common Ground
SIP	School Improvement Plan
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNMIL	United Nations Mission in Liberia
USAID	United States Agency for International Development

Contents

Executive Summary

I. Introduction

The three-year Girls' Opportunities to Access Learning (GOAL) project sought to address the low primary school enrolment among Liberian girls that continues to persist years after Liberia's 14-year civil war. The program was a Millennium Challenge Corporation (MCC) and USAID-supported Threshold Program, implemented between November 2010 and November 2013 by American Institutes for Research (AIR), the Forum for African Women Educationalists (FAWE), and Search for Common Ground. The project aimed to promote girls' school enrolment and attendance, and their completion of school, by engaging communities in supporting girls' education, providing grants to school parent-teacher associations (PTAs), and providing scholarships directly to girls.

Although there is a large body of research that describes the institutional and social barriers that impede girls' education, there has been considerably less research on strategies to overcome these barriers. An extensive review of the evidence on girls' education programs (conducted by the Population Council in 2009) identified two possible strategies: (1) providing direct cash and in-kind scholarships, and (2) providing PTA capacity building paired with school improvement grants. It was not clear whether (and how) these two strategies might support each other when implemented together. The GOAL project provided the two types of interventions separately and in combination in different groups of communities, and performed statistical analyses of the costs and cost-effectiveness of the different approaches. Through the interventions and their evaluation, the GOAL project both directly assisted girls in their primary education and contributed to the current research on girls' education.

II. Background

The 1989–2003 civil war disrupted all aspects of Liberian society, government services, and daily life, and the country's education system was no exception. The Liberian government has made considerable progress since the war ended in 2003, but the education sector continues to suffer from insufficient funding, a limited pool of qualified teachers, and fragmented systems and oversight. Although the Ministry of Education (MOE) introduced compulsory and free primary education in 2006, the government estimated that Net Enrolment Rates (NERs) were only 44 percent—and as low as 40 percent for girls—in 2009. In part, this reflects Liberia's history of male overrepresentation in its education system. According to the 1974 School Census, girls made up just 36 percent of enrollees at the primary level at that time. Now—almost 40 years later—the proportion of girls in primary school is still only 44 percent (as reported in a draft of Liberia's 2012–13 School Census).

III. GOAL Program Description

The GOAL project's aim was to improve girls' enrolment, attendance, and retention in 40 primary schools in two districts each in Lofa, Bong, and Grand Bassa counties. The program's interventions were implemented between 2010 and 2013, during which time Liberia's primary education completion indicator for girls increased from 52.5 percent to 60.3 percent.

Design and Implementation of the Three Interventions

The GOAL program offered three intervention models in the primary schools participating in the program: (1) a scholarship program, (2) community mobilization through PTA capacity

building and school improvement grants, and (3) a model that combined the scholarship and community mobilization programs (and provided supplemental academic tutoring to a small subset of schools). GOAL also monitored enrolment, attendance, and retention in 20 comparison schools that did not receive any GOAL interventions or services.

Intervention Model #1: Scholarship Program (10 schools)

In the first model, GOAL offered in-kind scholarships (uniforms, payment of school-related fees, and school supplies and toiletries) to girls in 10 schools, coupled with complementary services to help girls flourish as students. The scholarships sought to offset both direct schooling costs (by providing money for school fees and uniforms, for example) and the indirect schooling costs associated with not being able to participate in the local informal economy while in school. All of the female students enrolled at each GOAL school received the resources. The complementary services provided as part of this model were:

- Teachers' kits (contents included items such as dictionaries, calculators, chalk, and other supplies)
- Gender-Responsive Pedagogy training for teachers, mentors, and PTA members, which covered developing gender-responsive lesson plans, materials, and classroom set-up; using gender-responsive language in the classroom; and preventing and addressing sexual harassment
- Establishing Girls' Clubs, which were designed to provide girls direct support in addressing school-related difficulties (Girls' Club mentors received a small stipend and were provided direction about the operations of the clubs)

Throughout this report, schools in this intervention category are referred to as scholarship-only schools.

Intervention Model #2: Community Mobilization through PTA Capacity Building and Grants (10 schools)

In the second model, the GOAL staff worked to build the capacity of PTAs to support girls' primary education. Each school's PTA received a performance-based grant of up to US$1,000 per phase to improve the school environment. These grants met the needs identified in school improvement plans (SIPs) and provided an opportunity for PTA members to work together. This process was intended to strengthen PTA planning and management skills, and to build morale and cohesiveness. PTAs used the grants to make improvements to the physical environment of schools (e.g., buying new furniture and library materials and undertaking building repairs, toilet renovation, and so on). These activities improved the school environment for all students but were designed to especially benefit girls.

The intervention provided the PTAs training in operations and management, financial management and oversight, school monitoring and evaluation, local advocacy and resource mobilization, data use, and school health. Community mobilization through PTA capacity building also focused on engaging women as members and leaders in PTAs in order to influence household and community behavior and drive gender equity.

Throughout this report, schools in this intervention category are referred to as grant-only schools.

Intervention Model #3: Combined Scholarship Program and PTA Capacity Building and Grants (20 schools)

In 20 schools, the GOAL project provided a combination of Intervention Models 1 and 2. (A subset of nine randomly selected schools within this intervention category also received support in the area of after school tutoring.)

Throughout this report, schools in this intervention category are referred to as grant and scholarship schools.

In addition, the schools in all three program models received the following interventions:

- **Community outreach and awareness raising (through town hall meetings, drama performances, and radio messages and skits):** This was done to create an environment supportive of girls' education in all program schools and catchment areas.
- **Health interventions:** Two teachers from each school received training in first aid. Teachers, PTA members, and Girls' Club mentors (in schools with supported Girls' Clubs) from each school participated in "Water, Sanitation, and Hygiene" (WASH) training and age-appropriate trainings on HIV and AIDS and reproductive health.

Evaluation Design

To compare the relative effectiveness of GOAL's three intervention models, we addressed the following research questions:

1. **Impact:** To what extent does each program model increase girls' enrolment, attendance, and retention?
2. **Effectiveness:** What are the overall costs of each intervention, and the costs per student? What is the cost-effectiveness of each program (i.e., how much does it cost to increase enrolment by one girl)?
3. **Necessary conditions:** What contextual factors facilitate or hinder the implementation of each intervention and its effectiveness?

We employed a mixed-method evaluation design to answer these research questions. We used statistical regression methods to estimate the impacts of the scholarships, grants, and other program supports on girls' enrolment, attendance, completion, and promotion, and we analyzed cost data to estimate the cost of providing the different interventions. These costs were then compared with the estimated program impacts to determine the relative cost of a given amount of change (e.g., increasing school enrolment by one girl). We also carried out four in-depth, qualitative case studies to explore the contextual factors related to schools' and PTAs' experiences with the program interventions.

Program Implementation: Achievements, Outcomes, and Trends

GOAL provided the following resources to girls, their families, and other stakeholders within the targeted schools and communities.

Intervention Model #1 (Scholarship-Only Schools)

- This intervention distributed a total of 13,132 scholarships and 1,136 teachers' kits.
- It also provided Gender-Responsive Pedagogy training to 210 teachers, education officers, and PTA leaders, with one training session taking place in each county.

Intervention Model #2 (Grant-Only Schools)

- This intervention directly supported 29 PTAs and their leadership, community leaders, and students.
- The grant intervention funded projects that the PTAs had identified and designed through their SIPs. Over the life of the project, GOAL provided $66,696 in grants, matched by $12,427 in PTA cost share.

Intervention Model #3 (Grant and Scholarship Schools)

- In addition to the support, funds, and training provided to all 20 schools receiving this intervention, nine of these schools received a supplemental tutoring program that provided academic support for girls in mathematics, science, social studies, and English. Over the life of the project, 1,120 girls participated.

Additional Supports, Funds, and Training Provided to All GOAL Schools and Communities

- GOAL provided community engagement and media outreach to all 40 school catchment areas, regardless of intervention model, to raise awareness about topics central to GOAL's mission. GOAL used radio messages as a key community engagement strategy. The messages were broadcast in English and in Lorma, Kpelle, and Bassa (the dialects widely spoken in the project communities).
- 39 first aid kits were provided to GOAL program schools and 78 teachers were trained in first aid.
- 142 participants received WASH training.
- 221 participants received sexual and reproductive health training. 187 participants (including principals, clinic staff, and community health volunteers) were trained in classroom reproductive health activities.
- GOAL provided bacteriological testing and treatment of drinking water points in all 40 targeted communities.

Increasing Girls' Enrolment

Enrolment data were collected at the beginning of each semester throughout the life of the GOAL project. GOAL used three primary targets to measure its results:

1. **A 25 percent increase in girls' enrolment (3,493 girls).** In the final year of the project, girls' enrolment in Grades 2–6 in all 40 program schools was 23.2 percent higher than the baseline (increasing from 2,794 girls to 3,443 girls), which is slightly under the 25 percent target. Enrolment increased by 28.0 percent in scholarship-only schools and 49.0 percent in grant and scholarship schools, but grant-only schools experienced a decline of 17.8 percent overall. (In the comparison schools—which did not receive any GOAL support—enrolment declined by 19.5 percent.)
2. **A 25 percent increase in the number of girls who successfully complete their grade (1,847 girls).** In June 2011 (the baseline year), 1,464 girls in Grades 2–6 in the 40 program schools successfully completed the school year. In June 2013, 2,314 girls completed the year—an increase of 53.1 percent, which is far above the 25 percent completion target. Promotion rates, however, were lower. Among the cohort of 985 girls who received scholarships in May 2011 as second, third, or fourth graders, many repeated

grades, and only 28.8 percent of the girls in the cohort were promoted in two successive grade levels and years.

3. **An increase of 5 percentage points (to 63.2 percent) in the attendance rate for girls in Grades 2–6.** The attendance rate for all 40 schools increased by 10.3 percentage points—from 57.2 percent to 67.5 percent—which exceeded the 5 percent target.

IV. Analysis of GOAL Impact on Student Enrolment and School Conditions

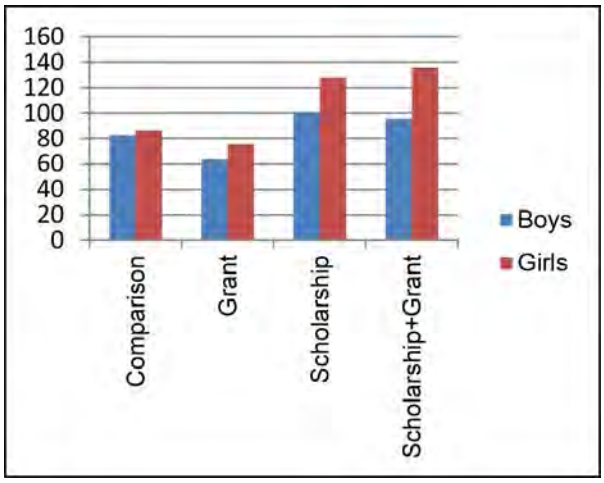
To help us identify the project's impact (and to distinguish the project from other events and interventions that may have benefited schools more generally), our analyses primarily focused on the differences in outcomes between boys and girls. The more the gender gap in these outcomes is reduced, the more likely it is that GOAL—which was designed to primarily benefit girls—is responsible for any improvements in outcomes.

Trends in Student Outcomes

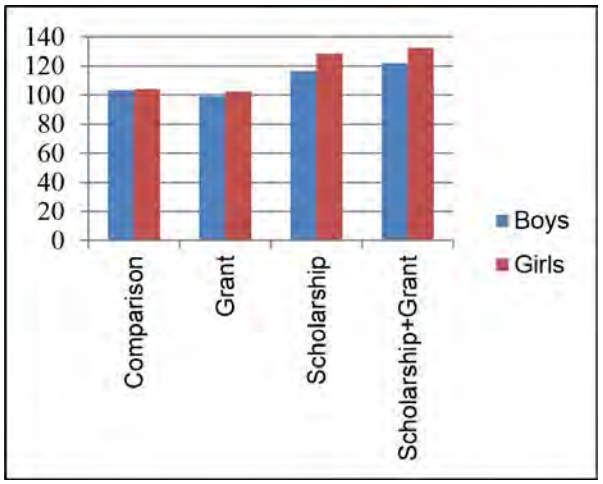
We looked at outcomes for the 40 GOAL schools based on which of the three intervention models they received, and we compared these outcomes with those of the 10 comparison schools. Exhibit 1 shows the relative change in each outcome from its baseline value.[1]

Exhibit 1. Relative Percent Changes Over Time in Enrolment, Attendance, Completion, and Promotion by Type of Support Provided to School

Enrolment

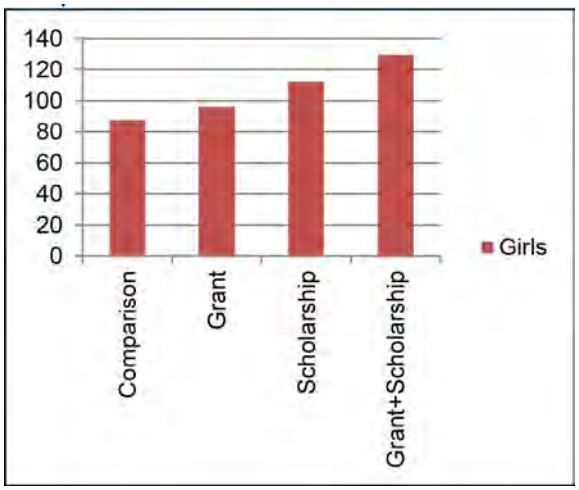


Attendance

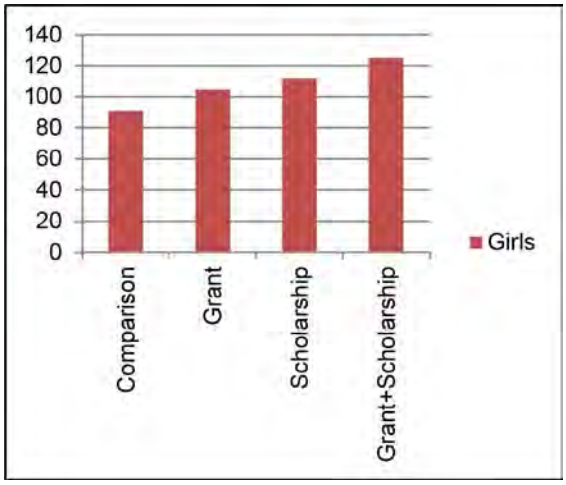


[1] To standardize the data relative to the baseline level of each outcome for each particular school, the figure shows the endline value relative to a standardized baseline value of 100. For example, if the average enrolment of boys in a school increased from 150 to 210 students (a 40 percent increase), the standardized endline value for that school would be 140.

Completion



Promotion



Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Note: Because data for boys are not available at the baseline for completion and promotion, relative changes are shown only for girls.

Three general findings emerge from these data:

- Boys' enrolment declined in all four school categories, and there were similar declines for girls in comparison schools and in schools that received grants only. In contrast, girls' enrolment increased in schools that were offered scholarship support (either by itself or in combination with grants).
- Attendance did not change in comparison schools or schools that received grants only, but it increased for both boys and girls at schools that offered scholarship supports (alone or in combination with grants).
- Grade completion and promotion among girls improved in schools that offered scholarship support (with or without grant support) and worsened in schools that did not provide scholarship support.

Regression Analysis of Student Outcomes

To further examine whether the observed changes were attributable to GOAL, and to establish whether these changes were statistically significant, we used regression analysis to compare changes in outcomes for girls and boys at GOAL intervention and comparison schools. Exhibit 2 summarizes the results from these analyses.

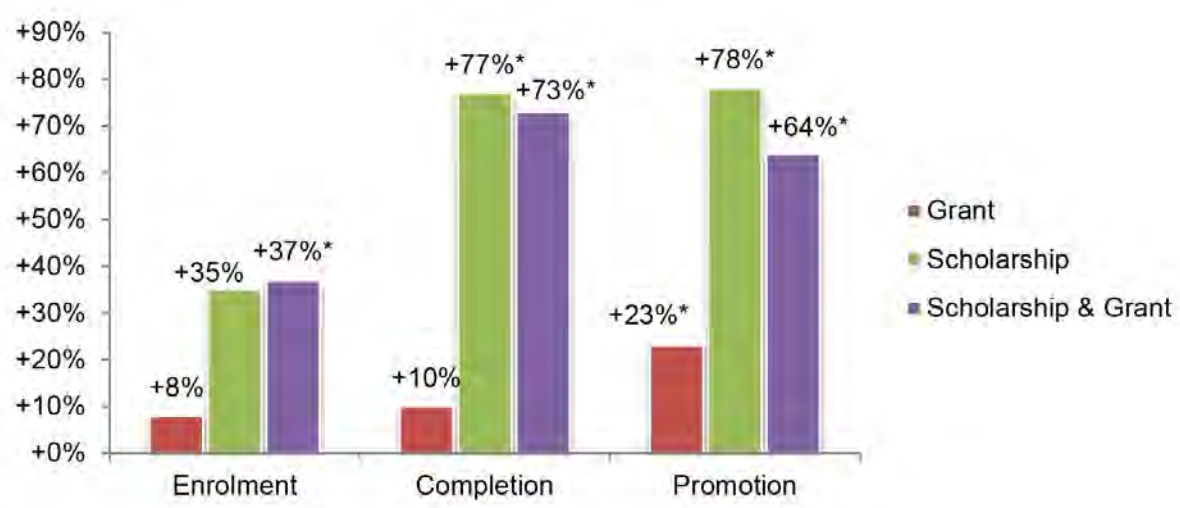
- **Enrolment:** Controlling for changes over time in boys' enrolment and enrolment in comparison schools, we estimated that GOAL increased girls' enrolment by an average of 11 girls at grant-only schools (8 percent), by an average of 18 girls at scholarship-only schools (35 percent), and by an average of 35 girls at grant and scholarship schools (37 percent). Based on these results, it appears that scholarships had a greater impact on girls' enrolment than grants (though only the increase at grant and scholarship schools was statistically significant).
- **Completion:** The regression analysis indicated that GOAL increased the number of girls who completed the school year by seven girls (10 percent) at grant-only schools, 20 girls (77 percent) at scholarship-only schools, and 39 girls (73 percent) at grant and scholarship

schools. The impacts at scholarship-only and grant and scholarship schools were statistically significant.

- **Promotion:** We estimated that GOAL increased the number of girls who were promoted to the next grade by 12 girls (23 percent) at grant-only schools, 16 girls (78 percent) at scholarship-only schools, and 29 girls (64 percent) at grant and scholarship schools. The impacts at scholarship-only and grant and scholarship schools were statistically significant.

Despite the relatively small number of schools in each of the four treatment conditions (the three intervention models and the comparison group), these results provide encouraging evidence on the effectiveness of the GOAL program. The improvements appear to be driven primarily by the scholarships provided to girls in 30 of the 40 GOAL schools.

Exhibit 2. Regression-Based Estimates of GOAL Impacts on Enrolment, Completion, and Promotion



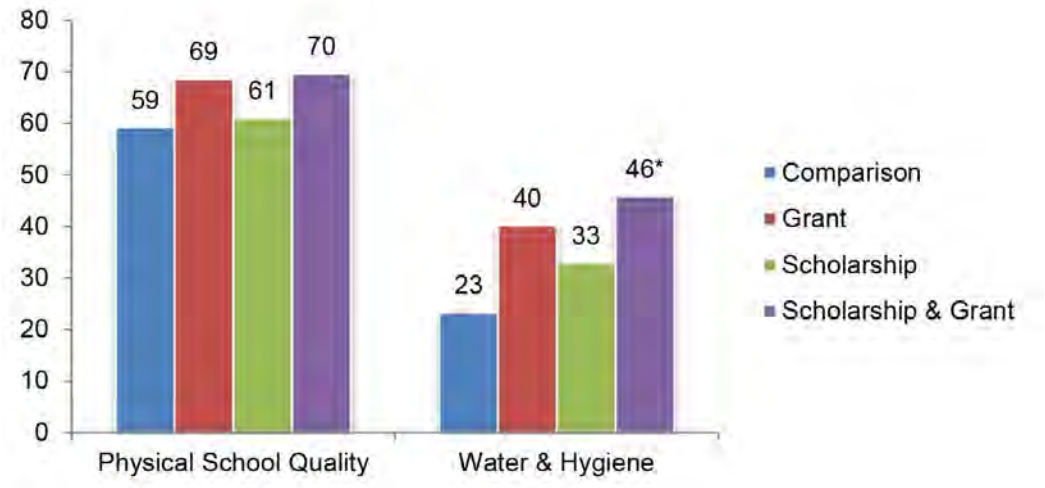
Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Note: Starred differences are statistically significant.

Impacts on School Conditions

In addition to examining the impact of GOAL on student outcomes, we also examined the change in school characteristics from baseline to endline across program and comparison schools. Using questions from GOAL school observation instruments, we created two scales to summarize school conditions across 16 individual observational variables. One scale (consisting of nine items) summarized the overall physical condition of the school and the other (consisting of seven items) summarized the availability and quality of its water and hygiene infrastructure.

Exhibit 3 summarizes the results from these analyses. It shows that GOAL schools generally had higher scores than comparison schools in both physical school quality and water and hygiene. The differences were more apparent for schools that received both scholarship and grants and were more pronounced for the water and hygiene scores. In addition, GOAL schools also appeared to have more visible notebooks, pencils, and textbooks relative to comparison schools (not included in the figure).

Exhibit 3. Ratings of Physical School Quality and Water and Hygiene Measures by Type of School



Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Note: Due to the small sample size, only the starred difference between GOAL and comparison schools was statistically significant.

V. Analysis of GOAL Cost-Effectiveness

To estimate the cost associated with an outcome (e.g., increasing enrolment by one girl) for each intervention model, we analyzed the costs of the three GOAL intervention models relative to their impacts on girls' outcomes. The lower the cost for a given outcome, the more cost-effective the intervention is (for that particular outcome). We found the following:

- The average annual cost of providing GOAL supports to an individual school ranged from $8,175 for a grant-only school to $19,082 for a grant and scholarship school.
- The total annual cost of providing the interventions (including administrative expenses) ranged from $65 per girl at grant-only schools to $199 per girl at grant and scholarship schools. (Grants were $1,000 per school, and scholarship payments to cover school fees averaged about $62 per girl.)
- In an average school with an enrolment of 100 girls, increasing enrolment by one girl had an associated cost of $1,089 at grant-only schools, $415 at scholarship-only schools, and $559 at grant and scholarship schools. Although the grant and scholarship combination had a greater impact on enrolments, it does not appear to have been cost-effective in increasing girls' enrolment as a single outcome.
- The patterns of cost-effectiveness for enrolment also applied to completion and promotion outcomes: Scholarships were more cost-effective than grants.

The costs associated with staff traveling to schools to provide training and other activities were a significant expense for the GOAL program, and these costs outweighed the direct costs of providing grants, scholarships, or materials to schools. Staff costs represented about 51 percent of total program costs, and they were highest (77 percent of total costs) at grant-only schools and lowest (47 percent) at grant and scholarship schools. These costs reflect the considerable effort required to travel to schools, provide the necessary training and support to school personnel, and work with families to encourage girls to participate and succeed in primary education.

VI. Lessons Learned from Interviews and Focus Groups

GOAL undertook four in-depth case studies at GOAL schools to better understand the factors that affected the implementation of each intervention, and to provide contextual information to explain why particular interventions might have been more effective. The four case study schools were the Kpanay Town, Saturday Town, William R. Tolbert, and Gorlu public schools. Selection was based on the following criteria:

- Representation of each project county
- Representation of schools receiving different intervention models
- Representation of schools with and without prior experience in organizing Girls' Clubs

The relative contribution of each intervention varied by context. Patterns in girls' enrolment, attendance, and completion that resulted from the intervention are not clear in any of the case study schools, and, as a result, it is difficult to tie specific elements of the interventions to effectiveness. However, common themes run throughout the case studies with similar components.

The case studies show that stakeholders who respond positively to the intervention facilitate the implementation process. Strong leadership, parental buy-in, and cooperation from the female students are all necessary conditions. Strong community leaders are able to engage parents, who then influence their children's ability to attend school (instead of farming, for example). Interviewees indicated that external assistance (like GOAL) was necessary in the community, but they also gave numerous examples of other projects that were unsustainable once the external implementer pulled out of the community. The lack of sustainability in past programs indicates the importance of local, community-based leadership, rather than temporary, external solutions. The key observations from the case studies are summarized below:

- The lack of basic necessities—such as uniforms, food, and school supplies—is a barrier to girls' enrolment and retention. Funding is a constant issue, and, when scholarships run out, there is no guarantee that students or their families can continue to pay fees and contribute to a long-term increase in enrolment, attendance, and completion.
- PTA capacity building and school improvement grants strengthened the PTAs and subsequently encouraged the community to support girls' education, although with mixed long-term sustainability, as each community internalized the role of the PTA differently.
- Public perceptions of girls' education are shifting, although the changes seem tenuous and it is difficult to translate the attitudes into action. While teachers and parents cited the importance of girls' education and its contributions to their families and the town, children continued to be pulled away from school by parents for household activities.
- Academic support at home is limited; most students do not have textbooks and many appear to lack a home environment that encourages study. Many mothers in the case study communities had not attended school and were therefore unlikely to have the academic skills to help their daughters with their homework. After school tutoring has the potential to improve girls' academic performance, but it needs to be tailored to students' needs.

Overall, schools cannot address the transient nature of the student population as long as commercial and subsistence agriculture pressures continue, and PTAs will need to identify strategies to engage parents early to register their children and then keep them in school.

VII. Summary and Conclusions

The evaluation of GOAL has found that the project was mostly successful in meeting its targets, and that it had a positive impact on the enrolment and promotion of girls in participating schools, and on girls' completion of school, in Liberia. Among the different program models, providing direct scholarships to individual girls appeared to be more effective than providing grants to the girls' schools. Despite being more expensive, the scholarships were also more cost-effective than the grants.

I. Introduction

The three-year Girls' Opportunities to Access Learning (GOAL) project—which began in late 2010—sought to address the low primary school enrolment among Liberian girls that still exists years after Liberia's 14-year civil war. Liberia's postwar recovery plan includes the restoration of basic services, including education. President Ellen Johnson Sirleaf has stated that her highest priority during her presidency is to support and educate underprivileged children, "to get them decent food, decent housing, and decent education… education of all the children of Liberia, especially the neglected girl child, must occupy a place second to none in our national priorities" (Johnson Sirleaf, 2010).

Many factors affect girls' participation in education and help to explain the persistent gaps in educational enrolment and attainment between boys and girls in Liberia and other developing countries. These include the limited availability of schooling in many communities, negative parent attitudes towards girls' education (and an unwillingness or inability to incur the cost of sending girls to school), and a lack of future economic opportunities that would motivate the girls themselves (Rugh, 2000). The United Nations' Millennium Development Goals (MDG), Education for All (EFA), and the United Nations (UN) Convention on the Rights of the Child all support the growing consensus that women's and girls' long-term welfare is fundamental to securing economic and social outcomes for the individual, the household, the community, and the country. In its 2008 report, *Girls Count*, the Center for Global Development emphasized that "at the macroeconomic level the size and competitiveness of tomorrow's labor force will be shaped by today's girls' education and skill-building and by how much these girls use their education and skills in formal and informal economic activity" (Levin, Lloyd, Green, & Grown, 2008, p. 1).

An extensive review of the evidence on girls' education programs (conducted by the Population Council in 2009) identified two strategies that could be implemented to increase girls' school enrolment and completion: (1) providing direct cash and in-kind scholarships (which the review suggested could reasonably be expected to have a positive effect on girls' enrolment); and (2) providing PTA capacity building alongside school improvement grants (which the review identified as promising but unproven) (Lloyd, 2009). It was unclear whether (and how) these two strategies might support each other when implemented together.

As financial incentives (scholarships/bursaries, conditional or unconditional cash transfers) have grown in popularity around the world, evaluations have begun to demonstrate their success in achieving short-term objectives, such as increasing visits to health clinics, improving school enrolment and attendance, supporting grade progression, and in some cases lowering (youth) participation in the labor market. However, little is known about the longer-term impact of these incentives (Alam et al., 2011).

One recent study in Columbia aimed to fill this knowledge gap by investigating the link between school participation and educational achievement. The study examined whether cohorts of children from poor households that received up to nine years of conditional cash transfers from *Familias en Acción* attended school for longer periods of time and performed better than non-recipients on academic tests at the end of high school. One outcome was that participants (especially girls and children from rural areas) increased their school attainment and were more likely to complete high school. However, although program participants were more likely to graduate from high school, they did not perform better than their peers in mathematics or Spanish (Baez & Camacho, 2011).

A second study evaluated the long-term effects of a conditional cash transfer program in northeast Pakistan—*Female School Stipend Program*—which began in 2003 with the aim of improving school participation for girls in Grades 6–8. The purpose was to learn, after four years of implementation, about girls' progression through and completion of school cycles, as well as labor market outcomes and adolescent girls' decisions on marriage and fertility (Baez & Camacho, 2011). The evidence demonstrated that the program helps girls to enroll in school and to remain enrolled through middle school (although not through high school).

One of the largest scholarship programs was USAID's Ambassador Girls' Scholarship Program (AGSP) within the Africa Education Initiative, serving 428,600 students from 2002 to 2010. In 2008, in response to community and parental demands, the program included males who were orphans and vulnerable children. In 2009, an evaluation of the outcomes and impacts of the AEI program prompted another shift in program design. Although the program was originally intended to support primary education, the evaluation revealed the need to pay attention to the transition of females from primary to secondary school, and to support girls in secondary school through completion (Allison, Culver, & Rasnake, 2009). The program aimed to raise student attendance, particularly girls' attendance, and it was successful in this endeavor, with AGSP recipients attending school as often as their peers. This was considered an achievement because most recipients were students who were the least likely to attend school, which meant that their attendance at school was in itself a success. (There was, however, no consistent information on the *quality* of the education they received.) The teachers in the three countries sampled reported that the AGSP recipients had higher attendance as a result of their scholarships (100 percent of teachers reporting in Senegal, 71.4 percent in Ethiopia, and 66.7 percent in Zambia), and students also reported they attended school more regularly as a result of receiving their scholarships.

Although there is a large body of research that describes the institutional and social barriers that impede girls' education, considerably less research exists on the various strategies that could be implemented to overcome these barriers. Many well-documented development projects have focused on girls' education and have produced a solid base of project-level performance and outcome data, but there is little systematic impact research on interventions aimed at increasing girls' school enrolment and completion while simultaneously evaluating different intervention models.

The GOAL project sought to address this knowledge gap—and to promote girls' enrolment, attendance, and retention at the primary level—by providing scholarships to some communities, grants to other communities, and both scholarships and grants to a third group of communities. The scholarships sought to offset both direct schooling costs (by providing money for school fees and uniforms, for example) and the indirect schooling costs associated with not being able to participate in the local informal economy while in school. The grants (and PTA-related activities) were intended to improve school conditions and generate community action to sustain those improvements, to strengthen school operations, and to support girls' attendance. (The GOAL program models are discussed in more detail in subsequent sections.)

The GOAL project was designed to facilitate documentation and statistical analysis of the results for these three categories of intervention, including an analysis of the costs of each category when compared with schools not participating in the GOAL project. By documenting and analyzing these results, the GOAL project directly assisted girls in their primary education and contributed to current research on girls' education by comparing the effectiveness and costs of different approaches to providing support to schools.

II. Background

The 1989–2003 civil war disrupted all aspects of Liberian society, government services, and daily life. The conflict was caused by a complex set of social, economic, and political factors, and it included several periods of widespread fighting between government and rebel forces, interspersed with periods of low-intensity conflict and relative calm. It is estimated that 500,000 people were killed and that nearly all of Liberia's 3.4 million people were at some point displaced by the war (Dick, 2003).

Poverty in Liberia increased significantly during and following the war (International Monetary Fund, 2008). Currently, 1.7 million people in Liberia are living in poverty, and approximately 1.3 million people are living in extreme poverty. The Liberia Poverty Reduction Strategy—a comprehensive poverty profile conducted by the Ministry of Planning and Economic Affairs and the United Nations Development Programme (UNDP)–Liberia and funded by the International Monetary Fund (IMF)—estimated that about 64 percent of the population lives below the national poverty line of US$1.00 per day, and that close to 48 percent of the population lives in abject poverty (International Monetary Fund, 2008). Economic opportunity for the vast majority of Liberians is primarily in informal market activities and subsistence agriculture (UNESCO–INEE, 2011). Liberia's national treasury relies heavily on exports of rubber and minerals (such as iron ore) that are subject to commodity price fluctuations. The country's economic hardships are also closely related to its serious infrastructure issues. As the IMF has reported:

> *Liberia's infrastructure was severely damaged by the war; most Liberians do not have access to electricity, safe water and sanitation, acceptable housing or decent roads. Lack of infrastructure undermines income-earning opportunities, limits access to health and education facilities, raises the price of goods and services, and weakens food security. Women and children bear a large burden as a result of poor infrastructure, as they spend proportionally more time carrying water and other goods; are more vulnerable to crime; and have less access to health and education facilities (International Monetary Fund, 2008).*

The Liberian education system did not escape damage during the war, and it continues to struggle. The limited ability of the Ministry of Education (MOE) to provide education services—and an overall lack of employment opportunities—undermines the potential for education to drive development and stability. According to the Liberia Poverty Reduction Strategy, "the majority of Liberia's young people have spent more time engaged in war than in school, with over one third of the population never having attended school" (International Monetary Fund, 2008). The Women's Commission for Refugee Women and Children (2006) estimates that "65 percent of boys and 62 percent of girls now over-aged for primary school grew up with no access to education."

Although the Liberian government has made considerable progress in social and economic development since the war ended in 2003, the education sector continues to suffer from insufficient funding, a limited pool of qualified teachers, and fragmented systems and oversight. For example:

- The MOE has limited accounting infrastructure, which hinders the payment of teachers, the allocation and distribution of teaching and learning supplies, facility construction and repair, and management oversight and training. There is no financial planning capacity at the school, district, or county level (Beleli et al., 2007).

- The MOE has estimated that 65.2 percent of children in primary and secondary school are taught by unqualified teachers and only 6.5 percent of teachers have a college degree or better (Ministry of Education, n.d.).
- The United Nations (2006) has estimated that over 75 percent of Liberia's school buildings were destroyed or badly damaged during the war.
- Limited communication between the MOE headquarters in Monrovia and the MOE's county, district, and school staff—and limited technical capacity at the country, district, and school levels—are significant obstacles to education management and quality teaching. There are limited formal guidelines to guide CEO/DEOs on supervisory or reporting functions (Beleli et al., 2007).

Although the MOE introduced compulsory, free primary education in 2006, the government estimated that Net Enrolment Rates (NER) were only 44 percent—and as low as 40 percent for girls—in 2009. There are significant costs associated with uniforms, textbooks, supplies, and exams that must be covered by the family or student, and affordability is therefore a serious challenge for Liberian families. As of 2006, up to 24 percent of household spending still went to education—a severe burden in times of food scarcity and limited economic opportunity. A recent survey by Plan International found that "58 percent of parents in Liberia said school costs were the main reason for not enrolling their children; 36 percent of children identified school fees as a key difficulty, and 36 percent said they struggled with the costs of school materials and uniforms" (Plan International, 2012). Additional hidden expenses extend beyond these direct costs (for example, the opportunity cost of having children in school and therefore not participating on the farm or in the marketplace).

Families often cannot afford the direct and indirect costs of educating all of their children, with the result that girls are more likely to work in the home, take care of siblings and elders, and perform daily household chores and subsistence farming (Boyle, Brock, Mace, & Sibbons, 2002). In 2008, girls aged between 5 and 17 were 7 percent less likely to be enrolled in school than boys. They were also less likely to persevere and graduate (Ministry of Education, 2009).

Girls' Education

Inequalities in education—whether social-cultural, structural, or financial—limit individual and societal growth. As Kevin Watkins (2012, p. 2) has noted:

> *Countries in which large sections of the population are denied a quality education because of factors linked to potential wealth, gender, ethnicity, language and other markers for disadvantage are not just limiting a fundamental human right. They are also wasting a productive resource and undermining or weakening the human capital of the economy.*

According to UNESCO's 2011 *Education for All* report, "gender gaps start to appear on day one of a school career. Intake into grade 1 is often skewed in favor of boys… Unless the imbalance is corrected later through higher survival rates for girls, the inevitable result of an unequal intake is a permanent gender bias in primary school" (p. 75). These disparities continue to grow through secondary school. Liberia is no exception; the country has a history of male overrepresentation in its education system that predates the war, with increasingly high proportions of male students at each successive level of education. According to the 1974 School Census, females constituted just 36 percent of enrollees at the primary level, and

fewer girls than boys transitioned to Grade 7. According to the National Statistical Booklet 2013, girls constitute 20.1 percent of the primary NER, and this falls to 8.3 percent in secondary school (Ministry of Education, 2013). The gross enrolment rate (GER) for girls was 50.0 percent in public schools, with only 19.2 percent of girls' GER in public secondary schools. Liberia's gender parity in public primary grades in 2012–13 was 55 percent for males and 45 percent for females (Ministry of Education, 2013).[2]

GOAL's primary mandate was to focus on addressing the issue of gender parity and access for girls, but the project was fully cognizant of the role that boys and men play in transforming gender norms and education aspirations for both boys and girls, and it acknowledges that boys are not immune "to poverty, discrimination and lack of opportunity in many parts of the world" (Plan International, 2012).

According to school census reports, the recent improvements made in enrolment are not sufficient to achieve the education and development objectives laid out by the Liberia Poverty Reduction Strategy, the Agenda for Transformation: Steps for Liberia Rising 2013, EFA, or the MDGs. Liberia will not reach Millennium Development Goal 2 (Achieve Universal Primary Education) or Goal 3 (Promote Gender Equality and Empower Women) by the target date of 2015—or, indeed, ever—without additional support for girls' education. The Goal 2 targets are an 80 percent literacy rate for girls aged 15 to 24, a 100 percent primary education NER, and an 80.6 percent primary completion rate. Goal 3 requires a one-to-one ratio of girls to boys in both primary and secondary education.

Liberia is also faced with the burden of its civil war. Only 65 percent of students make it to the last grade in poor, conflict-affected countries (compared with 86 percent in other poor countries), and this rate is even lower for girls. Post-conflict Liberia has a generation of girls and boys who did not have adequate access to education, and the country now faces the task of reintegrating these over-age students into the education system. The older a student is when he or she enters the classroom, the higher the likelihood of poor attendance and dropout (Sabates, Akyeampong, Westbrook, & Hunt, 2010). The goal of reducing over-age enrolment is emphasized in the MOE's Education Sector Plan 2010–2020 and the Liberian Administrative and Management Policies (2011), but few practical steps have been taken to address the issue, and progress has been slow in the decade since the war ended (DHS, 2007). The Liberia National Statistical Booklet 2013 reports an NER of 20.4 percent for public primary schools, which is far below global trends and the MDGs.

Bong, Lofa, and Grand Bassa Counties

The GOAL project was designed to support girls in three centrally located counties: Bong, Lofa, and Grand Bassa. (See Annex A for maps of Liberia and GOAL project counties and school sites.)

Bong is located in north-central Liberia (bordering the Republic of Guinea to the north) and is the third most populous of Liberia's 15 counties. Bong's capital city of Gbarnga served as Charles Taylor's base during the early 1990s, and it currently has one of the largest urban populations in Liberia. Bong is considered one of the richer regions in terms of natural resources.

2 The National Statistical Booklet 2013 does not include private and community schools in its NER and GER as was done in previous years.

Lofa is located in the northwestern corner of Liberia, bordering Guinea and Sierra Leone. While predominantly Christian, there is a sizable Muslim minority, and many Lofa residents practice traditional endemic religions. Subsistence upland rice farming is the principal occupation, with an estimated 70 percent of the population engaged in agriculture. Prior to the war, Lofa was considered the bread basket of Liberia and it was able to provide enough food for the entire country. According to the 2007 Comprehensive Food Security and Nutrition Survey, Lofa now has the highest number of food-insecure people in Liberia.

Grand Bassa is located in the west-central portion of Liberia and is the fifth most populous of the 15 counties. Buchanan, the county capital, is Liberia's third most populous city. In contrast with Lofa, Grand Bassa has been more active in its preservation of Poro and Sande society practices and traditions. Grand Bassa has a variety of natural resources—including gold, timber, diamonds, crude oil, and uranium—and is benefitting from direct foreign investment in the extraction of these natural resources and in its port in Buchanan. The majority of individuals in Grand Bassa, however, are engaged in palm oil and other agricultural production.

III. GOAL Program Description

The GOAL project is a multi-tiered, research-driven intervention that is designed to improve girls' participation in education and identify which types of interventions work best in the Liberian context. This three-year Threshold Program was supported by the Millennium Challenge Corporation (MCC) and USAID,[3] and it was implemented between November 2010 and November 2013 by American Institutes for Research (AIR), the Forum for African Women Educationalists (FAWE), and Search for Common Ground. The program's aim was to improve girls' enrolment, attendance, and retention in 40 primary schools in two districts each in Lofa, Bong, and Grand Bassa counties. Exhibit 4 lists the specific program districts within their respective counties.

Exhibit 4. Districts and Counties Selected for the Project

County	Districts
Bong	Suakoko and Zota
Lofa	Salayea and Zorzor
Grand Bassa	Buchanan (District #5) and District #3

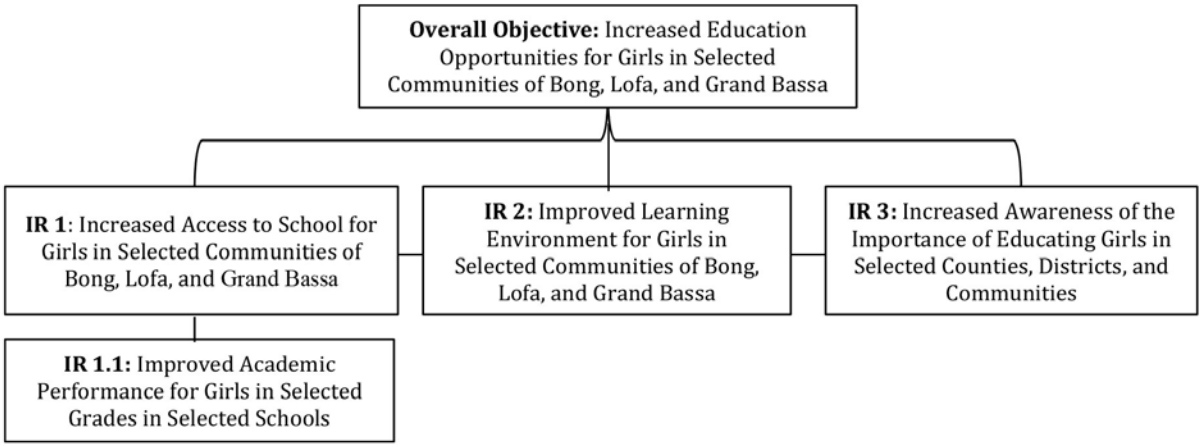
The USAID/Liberia Assistance Objective guided the GOAL project's results-based framework to *Increase Access to Quality Education* (see Exhibit 5). GOAL was designed to contribute to two USAID Intermediate Results (IRs):

IR1: Increased Quality of Basic and Higher Education

IR3: Strengthened Enabling Environment for Basic and Higher Education

This GOAL framework aligns with both USAID and MCC guiding principles on gender, and it contributes to the MDGs, EFA, and the UN Convention on the Rights of the Child.

Exhibit 5. Project-Level, Results-Based Framework

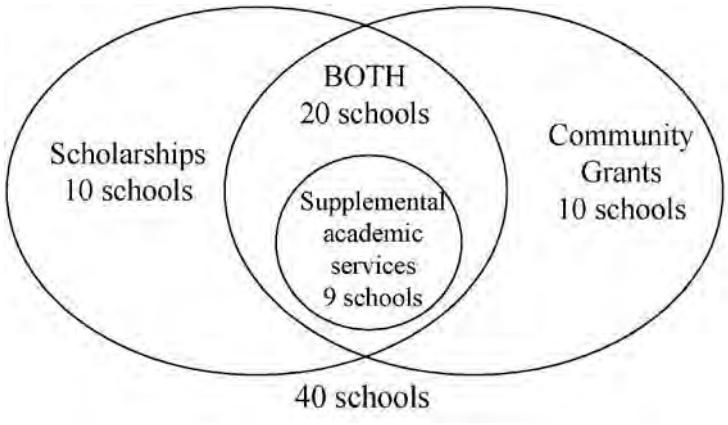


GOAL's project-level, results-based framework supports IR 1 through a direct scholarship program provided to all girls in the targeted schools; IR 2 through community mobilization (through PTA capacity building and school improvement grants); IR 3 through community awareness raising and media outreach; and IR 1.1 through the provision of supplemental

[3] MCC Threshold Programs assist countries in their efforts to become compact-eligible by supporting targeted policy and institutional reforms, thereby providing countries with an opportunity to demonstrate their commitment to the broad policy areas underlying the MCC eligibility indicators.

academic support (in the form of tutoring and Gender Responsive Pedagogy training on classroom practices) to a small subset of schools. The program offered three intervention models in the participating primary schools: (1) a scholarship program, (2) community mobilization through PTA capacity building and school improvement grants, and (3) a model that combined the scholarship and community mobilization programs (and provided supplemental academic tutoring to a subset of schools). The scholarship program intervention and the PTA capacity building and grant intervention were provided to 10 schools each. Twenty communities received a combined model (with a subset of nine of these communities benefiting from supplemental academic services in the form of tutoring), as demonstrated in Exhibit 6.

Exhibit 6. GOAL Intervention Model Clustering



The GOAL project also included an evaluation component, which was designed to determine which of the program's interventions were associated with the greatest improvement in girls' enrolment, attendance, and retention. Between 2010 and 2013—when the interventions were implemented—Liberia's primary education completion indicator for girls increased from 52.5 percent to 60.3 percent (Millennium Challenge Corporation, n.d.). This report explores the extent to which this improvement may be associated with GOAL (and programs like it) and the grant and scholarship interventions associated with such programs.[4]

Evaluation Design

The evaluation used quantitative and qualitative research methods. To compare the relative effectiveness of the different program strategies, the evaluation addressed the following research questions:

1. **Impact:** To what extent does each program model increase girls' enrolment, attendance, retention, and age-appropriate enrolment?
2. **Effectiveness:** What are the overall costs of each intervention and the costs per student? What is the cost-effectiveness of each program (how much does it cost to increase enrolment by one girl)?

4 Originally, findings from the research were intended to assist Liberia in achieving the "threshold" of eligibility for MCC compact assistance. However, in December 2012, Liberia achieved compact eligibility without having achieved the girls' primary education completion indicator of 70 percent (although, as of October 2013, Liberia has lost its compact eligibility status). This indicator measures a government's commitment to basic education for girls in terms of access, enrolment, and retention. MCC uses this indicator for low-income countries only.

3. **Necessary conditions:** What contextual factors facilitate or hinder the implementation of each intervention and its effectiveness?

We employed a mixed-method evaluation design to answer these research questions. We used statistical regression methods to estimate the impacts of the scholarships, grants, and other program supports on girls' enrolment, attendance, completion, and promotion. These methods compared outcomes across schools, over time, and between boys and girls within schools to identify the impact of GOAL. Although students and their schools were not randomly assigned to the different program interventions, the regression results presented in this report constitute our best estimate of the effects of GOAL.

To assess the cost-effectiveness of GOAL, AIR analyzed cost data (Research Question 2) to estimate the cost of providing the program supports (grants, scholarships, and a combination of grants and scholarships). These costs were then compared with the estimated program impacts on outcomes to determine the relative cost of a given amount of change (e.g., increasing school enrolment by one girl).

We also carried out four in-depth, qualitative case studies to explore the contextual factors related to schools' and PTAs' experiences with the program interventions. The case study narratives draw from multiple sources: personal interviews, participatory rural appraisal activities, focus groups, GOAL project documents, and the MOE's school censuses and policies. Girls, their parents, PTA members, teachers, principals, Girls' Club mentors, and GOAL staff were interviewed, and community stakeholder perspectives were gathered annually through interviews and focus group discussions. Key documents and reports were produced by GOAL's Monrovia-based staff (e.g., quarterly reports, trip reports, and PTA pre-assessment reports) and PTAs (School Improvement Plans [SIPs], grant proposals, and implementation reports), as well as descriptive statistics on girls' enrolment, attendance, promotion, and ages, which were drawn from GOAL's Monitoring and Evaluation (M&E) system.

Site Selection

In a collaborative selection process, the MCC, USAID, and the MOE selected the counties, districts, and schools in which the interventions were implemented. Bong, Lofa, and Grand Bassa were chosen because they had the lowest gender parity at the time of design (based on the 2009–10 Liberia School Census). AIR determined composite scores on the school selection criteria (described in Exhibit 7) and used these scores to select which schools would receive the interventions. From the pool of schools that would not receive the interventions, AIR identified comparison schools that best matched the program schools' characteristics. (See Annex A for maps of Liberia and GOAL project counties and school sites.)

Exhibit 7. School Selection Criteria

		Definition
Logistical Considerations	Clustered†	*Intervention Schools:* 16 Schools in Bong; 12 Schools in Grand Bassa; 12 Schools in Lofa *Comparison Schools:* 8 Schools in Bong; 6 Schools in Grand Bassa; 6 Schools in Lofa
	Accessibility*	All schools can be reached by motorcycle or jeep 12 months per year
	Similar numbers of beneficiaries in each county†	Schools were selected with number of beneficiaries in the county in mind

Exhibit 7. School Selection Criteria (continued)

		Definition
School Characteristics	Girls' enrolment*	Girls make up less than 50 percent of enrolment in the targeted grades
	Complementary school support**	Preference given to schools that have other programs available to either teachers, children, or community members (e.g., Liberia Teacher Training Program [LTTP] teacher training, school feeding, or health programs)
	Accurate school records*	School keeps up-to-date attendance sheets on file
	Presence of female teachers**	Preference given to schools that have at least one female teacher in the primary grades
	Proximity to health facilities**	Preference given to schools that have health facilities within a 30-minute walk to the school
	Parent teacher associations**	Preference given to PTAs that have held at least two meetings in the last year
Research	Rank†	Schools within clusters that are ranked highest receive the program. To recreate the program school in-county frequency distribution, comparison school ranks were used for school selection
	School size†	Schools with 20 or fewer girls enrolled were not selected due to perceived low cost/benefit

* Indicates key criteria used to develop a composite score.
** Indicates preferred criteria used to develop a composite score.
† Indicates criteria that were not used to develop composite score.

Source: GOAL Rapid Assessment Report, 2011

Intervention Model #1: Scholarship Program (10 schools)

In the first model, GOAL offered in-kind scholarships (uniforms, payment of school-related fees, and school supplies and toiletries) in 10 schools, coupled with complementary services to help girls flourish as students. All of the female students enrolled at each GOAL school received the scholarship each semester they enrolled in school over the life of the project.[5] The complementary services were designed to build girls' leadership, decision making, negotiation, and academic skills; foster safer and more girl-friendly schools; and provide teachers tools to help them become more effective in the classroom.

Girls' scholarship components:

- School fees
- Uniform set
- Book bag
- Copy books
- Toiletries & laundry soap
- Pens, pencils, & sharpeners

The complementary services were:

- Teachers' kits, which included a dictionary, lesson plan books, chalks, pens, pencils, flip charts, chalkboard paint, a calculator, and a lantern to grade papers at night

[5] Although GOAL was designed as a three-year project, the academic year did not align with when GOAL began activities in February 2011. As a result, GOAL only provided scholarships for two full academic years.

- Gender-Responsive Pedagogy training for teachers, mentors, and PTA members, which covered developing gender-responsive lesson plans, materials, and classroom set-up; using gender-responsive language in the classroom; and preventing and addressing sexual harassment
- Establishment of Girls' Clubs, designed to provide girls direct support in addressing school-related difficulties (Girls' Club mentors received a small stipend and were provided direction about the operation of the clubs). Tutoring services for low-performing students were also provided in nine randomly selected schools

Girls' Club activities:

- Drama/performance
- Mentoring
- Counseling
- Home visits
- Training in personal hygiene and family planning

Intervention Model #2: Community Mobilization through PTA Capacity Building and Grants (10 schools)

In the second model, the GOAL staff worked to build the capacity of PTAs to support girls' primary education and implement school improvement grants. Each school's PTA received a performance-based grant to improve the school environment. These grants served not only to meet priority needs identified in SIPs but also to provide an opportunity for PTA members to work together to achieve jointly identified outcomes. This process was intended to strengthen PTAs' planning and management skills, build morale, and act as a unifying force. Community mobilization through PTA capacity building also focused on engaging women as members and leaders in PTAs in order to influence household and community behavior and drive gender equity. PTAs used the grants to make improvements to the physical environment of their schools (e.g., buying new furniture and library materials and undertaking building repairs, toilet renovation, and so on). These activities were designed to improve the schooling environment for all students but were expected to especially benefit girls. The grants were awarded in three phases. Phase 1 was non-competitive and available to all PTAs. Phases 2 and 3 were competitive and awarded based on past performance, PTA capacity, and financial stewardship.

PTA Capacity Building Training topics:

- Basic PTA operations and management
- Recordkeeping
- Financial management
- SIP development
- Advocacy and resource mobilization
- Grant proposal writing
- Monitoring student & teacher attendance

Intervention Model #3: Combined Scholarship Program and PTA Capacity Building and Grants (20 schools)

In 20 schools, the GOAL project combined the scholarship and grant models, providing both sets of resources at all of the selected schools.[6]

Supplemental Academic Support

A subset of nine randomly selected schools within Intervention Model #3 also received support in the area of after school tutoring. The after school tutoring was originally intended to provide assistance to girls at risk of failure; however, all interested girls were welcome to attend.

6 Many school buildings in Liberia have two separate schools—a morning session and an afternoon session with separate principals and staff. As a result, though 30 schools received the grant or grant and scholarship intervention, only 29 PTAs participated, because Kpanay Town in Grand Bassa had two schools sharing one facility, with a single PTA. The PTA projects funded by the GOAL grant benefited both schools and their students.

Interventions for All Program Schools

Community outreach and awareness raising (through town hall meetings, drama performances, and radio coverage) sought to create an environment supportive of girls' education in all program schools and catchment areas. The GOAL staff worked (as appropriate, based on intervention model) with PTAs, communities, and Girls' Clubs to organize dramatic and musical performances at town hall meetings that delivered messages supporting girls' education.

Results from the baseline assessment indicated that the GOAL program schools would benefit from health interventions, including the provision of first aid kits and training, as well as training in Water, Sanitation, and Hygiene (WASH). Two teachers from each school received training in first aid. Teachers, PTA members, and Girls' Club mentors from each school participated in the WASH training and trainings on sexual and reproductive health (including age-appropriate HIV and AIDS and reproductive health education), which were organized through the Girls' Clubs.

Although the GOAL project did not focus on boys, boys are acknowledged as playing an important role in gender equity in education. Despite GOAL's focus on girls, the PTA capacity building, grants, and health training interventions benefited the entire school population—boys and girls alike. The boys and male teachers and community members were also engaged through community mobilization to serve as change leaders in their schools and communities regarding gender equity and school enrolment.

Comparison Schools

The comparison schools did not receive any GOAL interventions. Their contact with the program was limited to enrolment and completion data collection at the beginning and end of each semester. However, the comparison schools may have benefited from the influence of GOAL's national and community radio messages in support of girls' education.

Program Limitations

GOAL's intervention models were based on the experience accumulated through the various scholarship, community mobilization, and school improvement programs around the world that focus on educational access. These include the Ambassadors' Girls' Scholarship Program, CHANGES2 in Zambia, Education Reform Project in Egypt, and child sponsorship activities from Plan International, among others. GOAL's strategies focused largely on getting girls into the classroom and did not address the larger purpose of schooling—education. The strategies did not address other key factors associated with education and learning (e.g., teacher training, availability of teaching and learning materials, time on task).

Program Implementation: Achievements, Outcomes, and Trends

GOAL had three primary targets for measuring its success, as defined by the award:

1. A 25 percent increase in girls' enrolment (3,493 girls)
2. A 25 percent increase in the number of girls who successfully complete their grade (1,847 girls)
3. An increase of 5 percentage points (to 63.2 percent) in the attendance rate of girls in Grades 2–6

Enrolment data were collected at the beginning of each semester throughout the life of the GOAL project. In the final year of the project, girls' enrolment in all 40 program schools had

increased by 23.2 percent (from a baseline of 2,794 girls to 3,443 girls studying in Grades 2–6), which is slightly below the target of 25 percent. Enrolment increased by 28.0 percent in scholarship-only schools and 49.0 percent in grant and scholarship schools. Enrolment declined by 17.8 percent overall in grant-only schools. In comparison schools, enrolment declined by 19.5 percent.

In June 2011 (the baseline year), 1,464 girls in Grades 2–6 in the 40 program schools successfully completed the school year. In June 2013, 2,314 girls completed the year—an increase of 53.1 percent.

GOAL tracked the enrolment, attendance, pass and failure rates, and repetition of the girls who received scholarships, by individual and by grade level. A cohort of 985 girls who received scholarships in May 2011 as second, third, or fourth graders were tracked until the project ended in June 2013. Although many of these girls stayed in school, many of them repeated grades, and only 28.8 percent of the girls in the cohort were promoted in two successive grade levels and years.

The attendance rate for all 40 schools increased by 10.3 percentage points, from 57.2 percent to 67.5 percent, which exceeded the 5 percent target. The combined intervention model that offered both the scholarship and grant interventions showed the highest attendance rates among the three models. Attendance data proved difficult to obtain and verify across the life of the project. Teachers and principals are expected to take attendance; however, spot checks by GOAL staff and PTA members uncovered unreliable attendance data. As a result, this indicator is based on the GOAL staff spot checks that occurred each semester at all program and comparison schools. The attendance data analysis is viewed cautiously because of the lack of reliability and the inconsistency of the reporting. This lack of attendance record quality led GOAL to create an activity to train teachers on attendance taking, and on how attendance data can be used by the PTA for decision making and SIPs. However, mid-project training on quality attendance taking and recordkeeping does not resolve the overall issues with attendance data quality and related analysis.

Over the life of the project, GOAL distributed 13,132 scholarship packages and 1,136 teachers' kits. In April 2011, 1,220 girls in Grades 2–6 received the first scholarship package and 159 of their teachers received the first teachers' kit. This first distribution was delayed due to the project starting in the middle of the school year. In the two subsequent school years, packages and teachers' kits were distributed at the beginning of each semester.

Exhibit 8. Number of Scholarship Packages and Teacher Kits Distributed in 30 Schools

School Year	Scholarship Package Semester 1	Scholarship Package Semester 2	Teacher Kit Semester 1	Teacher Kit Semester 2
2010–2011	0	1,220	0	159
2011–2012	2,063	2,592	207	236
2012–2013	3,667	3,590	275	259
Total	**5,730**	**7,402**	**482**	**654**

In February 2012, GOAL provided a token package to 517 girls in Grade 1 and their teachers received complete teachers' kits.[7] This effort was made to support the government of

[7] Grade 1 girls and their teachers were not direct beneficiaries under the research design but were included mid-project by USAID in order to support the government's commitment to age appropriate enrolment. As such, Grade 1 girls are not evaluated with the same rigor.

Liberia's initiative to encourage age-appropriate enrolment, as well as the transition of Grade 1 girls to Grade 2 the following school year.

GOAL introduced Gender-Responsive Pedagogy training to teachers and education officials serving the schools receiving the scholarship intervention in order to improve the quality of education provided to scholarship recipients. In all, 210 teachers, education officers, and PTA leaders (177 men and 33 women) received Gender Responsive Pedagogy training, with one training session taking place in each county.

The grant intervention and its community mobilization activities were designed to help increase PTAs' knowledge and ability to improve their schools' learning environments. The program directly supported 29 PTAs and their leadership, community leaders, and students. The intervention provided the PTAs training and support in the following areas: operations and management, development and implementation of SIPs, financial management and oversight, school monitoring and evaluation, local advocacy and resource mobilization, the use of data for decision making, and school health. GOAL's community mobilization approach consisted of awareness-raising training (which helped train PTAs on how they can share information and communicate with their broader communities on education issues), sustained on-the-job technical support, experiential learning opportunities, and activities to promote peer learning.

The capacity of the PTAs to plan and manage was further strengthened through the grants awarded. The grants funded projects that the PTAs had identified and designed through their SIPs. These grants served not only to meet priority needs identified in SIPs but also to provide an opportunity for PTA members to work together to achieve mutually defined outcomes (including locally driven fundraising, as cost share was a requirement for the grant) and increase local ownership and foster sustainability. All GOAL grants were valued at $1,000 each; 29 non-competitive grants were awarded and completed during phase 1, 25 competitive grants were awarded and completed in phase 2, and 20 competitive grants were awarded and 19 completed in phase 3. One school (Bless Elementary School in Grand Bassa) was unable to complete its phase 3 grant, through no fault of its own, due to the limited availability of resources and the time constraints of the GOAL project. Over the life of the project, GOAL provided $66,696 in school improvement grant funds, matched by $12,427 in PTA cost share.

GOAL provided community engagement and media outreach to all 40 school catchment areas, regardless of intervention model, to raise awareness about topics central to GOAL's mission. GOAL used radio messages as a key community engagement strategy. GOAL signed memorandums of understanding (MOUs) with three local partner stations—Radio Life in Lofa County, Radio Zota in Bong County, and Radio Gbezohn in Grand Bassa—which aired spots and skits in support of the project. Spot messages were broadcast on a weekly basis, covering the following themes: (1) community support for girls' education, (2) the importance of school attendance, (3) early registration, (4) hygiene, and (5) the benefits of completing primary school. The messages were produced at Talking Drum Studio and broadcast in English and in Lorma, Kpelle, and Bassa (the dialects widely spoken in the project communities).

In the second semester of the 2011–12 school year (the first intervention year), GOAL worked with school authorities to establish after school tutoring classes in nine schools. The tutoring program was intended to provide academic support for girls with poor academic performance in the four core subjects (mathematics, science, social studies, and English).

However, all schools participating in the tutoring activity opened participation up to all interested girls. Over the life of the project, 296 girls in Grade 1 and 824 girls in Grades 2–6 participated in the tutorials. Tutors received training, a minimal stipend, and peer support through experience-sharing workshops.

Provision of School-Based Health Services

Health interventions were provided to all 40 GOAL program schools. They included first aid supplies and training for teachers; WASH training for PTAs (where PTAs were supported), mentors, and science teachers; sexual and reproductive health training for Girls' Club leaders (where Girls' Clubs were supported), mentors, and science teachers; reproductive health training for students in the classrooms; and bacteriological testing and treatment of drinking water points. Thirty-nine first aid kits were provided to GOAL program schools. Seventy-eight teachers (72 males and 6 females) were trained in first aid and 142 participants (128 males and 14 females) received WASH training. Another 221 participants (6 males and 215 females) received sexual and reproductive health training, and in a later training, 187 participants (including principals, clinic staff, and community health volunteers) were trained in classroom reproductive health activities.

The GOAL project used a broad range of activities and strategies to accomplish its goals of improving girls' enrolment and fundamentally shifting societal views and practices regarding girls' education in Liberia. The next chapters focus on the analyses that assess the project's actual impact and its cost-effectiveness.

IV. Impact of GOAL on Student Enrolment and School Conditions

In this chapter, we estimate the impact that the scholarships, grants, and other supports implemented under GOAL had on the enrolment, attendance, completion, and promotion of girls within the 40 schools that were part of our evaluation of GOAL.[8] We also present estimates of the changes in the conditions at these schools over time. We begin by providing summary information to describe the trends in these outcomes over a three-year period, and we compare these trends based on the type of supports the school received (grants only, scholarships only, grants and scholarships together, or no GOAL supports). We also used statistical regression methods to directly estimate differences in these trends between boys and girls at GOAL schools, relative to the comparison schools. These differences provide our best estimate of the effects of GOAL, as experienced by the girls targeted by the program.

To help us identify the impact of GOAL (and to distinguish it from other events and interventions that may have benefited schools more generally), most of our analyses focus on the differences in outcomes between boys and girls. The more the gender gap in these outcomes is reduced, the more likely it is that GOAL, which primarily benefited girls, is responsible for any improvements in outcomes. We use regression analysis to examine the change in this gap over time and we then compare this with similar changes in the gender gap observed at comparison schools. In the next chapter, these estimates are used to examine the relative cost-effectiveness of GOAL's three intervention models.

The data on student enrolment presented in this chapter cover Grades 1–6, and analyses are presented both at the school level and for individual grade levels. Findings regarding attendance are based on student attendance data (which cover Grades 2–6) and should be interpreted cautiously for several reasons. First, student attendance measures are one-day "snapshots" and are inherently less stable than the enrolment measures (which are one-time per semester, fixed data points) because attendance data ultimately proved unreliable. Second, data on attendance did not consistently cover all grades at the baseline, so the school-level data we report captures a different mix of grades in different schools. Finally, data on grade completion and promotion covered Grades 2–6 only and did not include boys at the baseline. In our analysis of completion and promotion impacts, we therefore examined year-over-year changes in the number of girls achieving these milestones without directly considering the gap between boys and girls.[9]

Trends in Outcomes

Data on enrolment and other outcomes are presented in Exhibit 9. They capture average enrolment in Grades 1–6 and attendance, completion, and promotion in Grades 2–6. The table shows the number of boys and girls in the baseline period when the GOAL program began and in the endline period three years later. There were 40 GOAL schools and 20 comparison schools; we categorize the schools here by the type of primary support they received—grants only (10 schools), scholarships only (10 schools), or both grants and scholarships (20 schools).[10] As discussed in the previous chapter, GOAL included a mix of supports in addition to providing grants to schools (for example, activities to strengthen PTAs at schools

[8] Completion refers to a student being enrolled for the entire school year, whether or not they were then promoted to the next grade.

[9] The small sample size made disaggregation to geographic, ethic, or age variations within grade sub-populations impossible.

[10] Of the 20 schools that received both grant and scholarship support, nine schools also offered tutoring to girls.

that received grants and the establishment of Girls' Clubs at schools that were offered scholarships).

Exhibit 9. Average Number of Students by Outcome Before and After Intervention by Gender, Grade, and Time (Grades 2–6) by Type of Support School Received

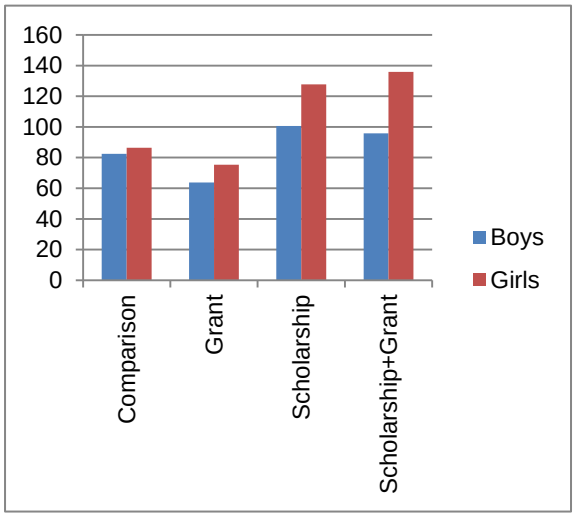
Outcome Measure	Baseline Comparison	Baseline Grant	Baseline Scholarship	Baseline Scholarship + Grant	Endline Comparison	Endline Grant	Endline Scholarship	Endline Scholarship + Grant
Enrolment								
Boys	98.1	153.7	72.6	113.3	80.6	117.5	73.2	109.1
Girls	83.0	124.9	50.8	95.7	69.4	100.3	78.6	131.6
Total	181.0	278.6	123.4	209.0	150.0	217.8	151.8	240.7
Attendance								
Boys	32.1	39.0	14.3	36.8	35.3	38.0	30.7	58.8
Girls	21.6	32.9	7.4	31.3	25.6	35.2	35.8	63.6
Total	53.6	71.9	21.7	68.0	60.9	73.2	66.5	122.3
Grade completion								
Girls	45.5	67.0	25.7	54.1	33.1	63.2	38.0	83.9
Grade promotion								
Girls	35.0	52.8	21.1	45.7	26.1	57.4	32.8	70.6

Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)

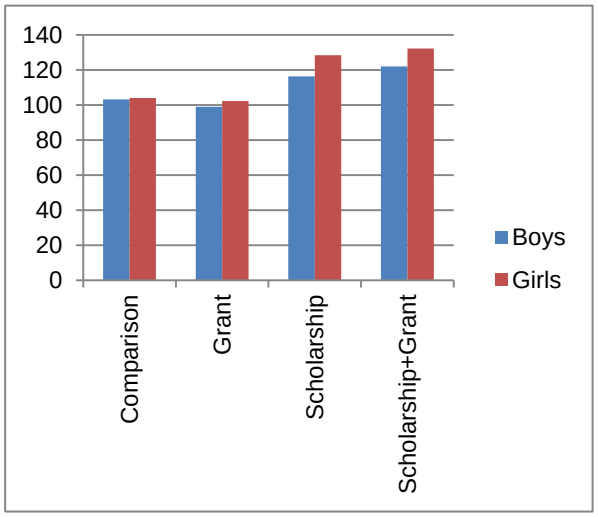
Exhibit 10 shows the relative change in each outcome from its baseline value. To standardize the data relative to the baseline level of each outcome for each particular school, the figure shows the endline value relative to a standardized baseline value of 100. For example, if the average enrolment of boys in a school increased from 150 to 210 students (a 40 percent increase), then the standardized endline value for that school would be 140.

Exhibit 10. Relative Changes Over Time in Enrolment, Attendance, Completion, and Promotion by Type of Support Provided

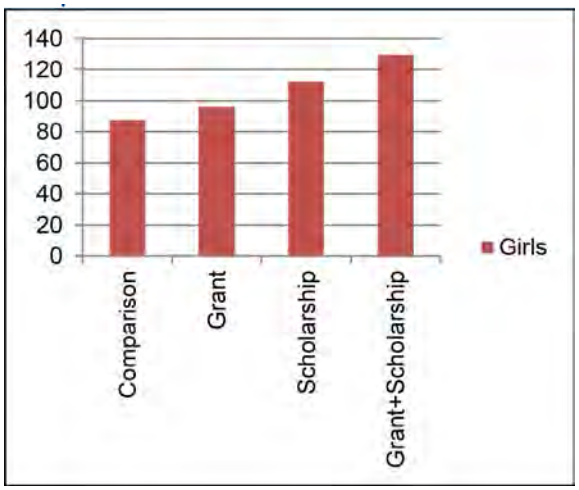
Enrolment



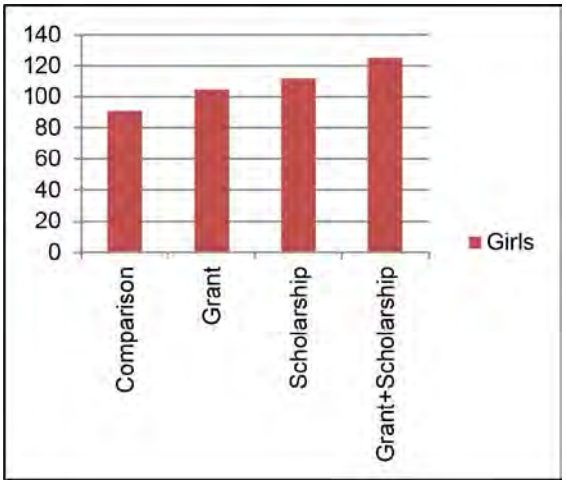
Attendance



Completion



Promotion



Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Note: Because data for boys are not available at the baseline for completion and promotion, relative changes are shown only for girls.

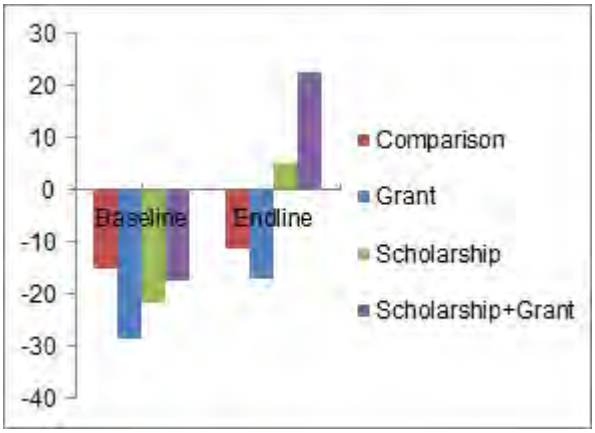
Three general findings emerge from these data:

- Boys' enrolment declined in all four types of schools, and there were similar declines for girls in comparison schools and in schools that received grants only. In contrast, girls' enrolment increased in schools that were offered scholarship support, either by itself or in combination with grants.
- Attendance did not change in comparison schools or in schools that received only grants, but it increased for both boys and girls at schools that offered scholarship supports, alone or in combination with grants.
- Grade completion and promotion among girls improved in schools that offered scholarship support (with or without grant support) and worsened in schools that did not provide scholarship support.

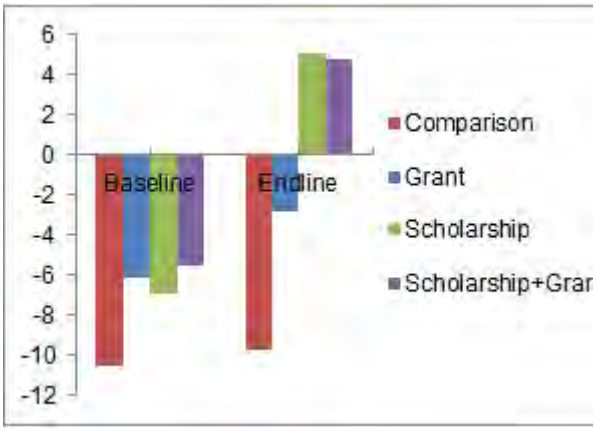
We can also directly examine the gap between girls and boys at the baseline and at the endline for each outcome. Exhibit 11 displays this school-level gap. (A negative number indicates that there were more boys than girls; a positive number means that there were more girls than boys). The figure shows that an initial gap in favor of boys in enrolment and attendance had reversed by the endline in schools offering scholarships. Because the baseline gap data did not exist for completion and promotion, we present only the endline gap, which shows a similar gap in favor of girls at the endline in schools where girls had access to scholarships.

Exhibit 11. School-Level Differences Between Girls' and Boys' Outcomes by Type of Support Provided

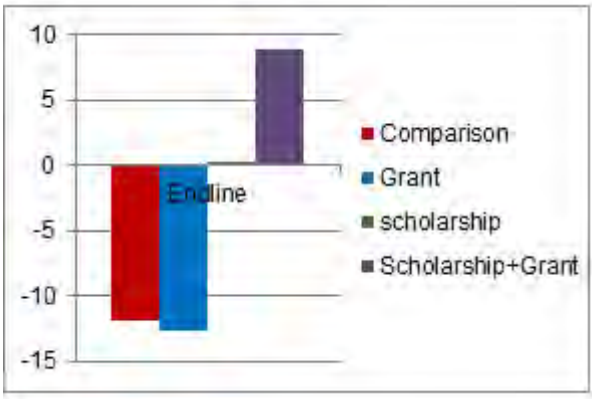
Enrolment



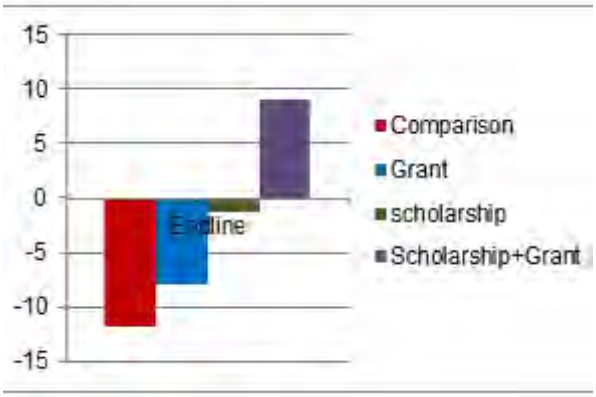
Attendance



Completion (endline only)



Promotion (endline only)



Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)

Regression Analyses

To further examine whether the observed changes were attributable to GOAL, and to establish whether these changes were statistically significant, we used regression analysis to compare changes in outcomes for girls and boys at GOAL intervention and comparison schools. For enrolment and attendance—where we had separate data for boys and girls at the baseline—we identified the effect of GOAL by examining how the changing gaps between boys' and girls' outcomes at comparison schools compared to those at different kinds of GOAL schools.[11] For completion and promotion, we developed estimates based on data only for girls, because completion and promotion data were not available over time for boys. Regression analysis allows us to assess whether estimated differences in outcomes observed between groups are externally valid—i.e., whether they are statistically significant (and therefore likely to be observed beyond the immediate sample of 60 schools). The low number of total schools in the study means that only relatively large impacts were statistically significant.[12]

[11] This is a conservative estimate of GOAL's impacts because it assumes that all GOAL impacts are found in the outcomes of girls in participating schools.

[12] The minimum detectable effect size of our evaluation was .78 for student enrolment outcomes. That is, only effects larger than .78 standard deviations are statistically significant.

Enrolment Analysis

We estimated the effect of GOAL on girls' enrolment with the following impact regression model:

$$Y\_git = \beta\_0 + \beta\_1\, Treatment + \beta\_2\, Girls + \beta\_3\, Intervention + \beta\_4\, Girls * Treatment + \beta\_5\, Girls * Intervention + \beta\_6\, Treatment * Intervention + \beta\_7\, Girls * Treatment * Intervention + \beta\rrbracket\ \_8\, Year + \beta\_9\, County$$

In this model, Y_{git} represents the grade-level enrolment in grade *g*, school *i*, and time *t* expressed as a number of students. *Girls* is a binary indicator for whether the data covered boys or girls, and *Treatment* is a categorical variable with four levels (scholarship, grant, grant and scholarship, and comparison), where comparison schools serve as the reference group. *Year* is an indicator for the time when the data are collected. *Intervention* is a binary variable indicating whether data reference an outcome at the baseline or after (i.e., Intervention=1 if t>1). *County* refers to indicator variables that identify which of the three counties the school was located in. The standard errors of these models are corrected for the clustering of observations within schools over time.

The key element of this regression is the coefficient β_7, which measures the difference in enrolment (or attendance) between the girls and boys in GOAL program schools over time relative to the difference between girls and boys in comparison schools. It is a direct measure of the impact of the GOAL program: It directly compares the change in enrolment (or attendance) of girls versus boys in a school that received a given set of supports relative to the changes at comparison schools. A coefficient of zero for a given type of school indicates that there was no change in the difference between girls and boys relative to the comparison schools. A positive value of β_7 indicates there was a positive impact of the GOAL program on the outcome being analyzed.[13]

Exhibit 12 presents estimated impacts on girls' enrolment for schools as a whole and by grade.[14] Enrolment in program schools in Grades 1–6 increased by between 10.5 girls and 35.2 girls, depending on the type of intervention.[15] This represents a substantial increase, ranging from 34 percent (at grant-only schools) to 225 percent (at schools receiving both grants and scholarships). The estimate was statistically significant only for schools that received both grants and scholarships, although this may partially reflect the fact that there were more schools in this category (20) than in the grant-only category (10) or the scholarship-only category (10). At the grant and scholarship schools, the increases were statistically significant in Grades 3, 4, and 5.

Based on these results, it appears that scholarships have a greater impact on girls' enrolment than grants, and that adding grants does not dramatically increase the effect of scholarships

[13] Before running the models, we tested whether schools that provided different types of GOAL support differed from the comparison schools in terms of school background characteristics (such as the number of teachers or the quality of the school building). There were no statistically significant differences between the four groups of schools; this meant we did not need to include background variables in the impact regressions. (See Table B1 in Annex B for details on these baseline comparisons). As a robustness check, we also ran the models with covariates and the point estimates from these sensitivity analyses were broadly comparable with those from the models without covariates. (See Tables B2 through B26 for detailed results from these analyses).

[14] Detailed regression results are presented in Annex Tables B2 through B8.

[15] Earlier tables showed that grant-only schools' enrolment of girls declined. However, boys' enrolments declined more than girls' at these schools; there were more girls enrolled at the endline than if their enrolment trends had followed those of the boys.

on girls' enrolment. Overall, girls' enrolment increased across the three program conditions by approximately 988 girls (10.5 × 10 + 17.9 × 10 + 35.2 × 20).

Exhibit 12. Impact Estimates per School for Enrolment by Type of Support Provided

	Grant	Scholarship	Scholarship and Grant
All grades	10.5 (8%)	17.9 (35%)	**35.2** (37%)
Grade 1	2.2 (8%)	-0.5 (-3%)	4.0 (18%)
Grade 2	-2.0 (-8%)	4.2 (36%)	3.2 (17%)
Grade 3	-1.7 (-8%)	2.4 (25%)	**9.9** (57%)
Grade 4	6.3 (38%)	4.0 (64%)	**8.3** (55%)
Grade 5	3.8 (22%)	4.8 (109%)	**8.6** (72%)
Grade 6	1.9 (13%)	3.0 (89%)	1.2 (11%)

Source: Liberia Girls' Opportunities to Access Learning project, baseline, midline, and endline (2011, 2013)
Notes: Impact estimates are the coefficients of the parameters of interest from the analysis. Bolding shows significance at .05 level. Percent decrease in gap from baseline enrolment given in parentheses.

Attendance Analysis

Our regression analysis of GOAL's impact on student attendance used the same regression model described for enrolment above. Exhibit 14 summarizes the estimated impacts of GOAL on attendance at the school level and by grade.[16] The estimated effects presented here are smaller than those shown in Exhibit 12, suggesting that not all of the additional girls who were enrolled as a result of the GOAL intervention were also found to be present when their attendance was independently verified. However, as noted above, attendance measures are inherently more likely to miss students (both boys and girls), because they are one-day snapshots rather than a cumulative set of records kept over time. Likely as a result of the smaller point estimates and the greater measurement error associated with one-time attendance measures, none of the estimates shown in Exhibit 13 are statistically significant.

Exhibit 13. Impact Estimates for Attendance per Grade by Type of Support Provided

	Grant	Scholarship	Scholarship and Grant
All grades	2.5 (8%)	11.2 (151%)	9.5 (30%)
Grade 2	-1.2 (-11%)	2.8 (279%)	-0.6 (-5%)
Grade 3	0.3 (3%)	1.0 (22%)	2 (18%)
Grade 4	1.1 (9%)	5.5 (210%)	4.4 (51%)
Grade 5	-4.1 (-34%)	-2.8 (-123%)	-0.6 (-5%)
Grade 6	0.5 (5%)	-1.1 (-52%)	-1.4 (-13%)

Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Notes: Impact estimates are the coefficients of the parameters of interest from the analysis. Attendance information is not collected at Grade 1 for the baseline, therefore impact estimates are not available. Bolding shows significance at .05 level. Grade-level results do not add up to all-grade results because the baseline data on enrolment is collected at Grades 2–4 for some schools and Grades 4–6 for the other schools. Percent increase in gap from base attendance given in parentheses.

Completion and Promotion Analysis

To measure the impact of the intervention on grade completion and promotion among girls (without making a direct comparison with boys, for whom these data were not available at the baseline), we used the following regression model:

[16] Detailed regression results are presented in Annex Tables B9 through B14.

$$Y\_git = \beta\_0 + \beta\_1\, Treatment + \beta\_2\, Intervention + \ [\![\beta\_3\, Treatment * Intervention + \beta]\!]\_4\, Year + \ [\![\beta\_5\, County + \beta]\!]\_x\, Controls$$

where Y_{git} represents the grade-level completion or promotion count for girls in grade *g*, school *i*, and time *t*. *Treatment* is a categorical variable with four levels (scholarship, grant, grant and scholarship, and comparison), where comparison schools serve as the reference group. *Year* is an indicator for the time when the data are collected (t=1, 2, 3). *Intervention* is a binary variable that distinguishes the baseline year from the intervention year (i.e., Intervention=1 if t>1). *County* refers to indicator variables that identify which of the three counties the school was located in. Again, the standard errors in this regression model are corrected for the clustering of observations within schools over time. The key element of this regression is the coefficient β_3, which shows whether there is an overall effect of GOAL on completion (or promotion) for girls in program schools compared with girls in comparison schools, controlling for trend, county, and school characteristics.

Exhibit 14 presents the estimated impact of GOAL on the number of girls who completed a grade or were promoted by intervention type.[17] Overall increases (Grades 2–6) were statistically significant for both completions and promotions for schools that offered scholarship support or scholarships in combination with grants. In addition, the progress was associated with statistically significant increases in both completion and promotion at schools receiving both scholarships and grants.

Exhibit 14. Impact of Intervention on the Completion and Promotion of Girls by Grade (Grades 2–6)

	Grant	Scholarship	Scholarship and Grant
Completion			
All grades	6.6 (10%)	**19.8** (77%)	**39.3** (73%)
Grade 2	2.8 (14%)	-0.4 (-2%)	**6.2** (33%)
Grade 3	-0.6 (-3%)	4.7 (52%)	**9.0** (51%)
Grade 4	1.5 (11%)	4.4 (66%)	**8.4** (55%)
Grade 5	-0.2 (-1%)	3.5 (50%)	**5.0** (37%)
Grade 6	2 (16%)	3.6 (42%)	**3.7** (26%)
Promotion			
All grades	12.0 (23%)	**16.4** (78%)	**29.4** (64%)
Grade 2	2.5 (17%)	1.8 (18%)	**5.3** (41%)
Grade 3	2.3 (15%)	4.9 (98%)	**7.2** (61%)
Grade 4	3.6 (37%)	3.0 (75%)	**6.8** (71%)
Grade 5	1.7 (16%)	3.0 (116%)	**5.9** (85%)
Grade 6	1.9 (23%)	3.1 (89%)	**3.1** (39%)

Source: Liberia Girls' Opportunities to Access Learning project, baseline, midline, and endline (2011–2013)

Notes: Impact estimates are the coefficients of the parameters of interest from the analysis. Completion and promotion information is not collected at Grade 1 for the baseline, so impact estimates are not available. Bolding shows significance at .05 level. Grade-level results do not add up to all-grade results because of the missing values at grade-level analyses. Percent increase from base completion and promotion given in parentheses.

The bottom half of Exhibit 14 shows that the number of girls who were promoted to the next grade in Grades 2–6 increased by between 12 girls and 29.4 girls, depending on the

[17] Detailed regression results are presented in Annex Tables B15 through B26.

intervention. This increase was again statistically significant only for schools that received both grants and scholarships. Within schools, there were statistically significant increases in promotion in Grades 2–6 for schools that received both grant and scholarship supports. Though not statistically significant, the increases in the number of girls completing a grade or eligible for promotion in grant-only schools is notable, in that enrolments of girls declined in these schools (as shown in Exhibit 9). The increase in the number of promotions for girls at these schools reflects an increase in girls' promotion rates that was large enough to offset the decline in enrolments.

The estimates of completion and promotion derived from the regression only cover Grades 2–6. Additionally, they may overstate the impact on girls relative to boys for the grades that they cover because they do not include any reference to the change in completion or promotion of boys.

Impacts on School Conditions

In addition to examining the impact of the intervention on student outcomes at the school and grade level, we also examined the change in school characteristics from baseline to endline across program and comparison schools. Using questions from school observation instruments developed for GOAL (see Annex D), we created two scales to summarize school conditions across 16 individual observational variables. One scale (consisting of nine items) summarizes the overall physical condition of the school, and the other scale (consisting of seven items) summarizes the availability and quality of its water and hygiene infrastructure.[18] In addition, we looked at two individual questions for academic outcomes: whether students had notebooks to write in and pencils to write with, and whether students had textbooks visible during visits from data collectors.

Exhibit 15 displays the mean of the two scales at the endline period, along with the share of schools in which observers found that students had notebooks to write on, pencils to write with, and textbooks that were visible in the classroom. The results show that GOAL schools generally had higher scores than comparison schools in both physical school quality and water and hygiene. The differences were more apparent for schools that received both scholarships and grants. These schools also appeared to have more notebooks, pencils, and textbooks relative to comparison schools.

Exhibit 15. Average School Characteristics at Endline by Type of Support Provided to School

Outcome	Grant	Scholarship	Scholarship and Grant	Comparison
Physical school quality	68.6	61.0	69.6	59.2
Water and hygiene	40.2	32.9	45.8	23.3
Notebook	50%	56%	90%	47%
Pencil	56%	60%	78%	58%
Textbook visible	22%	22%	42%	16%

Source: Liberia Girls' Opportunities to Access Learning project, endline (2013)

[18] We assessed the reliability of the two composite scales and found them to be sufficiently reliable, with Chronbach's Alpha's of 0.76 and 0.66 for the "physical condition" and "water and hygiene" scales, respectively.

We then tested whether these differences were statistically significant by estimating the following regression model:

$$Y_s = \beta_0 + \beta_1 Treatment + \beta_x Controls$$

where Y_s represents one of the outcomes in schools at the endline. *Treatment* is a categorical variable with four levels (scholarship, grant, grant and scholarship, and comparison), where comparison schools serve as the reference group and controls include school-level measures of the same outcomes at the baseline. For the academic outcomes (notebook, pencil, and textbook visible), we used logistic regression instead of ordinary least squares regression because the outcome variables were binary. For all outcomes, we ran three models in increasing complexity by adding control variables from the baseline school survey questionnaire to test whether differences across schools were robust to model specification. The results shown in Exhibit 16 below are from the models with the most comprehensive set of control variables.[19]

Exhibit 16. The Effect of GOAL on School Conditions

Outcome	Grant	Scholarship	Scholarship and Grant
Physical school quality	1.3	1.7	4.0
Water and hygiene	20.0	9.5	26.1
Notebook	0.0	0.1	0.4
Pencil	-0.1	0.1	0.2
Textbook visible	0.1	0.1	0.3

Source: Liberia Girls' Opportunities to Access Learning project, baseline and endline (2011, 2013)
Note: The exhibit shows the adjusted differences between the program schools and comparison schools (see Annex Tables B27 through B29).

The results show that the differences between program schools and comparison schools were not statistically significant in terms of physical school quality. However, in terms of water and hygiene, grant and scholarship schools scored 26.1 points higher (on a 100-point scale) than comparison schools. These schools also had more notebooks visible during visits from data collectors.

Conclusion

Despite the limited scope of the outcome data available for this evaluation and the relatively small number of schools in each of the four treatment conditions (the three intervention categories and the comparison group), there is encouraging evidence on the effectiveness of the GOAL program. Girls served by GOAL schools were more likely to enroll, more likely to attend school, and more likely to successfully complete the school year. These differences appeared to be driven primarily by the scholarships provided to girls in 30 of the 40 GOAL schools.

Compared with comparison schools, the GOAL program also appears to have increased the quality of the school environment, especially in the area of water and hygiene. However, differences in these outcomes were modest in size, and conditions were still quite poor even in schools participating in GOAL.

[19] Model results are shown in Annex Tables B7 through B29.

The analyses presented here come with a number of important caveats:

- Schools were not randomly assigned to the different program groups. This means that any differences we attributed to GOAL could instead be due to uncontrolled underlying differences between the schools, their leaders, their teachers, their students, or the communities they are located in.
- Many of the differences we presented were not statistically significant. This means that they could be the result of chance alone (although the fact that the overall pattern of impact estimates is consistent offers some protection against this possibility).
- Most of the outcomes presented here are based on reports from principals. It is possible that principals whose schools were in GOAL were more likely to exaggerate enrolment and completion numbers than principals whose schools were not beneficiaries of the GOAL interventions. A reporting bias may also explain why the attendance data (which were collected directly by AIR M&E staff) showed smaller impacts than other outcome data sources.
- Declines in boys' enrolment in all four types of schools is troubling on a national or system perspective and needs to be explored in future work. This finding mirrors observations from Plan International, the AGSP, and other programs focused solely on girls' education and equity, namely that boys are not immune "to poverty, discrimination and lack of opportunity in many parts of the world" (Plan International, 2012).

V. The Cost-Effectiveness of GOAL

In this chapter, we consider the costs of the three GOAL intervention models relative to their impacts on girls' outcomes. This allows us to estimate the cost associated with an outcome (e.g., increasing enrolment by one girl) for each intervention model. The lower the cost for a given outcome, the more cost-effective the intervention is (in terms of its effect on that particular outcome).

We begin this chapter by summarizing the total annual cost of GOAL's three intervention models. We obtained these cost estimates by reviewing project records and working with field staff to break down the cost of the various intervention components. These breakdowns were used to determine what drove intervention costs and how costs varied with the number of girls in a school. These data on costs are described in more detail in Annex C.

The cost-effectiveness analysis in this chapter combines program impacts with cost and enrolment data for schools at baseline values (the 2010–11 school year). The number of girls enrolled in a typical school varied by type of intervention, so we also use information on how costs vary with enrolment to discuss how cost-effectiveness is affected by enrolment and to ensure that comparisons across the different interventions are fair.

We found the following regarding costs and cost-effectiveness:

- The average annual cost of providing GOAL supports to an individual school ranged from $8,175 for a grant-only school to $19,082 for a grant and scholarship school.
- The average annual cost of interventions ranged from $65 per girl at grant-only schools to $199 per girl at schools with both scholarships and grants. (Grants were $1,000 per school, and scholarships payments to cover school fees and materials averaged about $62 per girl.)
- Increasing enrolment at a school by one girl had an associated cost of $779 at grant-only schools, $657 at scholarship-only schools, and $542 at grants and scholarship schools.
  - These costs varied with school size; with an enrolment of 100 girls, the estimated cost was $974 per additional girl enrolled at grant-only schools, $559 at schools that offered both grants and scholarships, and $415 at scholarship-only schools.
  - Scholarships were more cost-effective than grants. Although providing both grants and scholarships had a greater impact on enrolments, it appears that efforts to provide grants and community mobilization in addition to scholarships were not as cost-effective in increasing girls' enrolment.
- The patterns of cost-effectiveness for enrolment also applied to completion and promotion outcomes, in that scholarships were more cost-effective than grants.

GOAL represents a substantial investment in primary education. Specific data on spending per student at the primary level are difficult to obtain, but the Liberian appraisal of the 2010–2020 Education Sector Plan reported that the Liberian government spent about $38 per student in 2010 in primary schools.[20] Most of this government funding covered staff costs. Households contribute directly to school costs in the form of school fees, which the GOAL scholarship component sought to offset. There were large donor contributions to the education sector in Liberia (in 2009–10, for example, donor contributions were $47 million,

[20] Estimates of government expenditures are from the Global Partnership for Education (2010), *Republic of Liberia, Appraisal of the 2010–2020 Education Sector Plan* (p. 13).

or about $30 per enrolled pupil) for both technical assistance and capital spending (primarily school construction and rehabilitation); we do not know how much went to primary schools.[21]

The costs associated with training and other GOAL activities were a significant expense, outweighing the direct costs of providing grants, scholarships, or materials to schools. These staff costs reflect the considerable effort required to travel to schools, provide the necessary training and support to school personnel, and work with the families of girls within the community to encourage girls to participate in primary education. Staff costs represented about 51 percent of total program costs, and these costs were highest (77 percent of total costs) at grant-only schools and lowest (47 percent of total costs) at schools that received both grants and scholarships.

Estimating the Overall Cost of GOAL Interventions

To estimate cost-effectiveness, we start with the total costs of the supports offered under the different GOAL interventions. We assume that all program expenditures at GOAL schools go beyond what would otherwise have been provided and thus can be considered "incremental." Exhibit 17 shows these incremental costs for the average-sized school within each intervention category. These costs range from $8,175 for the average grant-only school to $19,082 for the average school with both grants and scholarships.

Exhibit 17 also provides the cost per girl for each category, which ranges from $65 (at grant-only schools) to $232 (at scholarship-only schools). However, this cost per girl is calculated using the average number of girls, which varies widely across the categories (from an average of 51 girls at scholarship-only schools to an average of 125 girls at grant-only schools). This variation means that cost-per-girl results are potentially misleading. The table therefore also provides the cost per girl for a hypothetical school with 100 girls to show how costs would differ across schools. We have estimated these costs based on our analysis of which cost components vary with the number of girls and which are fixed at the school level. The adjusted cost per girl for schools with an enrolment of 100 girls is still lowest for grant-only schools ($82), but the fact that it increases by $17 highlights the fact that grant-only schools are relatively large (and therefore spread the cost of the grants over large numbers of girls). For these hypothetical 100-girl schools, the cost per girl for scholarship-only schools is lower ($146) than for grant and scholarship schools ($195), as one might anticipate. Among the 20 schools that received both the grant intervention and the scholarship intervention, nine schools also received supplemental academic support in the form of tutoring. This supplemental support was a minor cost for grant and scholarship schools, at an average of $704 per school per year, or approximately $7 per girl at a hypothetical school with 100 girls.

Exhibit 17. Overall Annual Costs per School and per Girl by Type of Intervention

Type of Intervention (Number of Schools)	Observed Average School in Group	Average Number of Girls per School (2010–11)	Per Girl at Average School in Group	Per Girl at a School With 100 Girls
Grants only (10)	$8,175	125	$65	$82
Scholarships only (10)	$11,766	51	$232	$146
Scholarships and grants (20)	$19,082	96	$199	$195

Source: Financial and research data provided by GOAL staff and financial reports

[21] Estimates of donor funding are from the Global Partnership for Education (2010), *Liberia, Aid Effectiveness in the Education Sector* (p. 9). Enrolment figures are from Republic of Liberia (2012*), Liberia 2010/2011 National School Census Report*. Monrovia, Liberia: Ministry of Education (multiple pages).

Estimating the Cost-Effectiveness of GOAL Interventions

The cost-effectiveness of an intervention can be measured by the additional funding required to produce an additional unit of outcome. Using the estimated impacts on enrolment from the previous chapter, we estimate the program cost associated with an additional girl enrolling, being promoted, and completing school in the three different intervention categories.

Enrolment

Exhibit 18 shows the number of additional girls who enrolled as a result of the GOAL program (based on trends in comparison schools and on changes in the number of boys). The table shows the average cost for each additional girl, determined by dividing the average GOAL spending per school by the estimated increase in girls' enrolment.

Exhibit 18. Cost per Girl to Increase Enrolment Relative to Baseline Enrolment

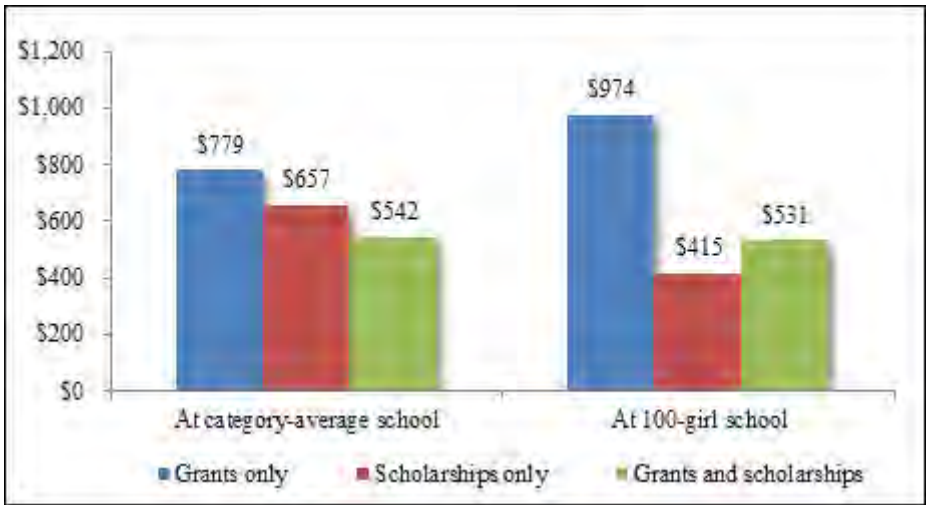
Type of Intervention (Number of Schools)	Average Number of Girls per School (2010–11)	Additional Girls Enrolled per School	Cost per Additional Girl Enrolled
Grants only (10)	125	10.5 (8.4%)	$779
Scholarships only (10)	51	17.9 (35.1%)	$657
Scholarships and grants (20)	96	35.2 (36.7%)	$542

Source: Financial and research data provided by GOAL staff and financial reports

The table shows that grant-only schools had the highest cost per additional girl enrolled, even though the cost for providing grants only was the lowest of the three GOAL interventions. This reflects the relatively low effectiveness of grants (and grant-related activities) in increasing the enrolment of girls (by only 8.4 percent) from the baseline level, compared with scholarship-only schools (in which enrolment increased by 35.1 percent) or grant and scholarship schools (in which enrolment increased by 36.7 percent).

Exhibit 19 presents this cost per additional girl enrolled and compares it with the cost per additional girl enrolled in a hypothetical school with 100 girls at baseline (addressing the fact that average school sizes varied across categories). The figure shows that if all three interventions served schools with 100 girls, it would cost more to enroll an additional girl using a grants intervention ($974) than it would using a scholarship intervention ($415). (An analysis presented in Annex C shows that this pattern holds true for hypothetical enrolments as low as 25 girls and as high as 150 girls.) Exhibit 19 also shows that the use of grants alone or in combination with scholarships was not cost-effective; the cost per additional girl enrolled at a school with 100 girls was $559 higher for grants and $116 higher for grants plus scholarships than for the scholarship-only intervention.

Exhibit 19. Cost per Additional Girl to Increase Enrolment, at Category-Average and 100-Girl School



Source: Financial and research data provided by GOAL staff and financial reports

Grade Completion and Promotion

Limitations

Our analysis of girls' completion and promotion outcomes is limited for two reasons. First, data on these outcomes were only available over time for Grades 2–6 and therefore likely understate the overall impact (in terms of the number of completions and promotions associated with GOAL).[22] As a result, costs are applied to a smaller number of girls, which means that costs per girl are likely overstated at the school level.

A second limitation of the cost-effectiveness analyses of completion and promotion is that, unlike the enrolment analysis, the underlying impact analysis did not include comparisons of changes in outcomes for girls versus boys. Instead, they only examined changes in the total number of completions and promotions of girls, with the assumption that there were no changes in completions and promotions of boys. If the number of completions and promotions for boys were also to increase, estimates of impact would be lower and the costs per girl associated with increasing completion and promotion would be higher.

As a result of these two limitations, costs associated with completion and promotion outcomes should not be compared directly with those for enrolment. They can, however, be compared with one another and across different levels of Grade 2–6 enrolment.

Completion

Exhibit 20 shows the estimated cost-effectiveness of the three GOAL interventions in increasing completion for girls in Grades 2–6. Exhibit 21 compares the cost per additional girl's completion with the cost at a hypothetical school with 100 girls. The patterns here are the same as for enrolment—grants are the least cost-effective intervention, and this is especially true when considering costs at schools with the same number of girls. With an enrolment of 100 girls at the baseline, the estimated cost per additional completion in a grant-only school is $1,549—more than four times the $375 per additional girl in a scholarship-only school. As with enrolment, it was more cost-effective to offer scholarship support only rather than combining scholarships with grants.

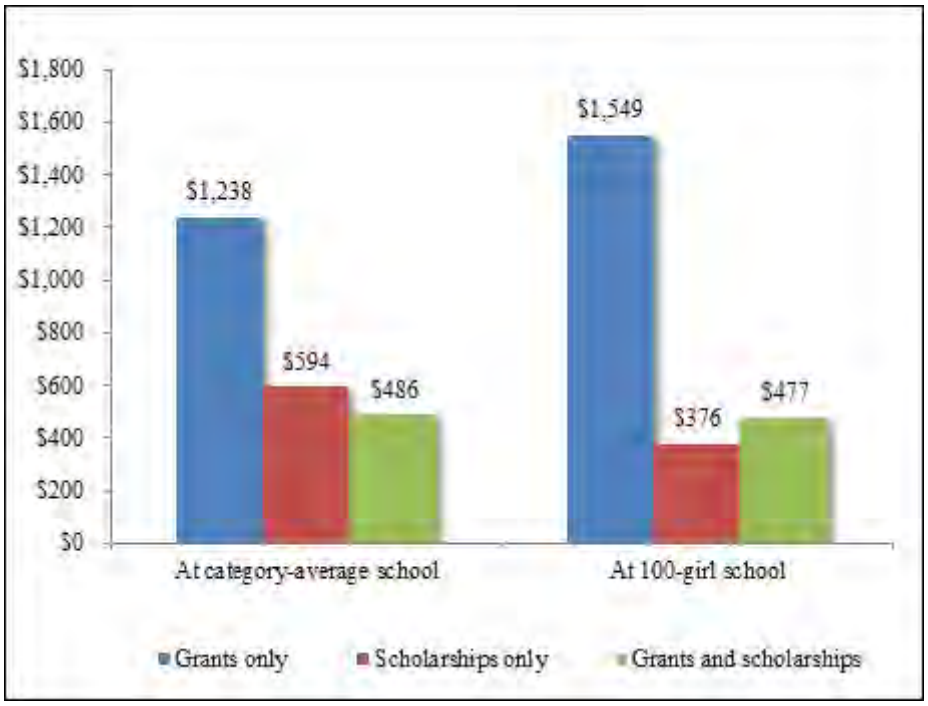
[22] Grade 1 represented about 22 percent of overall enrolments of girls in Grades 1–6 at the baseline.

Exhibit 20. Cost per Additional Girl in Grades 2–6 to Increase Completion Relative to Baseline

Type of Intervention (Number of Schools)	Average Number of Girls Completing per School (2010–11)	Additional Completions per School	Cost per Additional Completion
Grants only (10)	67.0	6.6 (9.9%)	$1,238
Scholarships only (10)	25.7	19.8 (77.0%)	$594
Scholarships and grants (20)	52.8	39.3 (74.4%)	$486

Source: Financial and research data provided by GOAL staff and financial reports

Exhibit 21. Cost per Additional Girl to Increase Completion, at Category-Average and 100-Girl School



Source: Financial and research data provided by GOAL staff and financial reports

Promotion

Exhibit 22 presents the estimated cost per additional promotion across the three GOAL interventions for girls in Grades 2–6. Exhibit 23 compares the cost per additional promotion with the cost per promotion at a hypothetical school with 100 girls. Again, grants are the least cost-effective intervention in both scenarios, and particularly at schools with the same 100-girl enrolment at the baseline. With an enrolment of 100 girls at the baseline, the estimated cost per additional promotion in a grant-only school is $851 (compared with $454 at a scholarship-only school).[23]

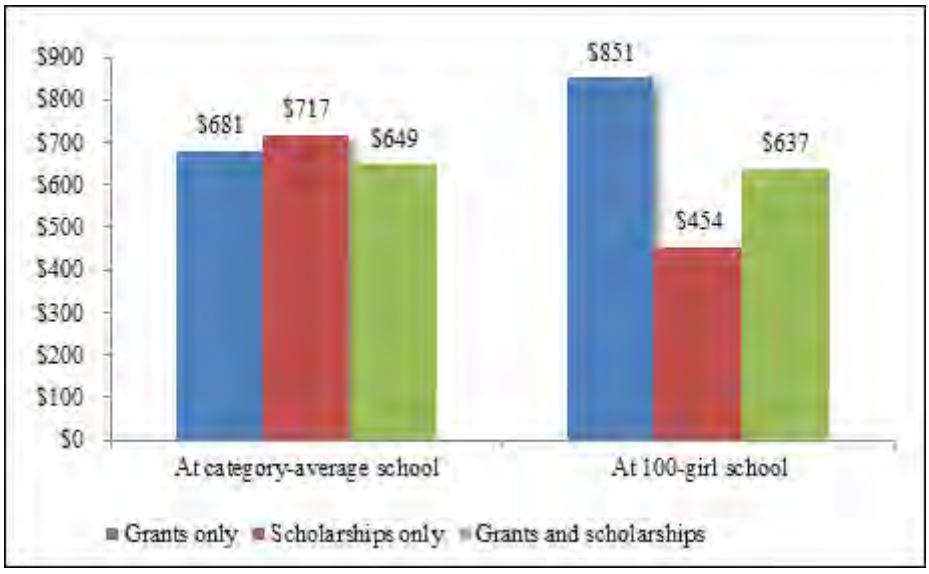
[23] It may seem incongruous that the cost per girl to increase completions is higher than it is for promotions at grant-only schools, in that there are fewer promotions than completions. The estimates of cost-effectiveness are, however, based on the *increase* in the number of promotions and completions, and the increase in the number of girls promoted at grant-only schools was larger than the increase in completions. As a result, the cost per girl of promotions is lower for these schools than it is for completions.

Exhibit 22. Cost per Additional Girl in Grades 2–6 to Increase Promotion Relative to Baseline

Type of Intervention (Number of Schools)	Average Number of Girls Promoted per School (2010–11)	Additional Promotions per School	Cost per Additional Promotion
Grants only (10)	52.8	12.0 (22.7%)	$681
Scholarships only (10)	21.1	16.4 (77.7%)	$717
Scholarships + grants (20)	45.7	29.4 (64.3%)	$649

Source: Financial and research data provided by GOAL staff and financial reports

Exhibit 23. Cost per Additional Girl to Increase Promotion, at Category-Average and 100-Girl School



Source: Financial and research data provided by GOAL staff and financial reports

Conclusion

The analysis in this chapter has combined information on the impacts of GOAL from the previous chapter with estimates of the costs of providing different types of supports to schools. Although there are limitations in the data, it appears that providing scholarships (and the related supports) is more cost-effective than either grants alone or grants in combination with scholarships. Although grants cost the least per student, their impact is not large enough to make them cost-effective. Similarly, although providing grants along with scholarships may have greater impact on outcomes, the additional impact is not cost-effective compared with scholarships alone.

VI. Lessons Learned from Interviews and Focus Groups

Introduction

This section explores the qualitative information that was collected through interviews and focus group discussions at six schools (Kpanay Town Public School, Saturday Town Public School, William R. Tolbert Public School, John P. Mitchell Public School, Borkeza Public School, and Gorlu Elementary/Junior High School)[24] over the course of the GOAL project and through interviews and focus groups that were conducted at all 60 schools (both program and comparison) as part of the endline data collection in May 2013. The responses by principals, teachers, students, and community members shed additional light on the perceived relative effectiveness of the different GOAL intervention components. Focus group participants and interviewees were selected through discussions with school principals, PTA chairpersons, Girls' Club mentors, and other community stakeholders. This process was designed to ensure participation from a wide range of individuals in the school community, including girls who may have dropped out of school.

This section is not intended to suggest causality, but rather is included to provide contextual and anecdotal information to complement the findings from the impact evaluation. It discusses all of the GOAL activities and supports: scholarships, grants, tutoring, community mobilization activities, and health and hygiene trainings. The hypotheses and assumptions underlying the use of each component are presented along with the qualitative data from the interviews and focus groups.

Scholarships

In paying school fees for female students, GOAL hoped to make attending school more affordable for girls and their families. Additionally, GOAL provided in-kind materials (e.g., uniforms, school supplies, toiletries) to remove other barriers to enrolment for girls. To enhance the school environment for girls, GOAL's scholarship component also included materials for teachers, students, and the schools themselves, as well as training in Gender-Responsive Pedagogy for teachers to promote female participation at school. In addition, GOAL scholarship schools received funds to support Girls' Clubs, which were intended to enhance girls' perceptions of the importance of education and staying in school.

GOAL scholarship schools received:

- Individual scholarship packages for female students (school fees paid and in-kind materials provided, such as uniforms and school supplies)
- Resources for teachers, students, and the school itself
- Gender-Responsive Pedagogy training for teachers
- Funds to support Girls' Clubs (stipend and training for Girls' Club mentor as well as supplies for the club)

Individual Scholarship Packages

In May 2013, principals at the 40 intervention schools were asked, "Have you seen any changes in girls' enrolment in the last year? If yes, what do you think caused the change?" The majority of principals responded that enrolment had increased as a result of GOAL's interventions, especially the scholarships provided to girls. One principal said, "Yes [girls'

[24] Six schools were targeted at the beginning of GOAL for in-depth, qualitative evaluation throughout the life of the project, four of which were selected for case study analysis. The complete case studies for Kpanay Town Public School, Saturday Town Public School, William R. Tolbert Public School, and Gorlu Elementary/Junior High School are contained in a separate case study compendium.

enrolment has increased], due to GOAL intervention in providing scholarships, materials for girls, and other school materials." Another principal responded, "Yes, supports from GOAL [have increased girls' enrolment through] provision of fees, uniforms, shoes, anklets/socks, copybooks." A third principal also cited uniforms and books as a source of motivation: "Yes, we started with 26 girls and grew up to 40 girls. I think the girls' uniforms and books encourage them."

At Saturday Town Public School in Grand Bassa, girls' parents told GOAL staff that the scholarship packages had relieved the financial burden associated with paying for school fees, uniforms, and materials. One parent interviewed at William R. Tolbert Elementary School in Bong said that the GOAL scholarship allowed her to use the money saved on school fees to purchase other things, such as clothing, for her daughter. One William R. Tolbert student mentioned that prior to getting the scholarship package, she was working in the market on the weekends to help pay for her school needs, but with the GOAL scholarship she no longer had to do so. Some parents indicated that GOAL scholarship packages had made the difference in being able to afford enrolling their daughters. GOAL scholarships also encouraged out-of-school girls to register: One female student interviewee who had dropped out of school indicated that she had returned to school and no longer had to work thanks to the scholarship. Girls enrolled at Gorlu Elementary told GOAL staff that having a uniform made it much easier to attend school; two other girls reported leaving school and a third reported never enrolling because they did not have uniforms.

Girls' Clubs

At almost all of the scholarship schools, Girls' Clubs were referred to favorably. Under the leadership of their mentor, the Girls' Club at Saturday Town went out into the community to encourage out-of-school girls to re-enroll. Two teachers at Saturday Town said that enrolment had increased as a result of the Girls' Club outreach. GOAL staff interviewed one 16-year-old girl (who had dropped out of school due to pregnancy) who reported that she had re-enrolled in the fourth grade after her sister and other members of the Saturday Town Girls' Club visited her. She said, "I know that school is important, and my sister and friends convinced me [to return]. They came from the assembly in Buchanan and told me about what they learned and my sister brought me gifts, so I went and registered right away." The Girls' Club at Borkeza Public School in Lofa also yielded positive results: In August 2012, one Borkeza teacher told GOAL staff that he had noticed a change in some of the girls in his class who participated in the club. He reported that the girls encouraged their friends, showed improved hygiene practices, and engaged in community mobilization efforts.

> "[Girls] have got their basic school needs from GOAL; [and] parents are now aware of the importance of girls' education. Other activities, like the Girls' Club, are also an encouraging factor."
>
> *–Perry G. Barker, Principal, Kollieta Public School*

Female students from William R. Tolbert indicated that the Girls' Club is a very popular activity. However, due to resource constraints, Girls' Clubs could not accommodate all the interested female students. One student who was not part of the club at the time said that she heard the club was fun; she reported hearing them sing and wanting to join herself. The Girls' Club mentor at William R. Tolbert corroborated this, saying that "many girls stand by and watch and want to be in the Girls' Club because their friends are participating." One aspect of the Girls' Club activities that participants indicated especially enjoying was drama and role-playing. In one interview with girls from Kpanay Town Public School in Grand Bassa, the

girls mentioned that they were especially engaged in the Girls' Club meeting that was focused on the importance of girls' education and staying in school because the message was conveyed through role-play.

The Kpanay Town Girls' Club experienced challenges that may offer insight for future planning and programming for Girls' Clubs. While the Girls' Club mentor was a teacher at Kpanay Town, she did not live in the community. This meant that she had a long commute and was not always accessible to the Girls' Club members. This distance may also have contributed to her perception that she did not "know the girls well" and thus could not serve as a confidante to them. In addition, the Kpanay Town Girls' Club mentor told GOAL staff that many of the girls chose to go home after school instead of staying for Girls' Club activities because they were hungry.

Gender-Responsive Pedagogy Training

Teachers are sometimes unaware of gender biases in their classrooms (for example, using learning materials that depict only one gender performing certain activities, or making disparaging or biased remarks about the capability or characteristics of either gender). The presence of these biases can discourage girls from participating in the learning process. GOAL provided training in Gender-Responsive Pedagogy to promote female participation at scholarship schools. A number of teachers who received the training told GOAL staff that they then changed their practices to encourage their female students. At William R. Tolbert Elementary School in Bong, teachers told GOAL staff that they learned not to segregate girls and boys within the classroom. One teacher reported that once boys and girls started sharing desks, "there is competition right at the desk. The girls and boys are competing against each other. They learned that not only boys can be clever. Things are changing." This teacher also said that the change "derailed some shyness of girls who sat at the back. Before, they used to cover or hide their heads." Teachers from Wakesu Public School and Zelemai Public School, both in Lofa, indicated that while they previously focused most of their attention on the strongest students (often boys), they now knew to treat students equally and to encourage participation from all students.

> "I thought that a classroom set-up did not matter; now I know, and I will make sure that my classroom is properly arranged to allow for both boys and girls to participate equally."
>
> *–Teacher, Konia Public School, Lofa*

Grants

All schools receiving grants from GOAL were eligible to apply for school improvement grants, which aimed to ultimately make the school environment more appealing to girls. Additionally, grant-recipient schools received PTA capacity building trainings (focused primarily on management and oversight) designed to promote girls' enrolment, attendance, and completion.

School Improvements

The principal at a grant-recipient school in Bong commented in May 2013 that the GOAL grant had allowed the school to provide activities (such as sports) that "attract girls." A principal from a grant and scholarship school in Bong agreed, and added that Girls' Clubs, drama club, and other supportive activities for girls had increased attendance over the previous year. At John P. Mitchell, also located in Bong, interviews revealed that involving the Town Chief and the Women's Leader in school improvement projects had encouraged community involvement. The principal of John P. Mitchell reported that the Women's Leader

tracks the local community's involvement in school improvement activities, and when she feels that someone has not contributed adequately, she visits them at home. "People cannot say no to her," said the principal.

At Borkeza Public School in Lofa, PTA members reported that they struggled to engage the community in school improvement projects. This difficulty was attributed to a lack of effective leadership on the part of town authorities.

PTA Trainings

Most principals cited positive effects of the PTA trainings, such as increasing community awareness of the importance of girls' education and increasing accountability for girls' attendance. Principals were asked, "How did PTA trainings help girls (in terms of enrolment, attendance, and completion)?" In response, one principal stated, "The PTA leadership come on the campus and do head count and if any girl is absent they go to the girl's parents and ask why… she was not in school." Another principal said that the PTA trainings "help us to keep daily attendance on our girl children, encouraging them to go to school every day." Teachers at William R. Tolbert Elementary school said they had started keeping daily attendance records for teachers and students, as well as for all school activities. The teachers reported that they understood the importance of keeping records to show improvement over time, and that they would continue doing this after GOAL ended.

> "These trainings have helped parents to know the importance of education for which most parents are now able to encourage their girl children to come to school."
>
> *-Alfred P. Nupolo, Principal, Gleh Public School*

It is important to note that a few principals at grant-recipient schools voiced frustration about their PTAs' perceived ineffectiveness. One principal said, "PTA trainings are not helping because the PTA is not implementing what they were taught," while another commented that the PTA was not helping girls because it was not active. This appeared to be the case at Gorlu Elementary School in Lofa, where regular PTA meetings were not occurring as of the summer of 2012. Teachers and community members attributed the lack of PTA activity at Gorlu to the principal's failure to share information and serve as a leader, as well as to a heavy emphasis on palm farming, which was reported to be a priority for all members of the community (including teachers and students). Additionally, interviewees reported a divide between parents and community members and the principal and teachers, with each group blaming the other for Gorlu's lack of progress under GOAL.

Tutoring

In nine of the schools receiving both scholarships and grants, GOAL also supported after school tutoring to promote girls' completion and promotion. The schools that offered tutorials through GOAL were Gorpu Dolo Boi, Togbah Kolliebor, William R. Tolbert, Bless, Lower Harlandsville, Tubmanville, Borkeza, Konia, and Wakesu.

In May 2013, principals were asked, "Have you seen any changes in girls' performance in the last year? If yes, what do you think caused the change?" A number of principals at tutoring schools commented that the tutoring had improved girls' performance. At the William R. Tolbert Elementary School in Bong, tutors followed up on individual girls' performances with their respective teachers, and at one point determined that three of their tutees had newly been placed on the honor roll. At Borkeza Public School in Lofa, tutors checked the progress of their tutees through pop quizzes, additional homework assignments, and check-ins with the

students' regular teachers. According to one tutor here, the girls had demonstrated gradual progress since the inception of the tutoring program. The principal of Borkeza had been instrumental to the success of the tutoring program. When it first began, girls were reluctant to attend the tutoring sessions, but, with the principal's encouragement, girls began to attend the tutoring sessions regularly. The principal continued to support the program through monitoring the activities, providing stationery for teachers and students, allotting specific time for the tutoring program, and encouraging girls' academic performance. The principal also worked to steer students with academic difficulties toward the tutoring.

Other Interventions

All 40 GOAL schools participated in community mobilization activities designed to encourage girls to enroll and stay in school, and in health and hygiene activities intended to improve girls' well-being and reduce barriers to attending school.

Community Mobilization

School principals felt that GOAL's community mobilization efforts had a positive impact on school communities. In May of 2013, principals were asked, "What do people in your community think about girls' education?" The responses largely attributed positive changes to GOAL's interventions. The principal at Geita Elementary School in Bong responded, "Their thought is very positive as it relates to girls' education, which all happen due to awareness and training that has been conducted by GOAL." This sentiment was echoed by the principal of Ziggida Public School in Lofa, who said, "At first they had negative thinking about it, but since the intervention of GOAL, enrolment of girls in school has increased." Similarly, at Borkeza Public School in Lofa, parents and teachers attributed the increase in girls' enrolment to a heightened awareness of the importance of girls' education in the community as a result of house-to-house visits and other activities (along with the scholarship packages).

At the John P. Mitchell School in Bong, community mobilization efforts benefited from the active participation of the Town Chief and the Women's Leader, both of whom were directly involved in encouraging parents to send their children to school. Community mobilizers visited parents at their homes and organized meetings to spread the word before the 2011–2012 school registration period started. The Women's Leader took responsibility for the house-to-house mobilization team in the community, arranged meetings, and worked with other women in the community to follow up with parents whose children were not in school.

The principal also identified two women from the community (a trained teacher who had travelled to South Africa and a doctoral candidate studying in the United States) who had contributed to John P. Mitchell in various other volunteer capacities to serve as additional role models for female students.

Over the course of the GOAL project, parents of female students at Kpanay Town School in Grand Bassa came to understand that their daughters need more than simply financial support to continue their education. In July 2011, when parents were asked how they could help girls succeed in school, the majority of respondents mentioned financial support, and they had to be prompted to think of other types of support, such as encouragement or academic support. About a year later, in August 2012, all parents interviewed said their role was to encourage their daughter(s) to continue their education. One parent said, "Our role is to encourage them, to advise them by counseling so they know that education is important for their future." Positive changes were noticed in the William R. Tolbert School community in Bong. One

mother interviewed said that the public's perception of girls' education had changed to such an extent that families were now embarrassed if they had an older girl at home who had never tried to go to school. The mother reported that this was a result of community mobilization and the many public announcements criticizing those who held children back from school.

Unfortunately, GOAL's activities did not always succeed in keeping girls in school. In August 2013, GOAL staff learned that all three girls from Gorlu Elementary School who had participated in case study interviews had since dropped out of school after becoming pregnant. In prior interviews, all three girls had confidently stated that they would continue in school, with one girl in particular declaring her strong commitment and reporting a high level of support from her father.

Though teachers and parents at Gorlu cited the importance of girls' education, children continued to be pulled away from school by parents during the farming season. A female student at Gorlu commented that her "body and head hurt because of too much work," and she told GOAL staff that she had difficulty concentrating on her studies and staying awake in class. She also reported that she was often late for school because she hauls water in the morning to generate income. Gorlu parents and teachers told GOAL staff that communications need to focus on girls *completing* school, not just attending school.

School-Based Health and Hygiene Activities

In a February 2012 focus group, teachers at William R. Tolbert Elementary School indicated that both the WASH trainings and the first aid training provided by GOAL were helpful. Teachers indicated that the trainings had taught them how to treat a sick or injured child and how to determine when to refer a child to the health clinic for further treatment. The teachers also reported sharing what they had learned with other teachers and with the school's principal, and they reported that they intended to continue to keep records of each time they treated a child (which they had not done in the past). One reported shortcoming of the first aid training was that teachers were unsure what to do when the first aid supplies ran out.

Over the summer of 2012, focus group discussions were also held with teachers at Gorlu Elementary and Junior High School, and the impressions of the teachers at Gorlu differed slightly from those at William R. Tolbert. Unlike their counterparts, the teachers from Gorlu reported that there was not enough information sharing by the teachers who attended the WASH and first aid trainings. The teachers at Gorlu did, however, say that they were using the first aid kit provided by GOAL to treat children when they got hurt.

At Saturday Town Public School in Grand Bassa, the Girls' Club mentor had taken an active role in providing sexual and reproductive health education to girls at school. When GOAL initially distributed scholarship packages, the Girls' Club mentor voiced concern about the number of girls who were getting pregnant at Saturday Town. She indicated that parents, in particular, were not receptive to her family planning messages and that many parents believed that the girls would become infertile if they started using birth control. Understanding the importance of involving girls' parents, the mentor decided to share the materials on reproductive health that she had received in the Girls' Club leadership training. After she received permission from the parents of the Girls' Club members, Esther took some of the girls to the local clinic to obtain birth control. In the first two years of the project (ending in June 2011 and June 2012), not a single girl had completed sixth grade. In June 2013, however, five girls completed sixth grade at Saturday Town. Several people attributed this to the Girls' Club mentor, and the mentor reported that other parents had started asking her to perform the same service for their daughters.

Conclusion and Lessons Learned

There is considerable anecdotal evidence that suggests which interventions succeeded, and which factors facilitated or hindered the effectiveness of the interventions. For example, GOAL's individual scholarship packages appear to have successfully reduced the financial burden of attending school for girls and their families. The Girls' Clubs appear to have engaged the girls who participated in them, although some of their success depended on the quality of the leadership and support provided by the Girls' Club mentor and the school principal.

Just as the Girls' Clubs need mentors who take initiative and actively engage with club members, PTAs rely on the leadership of the school principal and town leaders to accomplish their goals. The Gorlu PTA experience underscored the necessity for PTAs to function as cohesive units—without divisions between school employees and the surrounding communities—in order to be effective. Parental support and buy-in is also essential, as was demonstrated by the success of the sexual and reproductive health trainings at Saturday Town Public School.

Liberian children and youth face a number of competing priorities that threaten their ability to remain in school and succeed academically, most notably farming (as in the Gorlu community). The success of future programs will be dependent on their ability to address the pull of farming and other income-generating activities.

VII. Summary and Conclusions

The findings from this evaluation of the GOAL project indicate that GOAL was largely successful in meeting its targets, and that it had a positive impact on the enrolment and completion of girls in participating schools. Among the different intervention models, providing direct scholarships to individual girls appeared to be a more effective means of improving their educational access and persistence than providing grants alone to the girls' schools. Despite the increased costs associated with implementing a large-scale scholarship program, the scholarships were also more cost-effective than the grants. Although providing both scholarships and grants together was associated with the greatest improvements in outcomes, the combination was not as cost-effective as providing scholarships only. In this cost analysis, scholarship activity is the only cost that varies with the number of students at the school level. All other activities are considered to be effectively constant, regardless of the size of enrolment. For this reason, the scholarship activity exhibits lower economies of scale than the other activities.

In a context such as Liberia's, the benefits from externally funded activities like GOAL are sometimes difficult to sustain once direct support is no longer being provided to the community. It is important to consider that although the scholarships are an effective means of getting girls into the classroom in the short term, their long-term sustainability may be limited without continued support, which means that there may be little overall long-term change in the education system. However, PTA capacity building and school improvement grants—which, in the short term, have limited effect (and depend on local leadership, buy-in from parents, and community members)—involve training and strengthening the capacity of local stakeholders to support girls' education, the impact of which may extend beyond the short-term cost of the grant and related trainings.

GOAL tracked the enrolment, attendance, pass and failure rates, and repetition of the girls who received scholarships, by individual and by grade level. A cohort of 985 girls who received scholarships in May 2011 as second, third, or fourth graders were tracked until the project ended in June 2013. Although many of these girls stayed in school, many repeated grades, and only 28.8 percent were promoted in two successive grade levels and years. As GOAL's mandate centered on improving access and persistence in school, promotion rates serve as a useful context indicator that relates to the other areas necessary for improved learning outcomes and overall success in education. Teaching quality, the availability of teaching and learning materials, and teacher attendance are among the other factors related to student success and subsequent promotion to the next grade which fell outside the scope of the GOAL project.

GOAL directly increased enrolment over the life of the project in all 40 program schools by 23.2 percent (from a baseline of 2,794 girls to 3,443 girls in Grades 2–6), which is slightly below the target of 25 percent. Enrolment increased by 28.0 percent in scholarship-only schools and 49.0 percent in grant and scholarship schools, but enrolment declined by 17.8 percent in grant-only schools. However, in comparison schools, enrolment declined by 19.5 percent. In June 2011 (the baseline year), 1,464 girls in Grades 2–6 in the 40 program schools successfully completed the school year. In June 2013, 2,314 girls completed the year—an increase of 53.1 percent. The attendance rate for all 40 schools increased by 10.3 percentage points—from 57.2 percent to 67.5 percent—which exceeded the target of 5 percentage points. The combined intervention model that offered both the scholarship and grant interventions

showed the highest attendance rates among the three models. Over the life of the project, GOAL distributed 13,132 scholarship packages and 1,136 teachers' kits.

Despite the limited scope of the outcome data available for this evaluation, and the relatively small number of schools in each of the four conditions (the three intervention categories and the comparison group), there is encouraging evidence on the effectiveness of the GOAL program. The GOAL program also appears to have increased the quality of the school environment in the participating schools, especially in the areas of hygiene and water quality and availability. However, differences in these outcomes were modest in size and conditions were still quite poor, even in schools participating in GOAL.

Girls served by GOAL schools were more likely to enroll, more likely to attend school, and more likely to successfully complete the school year. These differences appeared to be driven primarily by the scholarships provided to girls in 30 of the 40 GOAL schools, with grants having little additional impact in schools where both scholarships and grants were offered. Given this finding, it is not surprising that providing schools with scholarships and related support was found to be more cost-effective than either providing grants alone or providing grants in combination with scholarships. Although grants offer the lowest cost intervention per student, their impact is not large enough to make them as cost-effective as scholarships. Similarly, although providing grants along with scholarships may have a greater overall impact on outcomes, the additional impact is not large enough to make the combination as cost-effective as providing scholarships alone.

The statistical analyses of the cost-effectiveness of GOAL and its impact on school outcomes were complemented by qualitative findings from case studies. The findings from the case studies indicate that engaging communities and changing attitudes regarding girls' education through community outreach, Girls' Clubs, town hall meetings, and other outreach activities will play a role in the long-term success of girls' education in Bong, Lofa, and Grand Bassa, and across Liberia. Ultimately, the findings suggest that strong leadership, parental buy-in, and cooperation from female students are all necessary conditions for implementing the interventions, and that they are essential to bringing about lasting change.

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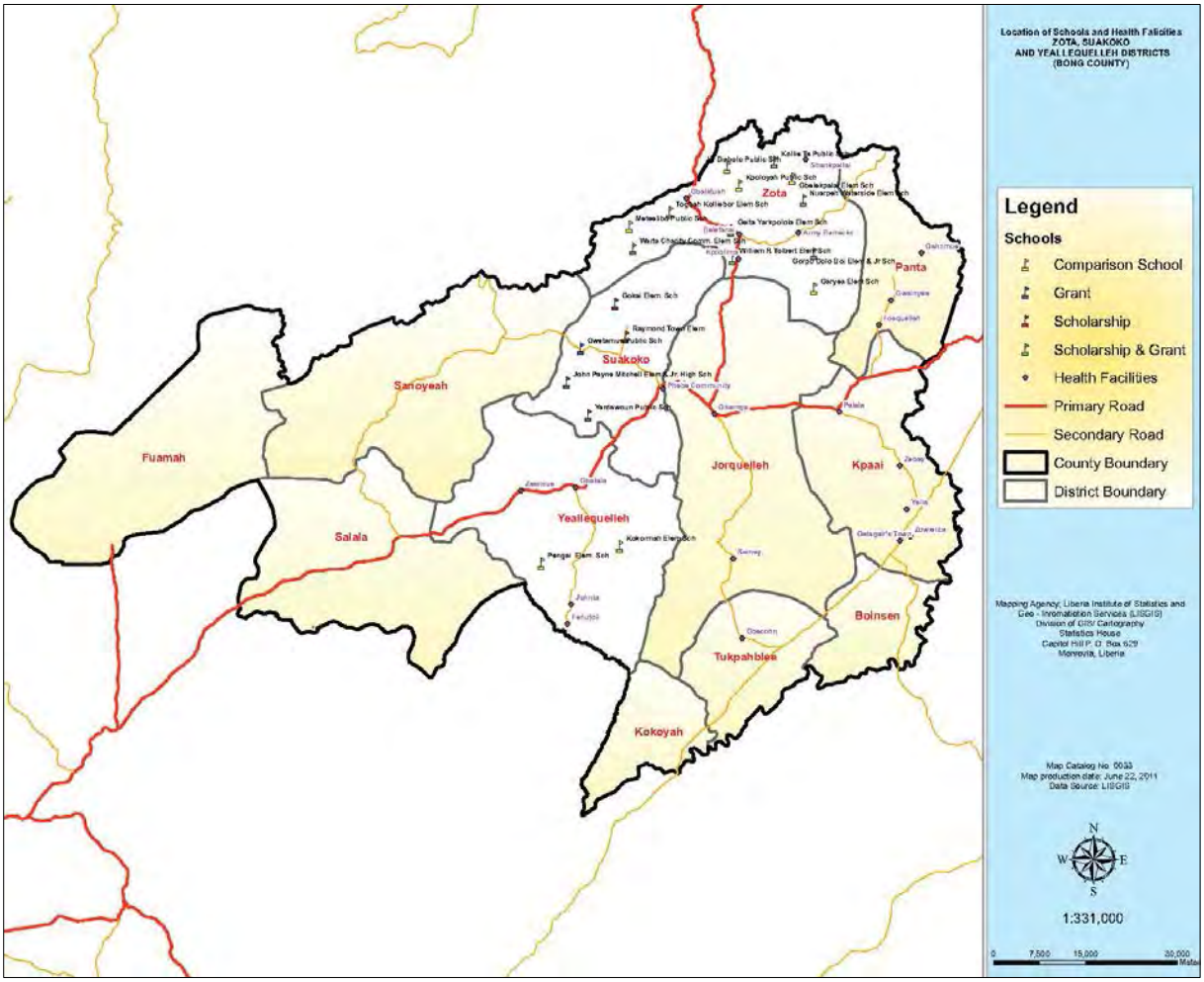
IX. Annexes

Annex A: GOAL School Locations by Intervention Type

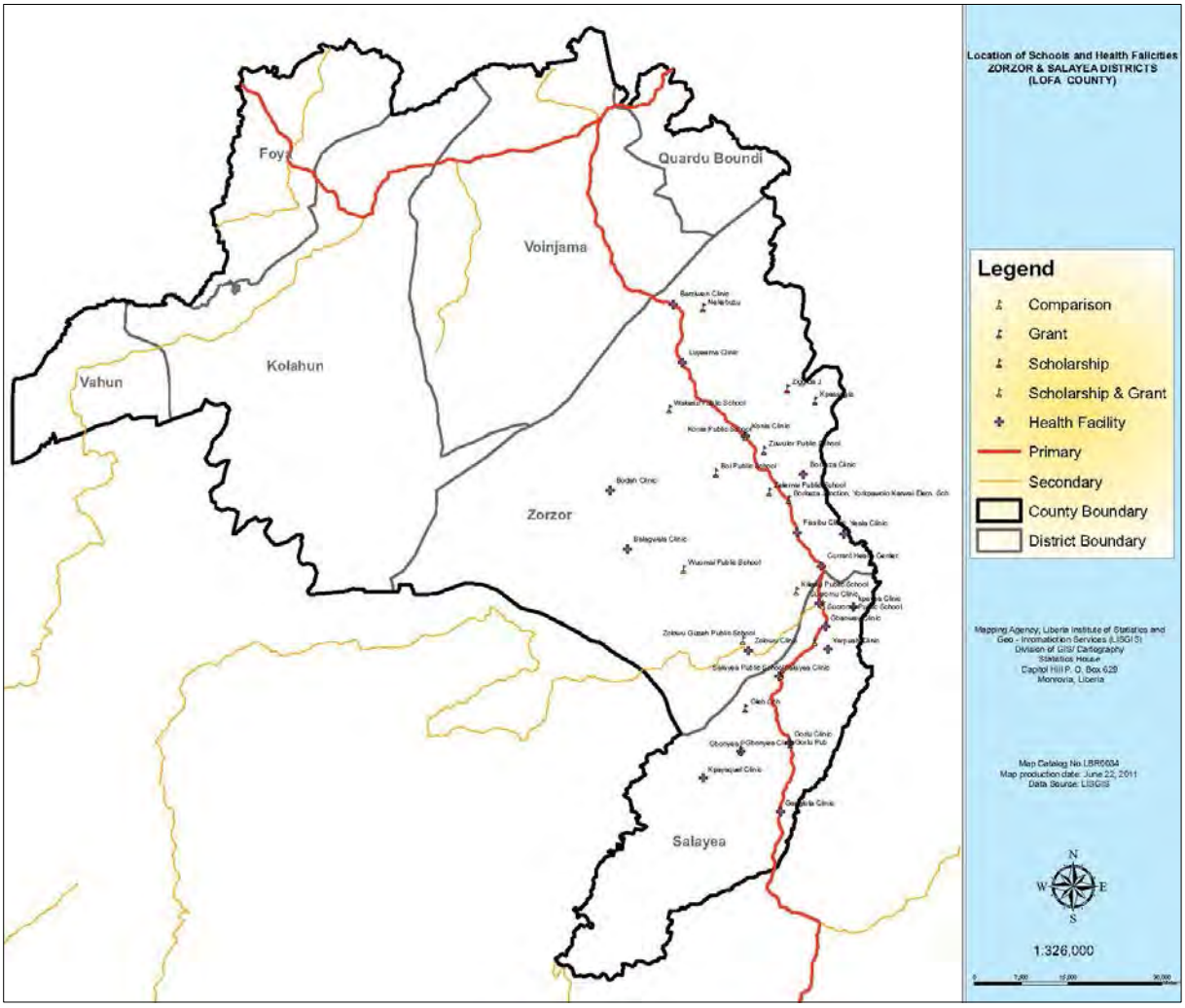
Map A: Map of Liberia

Map B: GOAL Schools in Bong County



Source: LISGIS, 2012

Map C: GOAL Schools in Lofa County



Source: LISGIS, 2012

Map D: GOAL Schools in Grand Bassa County

Source: LISGIS, 2012

Annex B: Impact Regressions

This annex provides details of the regression results, which were summarized in Chapter IV, "Impact of GOAL on Student Enrolment and School Conditions." The specifications of these regressions were presented in Chapter IV and included variables to measure the impact of GOAL on outcomes. The annex first presents summary statistics (Table B1) for the background characteristics of schools by type of intervention in order to assess the equivalence of these variables for schools by type of intervention. The table shows that there were no statistically significant differences in these variables by type of intervention, which allowed us to run models that did not include these variables as additional controls.

Tables B2 through B26 present regression statistics for models of school-level outcomes of enrolment, attendance, completion, and promotion. For each of these outcomes, regression results are first presented for schools as a whole (i.e., combining all grades used in the analysis) and then are presented separately by grade in subsequent tables. For each grade combination, we considered four separate specifications that differ in terms of the covariates included. These are included to assess the sensitivity of the model to alternative specifications. In presenting our results in Chapter IV, we have used results for the third of the four specifications, which includes a full set of interactions described in the text and a set of fixed effects for counties, and which excludes background characteristics (which, as noted, do not differ significantly by type of intervention). The tables report coefficient estimates, along with their estimated standard errors and associated p-values.

Table B27 presents regression results that estimate the impact of the interventions on physical conditions at schools (using a summary index developed from the observation instruments), and Table B28 presents results for the water and hygiene conditions at schools. Table B29 presents results from logistic regressions to assess whether schools were more likely to have notebooks, pencils, and textbooks available by type of intervention.

Table B1. Baseline Tests for the Covariates by Intervention Model

	Grant	Grant	Grant	Scholar-ship	Scholar-ship	Scholar-ship	Grant and Scholar-ship	Grant and Scholar-ship	Grant and Scholar-ship
	Mean	Standard Deviation	P-Value	Mean	Standard Deviation	P-Value	Mean	Standard Deviation	P-Value
Number of teachers	3.10	4.95	0.53	7.50	4.95	0.14	3.15	4.05	0.44
Fenced	0.20	0.19	0.29	-0.10	0.19	0.60	0.10	0.15	0.52
Recreation area	0.10	0.20	0.62	0.10	0.20	0.62	0.15	0.16	0.36
Building structure in good condition	0.05	0.20	0.80	0.05	0.20	0.80	0.15	0.16	0.36
School is clean	0.27	0.19	0.16	-0.19	0.19	0.34	-0.03	0.15	0.84
Enough classroom seats	0.15	0.19	0.44	-0.25	0.19	0.20	0.03	0.16	0.86
Building disability accessible	-0.13	0.19	0.49	-0.13	0.19	0.49	0.31	0.16	0.052

Table B2. Regression Results for the Impact of Intervention on School-Level Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	59.90	16.91	0.00	61.76	19.72	0.00	59.90	16.33	0.00	61.98	19.06	0.00
Girl	-15.10	9.91	0.13	-18.38	11.05	0.10	-15.10	9.60	0.12	-18.38	10.62	0.09
Treatment	15.15	17.50	0.39	8.56	18.71	0.65						
Intervention	-11.56	8.64	0.18	-20.74	11.34	0.07	-11.56	8.37	0.17	-21.34	10.90	0.05
Girl*TRT	-6.32	12.14	0.60	-3.08	13.23	0.82						
INT*TRT	-1.23	9.91	0.90	11.88	13.54	0.38						
INT*girl*TRT	24.73	14.02	0.08	21.86	18.38	0.24						
Wave	0.60	1.01	0.55				0.60	0.98	0.54			
Grant							55.65	23.91	0.02	44.80	24.82	0.07
Scholar							-25.45	23.91	0.29	-36.82	25.90	0.16
Scholarship + grant							15.20	19.52	0.44	8.49	20.73	0.68
Girl*grant							-13.70	16.62	0.41	-10.43	17.12	0.54
Girl*INT	-1.25	11.45	0.91	8.38	15.19	0.58	-1.25	11.08	0.91	8.38	14.60	0.57
Girl*scholarship							-6.70	16.62	0.69	-2.74	17.70	0.88
Girl*scholarship + grant							-2.45	13.57	0.86	0.82	14.60	0.96
INT*grant							-22.45	13.57	0.10	-8.91	17.93	0.62
INT*scholarship							7.28	13.57	0.59	23.59	18.98	0.22
INT*scholarship + grant							5.12	11.08	0.64	17.98	14.80	0.23
INT*girl*grant							10.52	19.20	0.58	2.65	24.37	0.91
INT*girl*scholarship							17.95	19.20	0.35	16.36	25.28	0.52
INT*girl*scholarship + grant							35.23	15.67	0.03	32.71	20.20	0.11
Covariates[a]				Yes						Yes		
District Fixed Effects	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B3. Regression Results for the Impact of Intervention on Grade 1 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	15.805	3.969	0.000	14.898	5.051	0.005	15.650	3.943	0.000	15.152	5.070	0.004
Girl	-4.400	3.050	0.150	-5.063	3.436	0.143	-4.400	3.069	0.152	-5.063	3.468	0.147
Treatment	0.250	4.206	0.953	-1.179	4.752	0.804						
Intervention	-7.515	2.660	0.005	-5.809	3.508	0.100	-7.515	2.676	0.005	-5.966	3.541	0.094
Girl*TRT	-0.375	3.736	0.920	-0.262	4.112	0.949						
INT*TRT	2.842	3.050	0.352	5.262	4.194	0.212						
INT*girl*TRT	2.458	4.313	0.569	5.317	5.714	0.354						
Wave	1.060	0.311	0.001				1.060	0.313	0.001			
Grant							9.750	5.910	0.100	7.289	6.481	0.263
Scholar							-6.750	5.910	0.254	-9.158	6.780	0.179
Scholarship + grant							-0.533	4.866	0.913	-1.733	5.509	0.754
Girl*grant							-3.800	5.315	0.475	-3.137	5.592	0.576
Girl*INT	2.783	3.522	0.430	4.896	4.722	0.302	2.783	3.543	0.433	4.896	4.766	0.306
Girl*scholarship							0.400	5.315	0.940	0.396	5.780	0.945
Girl*scholarship + grant							0.950	4.340	0.827	1.007	4.766	0.833
INT*grant							-2.667	4.340	0.539	1.455	5.837	0.803
INT*scholarship							5.900	4.340	0.175	10.733	6.161	0.084
INT*scholarship + grant							4.067	3.543	0.252	5.222	4.815	0.280
INT*girl*grant							2.217	6.137	0.718	6.082	7.958	0.446
INT*girl*scholarship							-0.483	6.137	0.937	0.646	8.255	0.938
INT*girl*scholarship + grant							4.050	5.011	0.419	6.739	6.598	0.309
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B4. Regression Results for the Impact of Intervention on Grade 2 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	14.201	3.392	0.000	15.603	4.085	0.000	14.088	3.343	0.000	15.582	4.041	0.000
Girl	-3.150	2.214	0.156	-4.000	2.494	0.111	-3.150	2.217	0.156	-4.000	2.429	0.102
Treatment	0.225	3.540	0.949	-1.051	3.861	0.786						
Intervention	-3.810	1.931	0.049	-6.270	2.555	0.015	-3.810	1.933	0.049	-6.381	2.489	0.011
Girl*TRT	1.000	2.712	0.712	1.811	2.985	0.545						
INT*TRT	2.958	2.214	0.182	4.954	3.052	0.107						
INT*girl*TRT	2.142	3.131	0.494	-0.977	4.148	0.814						
Wave	-0.269	0.226	0.235				-0.269	0.226	0.236			
Grant							7.200	4.933	0.145	5.615	5.223	0.284
Scholar							-4.900	4.933	0.321	-7.121	5.455	0.194
Scholarship + grant							-0.362	4.067	0.929	-1.624	4.417	0.714
Girl*grant							1.250	3.839	0.745	2.100	3.916	0.593
Girl*INT	1.467	2.556	0.566	4.056	3.428	0.239	1.467	2.560	0.567	4.056	3.338	0.226
Girl*scholarship							-1.250	3.839	0.745	-0.556	4.048	0.891
Girl*scholarship + grant							2.000	3.135	0.524	2.833	3.338	0.397
INT*grant							0.483	3.135	0.878	2.751	4.096	0.503
INT*scholarship							2.350	3.135	0.454	5.363	4.332	0.218
INT*scholarship + grant							4.500	2.560	0.079	6.166	3.381	0.070
INT*girl*grant							-2.033	4.433	0.647	-7.378	5.573	0.188
INT*girl*scholarship							4.233	4.433	0.340	2.000	5.781	0.730
INT*girl*scholarship + grant							3.183	3.620	0.380	0.637	4.621	0.890
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B5. Regression Results for the Impact of Intervention on Grade 3 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	10.499	3.529	0.004	9.668	4.374	0.031	10.386	3.464	0.004	9.738	4.327	0.029
Girl	-3.350	2.526	0.186	-3.625	2.996	0.228	-3.350	2.501	0.181	-3.625	2.942	0.220
Treatment	4.175	3.712	0.261	2.510	4.114	0.543						
Intervention	-0.494	2.203	0.823	-4.335	3.058	0.158	-0.494	2.181	0.821	-4.417	3.005	0.144
Girl*TRT	-0.900	3.094	0.771	-0.564	3.585	0.875						
INT*TRT	-1.750	2.526	0.489	0.330	3.656	0.928						
INT*girl*TRT	5.108	3.573	0.154	5.398	4.982	0.280						
Wave	-0.185	0.258	0.472				-0.185	0.255	0.468			
Grant							8.200	5.150	0.112	5.945	5.534	0.285
Scholar							-3.300	5.150	0.522	-5.024	5.788	0.387
Scholarship + grant							6.238	4.243	0.142	4.419	4.703	0.349
Girl*grant							0.850	4.331	0.845	1.125	4.744	0.813
Girl*INT	0.717	2.917	0.806	2.069	4.117	0.616	0.717	2.887	0.804	2.069	4.044	0.610
Girl*scholarship							-0.550	4.331	0.899	-0.597	4.904	0.903
Girl*scholarship + grant							-1.950	3.536	0.582	-1.486	4.044	0.714
INT*grant							-2.383	3.536	0.501	-0.088	4.953	0.986
INT*scholarship							0.450	3.536	0.899	1.515	5.229	0.773
INT*scholarship + grant							-2.533	2.887	0.381	0.021	4.086	0.996
INT*girl*grant							-1.683	5.001	0.737	-3.681	6.752	0.587
INT*girl*scholarship							2.383	5.001	0.634	4.278	7.004	0.542
INT*girl*scholarship + grant							9.867	4.083	0.016	10.305	5.598	0.068
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B6. Regression Results for the Impact of Intervention on Grade 4 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	6.858	3.028	0.027	5.738	3.476	0.105	6.824	2.908	0.023	5.717	3.310	0.090
Girl	-1.150	2.321	0.621	-1.875	2.558	0.465	-1.150	2.310	0.619	-1.875	2.454	0.446
Treatment	3.550	3.208	0.269	2.780	3.262	0.396						
Intervention	0.650	2.024	0.748	-1.490	2.603	0.568	0.650	2.014	0.747	-1.577	2.497	0.529
Girl*TRT	-1.925	2.843	0.499	-0.936	3.061	0.760						
INT*TRT	-2.333	2.321	0.315	0.545	3.114	0.861						
INT*girl*TRT	6.742	3.283	0.041	4.602	4.253	0.281						
Wave	0.017	0.237	0.944				0.017	0.236	0.944			
Grant							10.300	4.369	0.019	9.128	4.204	0.032
Scholar							-3.900	4.369	0.373	-5.382	4.402	0.224
Scholarship + grant							4.004	3.597	0.266	3.032	3.586	0.399
Girl*grant							-5.350	4.000	0.182	-4.625	3.956	0.244
Girl*INT	-2.267	2.680	0.398	0.208	3.515	0.953	-2.267	2.667	0.396	0.208	3.372	0.951
Girl*scholarship							-1.550	4.000	0.699	-0.014	4.089	0.997
Girl*scholarship + grant							-0.400	3.266	0.903	0.653	3.372	0.847
INT*grant							-7.600	3.266	0.020	-5.616	4.123	0.175
INT*scholarship							-0.433	3.266	0.895	1.944	4.345	0.655
INT*scholarship + grant							-0.650	2.667	0.808	2.898	3.400	0.396
INT*girl*grant							6.300	4.619	0.173	2.069	5.631	0.714
INT*girl*scholarship							3.967	4.619	0.391	2.431	5.841	0.678
INT*girl*scholarship + grant							8.350	3.772	0.027	6.488	4.668	0.167
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B7. Regression Results for the Impact of Intervention on Grade 5 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value	Estimate	Standard Error	P-Value
Intercept	5.590	2.551	0.033	5.098	3.011	0.096	5.542	2.428	0.026	5.194	2.853	0.075
Girl	-0.800	1.859	0.667	-1.313	2.193	0.551	-0.800	1.845	0.665	-1.312	2.172	0.547
Treatment	4.850	2.689	0.072	4.342	2.827	0.127						
Intervention	0.994	1.621	0.540	0.977	2.234	0.662	0.994	1.609	0.537	0.871	2.208	0.694
Girl*TRT	-3.125	2.277	0.171	-2.552	2.625	0.333						
INT*TRT	-3.033	1.859	0.104	-1.944	2.672	0.468						
INT*girl*TRT	6.467	2.629	0.014	6.636	3.648	0.071						
Wave	0.102	0.190	0.591				0.102	0.188	0.588			
Grant							10.450	3.629	0.004	8.701	3.617	0.017
Scholar							-2.050	3.629	0.572	-3.853	3.789	0.311
Scholarship + grant							5.642	2.989	0.060	5.815	3.089	0.062
Girl*grant							-2.800	3.196	0.381	-2.288	3.503	0.515
Girl*INT	-3.517	2.147	0.102	-3.132	3.014	0.301	-3.517	2.130	0.100	-3.132	2.985	0.296
Girl*scholarship							-3.200	3.196	0.317	-2.354	3.620	0.517
Girl*scholarship + grant							-3.250	2.609	0.214	-2.799	2.985	0.350
INT*grant							-5.967	2.609	0.023	-5.932	3.647	0.106
INT*scholarship							-1.800	2.609	0.491	0.120	3.841	0.975
INT*scholarship + grant							-2.183	2.130	0.306	-0.997	3.007	0.741
INT*girl*grant							3.817	3.690	0.302	4.399	4.985	0.379
INT*girl*scholarship							4.817	3.690	0.193	4.674	5.171	0.368
INT*girl*scholarship + grant							8.617	3.013	0.004	8.559	4.133	0.040
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B8. Regression Results for the Impact of Intervention on Grade 6 Enrolment

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	6.947	2.329	0.004	6.660	2.880	0.025	6.989	2.242	0.003	6.823	2.804	0.019
Girl	-2.250	1.552	0.148	-2.500	1.756	0.157	-2.250	1.530	0.142	-2.500	1.698	0.143
Treatment	2.100	2.434	0.389	1.170	2.722	0.668						
Intervention	-1.381	1.353	0.308	-3.431	1.799	0.058	-1.381	1.334	0.301	-3.553	1.740	0.043
Girl*TRT	-1.000	1.900	0.599	-0.581	2.102	0.783						
INT*TRT	0.083	1.552	0.957	1.802	2.149	0.403						
INT*girl*TRT	1.817	2.194	0.408	0.887	2.920	0.762						
Wave	-0.123	0.158	0.438				-0.123	0.156	0.432			
Grant							9.750	3.316	0.003	7.795	3.622	0.033
Scholar							-4.550	3.316	0.171	-6.025	3.784	0.114
Scholarship + grant							1.473	2.733	0.590	0.537	3.065	0.861
Girl*grant							-3.850	2.649	0.147	-3.600	2.738	0.191
Girl*INT	-0.433	1.792	0.809	0.278	2.413	0.909	-0.433	1.766	0.806	0.278	2.334	0.905
Girl*scholarship							-0.550	2.649	0.836	0.389	2.830	0.891
Girl*scholarship + grant							0.200	2.163	0.926	0.611	2.334	0.794
INT*grant							-4.317	2.163	0.047	-2.775	2.864	0.334
INT*scholarship							0.817	2.163	0.706	3.426	3.029	0.260
INT*scholarship + grant							1.917	1.766	0.278	3.579	2.364	0.132
INT*girl*grant							1.900	3.059	0.535	1.156	3.897	0.767
INT*girl*scholarship							3.033	3.059	0.322	2.333	4.042	0.565
INT*girl*scholarship + grant							1.167	2.498	0.641	-0.020	3.231	0.995
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B9. Regression Results for the Impact of Intervention on Attendance at the School Level

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	17.95	7.88	0.03	24.46	9.45	0.01	17.95	7.56	0.02	23.64	8.94	0.01
Girl	-10.50	5.84	0.07	-12.13	6.22	0.05	-10.50	5.69	0.07	-12.13	5.99	0.05
Treatment	-0.35	8.27	0.97	-0.68	8.91	0.94						
Intervention	3.25	5.84	0.58	5.24	6.36	0.41	3.25	5.69	0.57	5.00	6.12	0.42
Girl*TRT	4.50	7.15	0.53	6.61	7.44	0.38						
INT*TRT	11.60	7.15	0.11	11.53	7.60	0.13						
INT*girl*TRT	8.18	10.11	0.42	5.47	10.34	0.60						
Wave	0.00						0.00					
Grant							6.95	11.24	0.54	6.23	11.45	0.59
Scholar							-17.75	11.24	0.12	-20.65	11.98	0.09
Scholarship + grant							4.70	9.18	0.61	4.05	9.65	0.68
Girl*grant							4.40	9.85	0.66	6.03	9.66	0.53
Girl*INT	0.80	8.26	0.92	3.35	8.55	0.70	0.80	8.04	0.92	3.35	8.24	0.69
Girl*scholarship							3.60	9.85	0.72	7.01	9.99	0.48
Girl*scholarship + grant							5.00	8.04	0.53	6.74	8.24	0.41
INT*grant							-4.25	9.85	0.67	-6.58	10.09	0.52
INT*scholarship							13.15	9.85	0.18	9.27	10.66	0.39
INT*scholarship + grant							18.75	8.04	0.02	20.70	8.33	0.01
INT*girl*grant							2.50	13.93	0.86	0.64	13.75	0.96
INT*girl*scholarship							11.20	13.93	0.42	8.39	14.27	0.56
INT*girl*scholarship + grant							9.50	11.37	0.40	6.52	11.40	0.57
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B10. Regression Results for the Impact of Intervention on Grade 2 Attendance

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	7.210	3.710	0.057	9.616	4.852	0.053	7.215	3.711	0.057	7.860	4.966	0.120
Girl	-3.091	3.704	0.406	-4.111	3.683	0.267	-3.091	3.710	0.407	-4.111	3.630	0.260
Treatment	-2.608	4.147	0.531	-4.228	4.397	0.339						
Girl*TRT	2.773	4.537	0.542	3.761	4.434	0.398						
INT*TRT	6.508	4.180	0.122	7.305	4.293	0.092						
INT*girl*TRT	-0.323	5.648	0.955	-1.011	5.462	0.854						
Grant							0.466	6.423	0.942	-1.604	6.388	0.802
Scholar							-7.542	7.046	0.287	-7.178	7.334	0.330
Scholarship + grant							-0.785	4.553	0.863	-3.534	4.853	0.468
Girl*INT	3.241	4.612	0.484	4.222	4.510	0.352	3.241	4.620	0.484	4.222	4.446	0.345
Girl*grant							2.841	7.185	0.693	3.861	6.545	0.557
Girl*scholarship							-0.242	8.016	0.976	0.778	7.261	0.915
Girl*scholarship + grant							3.358	4.885	0.493	4.419	4.723	0.352
INT*grant							0.534	6.477	0.934	-1.847	6.253	0.768
INT*scholarship							7.642	7.095	0.284	5.954	7.152	0.407
INT*scholarship + grant							8.402	4.575	0.069	10.933	4.615	0.020
INT*girl*grant							-1.191	8.622	0.890	-1.417	7.912	0.858
INT*girl*scholarship							2.792	9.326	0.765	2.236	8.610	0.796
INT*girl*scholarship + grant							-0.558	6.246	0.929	-1.635	5.928	0.783
Intervention	-3.776	3.413	0.271	-4.930	3.549	0.168	-3.771	3.418	0.272	-4.810	3.503	0.173
Wave	0.000						0.000					
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B11. Regression Results for the Impact of Intervention on Grade 3 Attendance

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	9.347	2.853	0.002	11.176	3.693	0.004	9.532	2.857	0.002	11.312	3.790	0.004
Girl	-3.818	2.472	0.125	-4.556	2.622	0.086	-3.818	2.400	0.114	-4.556	2.495	0.071
Treatment	0.889	3.131	0.777	-1.341	3.354	0.690						
Girl*TRT	-0.049	3.043	0.987	1.067	3.176	0.738						
INT*TRT	2.386	2.828	0.401	5.088	3.093	0.103						
INT*girl*TRT	1.924	3.782	0.612	-0.067	3.904	0.986						
Grant							4.776	4.719	0.314	2.072	4.867	0.671
Scholar							-9.354	5.095	0.069	-13.777	5.552	0.015
Scholarship + grant							2.940	3.486	0.401	0.177	3.762	0.963
Girl*INT	1.818	3.078	0.556	3.500	3.212	0.279	1.818	2.988	0.544	3.500	3.056	0.255
Girl*grant							0.818	4.648	0.861	1.556	4.499	0.730
Girl*scholarship							3.485	5.185	0.503	4.222	4.991	0.400
Girl*scholarship + grant							-1.015	3.190	0.751	0.094	3.285	0.977
INT*grant							-2.826	4.238	0.506	-0.224	4.349	0.959
INT*scholarship							8.604	4.653	0.067	13.587	5.034	0.008
INT*scholarship + grant							3.092	3.013	0.307	6.093	3.240	0.063
INT*girl*grant							0.282	5.577	0.960	-1.278	5.439	0.815
INT*girl*scholarship							1.015	6.032	0.867	-0.042	5.918	0.994
INT*girl*scholarship + grant							1.965	4.064	0.630	-0.091	4.106	0.982
Intervention	-5.075	2.296	0.029	-8.792	2.557	0.001	-5.099	2.231	0.024	-9.215	2.453	0.000
Wave	0.000						0.000					
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B12. Regression Results for the Impact of Intervention on Grade 4 Attendance

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	5.611	1.957	0.006	6.969	2.511	0.008	5.629	1.908	0.005	7.120	2.428	0.005
Girl	-1.250	1.794	0.487	-1.813	2.049	0.378	-1.250	1.762	0.479	-1.813	2.034	0.374
Treatment	1.037	2.111	0.624	0.626	2.358	0.791						
Girl*TRT	-0.862	2.204	0.696	-0.230	2.459	0.925						
INT*TRT	0.088	2.204	0.968	0.325	2.491	0.896						
INT*girl*TRT	3.862	3.112	0.216	2.869	3.412	0.402						
Grant							4.750	2.903	0.104	4.690	3.056	0.127
Scholar							-3.750	2.903	0.198	-5.419	3.205	0.093
Scholarship + grant							1.477	2.408	0.540	0.874	2.649	0.742
Girl*INT	-1.750	2.538	0.491	-1.021	2.816	0.718	-1.750	2.492	0.484	-1.021	2.796	0.716
Girl*grant							-0.750	3.053	0.806	-0.187	3.280	0.954
Girl*scholarship							-1.450	3.053	0.635	-0.076	3.390	0.982
Girl*scholarship + grant							-0.593	2.513	0.814	-0.294	2.820	0.917
INT*grant							-3.950	3.053	0.197	-3.725	3.405	0.276
INT*scholarship							2.050	3.053	0.503	2.131	3.577	0.552
INT*scholarship + grant							1.157	2.513	0.646	1.641	2.831	0.563
INT*girl*grant							1.050	4.317	0.808	0.021	4.668	0.996
INT*girl*scholarship							5.450	4.317	0.209	3.535	4.842	0.467
INT*girl*scholarship + grant							4.443	3.539	0.211	3.917	3.888	0.315
Intervention	-1.450	1.794	0.420	-1.977	2.075	0.342	-1.450	1.762	0.412	-2.161	2.057	0.295
Wave	0.000						0.000					
Covariatesa				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B13. Regression Results for the Impact of Intervention on Grade 5 Attendance

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	8.503	2.663	0.002	6.918	3.382	0.046	8.369	2.585	0.002	6.996	3.144	0.031
Girl	-6.222	2.520	0.015	-5.000	2.941	0.093	-6.222	2.553	0.017	-5.000	3.009	0.100
Treatment	-0.752	2.941	0.799	0.236	3.294	0.943						
Girl*TRT	4.389	3.086	0.158	3.471	3.495	0.323						
INT*TRT	2.802	2.804	0.320	1.524	3.236	0.639						
INT*girl*TRT	-2.014	3.716	0.589	-0.776	4.154	0.852						
Grant							0.143	3.785	0.970	2.574	3.893	0.510
Scholar							-6.337	3.658	0.086	-7.807	3.935	0.051
Scholarship + grant							2.767	3.817	0.470	3.402	4.067	0.405
Girl*INT	4.272	3.034	0.162	2.833	3.466	0.416	4.272	3.074	0.168	2.833	3.546	0.427
Girl*grant							5.722	4.036	0.159	4.500	4.430	0.313
Girl*scholarship							3.365	3.859	0.385	2.833	4.430	0.524
Girl*scholarship + grant							4.222	4.271	0.325	3.000	4.662	0.522
INT*grant							0.457	3.721	0.902	-3.471	4.230	0.414
INT*scholarship							5.637	3.592	0.120	5.625	4.273	0.192
INT*scholarship + grant							1.586	3.769	0.675	1.039	4.164	0.803
INT*girl*grant							-4.072	5.009	0.418	-2.556	5.494	0.643
INT*girl*scholarship							-2.815	4.867	0.564	-1.667	5.574	0.766
INT*girl*scholarship + grant							-0.572	4.910	0.907	0.693	5.347	0.897
Intervention	-5.421	2.290	0.020	-4.391	2.745	0.113	-5.444	2.312	0.020	-4.565	2.768	0.103
Wave	0.000						0.000					
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B14. Regression Results for the Impact of Intervention on Grade 6 Attendance

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	8.246	2.187	0.000	9.569	2.946	0.002	8.166	2.066	0.000	9.571	2.688	0.001
Girl	-5.889	2.368	0.014	-7.429	2.875	0.011	-5.889	2.334	0.013	-7.429	2.879	0.012
Treatment	-0.951	2.471	0.701	-2.488	2.959	0.403						
Girl*TRT	3.556	2.901	0.223	5.311	3.415	0.124						
INT*TRT	1.851	2.600	0.478	3.525	3.104	0.259						
INT*girl*TRT	-0.581	3.493	0.868	-2.311	4.060	0.571						
Grant							2.226	3.059	0.468	0.924	3.401	0.786
Scholar							-7.107	2.936	0.017	-10.371	3.425	0.003
Scholarship + grant							1.218	3.176	0.702	-0.515	3.628	0.888
Girl*INT	2.989	2.852	0.297	4.595	3.388	0.178	2.989	2.810	0.290	4.595	3.393	0.179
Girl*grant							1.722	3.690	0.642	3.262	4.238	0.444
Girl*scholarship							4.317	3.528	0.224	6.595	4.238	0.123
Girl*scholarship + grant							4.689	3.905	0.233	6.229	4.460	0.166
INT*grant							-3.876	3.356	0.251	-3.799	3.944	0.338
INT*scholarship							5.557	3.245	0.090	8.158	3.988	0.044
INT*scholarship + grant							2.264	3.370	0.503	4.231	3.886	0.279
INT*girl*grant							0.478	4.579	0.917	-1.095	5.256	0.835
INT*girl*scholarship							-1.117	4.450	0.802	-3.012	5.332	0.574
INT*girl*scholarship + grant							-1.439	4.489	0.749	-3.079	5.116	0.549
Intervention	-5.550	2.123	0.010	-7.576	2.630	0.005	-5.621	2.078	0.008	-7.664	2.578	0.004
Wave	0.000						0.000					
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B15. Regression Results for the Impact of Intervention on School-Level Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	19.91	12.93	0.13	5.40	15.49	0.73	19.94	12.46	0.12	6.97	14.98	0.64
Treatment	3.55	12.57	0.78	-0.07	13.44	1.00						
Intervention	-5.28	8.96	0.56	-9.64	11.18	0.39	-5.18	8.66	0.55	-10.25	10.73	0.35
Wave	-2.01	4.24	0.64	0.00			-2.08	4.10	0.61	0.00		
INT*TRT	25.98	7.77	0.00	31.36	13.36	0.02						
Grant							21.55	17.11	0.21	19.00	17.35	0.28
Scholar							-19.75	17.11	0.25	-28.52	18.33	0.13
Scholarship + grant							5.73	14.05	0.68	2.65	15.02	0.86
INT*grant							6.65	10.57	0.53	3.62	17.65	0.84
INT*scholarship							19.80	10.57	0.06	29.59	18.70	0.12
INT*scholarship + grant							39.31	8.74	0.00	45.06	14.69	0.00
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B16. Regression Results for the Impact of Intervention on Grade 2 Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	6.90	3.30	0.04	-2.09	4.11	0.61	6.86	3.28	0.04	-1.70	4.43	0.70
Treatment	4.20	3.17	0.19	2.24	3.28	0.50						
Intervention	-0.37	2.83	0.90	-1.49	3.19	0.64	-0.37	2.82	0.90	-1.45	3.19	0.65
Wave	-1.09	1.37	0.43	0.00			-1.09	1.36	0.43	0.00		
INT*TRT	3.79	2.47	0.13	3.56	3.88	0.36						
Grant							5.28	4.58	0.25	3.54	4.79	0.47
Scholar							3.25	4.58	0.48	2.09	4.94	0.68
Scholarship + grant							4.26	3.67	0.25	1.89	3.98	0.64
INT*grant							2.82	3.64	0.44	1.19	5.49	0.83
INT*scholarship							-0.38	3.64	0.92	0.42	5.74	0.94
INT*scholarship + grant							6.24	2.87	0.03	5.98	4.49	0.19
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B17. Regression Results for the Impact of Intervention on Grade 3 Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	7.64	3.61	0.04	2.81	4.58	0.54	7.51	3.51	0.04	3.30	4.50	0.47
Treatment	3.48	3.50	0.32	4.03	3.96	0.32						
Intervention	4.63	3.00	0.13	-1.97	3.64	0.59	4.52	2.93	0.13	-2.07	3.56	0.56
Wave	-3.43	1.45	0.02	0.00			-3.36	1.42	0.02	0.00		
INT*TRT	5.23	2.66	0.05	2.98	4.51	0.51						
Grant							7.83	4.77	0.10	7.47	5.08	0.15
Scholar							-2.99	5.21	0.57	-4.49	6.56	0.50
Scholarship + grant							3.88	3.99	0.33	4.72	4.52	0.31
INT*grant							-0.64	3.65	0.86	-3.88	5.93	0.52
INT*scholarship							4.74	4.16	0.26	4.10	7.39	0.58
INT*scholarship + grant							8.98	3.07	0.00	6.83	5.11	0.19
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B18. Regression Results for the Impact of Intervention on Grade 4 Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	4.08	3.31	0.22	-2.05	4.07	0.62	3.85	3.21	0.24	-2.64	3.97	0.51
Treatment	2.28	3.23	0.48	2.93	3.54	0.41						
Intervention	1.52	2.67	0.57	-0.65	2.62	0.81	1.34	2.64	0.61	-0.65	2.55	0.80
Wave	-1.93	1.30	0.14	0.00			-1.81	1.28	0.16	0.00		
INT*TRT	5.43	2.39	0.03	3.59	3.23	0.27						
Grant							5.18	4.37	0.24	4.83	4.56	0.30
Scholar							-3.74	4.76	0.43	-5.09	5.52	0.36
Scholarship + grant							3.16	3.73	0.40	4.90	4.05	0.24
INT*grant							1.54	3.26	0.64	-2.25	4.33	0.61
INT*scholarship							4.42	3.82	0.25	4.91	5.41	0.37
INT*scholarship + grant							8.38	2.85	0.00	6.19	3.65	0.10
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B19. Regression Results for the Impact of Intervention on Grade 5 Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	5.00	2.60	0.06	0.34	3.26	0.92	4.91	2.50	0.05	0.44	3.25	0.89
Treatment	2.96	2.61	0.26	4.11	2.96	0.18						
Intervention	-0.14	2.07	0.95	-2.61	2.23	0.25	-0.27	2.05	0.90	-2.79	2.24	0.23
Wave	-1.54	1.03	0.14	0.00			-1.46	1.02	0.16	0.00		
INT*TRT	2.97	1.93	0.13	1.40	2.92	0.64						
Grant							7.23	3.54	0.04	6.38	3.81	0.11
Scholar							-3.93	4.45	0.38	-4.85	7.44	0.52
Scholarship + grant							3.49	2.95	0.24	4.87	3.37	0.16
INT*grant							-0.23	2.72	0.93	-1.10	3.95	0.78
INT*scholarship							3.49	3.92	0.38	3.54	7.68	0.65
INT*scholarship + grant							4.97	2.27	0.03	3.50	3.38	0.31
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B20. Regression Results for the Impact of Intervention on Grade 6 Completion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	5.24	2.15	0.02	-2.82	2.28	0.22	5.19	2.11	0.02	-2.92	2.31	0.21
Treatment	2.73	2.25	0.23	3.18	1.94	0.12						
Intervention	1.82	1.95	0.35	-2.68	1.45	0.08	1.75	1.96	0.38	-2.61	1.48	0.09
Wave	-2.52	0.97	0.01	0.00			-2.46	0.98	0.01	0.00		
INT*TRT	2.84	1.93	0.15	1.59	1.96	0.43						
Grant							4.59	2.98	0.13	2.95	2.51	0.25
Scholar							-2.33	4.52	0.61	-3.09	5.32	0.57
Scholarship + grant							3.46	2.80	0.22	4.59	2.36	0.07
INT*grant							1.99	2.56	0.44	-0.36	2.60	0.89
INT*scholarship							3.55	4.31	0.41	4.98	5.46	0.37
INT*scholarship + grant							3.68	2.49	0.14	2.30	2.44	0.36
Covariates[a]				Yes						Yes		
County Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B21. Regression Results for the Impact of Intervention on School-Level Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	15.81	11.13	0.16	2.61	13.26	0.84	15.81	10.79	0.15	3.47	13.03	0.79
Treatment	6.30	10.88	0.56	5.44	11.66	0.64						
Intervention	-5.50	6.90	0.43	-4.13	8.67	0.64	-5.50	6.81	0.42	-4.29	8.48	0.62
Wave	-0.48	3.25	0.88	0.00			-0.48	3.21	0.88	0.00		
INT*TRT	21.78	5.98	0.00	23.80	10.28	0.03						
Grant							17.80	14.91	0.24	16.08	15.45	0.30
Scholar							-13.90	14.91	0.35	-13.97	16.27	0.40
Scholarship + grant							10.65	12.18	0.38	9.00	13.14	0.50
INT*grant							11.98	8.34	0.15	8.54	13.90	0.54
INT*scholarship							16.43	8.34	0.05	16.20	14.80	0.28
INT*scholarship + grant							29.35	6.81	0.00	33.52	11.40	0.01
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B22. Regression Results for the Impact of Intervention on Grade 2 Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	3.782	2.912	0.199	2.587	3.552	0.470	3.792	2.902	0.197	3.087	3.589	0.394
Treatment	2.636	2.821	0.352	2.456	3.092	0.432						
Intervention	-1.875	2.223	0.401	0.064	2.432	0.979	-1.875	2.224	0.401	0.012	2.456	0.996
Wave	0.600	1.048	0.568	0.000			0.600	1.048	0.568	0.000		
INT*TRT	3.726	1.933	0.056	4.753	2.889	0.108						
Grant							3.819	4.032	0.346	4.845	4.334	0.271
Scholar							0.150	3.967	0.970	-0.961	4.402	0.828
Scholarship + grant							3.350	3.239	0.303	3.043	3.565	0.399
INT*grant							2.506	2.817	0.376	3.630	4.053	0.376
INT*scholarship							1.775	2.723	0.516	2.449	4.286	0.571
INT*scholarship + grant							5.250	2.224	0.020	6.132	3.309	0.072
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B23. Regression Results for the Impact of Intervention on Grade 3 Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	4.829	2.990	0.112	0.995	3.670	0.787	4.851	2.920	0.102	1.512	3.613	0.677
Treatment	1.515	2.894	0.602	0.975	3.163	0.759						
Intervention	-0.384	2.293	0.867	-1.885	2.747	0.497	-0.380	2.285	0.868	-1.989	2.699	0.466
Wave	-0.644	1.085	0.554	0.000			-0.646	1.081	0.551	0.000		
INT*TRT	5.468	1.995	0.007	5.421	3.285	0.107						
Grant							4.753	4.053	0.243	4.186	4.281	0.334
Scholar							-3.800	3.974	0.341	-4.739	4.359	0.284
Scholarship + grant							2.662	3.264	0.417	2.114	3.575	0.558
INT*grant							2.287	2.884	0.430	-0.216	4.478	0.962
INT*scholarship							4.900	2.788	0.082	5.011	4.709	0.294
INT*scholarship + grant							7.238	2.304	0.002	8.047	3.689	0.036
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B24. Regression Results for the Impact of Intervention on Grade 4 Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	2.998	2.761	0.282	-1.379	3.406	0.687	2.900	2.684	0.285	-0.986	3.399	0.773
Treatment	1.383	2.646	0.602	1.550	2.932	0.600						
Intervention	-0.705	2.416	0.771	-0.532	2.620	0.840	-0.788	2.415	0.745	-0.579	2.613	0.826
Wave	-0.513	1.146	0.655	0.000			-0.458	1.145	0.690	0.000		
INT*TRT	5.090	2.107	0.017	4.351	3.141	0.174						
Grant							3.000	3.598	0.406	2.565	3.864	0.511
Scholar							-2.831	3.785	0.456	-2.240	4.465	0.619
Scholarship + grant							2.627	2.961	0.377	2.852	3.335	0.398
INT*grant							3.590	2.962	0.228	1.239	4.317	0.776
INT*scholarship							3.016	3.155	0.341	2.392	4.941	0.631
INT*scholarship + grant							6.848	2.428	0.006	6.478	3.534	0.075
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B25. Regression Results for the Impact of Intervention on Grade 5 Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	2.431	2.149	0.263	-1.394	2.682	0.605	2.417	2.070	0.248	-0.937	2.633	0.723
Treatment	0.624	2.088	0.766	1.219	2.315	0.602						
Intervention	-1.327	1.650	0.423	-0.441	1.835	0.812	-1.399	1.630	0.393	-0.524	1.817	0.775
Wave	0.001	0.788	0.999	0.000			0.049	0.778	0.950	0.000		
INT*TRT	4.163	1.447	0.005	3.688	2.199	0.102						
Grant							3.866	2.855	0.179	3.836	3.099	0.224
Scholar							-3.467	2.996	0.250	-2.959	3.499	0.404
Scholarship + grant							1.121	2.306	0.628	1.767	2.593	0.500
INT*grant							1.680	2.055	0.415	1.545	3.000	0.610
INT*scholarship							2.974	2.244	0.188	1.987	3.550	0.579
INT*scholarship + grant							5.854	1.633	0.001	5.492	2.476	0.033
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B26. Regression Results for the Impact of Intervention on Grade 6 Promotion for Girls

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	2.648	1.689	0.123	-2.657	2.041	0.199	2.644	1.657	0.116	-2.358	2.097	0.266
Treatment	1.346	1.680	0.425	1.587	1.639	0.341						
Intervention	-0.117	1.430	0.935	-1.423	1.313	0.287	-0.135	1.439	0.925	-1.424	1.319	0.289
Wave	-0.655	0.680	0.338	0.000			-0.643	0.685	0.350	0.000		
INT*TRT	2.670	1.319	0.046	2.704	1.645	0.111						
Grant							3.078	2.282	0.181	1.928	2.200	0.388
Scholar							-2.445	2.810	0.386	-0.621	3.019	0.839
Scholarship + grant							2.028	1.927	0.295	2.240	1.939	0.258
INT*grant							1.918	1.804	0.290	1.114	2.184	0.614
INT*scholarship							3.129	2.512	0.216	2.404	3.017	0.432
INT*scholarship + grant							3.147	1.558	0.046	3.726	1.920	0.062
Covariates[a]				Yes						Yes		
District Fixed Effect	Yes			Yes			Yes			Yes		

Note: TRT = treatment; INT = intervention

[a] Covariates and district Fixed Effect rows indicate whether the covariates and district Fixed Effect are included in the model.

Table B27. Regression Results for the Impact of Intervention on Physical School Quality

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	59.17	5.88	0.00	51.25	6.46	0.00	36.25	8.47	0.00
Grant	9.44	10.19	0.36	10.09	9.92	0.31	1.26	9.65	0.90
Scholar	1.81	10.19	0.86	0.84	9.81	0.93	1.74	9.73	0.86
Scholarship + grant	10.38	8.32	0.22	6.66	8.19	0.42	4.03	8.30	0.63
School is structurally sound (walls, roof)				11.32	7.86	0.16	0.91	8.49	0.91
School in good physical condition (paint, windows)				8.08	8.27	0.33	-0.20	8.28	0.98
Adequate classroom space for all students							-0.06	9.25	0.99
Classrooms are clean							-4.68	8.41	0.58
Classrooms have adequate light							3.34	10.20	0.74
School has a separate recreation area (sports field)							3.69	8.08	0.65
Classrooms have adequate seating							13.59	8.41	0.11
Classrooms have adequate ventilation							21.68	10.27	0.04

Table B28. Regression Results for the Impact of Intervention on Water and Hygiene

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3	Model 4	Model 4	Model 4
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	23.33	5.84	0.00	17.81	7.00	0.01	23.33	5.81	0.00	13.47	6.49	0.04
Grant	16.83	10.49	0.11	15.65	10.43	0.14	20.01	10.73	0.07	14.89	9.90	0.14
Scholar	9.52	10.12	0.35	9.02	10.04	0.37	9.52	10.06	0.35	1.29	9.45	0.89
Scholarship + grant	22.50	8.26	0.01	20.49	8.31	0.02	26.09	8.69	0.00	18.53	8.37	0.03
Potable water				10.04	7.16	0.17				13.21	7.00	0.07
Water & soap for handwashing							-14.35	11.28	0.21	-15.91	11.49	0.17
Accessible toilets										-7.67	8.59	0.38
Clean toilets										-16.11	8.80	0.07
Private toilets (doors)										-1.64	9.66	0.87
Secure toilets (locks)										19.97	9.65	0.04
Wait-time for toilets										20.70	9.20	0.03

Table B29. Regression Results for the Impact of Intervention on Academic Outcomes

	Model 1	Model 1	Model 1	Model 2	Model 2	Model 2	Model 3	Model 3	Model 3
	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value	Estimate	Standard Error	P-value
Intercept	-0.34	0.58	0.56	0.04	0.56	0.95	-1.70	0.65	0.01
Grant	-0.01	0.81	0.99	-0.24	0.84	0.78	0.38	1.05	0.72
Scholarship	0.47	0.84	0.58	0.21	0.81	0.80	0.43	1.02	0.67
Scholarship + Grant	2.36	0.89	0.01	0.96	0.74	0.20	1.33	0.80	0.10
Baseline: students with notebooks	0.44	0.65	0.50						
Baseline: students with pencils				0.54	0.60	0.37			
Baseline: textbooks are visible							0.12	0.68	0.87

Note: These are logistic regression results.

Annex C: Estimating GOAL Program Costs

Summary of Annual Costs

This annex describes the costs associated with each type of intervention and demonstrates how these costs vary across schools of different sizes. This information underpins the estimates of the costs and cost-effectiveness of the interventions. These costs were estimated by examining project and corporate accounting systems, administering a comprehensive cost questionnaire to field staff in Liberia, and confirming cost estimates with project management.

The overall costs of GOAL in the baseline year (2010–11) and the endline year (2012–13) of the project are summarized in Table C1, along with the number of schools that received each type of support. As described in the body of the report, there were 40 study schools in three intervention groups:

- Grant-only schools (10 schools)
- Scholarship-only schools (10 schools)
- Grant and scholarship schools (20 schools)[25]

All study schools participated in town meetings and health activities. Both scholarship-only schools and grant and scholarship schools received Gender-Responsive Pedagogy training.

As Table C1 illustrates, providing scholarships was the most costly program within GOAL, largely because it involved covering an array of costs, including school fees for all the girls at the scholarship schools; in-kind materials for girls, teachers, and school buildings; training for Girls' Clubs and mentoring; and staff time and the associated costs of traveling to the schools. Total costs for the scholarship program varied over time due to changing student enrolment at program schools, changes to in-kind material packages, and changes to the fees charged to girls. The overall cost of the scholarship program was $277,443 in the baseline year (2010–2011), but this had risen to $338,856 by the end of the program (2012–2013), primarily as a result of increases in girls' enrolment at scholarship schools. Staff time and travel costs also varied, because schools that were more remote or difficult to access required more staff time and incurred greater transportation costs than schools that were easier for Monrovia-based staff to access.

Providing grants to schools was the second most costly program. Schools that received grants could apply for up to $1,000 per year, but the overall costs associated with the program also included site visits and training provided by GOAL staff to PTAs.

The individual components of each program within the different interventions are described in greater detail in the "Cost Components for Each Type of Intervention" section (p. 88) below.

[25] Among the 20 schools that received both the grant intervention and the scholarship intervention, nine schools also received supplemental academic support in the form of tutoring. This cost an average of $704 per school, per year, or approximately $7 per girl at a hypothetical school with 100 girls. These costs are included in the cost-effectiveness analysis of grant and scholarship schools by weighting costs appropriately. Given the limited sample size, the cost-effectiveness of supplemental academic support alone was not examined.

Exhibit C1. Overall Annual Cost of Each Program Provided to Schools

Program	Cost (2010–2011)
Scholarships (30 schools)	$277,443
Grants (30 schools)	$138,209
Town meetings (40 schools)	$115,663
Health support (40 schools)	$27,077
Gender-Responsive Pedagogy training (30 schools)	$19,843
Supplemental tutoring (9 schools)	$2,815
Total (40 schools)	**$581,051**

Total Costs per School

Each intervention group received a different combination of programs. Table C2 shows the different combination of GOAL programs that schools in each intervention group received, as well as the cost of each support on an annual, per-school basis. Each distinct program includes multiple components. Scholarship support, for example, includes scholarships, mentoring, and training. Grant support includes PTA training, and the smaller supports also consist of complex packages.

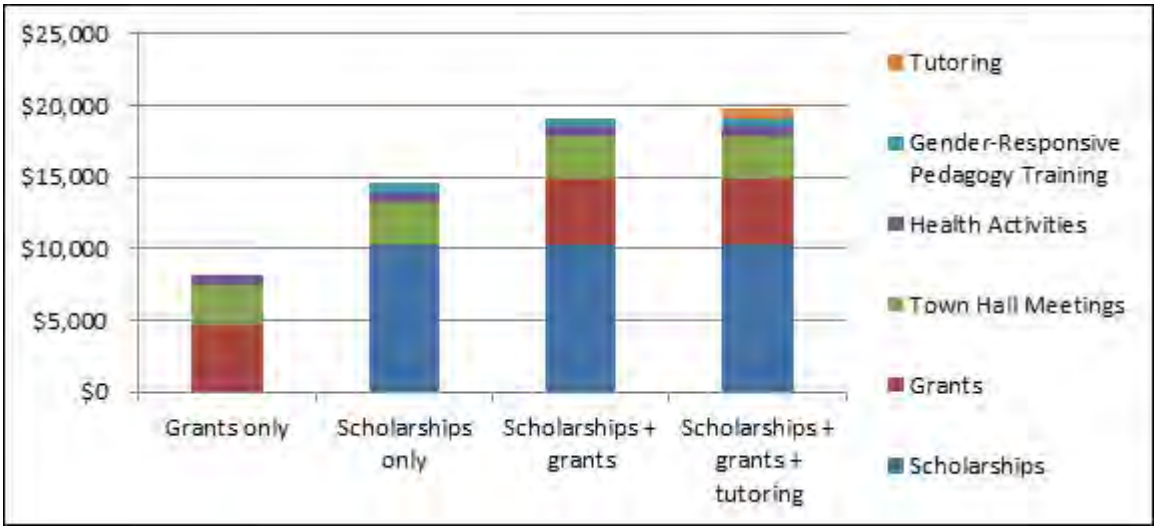
Exhibit C2. Annual Program Costs per School per Year by Type of School

Type of Intervention (Number of Schools)	Scholarships	Grants	Town Hall Meetings	Health Activities	Gender-Responsive Pedagogy Training	Tutoring
Grants only (10)	N/A	$4,607	$2,892	$677	N/A	N/A
Scholarships only (10)	$10,310	N/A	$2,892	$677	$661	N/A
Scholarships and grants (11)	$10,310	$4,607	$2,892	$677	$661	N/A
Scholarships, grants, and tutoring (9)	$10,310	$4,607	$2,892	$677	$661	$704

Note: N/A indicates that the program was not part of the indicated intervention model.

The chart below shows how each program contributed to the overall cost for a hypothetical school of 100 girls. It also illustrates the different combinations of programs (and their costs) that each group received.

Exhibit C3. Cost of Programs per School by Intervention Model



At any school that received the scholarship program—i.e., scholarship-only schools as well as grant and scholarship schools—the scholarship program was the most costly part of the intervention. At a school receiving scholarships, grants, and tutoring (i.e., the maximum GOAL program), scholarships accounted for 52 percent of the total cost of the intervention; at schools receiving scholarships and grants, scholarship activity accounted for 54 percent of the total cost; and at schools receiving scholarships only, scholarship activity accounted for 71 percent of the total cost.

Two groups of schools received grants—grant-only schools and grant and scholarship schools—and the costs associated with this program were less than half of the costs associated with the scholarship program. As a result, scholarship-only schools cost much more than grant-only schools. While the grant program accounted for 56 percent of the total cost at a grant-only school, it accounted for only 23 percent of total costs at schools receiving the full GOAL program.

Cost Components for Each Type of Intervention

As noted above, the scholarship program was the most expensive program. Among schools receiving the scholarship program, the primary drivers of cost each year were the fees and in-kind materials that individual girls received, which cost approximately $62 per girl, per year. These packages accounted for 60 percent (or $6,166) of the annual cost of the program $10,310) at a hypothetical school of 100 girls. The second largest driver of cost at scholarship-only schools was expenditure associated with supporting the school, which included:

- Staff time ($1,899 per school)
- Girls' Clubs and training of Girls' Club mentors ($1,100 per school)
- Teachers' packages ($680 per school)
- Materials disbursement ($350 per school)

The grant program was the second most expensive program. Among grant-only schools, the primary drivers of cost were site visits and the support provided by GOAL staff, which

accounted for $3,600 of the total $4,607 expended per school. The grants for building improvements themselves were approximately $1,000 per school.

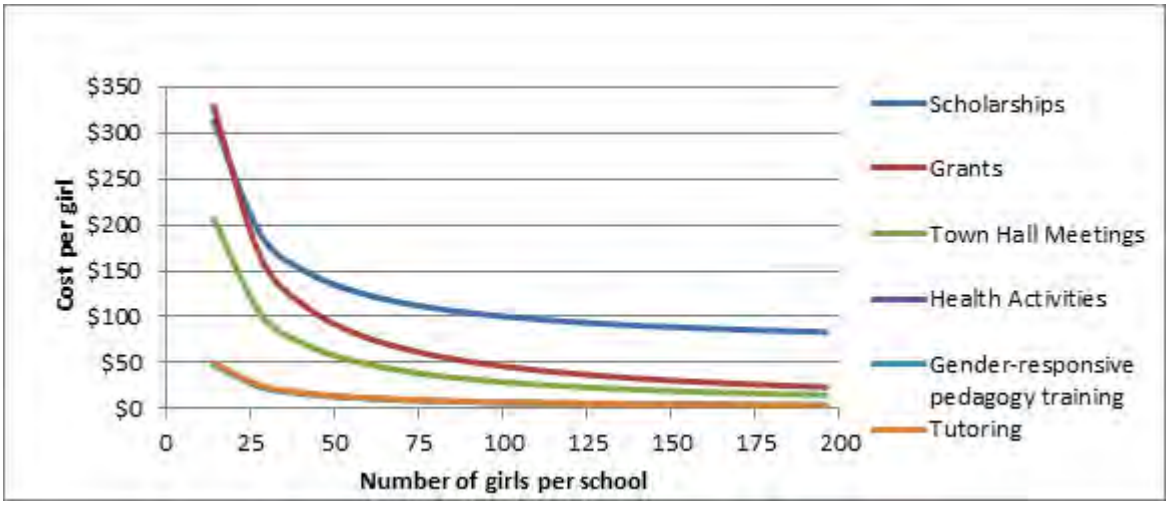
All schools that received program supports also participated in town meetings (at a cost of $2,892 per school) and health activities (at a cost of $677 per school). Schools receiving the scholarship intervention also received Gender-Responsive Pedagogy training, at a cost of $647 per school. Supplemental tutoring was provided to the nine schools that received the maximum GOAL program at a cost of $704 per school. Each of these supplemental activities cost much less per school than the primary interventions.

Costs per Girl

The overall cost of providing GOAL services includes some fixed costs (such as health activities) that do not vary significantly based on the number of students, as well as costs that vary directly with the number of girls enrolled (for example, scholarship activity costs). In terms of the total cost per girl within a school, smaller schools had higher costs per girl (given the assumption that fixed costs are the same across all schools, regardless of size). In order to consider the cost-effectiveness of different interventions, therefore, it is desirable to estimate costs for schools of the same size. This involves dividing fixed costs by the number of girls enrolled and computing how other costs vary with the number of girls per school.

Most costs are calculated at the school level, with the exception of scholarship costs, which are calculated at the individual girl level. For this reason, most costs are fixed and the cost per girl decreases as the number of girls at a school increases, as shown in Exhibit C4 below.

Exhibit C4. Cost of Supports per Girl



In this cost analysis, scholarship activity is the only cost that varies with the number of students at the school level. All other activities are considered to be effectively constant, regardless of the size of enrolment.[26] For this reason, the scholarship activity exhibits much lower economies of scale than the other activities.

Costs per girl were highest in small schools, and they declined with the size of the school because the cost of most GOAL supports did not vary based on the size of the school. Exhibit C5 provides an estimate of how the per-girl costs of GOAL interventions decline as fixed costs are spread over an increasing number of girls.

[26] Some costs, such as packages provided to teachers, exhibit negligible variation based on enrolment.

Exhibit C5. Average Costs per Girl by Number of Girls Enrolled

Type of Intervention (Number of Schools)	25 girls	50 girls	75 girls	100 girls	125 girls	150 girls
Grants only (10)	$327	$164	$109	$82	$65	$55
Scholarships only (10)	$377	$223	$172	$146	$131	$121
Scholarships + grants (20)	$574	$322	$238	$195	$170	$153

Annex D: Survey Tools

ENROLLMENT AND ATTENDANCE FORM
FOR ALL 60 SCHOOLS

School: _____ (**AM or PM**) School EMIS ID:_____

Name of Data Collector: _____ Date: _____

Town/City/Area: _____ District: _____ County: _____

Upon arriving at the school, ask for the Student & Teacher Attendance Register. Using the Register, please fill the following table with the numbers of students who are enrolled at the school.

- **A.** Tick each of the grade levels that are offered at the school.
- **B.** Enter the number of female students in each grade level. Enter "0" if none.
- **C.** Enter the number of male students in each grade level. Enter "0" if none.
- **D.** Enter the total number of students in each grade level *[Interviewer – check Totals.]*
- **E.** If this school offers **AM** and **PM** sessions, please only include the enrollment for the appropriate session.

Note: If the school has grades with multiple classes, fill in both Section A and Section B in the table below. If the school does not have multiple classes per grade, fill in Section A and ignore Section B.

FROM STUDENT REGISTER FOR ENTIRE SCHOOL

	1A. Official Enrollment – Students (Section A)			1B. Official Enrollment – Students (Section B)		
Grade levels/taught	A1. Girls	A2. Boys	A3. Total	B1. Girls	B2. Boys	B3. Total
☐ABC						
☐K1						
☐K2						
☐K3						
☐Grade 1						
☐Grade 2						
☐Grade 3						
☐Grade 4						
☐Grade 5						
☐Grade 6						
☐Grade 7						
☐Grade 8						
☐Grade 9						
☐Grade 10						
☐Grade 11						
☐Grade 12						
TOTALS						

TEACHER STATISTICS

Please fill in the following table with the names of each teacher, as listed in the teacher roster. Then, go classroom by classroom, and verify whether that teacher is absent or present. Ask that teacher which grades s/he teaches. If a teacher is not present, ask the principal which grades s/he teaches. *NOTE: If you are visiting the AM session, then please only write the names of the teachers who teach in the AM session as per the Teacher Attendance Roster. If you are visiting the PM session, write only the names of the teachers who teach in the PM session. Fill out for teaching staff only. Non-teaching staff should not be included here. After you have entered all the names of teachers from the Roster, ask the Principal if there are other teachers currently teaching at the school, such as practice teachers, who are not registered in the book.*

***Note: In the Status Column, Write O=Official, S=Supplementary, V=Volunteer, C=Community paid/School fees or P=Practice**

2a. Teacher Name	2b. Grades Taught	2c. *Status (O, S, V, C, P)	2d. Male Female	2e. Absent/ Present (A or P)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				

Note: Official Teachers are those on the regular payroll. Supplementary Teachers are those not on the regular payroll. Practice teachers are student teachers.

TODAY'S ATTENDANCE

Count student attendance in all classrooms in Grade 1, Grade 2, Grade 3, Grade 4, Grade 5, and Grade 6 and answer the questions below.

Note: If the school has grade with multiple classes, fill in the columns provided Section A and Section B, but if the school does not have, fill in the Section A1 and write dash (---) in the Section B2 column

	Section A	Section A	Section B (If necessary)	Section B (If necessary)
	A1. GIRLS	A2. BOYS	B1. GIRLS	B2. BOYS
3. Number of students in Grade 1 today:				
4. Number of students in Grade 2 today:				
5. Number of students in Grade 3 today:				
6. Number of students in Grade 4 today:				
7. Number of students in Grade 5 today:				
8. Number of students in Grade 6 today:				

9. Do all grades 1-6 have a teacher present and teaching them today? ☐ YES ☐ NO

10. If NO, which grades do not have a teacher today?

ASK THE PRINCIPAL THE FOLLOWING QUESTIONS.

11. Do any teachers at your school have a class with students from more than one grade in it (sometimes called multi-grade classes)? ☐ YES ☐ NO

12. Has there been anything (rainy weather, harvest season, wedding, funeral, religious holiday, market day, sporting event, Sande/Poro) in the past two weeks that has affected attendance? Please describe the event and the number of days affected.

	Event	Estimated # of Days
a.		
b.		
c.		
d.		

SUPPORT TO THE SCHOOL

Government of Liberia Operational Support In-cash or In-Kind

13. Has your school received operational funds from the *Ministry of Education* in the last three school years? ☐ YES ☐ NO

14. Has your school received in-kind/material support from the *Ministry of Education* in the last three school years? ☐ YES ☐ NO

NEW

15. If YES, please describe in which year and the type of in-kind support your school received?

School Year	In-kind
2010/11	
2011/12	
2012/13	

16. Other than GOAL, have you received or are receiving operational/material support in cash or in-kind from *other NGOs/INGOs*? *(If comparison school, do not reference GOAL).*

School Year	NGO/INGO	In-kind
2010/11		
2011/12		
2012/13		

17. Is your school collecting school fees (or school-related fees) from students? ☐ YES ☐ NO

18a. If YES, how much are you collecting per child? How much did you collect in September 2012 and how much did you collect in February 2013 respectively?

Semester	School Fees per child (in LD)	Purpose (e.g., student ID, feeding, PTA fees, test fee, etc.)
September 2012		
February 2013		

PRINCIPAL INFORMATION FORM

Instructions: Please interview the primary school principal/head teacher of the school.

Interviewer: _____ Date _____

School Name: _____ School EMIS ID: _____

Village/Town/City: _____ District: _____ County: _____

Principal Name: _____ Sex: ☐ (1) M ☐ (2) F Cell: _____

Instructions: Start by thanking the respondent for allowing the observations and for giving time for this interview. Explain that we are not evaluating him or her, nor his or her teachers or school. Also explain that interview results are confidential and will be analyzed along with many others from other counties so that we will better understand education in Liberia.

Suggested language:

Thank you for your time to share your experiences and opinions about your school. Everything you say will remain confidential – we just want to understand the experiences of Liberian schools. There is no right or wrong answer: we encourage you to just share your opinions and experiences. As the Principal at this school, you'll have the best information and ideas about how to improve it.

SCHOOL CHARACTERISTICS

1. Do you have any of the following kinds of programs at your school? *[Read each possible program and ask the follow up questions on whether/how the GOAL project contributed to each program.]* ***At comparison schools, do not ask about GOAL****, ask if they know who provides/overseas the program.*

	Does your school have this program?	***NEW*** **Did GOAL contribute to this program?**	**How/what did GOAL contribute?**
School health and/or HIV/AIDS program	☐ YES ☐ NO	☐ YES ☐ NO	
Teacher and/or principal training program	☐ YES ☐ NO	☐ YES ☐ NO	
Individual scholarships	☐ YES ☐ NO	☐ YES ☐ NO	
Scholarship **program**	☐ YES ☐ NO	☐ YES ☐ NO	

	Does your school have this program?	*NEW* Did GOAL contribute to this program?	How/what did GOAL contribute?
School Management Committee or PTA training	☐ YES ☐ NO	☐ YES ☐ NO	
Girls' Club	☐ YES ☐ NO	☐ YES ☐ NO	
Drama or other cultural club	☐ YES ☐ NO	☐ YES ☐ NO	
Sports activities	☐ YES ☐ NO	☐ YES ☐ NO	
Other (such as an Accelerated Learning Program, Cesly, Advancing Youth, etc.)	☐ YES ☐ NO	☐ YES ☐ NO	

2. We're interested in knowing how schools keep records. What kinds of records do you keep at this school? I'll ask to see the records as well, so that we can learn effective ways of record keeping. *[Read each possible program and tick the box under "Affirms" for each that the Principal says s/he has. Tick the box under "Visual" for each that you are shown. Do not read "None" but simply tick that box if none are present.]*

	Affirms	Visual
a. Student registration or enrollment records	☐	☐
b. Student attendance records	☐	☐
c. Teacher attendance records	☐	☐
d. Student health records	☐	☐
e. Annual student test records	☐	☐
f. Other student achievement records	☐	☐
g. Other: _____	☐	☐
h. Other: _____	☐	☐
i. None	☐	

3. What are the **top 3** reasons that teachers miss school?

   1.

   2.

   3.

4. What are the **top 3** reasons that students miss school? ***[Probe for events or times of the year when attendance varies more.]***

   1.

   2.

   3.

5. What are the **top 3** reasons that girls miss school?

   1.

   2.

   3.

PARENT AND COMMUNITY PARTICIPATION AT THE SCHOOL

6. Is there a PTA at this school? ☐ YES ☐ NO (If NO, skip to Question 9)

[Mark ONLY ONE for each row.]

ACTIVITIES	NO	YES	DON'T KNOW
a. Have community leaders visited the school in the past year?	☐	☐	☐
b. Do parents come in for regular meetings?	☐	☐	☐
c. Do parents come to PTA meetings?	☐	☐	☐
d. Do parents or community members provide service in classes?	☐	☐	☐
e. Do parents or community members provide service in school functions?	☐	☐	☐
f. Do parents or community members assist with school cleaning, repairs or renovations?	☐	☐	☐
g. Do parents or community members help raise money or donations for the school?	☐	☐	☐
h. Do parents or community members monitor student attendance?	☐	☐	☐
i. Are both male and female parents/community members involved in school activities?	☐	☐	☐

8. Would you describe the PTA at this school as "active"? ☐ YES ☐ NO
   8a. What is the role of the PTA?

9. Please name **TWO** thing that parents or community members could do (that they are not doing now) that would be important for your school. *[Interviewer: Write only ONE thing in the space below]*

   1.

   2.

SCHOOL CHARACTERISTICS

10. Are first aid kits available in your school? ☐ YES ☐ NO (If NO, skip to Question 12)

11. If YES, have teachers been trained in how to use the first aid kit? ☐ YES ☐ NO

12. Has the first aid kit been used to help a student in the last two weeks? ☐ YES ☐ NO

13. How often is the first aid kit replenished?

    13a. Who replenishes the first aid kit?

GIRL CHILD EDUCATION

14. Can you tell me at what age girls generally drop from school in this community?

What are the top 3 reasons girls drop from school in this community?

1.

2.

3.

15. What problems do you think girls face in **enrolling** in school? (**Name top 3**)

1.

2.

3.

16. What problems do you think girls face in **attending and completing** their education? (**Name top 3**)

1.

2.

3.

17. What would increase the number of girls who pass their class? **(Name 1)**

18. What do people in your community think about girls' education?

19. How many girls got pregnant at your school <u>this semester</u>?

20. Can you tell me at what age boys generally drop from school in this community?

BOY CHILD EDUCATION

21. What are the **top 3** reasons boys drop from school in this community?
    1.
    2.
    3.

22. What problems do you think boys face in **attending school and completing** their education? (**Name top 3**)
    1.
    2.
    3.

PRINCIPAL BACKGROUND

Please tell me a little about yourself:

23. How long have you been a principal (including this year)?
    - ☐ Less than one year
    - ☐ _____ years (*if one year or more*)

24. How long have you been a principal **at this school** (including this year)?
    - ☐ Less than one year
    - ☐ _____ years (*if one year or more*)

25. What is the *highest* diploma/degree that you have earned? *[Mark ONLY one]*
    - ☐ No diploma/degree/certificate
    - ☐ In-service training only
    - ☐ High school diploma
    - ☐ C Certificate
    - ☐ B Certificate
    - ☐ AA Certificate
    - ☐ Bachelors Degree or License
    - ☐ Graduate Degree
    - ☐ Doctorate

CONCLUSION

Thank you very much for your time.

SUPPLEMENTAL PRINCIPAL INFORMATION FORM: for GOAL Program Schools Only

Instructions: Please interview the primary school principal/head teacher of the school. Please note that this form is only to be completed for PROGRAM schools, not comparison schools.

Interviewer: _____ Date _____

School Name: _____ School EMIS ID: _____

Village/Town/City: _____ District: _____ County: _____

Principal Name: _____ Sex: ☐ (1) M ☐ (2) F Cell: _____

Instructions: Start by thanking the respondent for allowing the observations and for giving time for this interview. Explain that we are not evaluating him or her, nor his or her teachers or school. Also explain that interview results are confidential and will be analyzed along with many others from other counties so that we will better understand education in Liberia.

Suggested language:
Thank you for your time to share your experiences and opinions about your school. Everything you say will remain confidential – we just want to understand the experiences of Liberian schools. There is no right or wrong answer: we encourage you to just share your opinions and experiences. As the Principal at this school, you'll have the best information and ideas about how to improve it.

1. Have you participated in and of GOAL's trainings? ☐ YES ☐ NO
   If yes, which ones? (list)

2. Have you seen any changes in girls' **enrollment** in the last year? ☐ YES ☐ NO
   If yes, what do you think caused the change?

3. Have you seen any changes in girls' **attendance** in the last year? ☐ YES ☐ NO
   If yes, what do you think caused the change?

4. Have you seen any changes in girls' **performance** in the last year? ☐ YES ☐ NO
   If yes, what do you think caused the change?

5. What specific barriers (environmental, cultural, financial) do girls face in enrolling, attending, and succeeding in school?

5a. Have GOAL programs addressed any of these barriers? Which ones?

5b. Which barriers have not been addressed by GOAL?

6. From your perspective, what are the responsibilities of the PTA?

7. What are some of the ways that parents have been involved with the school? *(PTA meetings, community awareness, promoting girls' education, etc.)*

8. Which of the GOAL trainings offered to teachers was most useful? **Please circle top two**.
    - Gender-responsive pedagogy
    - Recordkeeping
    - Water sanitation and hygiene
    - Reproductive health
    - First aid

9. How did these teacher trainings help girls (in terms of enrollment, attendance, and completion)?

10. Which of the GOAL trainings offered to PTAs were most useful? **Please circle top two**.
    - Basic operational training
    - Advocacy and resource mobilization
    - Grant proposal writing
    - Financial management
    - Experience sharing on student attendance

11. How did these PTA trainings help girls (in terms of enrollment, attendance, and completion)?

CONCLUSION

Thank you very much for your time.

School: _____ School EMIS ID:_____

Name of Data Collector: _____ Date: _____

Town/City/Area: _____ District: _____ County: _____

School Observation Form

Instructions: One form should be completed for every school.

On a scale of 1-4 where 1 is "Not at all true" and 4 is "Yes, very true", please rate your agreement with the following statements/observations by circling the appropriate number. If the statement or observation does not apply or you cannot say, please circle the number 9.

Physical Environment	**Not at all true**	**A little bit true**	**Moderately true**	**Yes, very true**	**Not applicable/ cannot say**
1. The school is fenced off from the road or marked as separate property.	1	2	3	4	9
2. There is a clear access road leading to the school.	1	2	3	4	9
3. There is an area set aside for recreation and it is accessible to students.	1	2	3	4	9
4. School buildings are in good structural condition (e.g., walls and roof are present and provide protection from the elements.)	1	2	3	4	9
5. Buildings are in good physical condition (no peeling paint, broken windows, etc.)	1	2	3	4	9
6. Indoor school areas are clean.	1	2	3	4	9
7. Classroom space is available for all students.	1	2	3	4	9
8. Classes are held in classrooms.	1	2	3	4	9
9. There are adequate seats (chairs, benches, etc.) for all pupils in classrooms.	1	2	3	4	9
10. There is adequate ventilation in the classrooms.	1	2	3	4	9
11. There is adequate lighting in the classrooms.	1	2	3	4	9
12. The noise level is such that students and teachers can hear one another in class.	1	2	3	4	9
13. Buildings and classrooms are accessible to students with physical disabilities.	1	2	3	4	9
14. Disabled students are separated into groups for instruction or school	1	2	3	4	9
Sanitation and Hygiene					
15. Students and staff have regular, easy access to potable drinking water. (At least 500 meters from the latrines)	1	2	3	4	9
16. The toilet or latrine facilities are clean.	1	2	3	4	9
17. Water and soap are located close to toilets or latrines.	1	2	3	4	9
18. Flush toilets or pit latrines are accessible to students with disabilities.	1	2	3	4	9
19. Flush toilets or pit latrines are designed to allow students privacy.	1	2	3	4	9
20. Toilets are designed to allow security (inside door locks, separate entrances.)	1	2	3	4	9
21. Students do not have to wait an excessive amount of time to use toilets/latrines.	1	2	3	4	9
22. Students and staff wash their hands after using toilets or latrines.	1	2	3	4	9
23. Teachers have their own toilets or latrines and use them.	1	2	3	4	9

Physical Environment	Not at all true	A little bit true	Moderately true	Yes, very true	Not applicable/ cannot say
Student Safety and Protection					
24. Students are within sight or hearing of staff except when using the latrine, etc.	1	2	3	4	9
25. There is someone on duty to monitor recess and other non-class activities.	1	2	3	4	9
26. Older students do not have *unsupervised* access to younger students.	1	2	3	4	9
27. Instruments for corporal punishment are not in view.	1	2	3	4	9
28. Toxic materials (e.g., cleaners) are kept inaccessible to students at all times.	1	2	3	4	9
29. The school keeps a stocked first aid kit accessible at all times.	1	2	3	4	9

30. Are handwashing facilities available and working for student use?

☐ No ☐ Yes

31. Number of "poo flush" or "flush" toilets available for student use? *[Write 0 if none.]*

____ Males ____ Females ____ Flush toilets are not assigned by sex

32. Number of pit latrines available for student use? *[Write 0 if none.]*

____ Males ____ Females ____ Pit latrines are not assigned by sex

33. Is there a separate structure or entrance for girls' and boys' pit latrines or toilets? *[Mark only ONE.]*

☐ No – Same structure and entrance
☐ No – Same structure OR entrance
☐ Yes – Separate structure OR entrance
☐ Not applicable

Academic environment	Not at all true	A little bit true	Moderately true	Yes, very true	Not applicable/ cannot say
34. School walls are "talking" – posters, student work, art projects, etc.	1	2	3	4	9
35. School displays health, hygiene, and HIV/AIDS related messages	1	2	3	4	9
36. School displays information on external health services	1	2	3	4	9
37. Classrooms have chalk and adequate chalkboards (size, clarity, material, etc.).	1	2	3	4	9
38. There is a school library, book repository, reading corner or other such facility.	1	2	3	4	9
39. Most students have something to write in or on (notebooks, paper, etc.).	1	2	3	4	9
40. Most students have something to write with (pen, pencil, etc.).	1	2	3	4	9
41. Textbooks are visible in classrooms.	1	2	3	4	9
42. Students in classes are using textbooks for academic work.	1	2	3	4	9

Please provide a summary of the physical condition of the school and learning environment in your own words.

*Please continue your summary on the next page.

Summary of the physical condition of the school and learning environment (continued from previous page).

STUDENT INFORMATION FORM

*Instructions: Please interview **4-6** female students and **4-6** male students per school (**fill out a separate protocol for each student**). We would like students from second and fifth grade, if possible. This would mean:*

Gender	Grade	Quantity
Female	2nd	2-3
Male	2nd	2-3
Female	5th	2-3
Male	5th	2-3

Interviewer: _____ Date _____

School Name: _____ School EMIS ID: _____

Village/Town/City: _____ District: _____ County: _____

Student Name: _____ Sex: ☐ (1) M ☐ (2) F

Student ID: _____ Grade:_____ Age:_____

Instructions: Start by thanking the students for allowing the observations and for giving time for this interview. Explain that we are not evaluating him or her, nor his or her family, community or school. Also explain that interview results are confidential and will be analyzed along with many others from other counties so that we will better understand education in Liberia. Please be sure you communicate with the student in an age appropriate manner.

Suggested language:

Thank you for your time to share your experiences and opinions about your school. Everything you say will remain confidential – we just want to understand the experiences of Liberian schools and education. There is no right or wrong answer: we encourage you to just share your opinions and experiences.

FEELINGS ABOUT SCHOOL

1. Do you like school? ☐ YES ☐ NO

2. If you could ask your school to do ONE thing, something different from what the school does now, what would it be?

MISSING SCHOOL

3. Do your teachers ever have to miss school? ☐ YES ☐ NO

   3a. If YES, how often? _____ ***# days in past month***

4. Do <u>YOU</u> ever have to miss school? ☐ YES ☐ NO

   4a. If YES, how often do you have to miss school? _____ ***# days in past month***

4b. What are the main reasons you miss school? **(Name 3)**

1.

2.

5. Do your friends ever leave school early? ☐ YES ☐ NO

6. If yes, why do you think your friends leave school early?
(Name 2 reasons for leaving early)

1.

2.

PERFORMANCE

7. What level of schooling would you like to complete? In other words, how far would you like to go in school? (*junior high school, high school, university, etc.)*

8. What kind of help/support will you need to complete this level of schooling?
(Name 2)

1.

2.

9. What kinds of help/support are you <u>currently</u> getting? From whom?
(Name 2 kinds of support and list from whom the support is coming from)

1.

2.

10. What assistance do you need to pass your class? *(i.e., get promoted to the next grade)*

GIRLS' and BOYS' EDUCATION

11. What types of difficulties are you facing at school?

CONCLUSION

Thank you very much for your time.