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Liberia Girls' Opportunities to Access Learning (GOAL) Plus Project Research Findings



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Acronyms

AIR	American Institutes for Research
EVD	Ebola Virus Disease
FAWE	Forum for African Women Educationalists
FGD	Focus Group Discussion
GOAL	Girls' Opportunities to Access Learning
MCC	Millennium Challenge Corporation
M&E	Monitoring and Evaluation
MOE	Ministry of Education
NGO	Nongovernmental Organization
NPTA	Nonmembers of Parent Teacher Association
PTA	Parent Teacher Association
SSI	Semistructured Interview
USAID	United States Agency for International Development

Executive Summary

This report examines the trajectory of girls' enrollment and attendance patterns in Girls' Opportunity to Access Learning (GOAL) and GOAL Plus schools, particularly in the aftermath of the Ebola Virus Disease (EVD) epidemic. The findings are based on qualitative and quantitative research conducted by American Institutes for Research (AIR) for the USAID-funded GOAL Plus project.

The original GOAL project was implemented by AIR, the Forum for African Women Educationalists (FAWE), and Search for Common Ground between October 2010 and October 2013. The GOAL project provided three different sets of interventions: (1) a scholarship program at 10 schools, (2) a Parent Teacher Association (PTA) capacity building and community grants program to improve school learning environments at 10 schools, and (3) an intervention that provided both the scholarships and the grants at 20 schools. These interventions were aimed to improve girls' enrollment, attendance, and retention in the 40 participating primary schools in Bong, Grand Bassa, and Lofa Counties, while monitoring 20 comparison schools. AIR's statistical analysis of key indicators found that GOAL interventions had significant positive impacts on girls' enrollment and attendance in school. The scholarship intervention was found to have a greater positive impact than the grants intervention, and schools receiving both scholarships and the grants had the greatest impacts.

Building on the findings of the original GOAL project, USAID contracted AIR and its partners to implement GOAL Plus, a 2-year extension of the original project designed to expand its efforts to improve girls' enrollment and attendance in school. GOAL Plus began September 1, 2013, and ends on February 28, 2016. The program provided continued educational support to all 60 GOAL schools in Bong, Grand Bassa, and Lofa. For the duration of the program, all schools received the most promising approach, which included the scholarships, the PTA capacity building and community grants, and an outreach awareness campaign to create support among parents and communities for girls' education and appropriate age enrollment.

The second year of GOAL Plus was profoundly affected by the Ebola Virus Disease (EVD) epidemic. When the EVD epidemic took hold in July 2014, the Liberian Ministry of Education decided not to open schools in August 2014 for the start of the 2014–2015 school year. Schools eventually opened for a truncated 2015 school year, which lasted from February 2015 to July 2015. In addition to having a dramatic impact on Liberians' lives, the changes forced the GOAL Plus team to shift its activities toward EVD awareness and prevention. To examine these changes, GOAL Plus focused its research to examine the effects of GOAL and GOAL Plus interventions on girls' education, as well as communities' ability to recover from the EVD epidemic and overcome challenges to restore education as the centerpiece of the community.

The team implemented a research design that combined quantitative and qualitative methods. The research covers a 2-year intervention with special attention paid to GOAL Plus's efforts to promote reenrollment after the EVD epidemic. The quantitative

component of the study tracks and analyzes student enrollment and attendance through the life of the project, along with completion of a grade and promotion to the next grade. The qualitative component answers questions on community resilience and factors that facilitated community reengagement in education after months of closure during the EVD epidemic. These two components complement each other to portray a chronological picture of the GOAL Plus schools over 2 years.

The quantitative analysis of enrollment, attendance, completion, and promotion data found that schools that received additional services under GOAL Plus improved these student outcomes for girls at those schools. Schools that had not received supports under the previous GOAL program showed the greatest gains in outcomes—as they saw the greatest change in the supports they were receiving—whereas schools that had received scholarship support under GOAL and received grant support under GOAL Plus showed smallest gains. This is consistent with earlier findings for GOAL that scholarships were associated with greatest increases in girls’ outcomes and that grants had relatively small effects.

An important finding is that the gains in student outcomes that were realized before the outbreak of EVD were sustained once schools reopened and were not lost as a result of the outbreak. Enrollment and attendance for both girls and boys were as high as they were before the outbreak for most (about 75 percent) of schools included in GOAL Plus.

The qualitative research suggests that key gaps that hindered students’ reenrollment after the EVD epidemic were damage to school infrastructure, inconsistently implemented health protocols, financial constraints, the transformation of social norms, and a continued fear of EVD. School community activity helped schools overcome these challenges, and factors that helped this resiliency included (1) GOAL Plus interventions that provided a mechanism through which the community organized disaster recovery efforts; (2) government-mandated health protocols that allayed fears about returning to school; and (3) community members who valued education enough to contribute their time, labor, and money to repair schools and disseminate information about school reopening.

The analysis of enrollment, attendance, promotion, and completion data at the GOAL Plus schools presented here is the first known quantitative research conducted on education in post-EVD Liberia, and the qualitative data were gathered soon after schools reopened in Liberia. The lessons learned from implementing GOAL Plus interventions during an epidemic can be used to facilitate meaningful change in other countries that have experienced similar external public health related challenges to an education system.

GOAL Plus provided its final supports to the 60 participating schools in December 2015. GOAL Plus staff held closeout meetings with the schools and PTAs to set the stage for PTAs to take ownership of their school improvement plans while maintaining quality and momentum of changes under GOAL and GOAL Plus. PTAs shared what they had learned and what they plan to continue, and developed their plans for sustainable and continued school improvement without GOAL Plus.

Chapter 1: Background

Introduction

The Girls' Opportunities to Access Learning (GOAL) Plus project was funded by the United States Agency for International Development (USAID) in 2013–2016 to support a partnership between the American Institutes for Research (AIR) and the Forum for African Women Educationalists (FAWE). GOAL Plus continued and expanded the work undertaken through the 2010–2013 Millennium Challenge Corporation (MCC)-funded and USAID-administered GOAL project. The GOAL project provided a varying mix of supports to 40 schools in Grand Bassa, Bong, and Lofa Counties to support and enhance enrollment, attendance, completion, and promotion in primary grades (Grades 1 through 6). The GOAL Plus program extended supports at these schools and 20 other comparison schools that were included in the GOAL program by implementing the mix of supports found to most effective in the GOAL program. These supports included scholarship packages for girls along with Parent and Teacher Association (PTA) capacity building and grants (with supplemental tutoring, Girls' Clubs, and Gender Responsive Pedagogy training components).

GOAL Plus is motivated by the need to address the problem of low enrollment, attendance, and completion and promotion of girls in Liberia. The original GOAL program was an MCC threshold activity with the overall objective of increasing educational opportunities for girls in the targeted communities. MCC threshold activities provide assistance to countries that are near eligibility for MCC compact agreements to overcome constraints to growth and become eligible for greater MCC assistance through compacts. The GOAL project had three intermediate results linked to the fulfillment of the overall objective in these communities:

- Increased access to schools for girls;
- Improved learning environment; and
- Increased awareness of the importance of educating girls.

GOAL Plus continued the work of GOAL under the USAID Results Framework. The Development Objective is *Better Educated Liberians* as defined in the USAID/Liberia 2010 Country Development Cooperation Strategy.¹ The primary Mission level Intermediate Results (IR) that GOAL Plus fulfills are:

- IR 4.1: Improved Basic Education Opportunities; and
- Sub IR 4.1.2: Increased Equitable Access

GOAL Plus also contributes to:

- IR1: Increased Quality of Basic and Higher Education; and
- IR3: Strengthened Enabling Environment for Basic and Higher Education

¹USAID. (2010). *Country development cooperation strategy: Liberia, 2013–2017*. Retrieved from <https://www.usaid.gov/sites/default/files/documents/1870/liberia-cdcs.pdf>

GOAL and GOAL Plus operated in the post-conflict setting after the cessation of the lengthy civil war in 2003. The programs sought to enhance education, specifically for girls. This reflects an essential humanitarian response to conflict and disaster-affected communities, as education in emergency settings is needed to prepare societies for eventual post-conflict reconstruction and social and economic development.²

Whereas both GOAL and GOAL Plus operated in a post-conflict environment, the implementation of GOAL Plus was complicated by the outbreak of EVD in West Africa in 2014 which led to a lengthy closure of schools in the country. Prior to the EVD outbreak, the primary education system in Liberia faced many challenges that GOAL was intended to help address, including:

- National resource constraints that led to shortfalls in essential education inputs to schools, including desks, textbooks, pencils, and notebooks;³
- Costs of fees to families to enroll students in primary schools; and
- Low school attendance and age-appropriate enrollment rates.

Overall school attendance in Liberia was relatively low before the EVD outbreak, and in 2014 the net enrollment rate in primary school (that is, the total number of students in the theoretical age group for primary education enrolled in that level, expressed as a percentage of the total population in that age group) was 38%, whereas the 2014 gross enrollment rate (defined as the total enrollment in primary education, regardless of age, expressed as a percentage of the population of official primary education age) was 96%, reflecting the fact that significantly older students (e.g., 15-year-olds) often attended primary school.⁴

School fees and costs are one of the primary barriers to education in Liberia. The costs tend to limit enrollment of girls more than boys, as families making household expenditure decisions about whether to send children to school exhibit preferences for

²Talbot, C. (2012). *Education in conflict emergencies in light of the post-2015 MDGS and EFA agendas*. Retrieved from NORRAG NEWSBite website:

<https://norrags.wordpress.com/2012/10/04/education-in-conflict-emergencies-in-light-of-the-post-2015-mdgs-and-efa-agendas/>

³Liberia Ministry of Education. (2007). *Liberian Primary Education Recovery Program prepared for Fast Track Initiative*. Retrieved from http://planipolis.iiep.unesco.org/upload/Liberia/Liberia_plan.pdf

⁴Net enrolment rate, primary, both sexes (%) (Net enrolment rate, primary, both sexes (%)) <http://data.worldbank.org/indicator/SE.PRM.NENR> and Gross enrollment ratio, primary, both sexes (%) (Gross enrollment ratio, primary, both sexes (%)).

<http://data.worldbank.org/indicator/SE.PRM.ENRR/countries>

boys given the perception of higher income potential.⁵ Under GOAL and GOAL Plus, fees were paid directly to schools via bank transfer for each girl enrolled at the school, as verified by project staff via in-person enrollment checks.

The extended school closure from August 2014 through February 2015 caused by EVD exacerbated these challenges in several significant ways:

- The longer a child stays out of school, the less likely he or she is to return. The drop-out rate in Liberia is likely to increase as a result of the EVD outbreak;
- Without access to education, children are less resilient and more vulnerable to various protection risks common in times of crisis. Increased incidence of early marriage and pregnancy have been observed in other times of crisis; and
- As contributing to the household economy becomes even more critical for survival, children who are out of school are more likely to be involved in the worst forms of child labor, which makes the return to school even less likely.⁶

Liberia had been making progress toward national recovery in education and other sectors, only to be set back by EVD.⁷ Liberian President Ellen Johnson Sirleaf said that “the real tragedy of the Ebola outbreak is that it puts all progress at risk... If we don’t stop it now, then there’s a real danger that the disease will ravage the country and set us back where we started.”⁸ The unprecedented nature of the EVD epidemic in West Africa raised important questions about the health care system, government services, and community organization.

To respond to challenges the EVD epidemic presented to education, the Education Cluster, a consortium of NGOs collaborating on education in emergencies was activated in mid-2014. In January 2015, the Cluster conducted a joint needs assessment, which aimed to identify challenges to reopening schools once the EVD epidemic had abated to inform Liberian education policy at the national, country, and district level. Consistent with other research as noted above, the Cluster identified these pre-EVD challenges as school fees and costs, followed by work for boys and early pregnancy for girls. In

⁵The effectiveness of reducing direct costs of attendance through payment of school fees and provision of supplies and uniforms was cited by Alejandro Ganimian and Robert Murnane in their summary of lessons learned in rigorous evaluations of interventions designed to improved primary education in developing countries: Ganimian, A. J., & Murnane, R. J. (2014). *Improving educational outcomes in developing countries: Lessons from rigorous evaluations* (NBER Working Paper No. 20284). Retrieved from <http://www.nber.org/papers/w20284>

⁶An International Network of Education in Emergencies. (2015). *EiE Crisis Spotlight: Ebola - West Africa*. Retrieved from <http://www.ineesite.org/en/crisis-spotlights/ebola-west-africa>

⁷For example, between 2010 and 2013, Liberia’s primary education completion indicator for girls increased from 52.5% to 60.3%. <http://data.worldbank.org/indicator/SE.PRM.CMPT.ZS>

⁸Marshall, A. (2014). *Ellen Johnson Sirleaf on Ebola: "This is everyone's fight."* Retrieved from the ONE website: <http://www.one.org/international/blog/ellen-johnson-sirleaf-on-ebola-this-is-everyones-fight/>

addition, respondents agreed that contracting EVD and school fees were their biggest concerns about schools reopening.⁹

The research presented in this report provides an overall assessment of a particular education intervention—GOAL Plus—but also provides a unique contribution in the discussion of education and resilience in a post-epidemic setting. Given that the program spanned the time that schools were closed during EVD, data on reenrollment after school reopening provide meaningful insight on community resilience, including description of activities that occurred during school closure undertaken to maintain the education system and promote school enrollment once schools had reopened.

The GOAL Plus qualitative research distinguishes itself from other studies conducted in the same timeframe within Liberia in several ways:

Timing: Several studies were conducted January through March 2015,¹⁰ just as schools were beginning to open. These studies interviewed participants during a period of immense transition and change. GOAL Plus qualitative data collection occurred in April 2015. By this point, students and parents had had enough time to adjust to a new routine and were able to share their experiences about going back to school.

Analytical Approach: While all of the studies relied on firsthand accounts, they differed in their analytical approach. Education Cluster and International Research and Exchanges Board (IREX) primarily quantified the qualitative information they collected, while Finn Church Aid and GOAL Plus applied a qualitative analysis of the data, which captures the nuances present in informant narratives.

Focus: The GOAL Plus research is most similar to the Education Cluster report, yet both studies differ in their areas of focus. The Education Cluster report seeks to answer questions related to education policy and recommends specific actions that key actors can carry out. GOAL Plus specifically focuses on girls' education and the factors associated with their reenrollment and attendance in GOAL Plus schools.

Information Gaps: To our knowledge, none of the studies address why students and their parents had not returned to schools after they opened. The Education Cluster report found nine students that had not returned to school, but states that “data does not exist as to the exact reason why these nine students and nine different parents say they will not be returning to school.” Moreover, this study also looks at schools outside of affected areas to assess the indirect impact of EVD in these communities.

⁹Liberia Education Cluster. (2015). *Assessment of the effect of Ebola on education in Liberia*. Retrieved from http://educationcluster.net/?get=002241|2015/02/Liberia_Education_Cluster_Ebola_Assessment_Report_FI_NAL.pdf

¹⁰International Research and Exchanges Board (Feb–March 2015), Finn Church Aid (Jan–Feb 2015), and Education Cluster (Feb 2015).

The quantitative analysis presented in the report continues the analytic work conducted during the GOAL program to measure trends in key outcomes of enrollment, attendance, completion, and promotion. The analyses use data collected from schools to compare change in outcomes over time for girls compared with boys and to examine how type of supports provided at schools over time affect these changes. Whereas AIR’s 2013 research on GOAL focused on how trends differed by type of supports provided at 40 schools while GOAL was in operation, research on GOAL Plus focused on change in outcomes as the 60 schools included in the GOAL analysis (including 20 schools that received no support under GOAL) adopted GOAL Plus. This allows us to assess how the provision of different types of supports beyond what was provided under GOAL relates to changes in outcomes. The results provide a better understanding of the potential impact of different types of supports on outcomes, including closing the “gaps” between boys and girls in the primary education system.

The quantitative data used in this report also cover time before and after the closing and reopening of schools following the outbreak of EVD. The data collected for the schools in this study showed that enrollments and attendance for both boys and girls returned to and exceeded pre-EVD level in most schools, indicating that positive effects of adopting GOAL Plus before EVD were sustained. Although we do not have current outcome data for the nation as a whole to which we can compare findings for the GOAL Plus schools, the finding that enrollment and attendance returned to and exceeded their pre-EVD values shows these schools and their communities were able to sustain support for education during the time of school closure.

The lessons learned from implementing GOAL Plus interventions during an epidemic can potentially be applied in other countries that have experienced similar external challenges that lead to significant and sustained closures of an education system. This research, combined with that on GOAL, highlights the importance of prioritizing capacity building in local communities and avenues of available funding as a way to increase students’ participation in education.

This report has five chapters. The first chapter provides a brief description of the original GOAL project and research findings. It then describes the implementation of GOAL Plus, a continuation and expansion of GOAL, before the outbreak of EVD that halted implementation. Chapter 2 describes the research methods for the quantitative and qualitative components of this study. Chapter 3 discusses the quantitative findings from GOAL Plus, including how outcomes under GOAL Plus compare to GOAL and how enrollment has changed after the EVD outbreak. Chapter 4 presents the report’s qualitative findings, which examine activities during the EVD-caused school closures and then turns to significant factors that both helped and hindered student reenrollment following the opening of schools as the outbreak waned. In Chapter 5, the report concludes with implications of this research for future programming.

GOAL (2010–2013)

Description of GOAL Interventions

The GOAL project, implemented between November 2010 and November 2013, sought to address the low primary school enrollment among Liberian girls that continues to persist years after Liberia’s 14-year civil war. The program was a MCC and USAID-supported Threshold Program implemented by AIR, FAWE, and Search for Common Ground. The project aimed to promote girls’ school enrollment and attendance, and their completion of school, by engaging communities in supporting girls’ education, providing grants to school PTAs, and providing scholarships directly to girls. GOAL implemented three different models of supports designed to overcome the institutional and social barriers that impede girls’ education. The GOAL project was designed to support girls’ enrollment, attendance, and retention in 40 primary schools in three centrally located counties: Bong, Lofa, and Grand Bassa.

GOAL offered three intervention models in 40 primary schools participating in the project:

- A scholarship program at 10 schools,
- Community mobilization through a PTA capacity-building and school-improvement grant at 10 schools, and
- A model that combined the scholarship and community mobilization programs at 20 schools.

In addition to the three intervention models, GOAL conducted community outreach and health training interventions in all program schools. In addition, GOAL monitored enrollment, attendance, and retention in 20 schools across the three counties that did not receive any GOAL interventions or services that were selected as comparison schools.

Intervention Model 1: Scholarship Program

In the first model, GOAL offered in-kind scholarships to girls in 10 schools along with complementary services to help girls flourish as students. The scholarships sought to offset direct schooling costs—such as school fees—and the indirect schooling costs associated with not being able to participate in the local economy while in school. On average, scholarship payments to cover school fees cost about \$62 per girl per year under GOAL.¹¹ Complementary services were designed to provide girls with direct support in addressing school-related difficulties and included teachers’ kits, which included school supplies; gender-responsive pedagogy training for teachers, mentors, and PTA members; and Girls’ Clubs, which established a system of trained, paid mentors who provided girls direct support in addressing school-related difficulties. Over the life of the project, GOAL distributed 13,132 scholarship packages and 1,136 teachers’ kits.

¹¹Dollar amounts are USD unless otherwise noted.

Intervention Model 2: Community Mobilization Through PTA Capacity Building and School Grants

In the second model, GOAL staff worked to build the capacity of PTAs to support girls' primary education in 10 schools. Each school's PTA received a performance-based grant of up to \$1,000 per phase to improve the school environment. Grants were used to meet the needs identified in school improvement plans and created an opportunity for PTA members to work together. The PTA used the grants to make improvements to the physical infrastructure of the schools, such as buying new furniture and library materials and undertaking building repairs.

This intervention provided the PTAs with 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.

Intervention Model 3: Combined Scholarship Program and PTA Capacity Building and Grants

In 20 schools, the GOAL project provided a combination of Intervention Models 1 and 2. These 20 schools received both the scholarship packages for girls with complementary services as described in Intervention Model 1 and the PTA capacity building and grants described in Intervention Model 2. A subset of nine randomly selected schools within this intervention category also received supplemental after-school tutoring.

In 2013, GOAL Plus expanded this intervention model (grants and scholarships) to all 60 schools that participated in the original GOAL project, including the 20 comparison schools under GOAL.

Findings from the GOAL Endline Report

AIR employed a mixed-method design to compare the relative effectiveness of GOAL's three models, and findings were presented in the GOAL endline report submitted December 2013. We summarize findings from GOAL here, in that they influenced the design of the GOAL Plus project and also provide the framework to analyze the quantitative effects of GOAL.

Under GOAL, statistical regression methods estimated the impacts of the scholarships, grants, and other supports on enrollment, attendance, completion, and promotion outcomes, along with contextual factors that facilitated or hindered implementation. AIR also collected cost data to estimate the cost of implementing each model at schools of different sizes and combined estimates of project costs with impact findings to assess the cost-effectiveness of each intervention.

Trends in Student Outcomes and GOAL

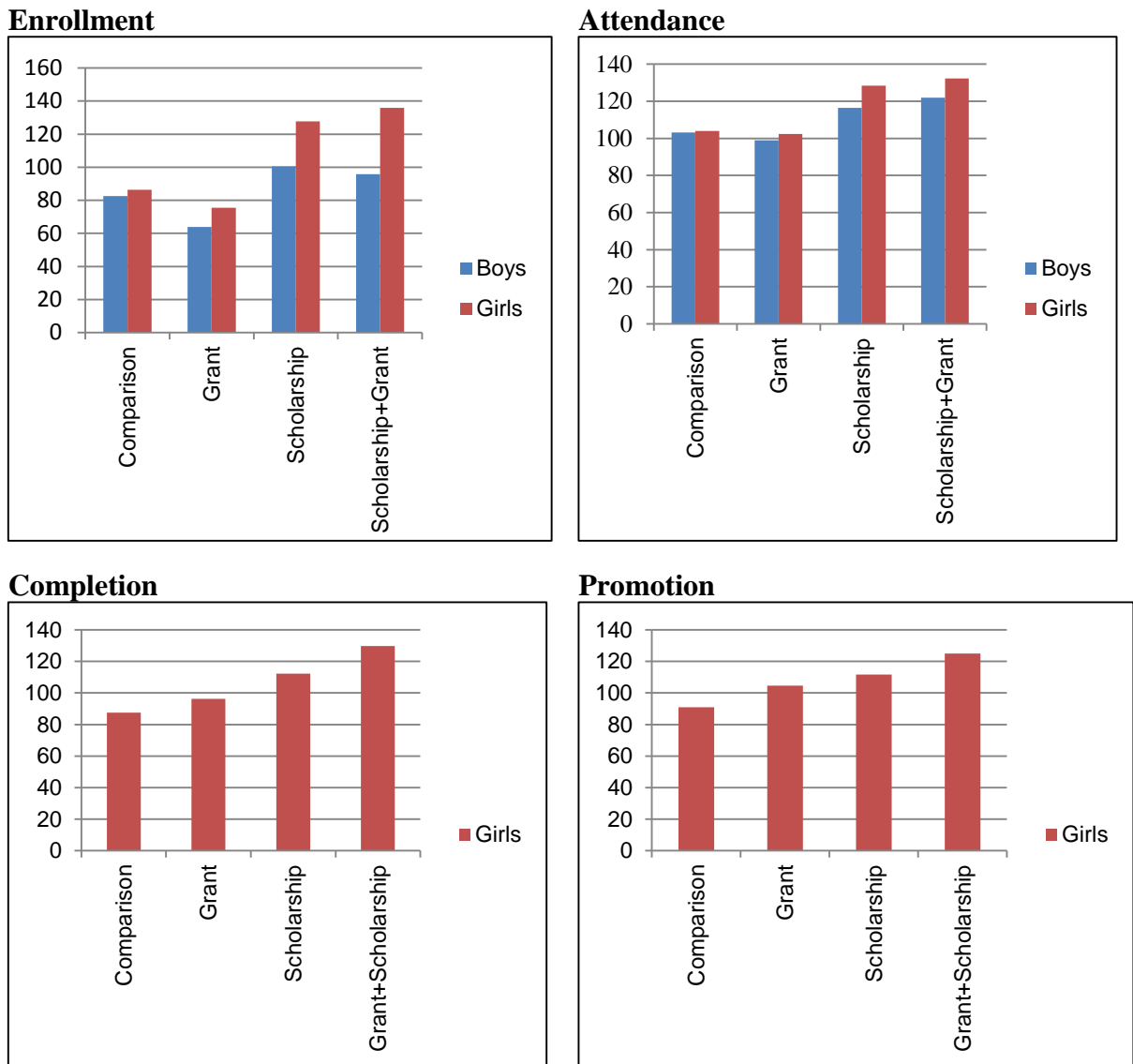
GOAL used three primary targets to measure results on enrollment, attendance, and completion for girls in Grades 2 through 6:

1. **Girls' enrollment.** In the final year of the project, girls' enrollment in Grades 2 through 6 in all 40 project schools was 23.2% higher than the baseline (increasing from 2,794 girls to 3,443 girls), which is slightly under the 25% target. (In the comparison schools—which did not receive any GOAL support—enrollment declined by 19.5%.)
2. **Girls' attendance in school.** The attendance rate for all 40 schools receiving supports increased by 10.3 percentage points—from 57.2% to 67.5%—which exceeded GOAL's 5% target.
3. **Girls' successful completion of their grade and promotion.** In June 2011 (the baseline year), 1,464 girls in Grades 2 through 6 in the 40 project schools successfully completed the school year. In June 2013, 2,314 girls completed the year—an increase of 53.1%, which far exceeded the project's 25% completion target. AIR also examined promotion rates, or the rates at which girls in a cohort were eligible to enroll in the following grade after completing a year. Among the cohort of 985 girls who received scholarships in May 2011 as second, third, or fourth graders, only 28.8% were promoted in two successive grade levels and years.

Figure 1 shows the relative change in each outcome from its baseline value (expressed as average number of students per school set to a value of 100) for the 40 GOAL schools based on which of the three intervention models they received, and for the 20 comparison schools.¹²

¹²To 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 enrollment of boys in a school increased from 150 to 210 students (a 40% increase), the standardized endline value for that school would be 140.

Figure 1. Relative Percent Changes Over Time in Enrollment, Attendance, Completion, and Promotion by Type of Support Provided to School Under GOAL



Source: Liberia GOAL project, baseline and endline (2011, 2013).

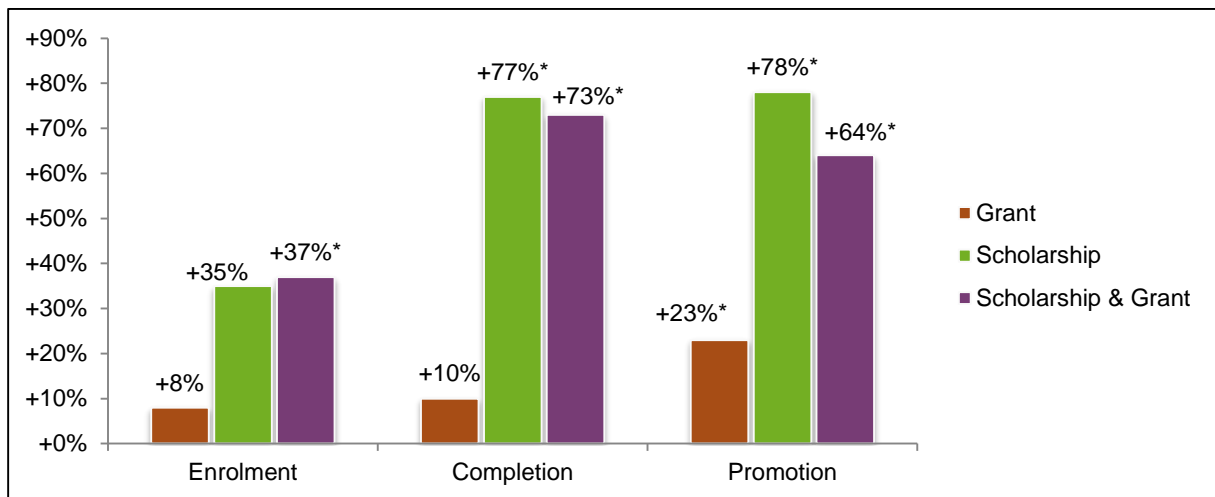
Note. Because data for boys are not available at the baseline for completion and promotion, relative changes are shown only for girls.

Regression Analysis of Student Outcomes Under GOAL

To further examine whether the observed changes were associated with supports provided under GOAL, and to establish whether these changes were statistically significant, AIR used regression analysis to compare changes in outcomes for girls and boys at GOAL intervention and comparison schools. To help identify the project’s impact (and to distinguish the project from other events and interventions that may have benefited schools more generally), the analyses primarily focused on the differences in outcomes between boys and girls. The greater the extent to which 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. Figure 2 shows the results of this regression analysis on the effects of the three GOAL intervention models on three different outcomes of interest: girls’ enrollment, completion, and promotion of girls. The numbers show the percent increase from baseline for a given outcome. Five of the outcomes, indicated with asterisks, are statistically significant.

Figure 2. GOAL Impacts on Girls’ Education Outcomes by Type of Model Relative to Comparison Schools



Source: Liberia GOAL project, baseline and endline (2011, 2013).

Note. Differences denoted by asterisks (*) are statistically significant.

Enrollment: The regression analysis indicated that GOAL was associated with an increase in girls’ enrollment by an average of 11 girls at grant-only schools (8%), by an average of 18 girls at scholarship-only schools (35%), and by an average of 35 girls at grant and scholarship schools (37%). Based on these results, it appears that scholarships had a greater impact on girls’ enrollment than grants (although only the increase at grant and scholarship schools was statistically significant).¹³

Completion: GOAL increased the number of girls who completed the school year by seven girls (10%) at grant-only schools, 20 girls (77%) at scholarship-only schools, and 39 girls (73%) at grant and scholarship schools. The impacts at scholarship-only and grant and scholarship schools were statistically significant.

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

¹³GOAL also collected data on attendance at a school on the day schools were visited by data collectors; these data showed great variation (e.g., were sometimes greater than enrollments) and were not analyzed extensively in the GOAL research.

Girls served by GOAL schools were more likely to enroll, more likely to complete the school year, and more likely to enroll in the following grade. 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.

Analysis of GOAL's Cost-Effectiveness

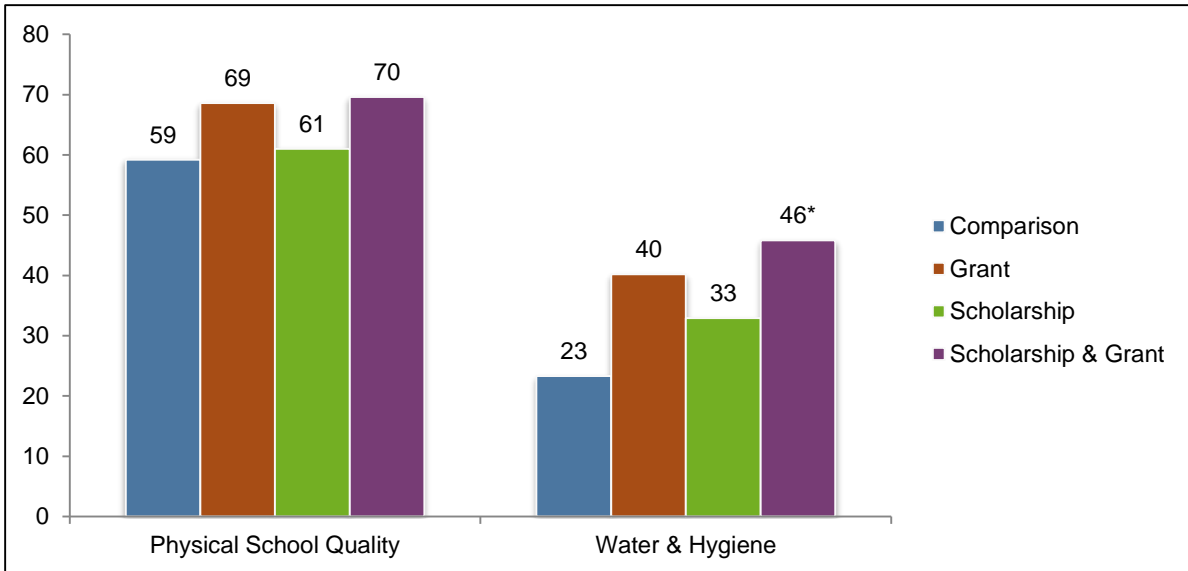
To estimate the cost associated with an outcome (e.g., increasing enrollment by one girl at a school) for each intervention model, AIR analyzed the costs of the three GOAL intervention models relative to their impacts on girls' outcomes. The cost-effectiveness analysis combined the impacts described above with cost data gathered from project records.

The analysis found that scholarships were more cost-effective than grants for increasing enrollment, completion, and promotion. 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. Despite the increased costs associated with implementing a large-scale scholarship program, the scholarships were more cost-effective than the grants due to their larger impact. Providing both scholarships and grants was associated with the overall greatest improvements in outcomes, but the combination was not as cost-effective as providing scholarships only (i.e., there was little additional impact when grants were added to the scholarships). In the cost analysis, scholarship activity was the only cost that varied with the number of students at the school level. All other activities were effectively fixed at the level of the school, regardless of student enrollment rates.

GOAL's Impacts on School Conditions

In addition to examining the impact of GOAL on student outcomes, AIR also examined the change in school characteristics from baseline to endline (i.e., covering the period from February 2011 to May 2013) across project and comparison schools using school observation instruments. Figure 3 summarizes the results from these analyses, based on summary scale scores (ranging from zero to 100) AIR developed from related questions. 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).

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



Source: Liberia GOAL project, baseline and endline (2011, 2013).

Note. Due to the small sample size, only the difference between GOAL and comparison schools denoted with an asterisk (*) was statistically significant.

GOAL Plus Prior to the EVD Epidemic (2013 to July 2014)

The USAID-funded GOAL Plus project began activities to broaden GOAL in September 2013. GOAL Plus was a follow-on project implemented by AIR and FAWE in response to the USAID Mission in Liberia's request for applications for improving girls' access to education and improving girls' enrollment, attendance and completion in Bong, Lofa and Grand Bassa Counties. GOAL Plus began operations in September 2013 with a 2-year period of performance through October 2015 (since extended to February 2016).

GOAL Plus provided continuity of support to all 40 GOAL schools and expanded support to the 20 comparison schools; under GOAL Plus, all 60 schools (40 original GOAL schools and 20 comparison schools) received services under the Grant plus Scholarship model, the one found to be most effective as part of the GOAL. Implementation was profoundly affected by the EVD epidemic in 2014, as schools in Liberia were prohibited from reopening in August 2014 for the 2014–2015 school year.

Description of GOAL Plus Interventions

GOAL Plus was a continuation and expansion of the GOAL project, aiming to increase primary school girls' enrollment, attendance, and completion. Whereas GOAL provided three different intervention models to 40 schools and no supports to 20 comparison schools, GOAL Plus, beginning in September 2013, provided the most promising GOAL intervention model to all 60 schools. This model combined girls' scholarships with PTA capacity building and grants (with supplemental tutoring and gender-sensitive pedagogy training components). As discussed above, the GOAL research found that this combined model (Intervention Model 3 or the Scholarship and Grants Model) resulted in the greatest improvements in girls' outcomes of interest. GOAL Plus field staff provided the direct support to each of the 60 GOAL Plus schools, including the following:

- **Scholarships (Girls' Assistance Packages).** Girls enrolled in Grades 1 to 6 received in-kind scholarships, and GOAL Plus reimbursed their school-related fees (actual amount or up to the limit of \$5 at a public school and \$15 at a community school as prescribed by the Ministry of Education [MOE]) for each semester after confirmation of enrollment. The full scholarship package contained a uniform, a book bag, school supplies, and basic hygiene items.
- **Teachers' kits.** All teachers in the primary school grades at the beginning of each semester received a book bag, lantern with batteries for working after dark, lesson planning books, chalk, copybooks, pens, and pencils.
- **School supplies.** GOAL Plus also distributed a complete set of textbooks for each grade and blackboard paint to all schools to enhance classroom teaching practices.

- **Award to best performing girls and age-appropriate enrollees.** At the end of each semester, GOAL Plus and PTAs awarded certificates of recognition to high-performing girls and parents who enrolled their children in school at the appropriate age (age 6 or 7 for Grade 1).
- **Girls' Clubs, mentoring, and tutoring.** GOAL Plus trained leaders for Girls' Clubs and mentors for girls among the teachers at each school. GOAL Plus also hired and trained tutors to provide supplemental academic supports to struggling female students.
- **PTA training and community mobilization.** GOAL Plus staff provided a wide range of capacity-building training to PTAs and community members to enhance PTA strengthening, school improvement planning, grants management, and other topics supporting girls' education.
- **Grants to improve school facilities.** Each academic year, GOAL Plus provided grants to PTAs at eligible schools for the PTAs to make improvements to their school environments with an expected positive effect on girls' enrollments, retention, and promotion rates. PTAs identified their own needs and were required to contribute their own resources to complement the grants.
- **Adolescent sexual and reproductive health training.** This age-appropriate training conducted by GOAL Plus focused on increasing the knowledge of primary school girls and boys about basic hygiene and health issues.

As with the GOAL project, GOAL Plus provided direct support as well as indirect strategies including an outreach awareness campaign to create support among parents and communities for girls' education and appropriate age enrollment and support to the MOE on topics related to girls' education.

Chapter 2: **Research Design and Data**

Research Objectives and Methodology

Under both GOAL and GOAL Plus, the research team employed regular data collections at schools to track enrollment over time, along with attendance, completion, and promotion rates at schools by grade. This provided a set of trend data for schools that allowed us to track changes in these outcomes by model type over the life of GOAL project, and then to further track changes under GOAL Plus as schools received a common set of supports. These data spanned the period covered by the EVD epidemic and allow us to describe the extent to which schools recovered in terms of enrollment and attendance.

The data on student outcomes were augmented by additional information collected via a school observation form and an EVD questionnaire. Both data collection tools helped determine how equipped and capable schools were of serving as safe learning spaces for students and provided information about EVD's impact on schools as well as the community's response to and implementation of the health protocols as schools reopened.

The disaster recovery and resilience framework informed the qualitative research design as the team gathered data after the outbreak of EVD. Resilience, as defined by USAID, is “the ability of people, households, communities, countries and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.”¹⁴ In this context, resilience is critical to a community's ability to recover quickly after an emergency.

The majority of existing resilience literature addresses recovery after a natural disaster; however, the research team believed Liberia's case qualified as well, even if it was unique because it pertained to resilience after an epidemic. A review of existing literature found that similar research has been conducted for both the severe acute respiratory syndrome (SARS) epidemic and the swine flu pandemic. The majority of the damage generated by the SARS epidemic was caused by the fear and panic generated, both within infected areas and in uninfected populations.¹⁵ The persistence of fear and panic distinguishes disease epidemics from natural disasters and requires a more nuanced public health response through education and community outreach.¹⁶ AIR researchers drew from this existing literature to adapt the resilience framework to address community resilience after the EVD epidemic. AIR researchers examined the barriers to accessing education and community response in a post-EVD setting. The qualitative instruments addressed community resilience by asking participants about the challenges they faced during and after the EVD epidemic and how they overcame those challenges. Significant barriers included displacement, loss of livelihood and familial support, fear, and damage

¹⁴USAID. (2013). *The resilience agenda: Measuring resilience in USAID*. Retrieved from https://www.usaid.gov/sites/default/files/documents/1866/Technical%20Note_Measuring%20Resilience%20in%20USAID_June%202013.pdf

¹⁵Cooper, A. F., & Kirton, J. J. (Eds.). (2013). *Innovation in global health governance: Critical cases*. Surrey, U.K.: Ashgate Publishing.

¹⁶Person, B., Sy, F., Holton, K., Govert, B., Liang, A., Garza, B., ... Zauderer, L. (2004). Fear and stigma: The epidemic within the SARS outbreak. *Emerging Infectious Diseases*, 10(2), 358–363. <http://doi.org/10.3201/eid1002.030750>

to the school infrastructure. The project team tailored interview questions to assess the effectiveness of GOAL Plus interventions in the aftermath of the EVD epidemic.

Quantitative research was structured around four key research questions:

1. **Trends in outcomes:** How did trends in student outcomes at schools change with adoption of GOAL Plus and the supports that GOAL Plus provided?
2. **Differences between boys and girls:** Did observed trends in outcomes differ between boys and girls, or did they affect all students similarly?
3. **Outcomes after EVD:** Did outcomes return to where they had been before closure of schools for EVD?
4. **Trends in school and classroom conditions:** Did indicators of the school physical environment and learning change over time and did change differ by type of school?

Qualitative research was structured around three key research questions:

1. **Patterns of reenrollment:** What factors facilitated or hindered female students' reengagement in their education in GOAL Plus schools?
2. **Community resiliency:** What factors in communities that received GOAL Plus interventions are associated with quick recovery and restoration of education as a centerpiece of their community?
3. **School community assets and gaps after the EVD crisis:** How do they (for example PTAs as assets, damaged infrastructure as gaps) relate to enrollment, attendance, retention, and completion rates in GOAL/GOAL Plus schools?

Quantitative Methodology

Data for the quantitative analysis were gathered at the school level for both GOAL and GOAL Plus on a regular basis at primary schools included in the study as described below. For GOAL, these data allowed the team to analyze trends in outcomes over time by type of program model, where trends in outcome for GOAL schools could be examined relative to a set of comparison schools. With the adoption of GOAL Plus, all schools adopted the same set of supports, and the comparisons across schools could be made in terms of the additional supports they received relative to what they had received under GOAL.

Throughout the analysis, we compared outcomes separately for boys and girls, in that many of the supports (e.g., payment of school fees) under GOAL were targeted at girls, although some supports (grants to improve school conditions and provide classroom supplies) would be expected to help both boys and girls. The analyses we conducted included graphing trends in outcomes by gender and computing descriptive statistics that normalize statistics to a base value to more clearly show relative magnitude of changes across different groups of schools and between boys and girls.

Although much of our analyses are descriptive using graphs and summary statistics, we also used regression analyses as a means of computing summary effects and making comparisons across model types and between boys and girls. The use of regression allowed us to make comparisons while adjusting for common trends that may affect all schools; also, by accounting for the county in which schools are located, we could adjust for differences across counties such as local policy and customs that may affect outcomes. The usefulness of regression as a summary tool in the analyses is somewhat limited in that there is a great deal of variability in trends among individual schools, making it difficult to declare that individual differences across groups are statistically significant.

Quantitative Data Collections

Enrollment, Attendance, and Completion/Promotion Data

Enrollment, attendance, and promotion data were collected for students in all 60 GOAL Plus schools and disaggregated by grade and gender. The GOAL Plus team collected student enrollment and attendance data during both the beginning and end of each year in order to have a more complete picture of student attendance as the year progressed. As schools were closed in the fall of 2014, there are no data during this term; however, the research team collected data in the fall of 2013, the spring of 2014, the spring of 2015, and November 2015. In addition, school completion and promotion data were collected in July 2014 and July 2015 by the GOAL Plus team.

School Observation Form

The M&E Officer was responsible for filling out the School Observation Form in all 60 schools during February 2011, May 2013, and April 2015. This instrument examined school characteristics across 42 observational variables. The observational variables were divided into four categories: (1) physical environment, which assessed the physical condition of the school; (2) sanitation and hygiene, which assessed the availability and quality of its water and hygiene structure; (3) student safety and protection, which reviewed measures taken to ensure student safety; and (4) academic environment, which determined the availability of academic tools to encourage learning. The items from the observation forms were used to create scales that were tracked over time by type of school.

EVD Supplemental Questionnaire

The research team and the M&E Officer administered the Ebola Virus Disease Supplemental Questionnaire, a one-page supplement to the School Observation Form, in GOAL Plus schools in April 2015. Questions in this instrument asked whether or not school facilities had been negatively impacted by the Ebola virus and, if so, had the facilities been subsequently renovated. They asked if EVD had had an effect on enrollment, and whether schools were complying with the health and safety protocols that the MOE had circulated across schools in Liberia. School administrators provided

responses to the questionnaire in 24 schools in Bong County, 17 schools in Grand Bassa County, and 18 schools in Lofa County.

Qualitative Methodology

In February 2015, soon after the schools in Liberia reopened, AIR reviewed the list of GOAL Plus schools and purposively selected a sample of six schools out of 60 GOAL Plus schools with the primary objectives of selecting two schools each of the three intervention counties, with variation of districts within the counties and variation of EVD impact. The team reviewed the list of GOAL Plus schools within the Liberia Monitoring and Evaluation Program’s map of EVD “hit zones,” which classified areas based on the number of EVD cases (shown in Figure 4). Table 1 below provides the rationale for school selection.

Table 1. Rationale for School Selection

County	District	EVD Hit Zone	Rationale for Selection
Grand Bassa	District #5	Medium	Only GOAL Plus school in "medium" EVD hit zone
	District #3	None	Randomly selected from GOAL Plus schools in district #3, Grand Bassa in "none" EVD hit zone
Lofa	Zorzor	Low	Only GOAL Plus school in Lofa in "low" EVD hit zone
	Salayea	None	Randomly selected from GOAL Plus schools in Salayea district, Lofa
Bong	Suakoko	Low	Randomly selected from GOAL Plus schools in Bong in "low" EVD hit zone
	Zota	None	Randomly selected from GOAL Plus schools in Bong in "none" EVD hit zone

Schools were purposively selected to ensure that one nonaffected school was selected in each county, to compare with another school that was either in the “Low” or “Medium” EVD hit zone in the same county. Consequently, in Grand Bassa County the research team went to schools in District #5 and District #3; in Bong County, schools were in Suakoko and Zota districts; and in Lofa County, they were located in Zorzor and Salayea districts. Just one school was in a “medium” EVD hit zone, whereas two schools were located in an area classified as “low” and three schools as “none” in terms of the disease’s impact.

Qualitative Data Collection

Interviews and Focus Groups

The research team conducted qualitative field work to investigate the experiences of students, parents, and community members as schools reopened. The team was led by

two researchers from the AIR home office as well as the GOAL Plus M&E Officer, and consisted of two female researchers with a background in qualitative research. The GOAL Plus project specifically hired female researchers to ensure ease of communication with school-aged girls. Prior to data collection, the researchers attended 2 days of training on qualitative research techniques, during which they were also briefed on the GOAL Plus project and the research topics of interest.

The EVD assessment data collection employed two main methods:

- Focus group discussions (FGDs): Four FGDs (with 8 to 10 purposively selected (1) PTA members; (2) non-PTA members; (3) teachers and principals; and (4) students mixed in age and gender) were carried out in two districts in Grand Bassa, Bong, and Lofa (24 FGDs in total).
- Semistructured interviews (SSIs): 16 SSIs (the research team endeavored to split this number evenly between interviews with girls who reenrolled in school and with girls who did not reenroll in school) were carried out across the two districts in Grand Bassa, Bong, and Lofa Counties (48 SSIs in total).

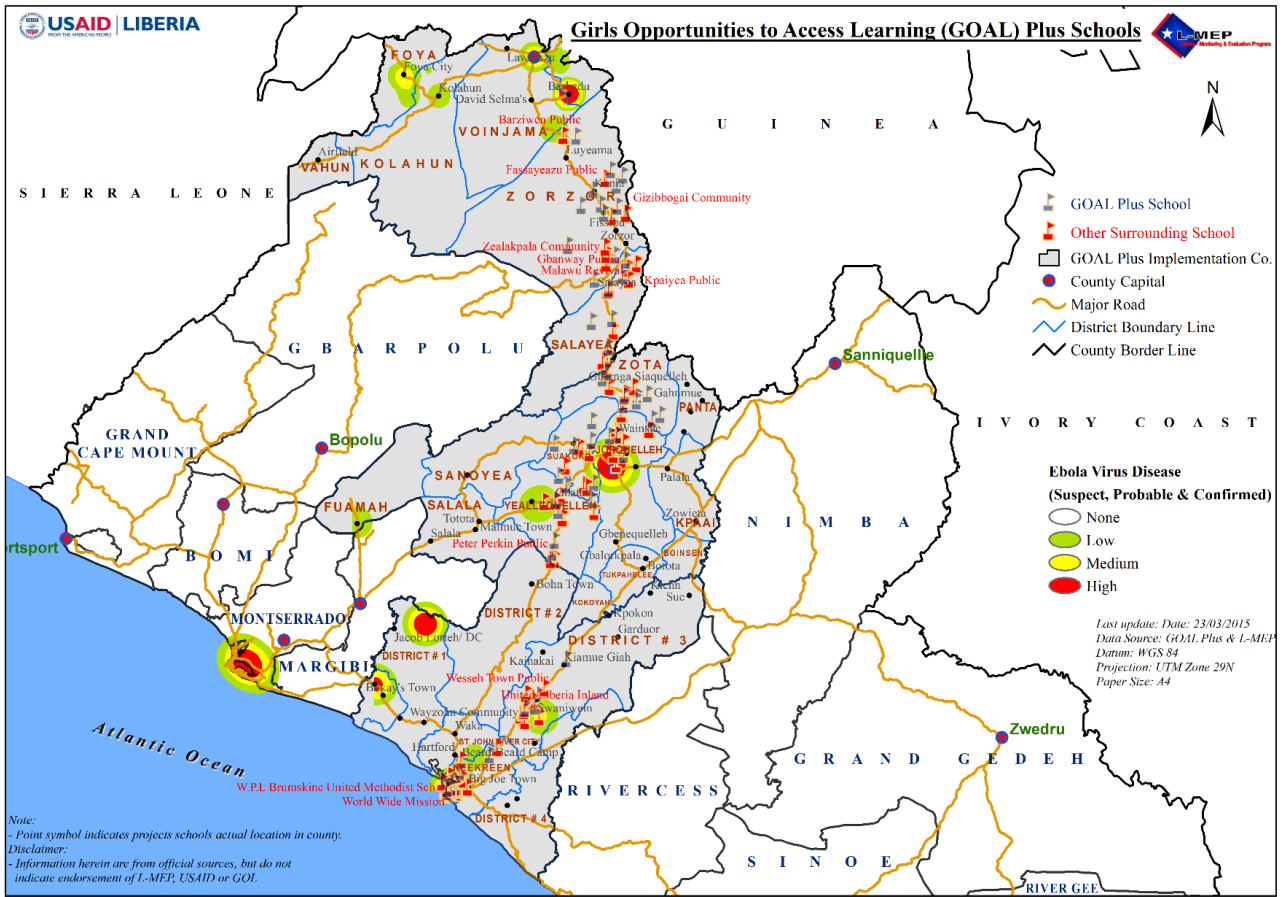
Handling of Qualitative Data

Wherever possible, one field researcher was responsible for interviewing or facilitating, while the second researcher had primary responsibility for recording responses. Researchers noted responses on response sheets provided with each data collection instrument, and they recorded all SSIs, together with FGDs, on portable digital recorders. Researchers downloaded these recordings to field laptops each day, renamed them according to an anonymized code system held in an encrypted Excel sheet, and then copied them to external media for backup. At the end of each day, the field researchers transcribed the handwritten field recording sheets to Microsoft Word documents. Researchers used audio recordings to supplement and validate the written transcriptions and translations. All transcriptions were also assigned new names (in accordance with the code system) in order to ensure data and informant confidentiality.

Coding and Analysis of Qualitative Data

AIR researchers developed a descriptive coding scheme linked to an overall analytical framework, with specific reference to themes of interest and research questions. The researchers then loaded the coding scheme and the transcripts into the qualitative data analysis software package (NVivo 10). Coding in NVivo is a manual process based upon careful reading of each piece of data (in this case, interview responses and other notes) and subsequent selection of appropriate code(s) to describe these data. Once properly coded, the data can be analyzed in different ways prior to producing written outputs.

Figure 4. GOAL Plus Schools and EVD Hit Zones



Chapter 3: Quantitative Findings

Quantitative Findings

In this chapter, we present estimates of the impact that the GOAL Plus project had on the key outcomes of enrollment, attendance, completion, and promotion of girls within schools. We first summarize trends in these outcomes over a 6-year period, including the years GOAL operated in schools that used different models of support (grants only, scholarships only, grants and scholarship) along with schools that received no support that were used for comparisons in the study of GOAL. This allowed us to examine how outcomes changed in schools as GOAL Plus was adopted, given the type of supports GOAL offered within schools. Table 2 below describes the sample of schools covered in the analysis in terms of supports provided under GOAL and the additional supports they received under GOAL Plus.

Table 2. Difference Between GOAL and GOAL Plus Intervention Type

Supports Under GOAL	Number of Schools	Added Supports Under GOAL Plus
Comparison (no supports)	20	Grants and scholarships
Grants only	10	Scholarships
Scholarship only	10	Grants
Scholarship and grants	20	None*
Total	60	60

*Eleven schools received additional supplemental services under GOAL Plus.

Because GOAL Plus provided grants and scholarships to all schools (including those that received no support under the GOAL project), we can attribute changes in outcomes after GOAL Plus was adopted to provision of different services under GOAL Plus compared with what they had previously received. As described below, we see the greatest changes in those schools where we expected, namely among schools that received no services under GOAL. We see the smallest changes in schools that had previously received grants and scholarship under GOAL—supports that continued to be provided under GOAL Plus. Effects of GOAL Plus were also relatively large at schools that had previously received only grants (which were found to have little effect on outcomes under GOAL) and smaller at schools that had had received scholarships without grants.

Research Questions Addressed in This Chapter

1. **Trends in outcomes:** How did trends in student outcomes at schools change with adoption of GOAL Plus and the supports that GOAL Plus provided?
2. **Differences between boys and girls:** Did observed trends in outcomes differ between boys and girls, or did they affect all students similarly?
3. **Outcomes after the EVD epidemic:** Did outcomes return to where they had been before closure of schools for EVD?
4. **Trends in school and classroom conditions:** Did indicators of the school physical environment and learning change over time, and did change differ by type of school?

This chapter begins by describing trends for boys and girls in enrollment, attendance, completion, and promotion during GOAL and GOAL Plus periods. To better identify the effect of GOAL Plus (and to distinguish it from factors that may have affected outcomes across all schools), most of our analyses focus on the differences in outcomes between boys and girls. Both GOAL and GOAL Plus primarily focused on improving outcomes for girls. Changes in outcomes for boys over time include trends affecting all schools in Liberia in addition to the supports for GOAL and GOAL Plus that generally supported schools (such as grants to improve facilities) rather than policies specifically focused on girls (such as providing girls with scholarships).

The approach we used to identify the outcomes of the GOAL and GOAL Plus projects is to measure the “gender gap” between boys and girls within schools over time, that is, the difference in outcomes such as average number of students enrolled in a school by gender. This gap between the outcomes of boys and girls was observed to become smaller over time for most outcomes as (for example) enrollments of girls grew more quickly over time than it did for boys, so that the number of girls relative to boys in schools became more equal over time.

The smaller the “gender gap” is for outcomes over time, the more likely that changes can be attributed to GOAL and GOAL Plus rather than general trends in Liberia that may have affected outcomes for both boys and girls. We used regression analysis to examine the change in this gap for each outcome over time by type of services provided at schools under the GOAL project. We then compared the measured gap to changes in the gender gap observed at scholarship plus grant schools to determine whether the gender gap in other schools is similar to that of scholarship plus grant schools.¹⁷ In the case of schools that received no services under GOAL but received grants and scholarships under GOAL Plus, we can reasonably attribute change in girls’ outcomes relative to those of boys to GOAL Plus. For other models (such as grants only or scholarship only), we can attribute changes in the gap to the additional services provided under GOAL Plus (either grants or scholarships, but not both). For schools that received grants and scholarships under the GOAL project, the GOAL Plus project represented a continuation of services, so that

¹⁷The results from GOAL showed that the gender gap in scholarship plus grant schools decreased more than other schools. Therefore, if the gender gap in other schools (i.e., comparison or grant) is similar to the gap in scholarship plus grant schools, it would mean that the gender gap in those schools has also decreased.

changes in the gap over time under GOAL Plus likely represents general factors outside of GOAL that affect girls differently from boys.

The data on the student outcomes presented in this section cover Grades 1 through 6. Analyses are presented both at the school level and also for individual grade levels. Data on student attendance should be interpreted cautiously because student attendance measures are 1-day “snapshots,” which are inherently less reliable than longer-term enrollment measures, which represent averages within schools for a given month in which data were collected.

In addition to student outcomes, we also examine changes in the conditions of schools over time under the different models that were developed using data from the school observation surveys. These surveys were administered at GOAL baseline (spring 2011), GOAL endline (spring 2013) and GOAL Plus endline (spring 2015). Using items from these surveys, we created two separate scales on the condition of schools measuring “physical quality” (e.g., the scale included presence of intact fencing at schools) and “water and hygiene” (e.g., the scale included presence of potable water at schools).

In addition, we examined the impact of GOAL Plus on individual survey items covering the learning environment, such as whether students had notebooks to write on, pencils to write with, and whether textbooks were visible during visits from data collectors. Results showed that GOAL Plus had an effect on improving school conditions over time. Similar to results for student outcomes, the significant changes were mostly observed in comparison schools and grant schools. Comparison schools improved more in terms of having notebooks to write and having textbooks visible during visits. Grant schools improved most in terms of water and hygiene and also had more notebooks to write on.

Trends in Student Outcomes

Including the period covered by the pre-GOAL baseline, there were 10 data points for each school for enrollment and attendance (four for completion and promotion): one baseline before GOAL, five in GOAL (two for completion and promotion), and four in GOAL Plus (one for completion and promotion). The pre-GOAL baseline data (the first data point) were from spring 2011, and GOAL data cover fall 2011 to spring 2013. GOAL Plus data collection started in fall 2013. The second wave of data was collected in spring 2014. Due to the outbreak of EVD, the 2014–2015 school year was cut short, and the schools reopened in spring 2015. The final wave of the data collection was conducted in fall 2015. Enrollment data were collected at the beginning of each semester, attendance was collected in mid-semester, and completion and promotion was collected at the end of the school year.

Figures 5 to 8 show trends in enrollment, attendance, completion, and promotion outcomes over the time before GOAL to the final report period under GOAL Plus. The figures show the average enrollment at schools separately for boys and girls in Grades 1 to 6 and attendance, completion, and promotion in Grades 2 to 6. The GOAL schools included 40 project schools—which received the different types of supports previously described—and 20 comparison schools. In this section, we categorize the schools in terms of the type of primary support they received under GOAL: grants only (10 schools), scholarships only (10 schools), or both grants and scholarships (20 schools), and comparison (20 schools).

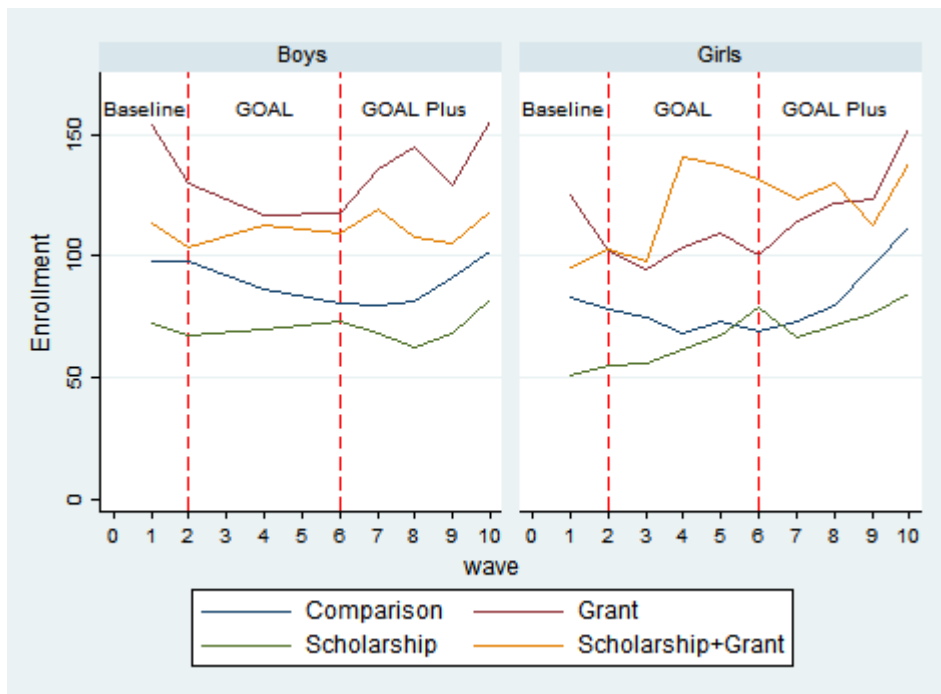
During GOAL (labeled as waves 2 to 6 in the figures below), there was a steady increase in the number of girls enrolled and number of girls attending school in GOAL project schools. The numbers of girls enrolled and attending classes in comparison schools was relatively stable during the same time. During GOAL Plus (waves 7 to 10), the trends for girls appeared to continue.

The trends under GOAL Plus for each type of school can be summarized as follows:

- Scholarship plus grant schools: There was little or no change in the numbers of enrollment and attendance for both boys and girls as schools continued to provide these supports;
- Grant schools: Enrollment and attendance appeared to increase in schools, most notably for girls but also to a degree for boys as scholarships were provided;
- Scholarship schools: The increasing trend in attendance and enrollment under GOAL appeared to continue under GOAL Plus, though not as much as grant schools; and
- Comparison schools: The most noticeable difference from GOAL to GOAL Plus periods were for comparison schools. There was little change in the enrollment and attendance numbers for comparison schools throughout GOAL, but the numbers started increasing across all periods during GOAL Plus.

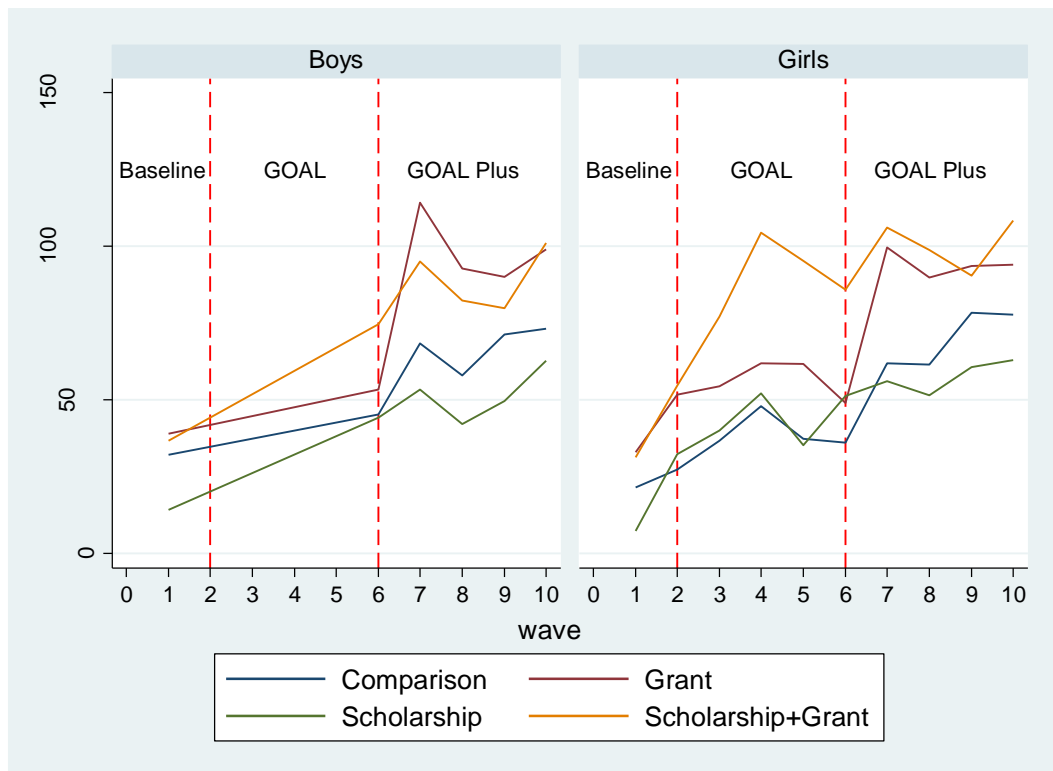
Figures 5 and 6 also show the changes in enrollment and attendance before and after the EVD outbreak (the epidemic began after period 8 in the figure and schools reopened in period 9). For both boys and girls, there was a small decrease in the number of enrollments and attendance in grant and scholarship plus grant schools after schools reopened (wave 9), then reached or surpassed the pre-EVD levels at the GOAL Plus endline (wave 10). The figures show the average number of students across all schools, but further analyses shows that enrollments of girls and also boys increased at 77 percent of schools at the GOAL Plus endline (again November and December of 2015) from the corresponding terms a year before, before the outbreak of Ebola. Similarly, attendance increased for girls from the period before Ebola at 73 percent of schools and for boys at 70 percent of project schools.

Figure 5. Enrollment Trend Over Time by Type of Support Provided to School



Source: Liberia GOAL and GOAL Plus projects (2011 to 2015).

Figure 6. Attendance Trend Over Time by Type of Support Provided to School



Source: Liberia GOAL and GOAL Plus projects (2013, 2014).

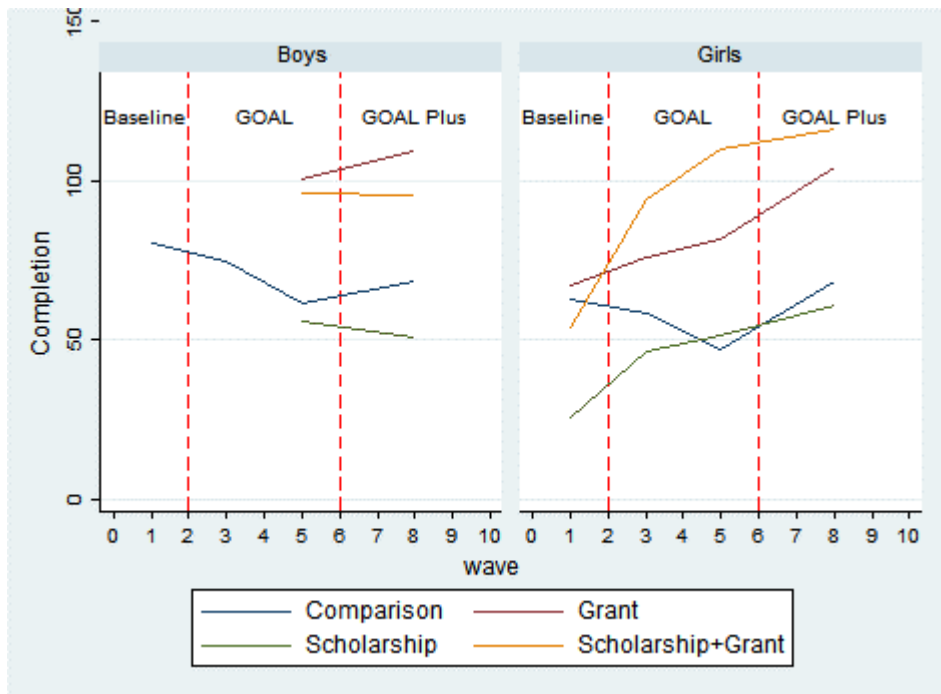
Note. Attendance data for boys during GOAL for were available only at baseline (wave 1) and endline (wave 6).

Completion and promotion outcomes followed a similar pattern for girls, though data on completion and promotion are shown only up to period 8, the period before the EVD epidemic. We restrict data to this period because in the truncated 2015 school year, in which schools opened late in February and March 2015 and closed early in July 2015, decisions on completion and promotion were made in a decentralized way at the school level without exams. Schools that promoted students did so using a collective negotiation process through meetings and consultations among principals, teachers, and parents. Some schools passed students with an average grade of 80%, others set the average at other levels, and three GOAL Plus schools opted not to promote students at all.

The trends in completion and promotion outcomes with improvements for girls observed during GOAL were continued with GOAL Plus up to the cutoff period. Specifically, the changes during GOAL Plus for different types of schools were as follows:

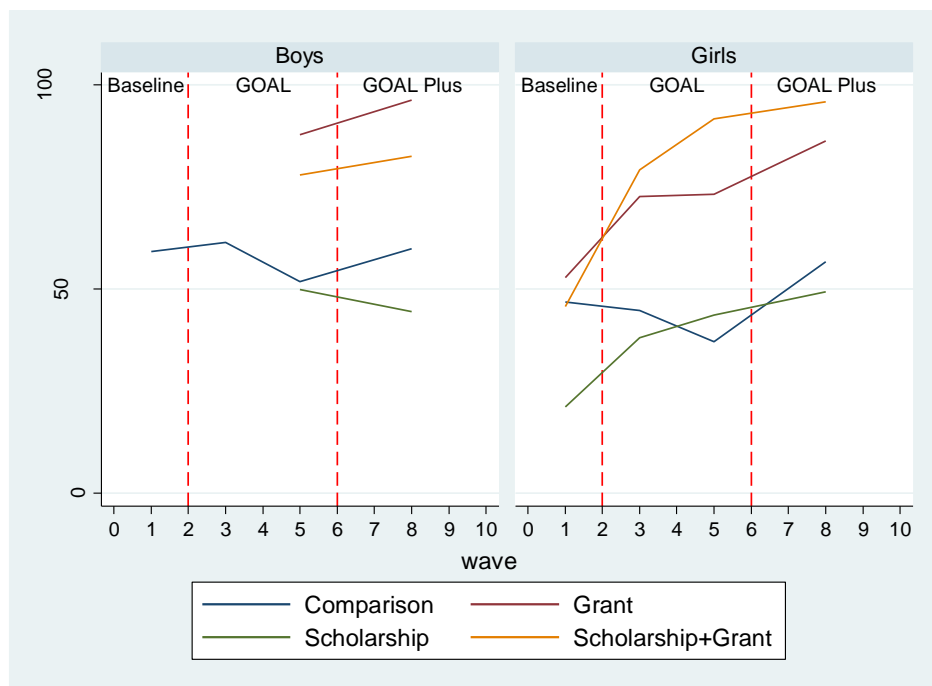
- **Scholarship plus grant schools:** There was relatively little change over time in the completion and promotion outcomes for both boys and girls under GOAL Plus.
- **Grant schools:** Similar to enrollment and attendance outcomes, the numbers of completions and promotions appeared to increase for girls but also to a lesser degree for boys.
- **Scholarship schools:** The increasing trend for girls in completions under GOAL appeared to continue under GOAL Plus. However, there was little or no change in the promotion outcomes for either boys or girls.
- **Comparison schools:** Again, the greatest change in outcomes between periods covered by GOAL and GOAL Plus were for comparison schools. There was a decline in completion and attendance both for girls and boys throughout GOAL, but there was an increase in these outcomes during GOAL Plus, especially for girls.

Figure 7. Completion Trend Over Time by Type of Support Provided to School



Source: Liberia GOAL and GOAL Plus projects (2013, 2014).
 Note. Completion data for boys during GOAL were available only at endline for project schools.

Figure 8. Promotion Trend Over Time by Type of Support Provided to School



Source: Liberia GOAL and GOAL Plus projects (2013, 2014).
 Note. Promotion data for boys during GOAL were available only at endline for project schools.

To numerically summarize changes in outcomes over the period covered by GOAL Plus, we compare the student outcomes just before GOAL Plus and at the end of GOAL Plus period for each outcome; Table 3 shows the number at the two points.¹⁸

A measure of the overall effect of GOAL Plus on girls relative to boys can be computed by dividing the value of outcome at the endline for either boys or girls by its value in the period just before GOAL Plus began. These values are shown in Figure 9. If the endline value is equal to the pre-GOAL Plus value, it will have a value of 100. If the outcome increases by 20%, it will have a value of 120. For example, if the average enrollment of boys in schools increased from 150 to 210 students (a 40% increase), then the standardized endline value would be 140. If average enrollment decreased from 150 to 120, then the measure would take the value of 80. To the extent that outcomes increased more for girls than boys over the time, the red bar (rightmost in pair associated with model type) will be longer.

¹⁸The GOAL endline data for all outcomes come from spring 2013 (at wave 6 in the figures). The enrollment and attendance data at GOAL Plus endline are from fall 2015, whereas the completion and promotion data for GOAL Plus endline come from spring 2014—the end of first full year of GOAL Plus implementation.

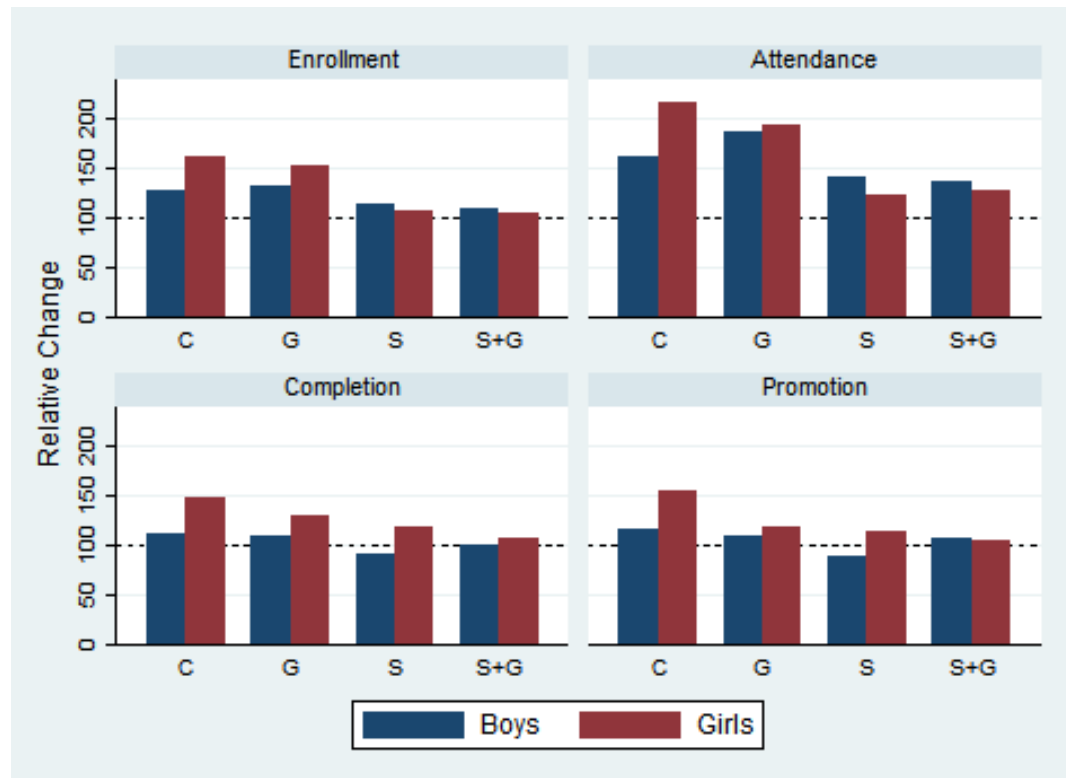
Table 3. Average Number of Students at Schools Before and After Intervention

		GOAL Endline				GOAL Plus Endline			
Outcome	Group	Comparison	Grant	Scholarship	Scholarship and grant	Comparison	Grant	Scholarship	Scholarship and grant
Enrollment									
	Boys	80.55	117.50	73.20	109.05	101.90	155.25	82.50	118.61
	Girls	69.40	100.30	78.60	131.60	112.00	151.88	84.90	138.22
Attendance									
	Boys	45.30	53.40	44.20	74.50	73.25	99.00	62.70	101.11
	Girls	36.10	49.00	51.20	85.75	77.70	94.00	63.00	108.44
Completion									
	Boys	61.65	100.30	56.00	96.05	68.57	109.30	51.00	95.55
	Girls	47.05	81.60	51.80	109.95	68.71	104.70	60.80	116.40
Promotion									
	Boys	51.80	87.80	49.90	77.85	59.90	96.20	44.50	82.55
	Girls	37.05	73.20	43.60	91.70	56.67	86.20	49.30	95.85

Source: Liberia GOAL and GOAL Plus projects (2013, 2014, 2015).

Note. Data before and after intervention for Grades 1 through 6 by gender and types of support the schools received. The GOAL endline data for all outcomes come from end of spring 2013. Enrollment and attendance data at GOAL Plus endline come from 2015, whereas the completion and promotion data for GOAL Plus endline come from spring 2014—the end of first full year of GOAL Plus implementation.

Figure 9. Relative Changes Over Time Associated With GOAL Plus



Source: Liberia GOAL and GOAL Plus projects (2013, 2014, 2015).

Note. Changes in enrollment, attendance, completion, and promotion of boys and girls by type of support provided to school. Enrollment and attendance data come from GOAL Plus endline in 2015, whereas the completion and promotion data come from end of first full year of GOAL Plus implementation.

The results from Table 3 and Figure 9 complement the observations from trend lines for GOAL Plus. The findings for GOAL Plus can be summarized for each outcome as follows:

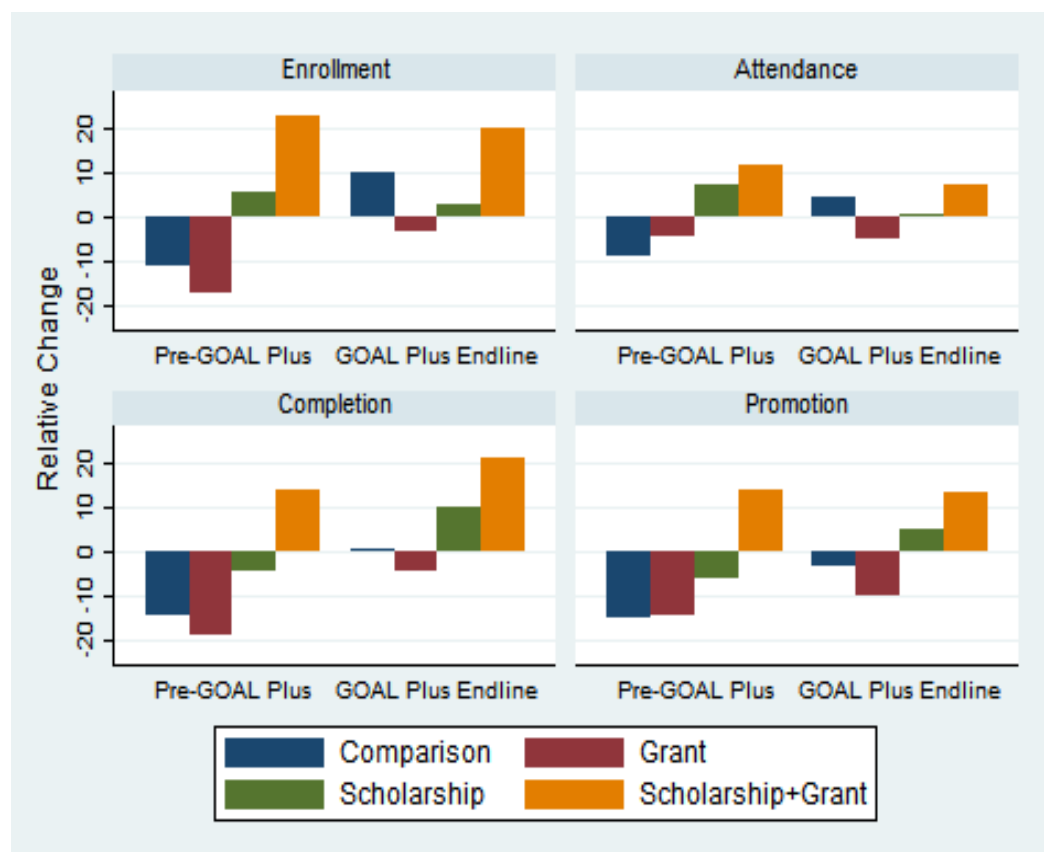
- The enrollment of girls appears to be stable or increasing for each groups of schools. The most noticeable increases in enrollment of girls relative to boys were at comparison and grant schools.
- Attendance increased in all schools, and the relative increases for girls were higher than boys at comparison schools and slightly higher at grant schools. Growth in the attendance of boys was somewhat higher than girls at schools that had been scholarship schools or scholarship and grant programs under GOAL.
- Completion improved more for girls than boys, and increases in completion for girls rather than boys were observed in all but schools that had provided both scholarships and grants.
- Promotion data were very similar to completion data, increases for girls rather than boys in all but schools that had provided both scholarships and grants.

The increases in enrollment of girls and boys under Goal Plus for schools that served as comparison schools were similar (in percentage terms) to those increases observed under GOAL (see Figure 1) for schools that had received scholarships and grants. This provides corroboration across two sets of schools across two separate time periods of the effects associated with providing grants and scholarships. The pattern is similar for attendance measures, though there was greater growth in attendance than enrollment, indicating there was also an increase in attendance rate at these schools under GOAL Plus.

Another way to look at these data is to directly examine the numerical gap between girls and boys for each outcome in terms of the average number of students at a point in time and compare the change over time in this gap between girls and boys. In this way, the difference in outcomes between boys and girls can be directly compared in terms of the average number of students at schools shown as a gap between girls and boys. A negative number (bars in the figure below zero) indicates that there were more boys than girls on average at school, and a positive number (bars above zero) means that there were more girls than boys. Figure 10 displays this school-level gap before GOAL Plus (at wave 6) and at GOAL Plus endline for enrollment, attendance, completion, and promotion. The changes in the gender gap from pre-GOAL Plus to GOAL Plus endline can be summarized as follows by type of model:

- **Scholarship plus grant schools:** The gender gaps in favor of girls in scholarship plus grant schools observed for all outcomes at these schools were stable over the period covered by GOAL Plus.
- **Scholarship schools:** The gender gaps did not change from pre-GOAL Plus to GOAL Plus endline for enrollment and attendance and but were reduced for completion and promotion – i.e., there were greater increases for girls for both completion and promotion.
- **Grant schools:** The negative gender gap (more boys than girls at schools) in enrollment and completion appeared to diminish by the GOAL Plus endline as girls received scholarships. There was little change for the attendance and promotion gender gaps from pre-GOAL Plus to GOAL Plus endline.
- **Comparison schools:** The negative gender gap (in favor of girls) at the end of GOAL in attendance and promotion changed little over GOAL Plus, with small changes (in favor of boys) in enrollment and completion of a few students. These schools largely maintained their status quo from the end of GOAL over GOAL Plus.

Figure 10. School-Level Gender Gap by Type of Support



Source: Liberia GOAL and GOAL Plus projects (2013, 2014, 2015).
 Note. Gender gap by type of support provided to school for GOAL and GOAL Plus.

Regression Analyses

To examine whether the observed changes in outcomes over time were attributable to GOAL Plus and to assess whether these changes were statistically significant, we used regression analysis to compare changes in outcomes for girls and boys at schools that received different kinds of support under GOAL relative to what was observed between girls and boys at scholarship plus grant schools. The regression includes data for the period just before GOAL Plus was implemented (i.e., the GOAL endline; wave 6 on the figures above), through the final time for which data were available for analysis (wave 10 for enrollment and attendance; point 8 for completion and promotion).

We estimated the effect of GOAL Plus on student outcomes with the following regression model:

$$Y_{git} = \beta_0 + \beta_1 Treatment + \beta_2 Girls + \beta_3 Intervention + \beta_4 Girls * Treatment + \beta_5 Girls * Intervention + \beta_6 Treatment * Intervention + \beta_7 Girls * Treatment * Intervention + \beta_8 Trend + \beta_9 County$$

In this model Y_{git} represents the grade-level enrollment in grade g , school i , and time t expressed as a number of students in a school. The grade can cover all grades within a school or an individual grade. *Girls* is a binary indicator for whether the data covered boys or girls, treatment is a categorical variable with 4 levels (scholarship, grant, scholarship plus grant, and comparison) where scholarship plus grant schools serve as the reference group. *Trend* is an indicator for the time when the data were collected only for enrollment and attendance outcomes.¹⁹ *Intervention* is a binary variable indicating whether data reference an outcome at GOAL Plus or before (i.e., $Intervention = 1$ if $wave > 6$). *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 change in an outcome between the girls and boys (the “gap” described above) in schools over the time of GOAL Plus measured as the number of students at a type a school, relative to the difference over time for the outcomes between girls and boys in scholarship plus grant schools. It is a direct measure of impact of the GOAL project in a regression framework. An estimated coefficient of zero for a given type of school indicates that the change in girls’ outcomes relative to boys’ in other schools was not different from the change in girls’ outcomes relative to boys’ in scholarship plus grant schools. A positive value of β_7 indicates there was an additional impact of the GOAL Plus project in favor of girls on the outcome of interest. For example, if the number of girls enrolled in grant schools increased by 15 and the number of boys increased by 10, there would be a reduction in the gap of 5 students favoring girls.

Regression analysis is useful in that it summarizes a large amount of data and enables us to account for differences across schools other than their GOAL Plus status, including their location in terms of county. In addition to providing a summary across all grades (similar to the graphs above), it also allows us easily to summarize the effects of GOAL Plus for each grade. The overall effects across all grades necessarily add up to the sum of effects for individual grades; thus grade-level effects provide information on grades in which there were the largest effects within schools.

One reason to use regression analysis is that it allows us to assess whether estimated differences in outcomes observed between groups are externally valid, that is, whether it is likely that they would be observed beyond the immediate sample of 60 schools included in this study. Such external validity is captured by the statistical significance of the estimates. For this study, our ability to declare that observed differences in outcomes across schools are statistically significant is quite limited, in that data are available only at the level of the school, and the total number of schools is limited to 60 schools. Most of the differences observed between different school types

¹⁹Because there are only two data points for completion and promotion outcomes, the *trend* variable cannot be included in the model along with the *intervention* indicator. Therefore, completion and promotion models do not include the *trend* variable.

were not statistically significant but can be considered as a summary measure of impact across models for these schools when we control for general trend and location in terms of county.²⁰

Results from Regression Analysis

Table 4 presents estimated impacts on girls’ enrollment for schools as a whole and by grade, with the regression coefficients (β_7) for individual grades adding up to the coefficient across all grades considered together. In terms of overall enrollments in schools, the number of girls enrolled in Grades 1 through 6 differentially increased by between 8.1 and 21.9., depending on the type of support GOAL provided originally. The pattern of results matches that presented in the figures above, namely estimates are largest for the GOAL comparison schools, followed by grant schools (which received scholarship support under GOAL PLUS), followed by scholarship schools (which received grants as additional support under GOAL Plus). Neither the grade level results nor all-grades results were statistically significant, in part reflecting variability across schools. However, in the majority of the cases, the estimates of effects were positive, meaning that that the pre- to post-GOAL Plus gender gap differences in comparison, grant, and scholarship schools decreased more than those at scholarship plus grant schools. The results specific to different type of schools were as follows:

- Comparison schools: Across all grades, the gender gap changed by 21.9 points in favor of girls relative to the change in scholarship plus grant schools. This increase was mostly due to differential increases in Grades 1 and 3, where the gender gaps improved by 8.7, and 6.1 points.
- Grant schools: The gender gap decreased by 12.9 points across all grades. Most of the changes were observed at Grades 2 and 3, where the gap was decreased by 6.1 and 4.9 points.
- Scholarship schools: Relative to the change in scholarship plus grant schools, the gender gap was decreased by 8.1 points. The changes in Grades 1 and 3—2.9 and 4.3, respectively—were the biggest contributor to this result.

Table 4. Impact Estimates per School for Enrollment by Type of Support

Grade	Comparison	Grant	Scholarship
All grades	21.873 (16.557)	12.917 (20.590)	8.098 (20.256)
Grade 1	8.724 (5.479)	0.849 (6.812)	2.924 (6.702)
Grade 2	1.828 (4.090)	6.134 (5.085)	1.366 (5.003)
Grade 3	6.138 (3.700)	4.876 (4.601)	4.288 (4.527)
Grade 4	3.933 (3.457)	3.303 (4.297)	0.628 (4.227)
Grade 5	2.024 (3.123)	-3.126 (3.884)	1.462 (3.821)

²⁰The minimum detectable effect size was at least 0.642 standard deviations in the student outcomes. That is, only effects larger than 0.642 standard deviations are statistically significant. All of the effects are smaller than 0.642 in our analyses and therefore do not reach statistical significance. The standard deviations in the outcome variables are relatively large, reflecting variability across schools. With larger samples of schools, it would be more likely that effects would be statistically significant.

Grade 6	-0.885 (2.716)	0.790 (3.378)	-2.660 (3.323)
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Source: Liberia GOAL and GOAL Plus projects (2011–2015).

Note. Impact estimates are the coefficients of the parameter (β_7) of interest from the analysis; standard errors are in parentheses. Bolding shows significance at .05 level (note: there are no significant results in the table above).

Table 5 summarizes the estimated impacts of GOAL Plus on attendance at the school level and by grade. In terms of overall attendance in schools, the number of girls attending schools in Grades 2 through 6 differentially increased only for comparison schools but was close to zero overall or other schools. Although there were gains in first grade, they were largely offset by other grades. None of the results were statistically significant. The results specific to different type of schools were as follows:

- **Comparison schools:** Across all grades, the gender gap in attendance is improved by 11.2 points in favor of girls relative to the change in scholarship plus grant schools. This improvement was mostly due to differential increase in Grade 1, where the gender gap improved by 7.6 points.
- **Grant schools:** The gender gap increased by 0.5 points across all grades. The gap decreased only in Grade 1 by 5.8 points.
- **Scholarship schools:** Relative to the change in scholarship plus grant schools, the gender gap decreased by 1.4. The gender gap for attendance is decreased by 5.3 points in Grade 1.

Table 5. Impact Estimates for Attendance per School by Type of Support

Grade	Comparison	Grant	Scholarship
All grades	11.198 (12.504)	-0.527 (15.550)	-1.402 (15.298)
Grade 1	7.622 (3.988)	5.753 (4.959)	5.347 (4.879)
Grade 2	1.204 (3.622)	-0.458 (4.504)	-0.708 (4.432)
Grade 3	-0.627 (2.931)	-2.809 (3.645)	-3.840 (3.586)
Grade 4	0.822 (2.907)	-1.135 (3.615)	-2.478 (3.557)
Grade 5	0.528 (2.666)	-2.334 (3.315)	0.878 (3.262)
Grade 6	1.650 (2.315)	0.456 (2.879)	-0.600 (2.832)

Source: Liberia GOAL and GOAL Plus projects (2011, 2015).

Note. Impact estimates are the coefficients of the parameter (β_7) of interest from the analysis; standard errors are in parentheses. Bolding shows significance at .05 level (note: there are no statistically significant results in the table above).

Table 6 summarizes regression results for completion and promotion outcomes. The top panel of Table 6 presents the estimated impact of GOAL Plus on the number of girls who completed a grade by the type of support their school received. In terms of overall completion in schools, the number of girls who completed the school year differentially increased by about 10 students (in favor of girls) for each type of school relative to the scholarship and grants schools. The overall results indicate that gap between girls and boys was reduced at all types of schools when extra support was provided in terms of total number of students. The fact that the overall coefficient is positive for each type of school model (relative to scholarship and grant schools) reflects the fact that the gap between girls and boys decreased under GOAL Plus, whereas it remained unchanged at scholarship and grant schools over the period of GOAL Plus. The results were only

statistically significant for comparison school at the overall level, but none of the remaining grade-level results nor all-grades results were statistically significant.²¹

However, across all grades, the majority of the estimates were positive, meaning that gender gap differences over the course of GOAL Plus in comparison, grant, and scholarship schools decreased more than at scholarship plus grant schools. The results specific to different type of schools were as follows:

- Comparison schools: Across all grades, the gender gap significantly decreased by 10.2 points in completions relative to the change in scholarship plus grant schools. At Grade 1, the gender gap in completion decreased by 8 points.
- Grant schools: The gender gap decreased by 10.2 points in completions across all grades. The biggest decreases in completions gap were observed at Grades 1 and 6 by about 6 points.
- Scholarship schools: Relative to the change in scholarship plus grant schools, the gender gap in completion was decreased by 10.9 points. The biggest decrease in completion gap was observed in Grade 1 by 9.9 points.

The bottom panel of Table 6 presents the estimated impact of GOAL Plus on the number of girls who were promoted by the type of support their school received.²² The results are similar to those for completion, in that there was greater growth in girls' completion than boys' for all types of schools relative to the scholarship and grant schools. Neither the grade-level results nor all-grades results were statistically significant. However, across all grades, the majority of the estimates were positive, meaning that over the course of GOAL Plus, the gender gap differences in comparison, grant, and scholarship schools decreased more than that of scholarship plus grant schools. The results specific to different type of schools were as follows:

- Comparison schools: Across all grades, the gender gap was decreased by 7.8 points in promotions relative to the change in scholarship plus grant schools. At Grade 6, the gender gap in promotions increased by 12.1 points.
- Grant schools: The gender gap increased by 7.2 points in promotions across all grades. The biggest decrease in promotions gap was observed in Grade 6 by 5.2 points.
- Scholarship schools: Relative to the change in scholarship plus grant schools, the gender gaps in promotions were decreased by 7.1 points. The biggest decrease in promotion gap (i.e., in favor of girls) was observed in Grade 6 by 11.7 points.

²¹There are more comparison schools than grant and scholarship schools; therefore estimates are more precise and results are more statistically significant for comparison schools.

²²Detailed regression results are presented in Appendix X.

Table 6. Impact of Intervention on the Completion and Promotion of Girls by Grade

Grades	Comparison	Grant	Scholarship
Completion			
All grades	10.243 (5.219)	10.150 (6.430)	10.850 (6.430)
Grade 1	7.986 (6.052)	5.950 (7.456)	9.850 (7.456)
Grade 2	-1.893 (5.326)	-1.100 (6.562)	0.300 (6.562)
Grade 3	3.686 (4.631)	3.600 (5.706)	1.400 (5.706)
Grade 4	-0.210 (4.657)	-3.250 (5.737)	-3.950 (5.737)
Grade 5	-4.083 (3.473)	-4.500 (4.279)	-1.400 (4.279)
Grade 6	2.307 (2.915)	5.830 (3.634)	0.850 (3.592)
Promotion			
All grades	7.793 (21.997)	7.150 (27.102)	7.050 (27.102)
Grade 1	-1.481 (4.651)	-1.205 (5.723)	1.995 (5.723)
Grade 2	4.333 (4.169)	2.900 (5.137)	3.000 (5.137)
Grade 3	0.143 (4.145)	-6.550 (5.107)	-3.750 (5.107)
Grade 4	-2.036 (3.096)	-3.669 (3.809)	-0.069 (3.809)
Grade 5	1.686 (2.764)	3.716 (3.445)	0.450 (3.405)
Grade 6	12.062 (18.928)	5.150 (23.321)	11.650 (23.321)

Source: Liberia GOAL and GOAL Plus project (2011–2015).

Note. Impact estimates are the coefficients of the parameter (β_7) of interest from the analysis; standard errors are in parentheses. Bolding shows significance at .05 level.

Impacts of GOAL Plus on School Conditions

In addition to examining the impact of GOAL Plus on student outcomes at the school and grade level, we examined the change in school characteristics from GOAL endline to GOAL Plus endline across schools. Using questions from school observation instruments developed for GOAL, we created two scales to summarize school conditions across 16 individual observational variables. One scale (nine items) summarized the overall physical condition of the school and the other (seven items) summarized the availability and quality of its water and hygiene infrastructure.²³ In addition, we also created summary statistics for individual questions for academic outcomes for whether (1) students have notebooks to write on, (2) students have pencils to write with, and (3) textbooks were visible during visits from data collectors.

Table 7 displays the mean of the two scales (which were on the range of zero to 100) at GOAL and GOAL Plus endline periods, along with the percentage of schools in which observers found that students had notebooks to write on and pencils to write with, and textbooks were visible in the classroom. Figures 11 and 12 show the same information starting from GOAL baseline. The results show that compared with the GOAL Plus endline, most schools appeared to have improved school conditions over the period covered by GOAL Plus, with the largest changes at

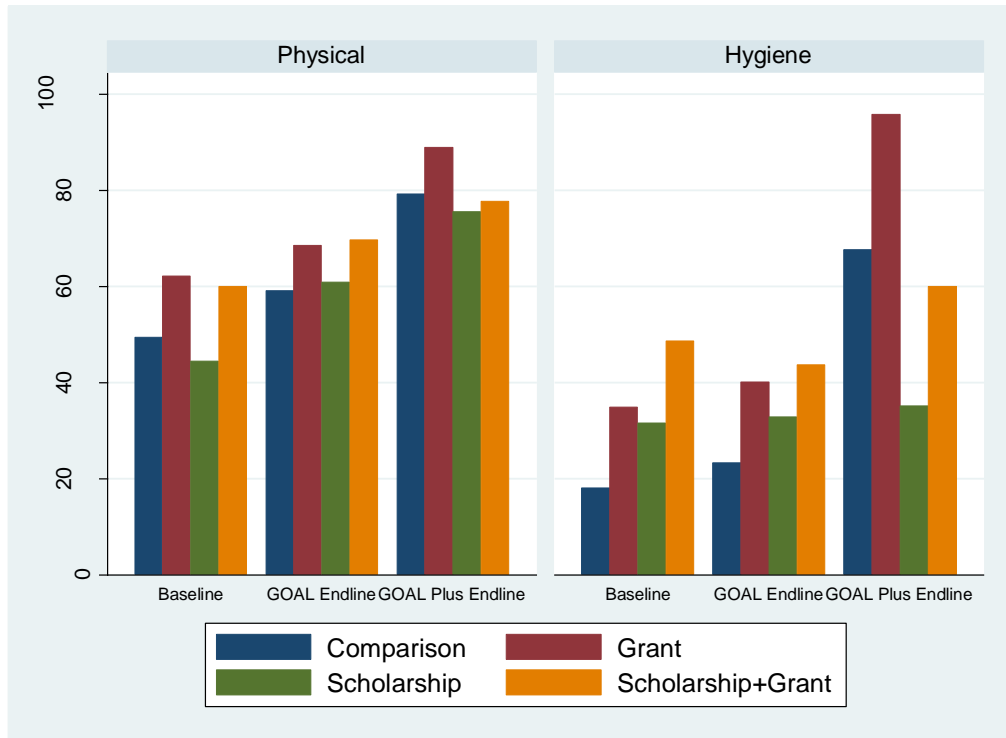
²³We assessed the reliability of the two composite scales and found them to be sufficiently reliable with Cronbach's alphas of 0.74 and 0.66 for the "physical condition" and "water and hygiene" scales, respectively, at the GOAL endline. At GOAL Plus endline, the Cronbach's alphas were 0.61 and 0.89, respectively.

the comparison schools under GOAL that had not previously received supports. There also seemed to be increases in the availability of materials and supplies in classrooms across schools over this time, with specific exceptions noted below. Caution should be taken in interpreting the indicators of resources in a school in that they are based on a very small number of scale (1–4) responses averaged together for small numbers of schools; therefore they are sensitive to small changes at only a few schools.

The changes specific to each type of schools were as follows:

- Scholarship plus grant schools: Scholarship plus grant schools had higher physical school quality and water and hygiene scores at GOAL Plus endline than GOAL endline. However, there were little or no improvements in terms of notebook, pencil, and visible-textbook (which showed decline) availability during school visits.
- Grant schools: Grant schools had improvements in all school conditions measures. The most notable differences were observed in water and hygiene scores and the availability of notebooks, pencils, and textbook visibility.
- Scholarship schools: Scholarship schools showed some improvement on physical school quality and larger improvements in the availability of notebooks, pencils, and textbook visibility.
- Comparison schools: Comparison schools appeared to have improvements in all school quality measures. The highest improvements were observed water and hygiene scores and textbook visibility.

Figure 11. Average Scale Scores for Physical School Quality and Water and Hygiene by Type of Support



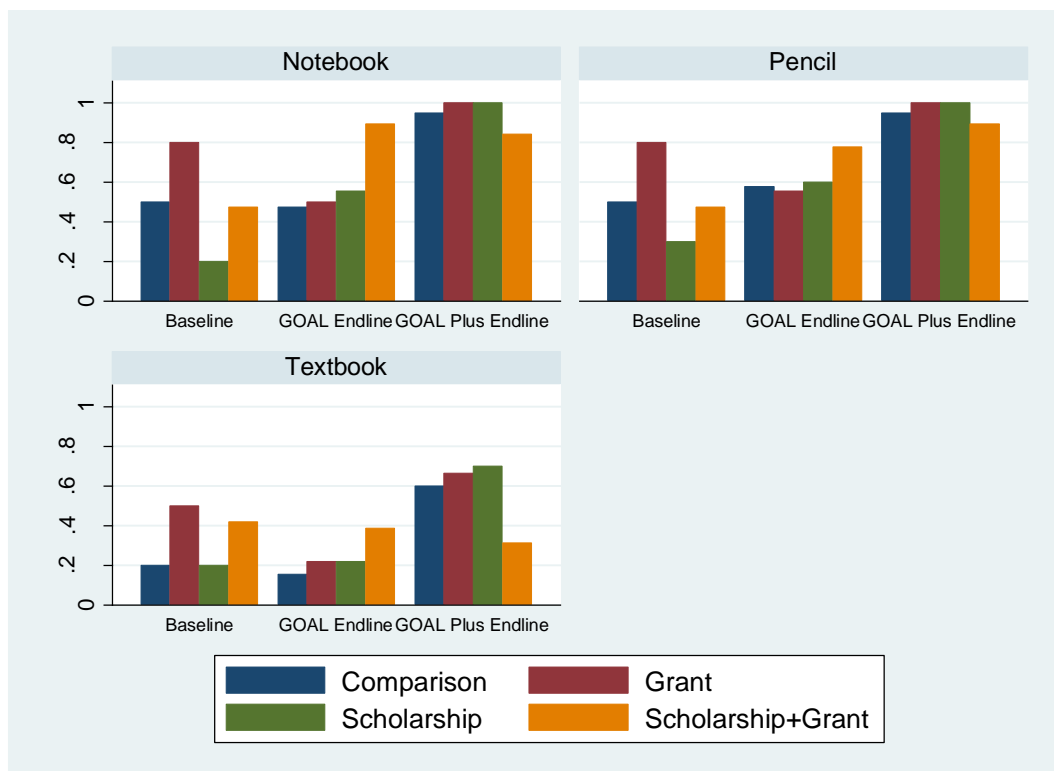
Source: Liberia GOAL and GOAL Plus projects (2011, 2013, 2015).

Table 7. Average School Characteristics at the Endline by Type of Support

Variable	GOAL Endline				GOAL Plus Endline			
	Comparison	Grant	Scholarship	Scholarship and Grant	Comparison	Grant	Scholarship	Scholarship and Grant
Physical School Quality scale	59.2	68.6	61.0	69.6	79.29	88.89	75.56	77.78
Water and Hygiene scale	23.3	40.2	32.9	45.8	67.73	95.83	35.24	60.03
Notebook	47%	50%	56%	90%	95%	100%	100%	84%
Pencil	58%	56%	60%	78%	95%	100%	100%	89%
Textbook visible	16%	22%	22%	42%	60%	67%	70%	32%

Source: Liberia GOAL and GOAL Plus projects (2013, 2015).

Figure 12. Percentages of Schools with Different Characteristics by Type of Support



Source: Liberia GOAL and GOAL Plus projects (2011, 2013, 2015).

Next, we tested whether these differences across type of treatment were statistically significant by estimating the following regression model:

$$Y_s = \beta_0 + \beta_1 Treatment + \beta_2 Intervention + \beta_3 Intervention * Treatment$$

where Y_s represents one of the outcomes in schools at GOAL Plus endline. *Treatment* is a categorical variable with four levels (scholarship, grant, scholarship plus grant, and comparison) where scholarship plus grant schools serve as the reference group, and *Intervention* is an indicator for whether data come from GOAL Plus endline or GOAL endline. The key element of this regression is the coefficient β_3 , which measures the difference in outcome between the GOAL project schools over time relative to the difference between scholarship plus grant schools. A positive value of β_3 indicates that the set of schools showed greater increase over time covered by GOAL Plus in a measure than schools receiving scholarship plus grants.

Table 8 show the results from these models.

Table 8. The Effect of GOAL Plus on School Conditions

Outcome	Comparison	Grant	Scholarship
Physical School Quality	12.036 (10.532)	12.195 (13.105)	6.501 (12.871)
Water and Hygiene	26.109 (13.574)	37.385 (17.437)	-15.909 (16.781)
Notebook	0.521 (0.167)	0.545 (0.207)	0.489 (0.207)
Pencil	0.249 (0.171)	0.322 (0.215)	0.278 (0.208)
Textbook visible	0.481 (0.214)	0.483 (0.269)	0.517 (0.264)

Source: Liberia GOAL and GOAL Plus projects (2013, 2015).

Note. Impact estimates are the coefficients of the parameter (β_3) of interest from the analysis; standard errors are in parentheses).

The results show that the pre- to post-GOAL Plus changes in schools relative to the changes in scholarship plus grant schools were not statistically significant in terms of physical school quality. However, there were statistically significant changes over time in terms of water and hygiene, notebook availability, and textbook visibility on the day of school visit. The changes from GOAL endline to GOAL Plus endline can be summarized for each type of school as follows:

- Comparison schools: Relative to scholarship plus grant schools, the increase in the share of comparison schools that had notebooks to write on and textbooks visible during school visits were 52.1% and 48.1%, respectively. Comparison schools also increased their physical school quality and water and hygiene scores by 12 and 26.1 points from GOAL endline to GOAL Plus endline relative to scholarship plus grant schools, but these changes were not statistically significant.
- Grant schools: Grant schools increased their water and hygiene scores about 37.4 points more than scholarship plus grant schools from GOAL endline to GOAL Plus endline. Grant schools also had about 12.2 points higher increase in physical school quality, but the difference was not statistically significant.
- Scholarship schools: Relative to scholarship plus grant schools, the increase in numbers of scholarship schools that had notebooks to write on was about 49% at GOAL Plus endline.

Chapter 4:

Qualitative Findings

Qualitative Findings

In interviews and focus groups, respondents from the GOAL Plus study schools discussed a range of challenges that both schools and individual community members faced while schools were closed due to the EVD outbreak. Investigating the challenges and the activities that communities took to overcome them informed the research team's understanding of each community's recovery efforts as schools reopened. As schools reopened, significant gaps existed that hindered students' reenrollment, including extensive damage to school infrastructure, inconsistently implemented health protocols, financial constraints, the transformation of social norms, and a continued fear of EVD. Fortunately, despite the immense challenges facing communities in the wake of the EVD epidemic, school communities were resilient in their recovery. PTA and community members contributed their time, labor, and money to repair schools and disseminate information about school reopening; furthermore, both students and community members discussed the numerous reasons that education is important. GOAL Plus activities also resumed once schools reopened, easing the financial burden many families faced in sending their children to school. This support as well as the capacity building GOAL Plus conducted prior to the EVD outbreak were critical to restoring education as a centerpiece of the community as students returned to school.

Activities During School Closure (August 2014–February 2015)

To contain the spread of EVD, Liberian President Ellen Johnson Sirleaf ordered all schools closed on July 30, 2014. This nationwide closure included all GOAL Plus schools. In addition, the government ordered a ban on all public gatherings, including events and demonstrations, and announced quarantines of EVD-hit communities. Consequently, routine activities changed substantially, particularly for children in the absence of schools. Financial constraints forced many students to assist their families with income-generating activities. However, many of these students managed to continue studying their school materials and received informal instruction from other community members and family members. Concurrent with economic and education activities, several NGOs helped GOAL Plus communities conduct mobilization and EVD awareness activities and conducted trainings to ensure schools would reopen according to health and safety protocols.

EVD Awareness Activities

Many organizations, including the USAID-funded GOAL Plus project, provided assistance to communities that contributed to school reenrollment as communities recovered from the EVD outbreak. Several NGOs were involved in activities that directly addressed the EVD epidemic as it occurred, while others focused their efforts in helping Liberians rebuild their communities. Focus group and interview participants at three of the GOAL Plus schools specifically mentioned the efforts of Plan Liberia, the Red Cross, Crusaders of Peace, International Rescue Committee, Save the Children, and Africa Team Work. These organizations helped local communities respond to EVD in three main ways. First, NGOs helped to build capacity in EVD awareness within the local communities. Second, these organizations worked to spearhead several

initiatives that helped to encourage students to reenroll in school. Finally, NGOs proved to be instrumental in the post-EVD building of much-needed school infrastructure. In addition, the GOAL Plus team coordinated health protocol training prior to school reopening in all 20 schools in Grand Bassa. In Bong County, GOAL Plus split these training duties with Save the Children. Finally, in Lofa County, Plan Liberia trained one third of GOAL Plus Lofa schools while GOAL Plus trained the remaining two thirds. The health protocols list measures that school administrators needed to take (1) before schools reopened, (2) once schools reopened, and (3) when individuals are placed under quarantine. The protocols also discuss safe health and hygiene practices, psychosocial support and reducing stigma, communicating with families, the timeline for protocol implementation, and ensuring full compliance with the protocols.

The Liberian government issued health protocols, which recommended that each school form a “School Ebola Safety Committee” consisting of administrators, adult volunteers, children, and youth. While the Ebola Supplemental Questionnaire did not specifically ask whether such a committee existed in each GOAL school, committees were mentioned in several responses, particularly when respondents explained who was responsible for conducting temperature checks and overseeing hand washing. Respondents referred to groups with varying titles, but some version of a safety committee was named by just under half of the schools. In Bong County, this committee was called the *Safety Management Committee*, in Grand Bassa this title was also used, as was *Ebola Safety Committee* and *School Safety Committee*. However, just two out of eighteen schools in Lofa County referenced any such committee.

Education Activities During the EVD Period

In terms of educational activities while schools were closed, parents and students recalled international NGOs encouraging children to study as well as the alternative teaching program that was offered through the radio. Many students studied their old notes in order not to forget what they had been learning about before the school closure. Multiple students mentioned that their family members encouraged them to remain motivated in their schoolwork while schools were closed and played a critical role in encouraging them to return to schools as they reopened. Multiple students mentioned that family members often reminded them to continue reviewing their schoolwork even as schools remained shuttered; they also emphasized that because EVD would not last forever, students must be prepared to return to school. One female student from Grand Bassa explained, “I studied my past notes. My uncle encouraged me to study. He always said Ebola will finish someday so I shouldn’t forget about school. He sometimes helped me with my lesson.”

One focus group participant from Bong described this encouragement as well, “I talk to my children to study. I told them that if they forget school will forget them.” In several communities “study classes” were mentioned, which were run at churches or other focal points in the community, often by parents. Additionally, many individuals told the research team that older students assisted younger students with lessons during this time.

Economic Activities of Families During the EVD Period

Respondents recalled occupying their days with a variety of income-generating activities while schools were closed. Most students reported participating in economic activities with their

families. Students mentioned working on several different kinds of farms, including peanut, sugar cane, cassava, and rubber. In addition, students assisted their parents with housework and various small business activities, such as the selling of goods. One frequently mentioned income-generating activity mentioned by several students in Grand Bassa was the crushing of rocks. One female student explained, “I’m crushing rocks in the rock field. If I come back to school, I will continue to crush rock after school hours.” Parents in this county also referenced that they and their children participated in this activity during the school closure. While respondents did not describe what larger activity crushing rocks contributed to, they explained that they sold the crushed rocks in order to buy school materials.

Reopening of Schools Post-EVD: February and March 2015

Although schools officially reopened on February 16, many Liberians mentioned in focus groups and interviews that they believed that schools would reopen in March. In Grand Bassa, Bong, and Lofa Counties, information on school reopening was communicated through two main methods. First, in Grand Bassa and Bong, the majority of participants mentioned that they learned about the schools reopening from listening to the radio. One possible reason for their confusion was that radio announcements provided conflicting information: “The dates of reopening were conflicting. The first announcement was the schools were opening in February, later it was announced that school was opening in March.” People in Lofa, however, did not depend on the radio because of the lack of radio coverage in the district. According to one Lofa resident, “no good radio coverage [exists] here to monitor the news.... We get the news late.” Another pointed out, “not everyone here has radio.” In response to inadequate radio coverage, many community members in Lofa actively participated in efforts to spread news of the school reopening. Community efforts were undertaken by the MOE (letters, District Education Officer), the school itself (teachers, principal, and the PTA, including posters, flyers, and hired town criers), and other community members (family members, friends, and neighbors).

Barriers to Student Reenrollment

This section primarily addresses the third research question regarding the school communities' assets and gaps after the EVD crisis: how do they relate to enrollment, attendance, retention, and completion rates in GOAL/GOAL Plus schools? We will discuss the following:

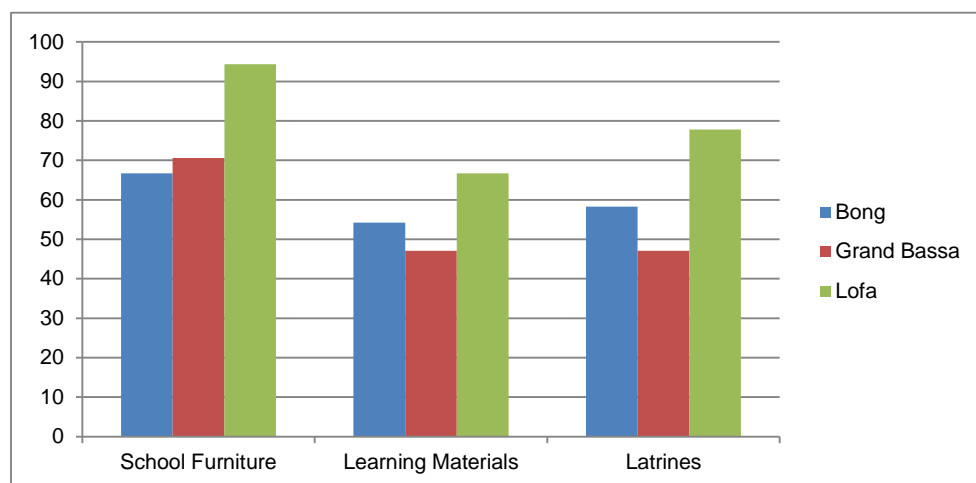
1. The challenges of reopening schools in the post-EVD environment, such as repairing damaged infrastructure, addressing the teaching staff deficit, and overcoming a learning deficit;
2. How GOAL Plus schools inconsistently implemented government-mandated health protocols;
3. The ways that the EVD epidemic created financial barriers through loss of livelihood and familial support;
4. The ways in which the EVD epidemic drastically impacted social interactions among community members; and
5. The fear of contracting EVD that initially prevented parents and students from reenrolling in school.

Challenges in Schools Post-EVD

In the aftermath of the EVD epidemic, schools throughout the study area faced new sets of challenges. The most common challenges reported by respondents in Bong, Lofa, and Grand Bassa included damages to school infrastructure, deficits in teaching staff, and gaps in students' learning.

Damages to School Infrastructure. Respondents reported that extensive damage took place to school property during school closures, despite the fact that none of the schools were used for EVD-related activities. Damage to school infrastructure also decreased students' motivation to attend school and contributed to low morale. The most common occurrences of damage reported by students and educators were to latrines and building doors. Over half of GOAL Plus schools responding to the EVD supplemental questionnaire in Bong and Lofa Counties reported that furniture, learning materials, and latrines were damaged while schools were closed during the outbreak. Lofa County reported the most damage to school infrastructure; all but one school responded that furniture had been damaged or stolen/removed during the outbreak, two thirds of its schools reported learning materials had been damaged or stolen/removed, and latrines at over three quarters of schools in this county were altered or damaged during the outbreak. Fortunately, only six GOAL Plus schools reported having classrooms that were no longer usable due to the outbreak (four of them located in Lofa County). One parent from Grand Bassa discussed the impact of poor school infrastructure on students in their community, "School infrastructure were not in good condition and students had problem with that which discourage them from going to school, classrooms were not special." This sentiment reveals the potential influence that damage to school infrastructure can have on student motivation to attend school.

Figure 13. Percentage of Schools Reporting Damage



Across counties, schools’ response to damaged infrastructure was varied and inconsistent in providing replacement furniture and materials. The largest gap in addressing damaged infrastructure was the lack of response in renovating damaged latrines; less than a third of schools in Bong and Lofa County where latrines were damaged during the outbreak had been renovated at the time of this study.

In addition to the damage done to schools’ infrastructure, schools also reported damage to and losses of learning materials. Learning materials were replaced in three quarters of affected schools in Bong and Lofa Counties, but only slightly more than a third of schools in Grand Bassa County. However, new or replacement furniture was provided to a larger portion of affected schools in Grand Bassa than to those in Bong and Lofa Counties.

Deficits in Teaching Staff. Despite the Liberian government’s decision to continue to pay government teachers during school closure, schools still faced challenges in maintaining adequate teaching staff. Decreases in teaching staff and increases in student enrollment due to migration created teacher deficits across districts. Volunteer teachers played an important role in alleviating the teacher deficit. Although volunteer teachers were in high demand to staff schools as they reopened, they were not compensated by the government during school closure, and this lack of compensation was a significant factor motivating their weak commitment to their positions. Numerous non-volunteer teachers also reported inconsistent payment schedules or not receiving payment at all for their work as teachers, which affected their willingness to attend school and teach class. Furthermore, the existence of volunteer teachers as a critical component of the school represents a larger barrier to schools, as it presents a temporary solution for understaffed schools with increased enrollment rates.

Learning Challenges. Educators and students reported several challenges in reengaging students in their education as a result of the EVD-related school closures. The majority of students reported that their ability to learn and the teaching instruction were relatively unchanged. However, several students reported increased challenges in learning since they had reenrolled in school. Of the students that mentioned experiencing learning challenges, the majority said that they had “issues understanding, lessons were taught too quickly, or there was trouble

remembering from last year.” Educators also experienced difficulty in teaching as a result of the EVD school closures. Several teachers also mentioned that they had an increased workload, often having to teach two or more subjects.

Inconsistencies in Schools’ Implementation of Health Protocols

Inconsistencies regarding the frequency of temperature checks and hand washing in schools existed between EVD questionnaire answers and information gathered from FGDs. The health protocols were designed and issued by the Liberian government to school communities in order to ensure that schools be safe spaces of learning for students and that they protect students from EVD. They consisted of daily procedures that needed to be established for all who entered the school property along with instructions for designating specific people as responsible for enforcing them. When asked about health protocols in the EVD questionnaire, responses revealed that schools were uniformly complying with the daily requirements. In fact, 100% of schools indicated that EVD-specific cleaning materials were available and that students had temperature checks before entering schools. Additionally, all but one school (in Bong County) responded that they enforced hand washing before entering schools, and well over three quarters of schools stated that they displayed information about EVD awareness.

Across all three counties, participants had different ideas about who was responsible for temperature checks and hand washing. Often, participants at the same school would name different individuals responsible for ensuring the implementation of health protocols. Examples of responsible individuals named include school administrators, teachers, PTA members, janitors, or older students. Discussions about these roles revealed to the research team that schools were inconsistently following the protocols, not only in terms of designating responsible administrators, but also in following the protocols with regularity.

Students and participants in FGDs provided conflicting information about the regularity of these procedures. Several respondents in a Grand Bassa County focus group discussion remarked that “it was being done before but our temperature is not checked anymore,” but others in this county stated that the checks occurred every day, with one female student telling researchers that temperatures were checked during roll call. In Lofa County, a PTA focus group highlighted that although they followed the rule requiring two-person teams of safety administrators, they did not follow the protocols consistently:

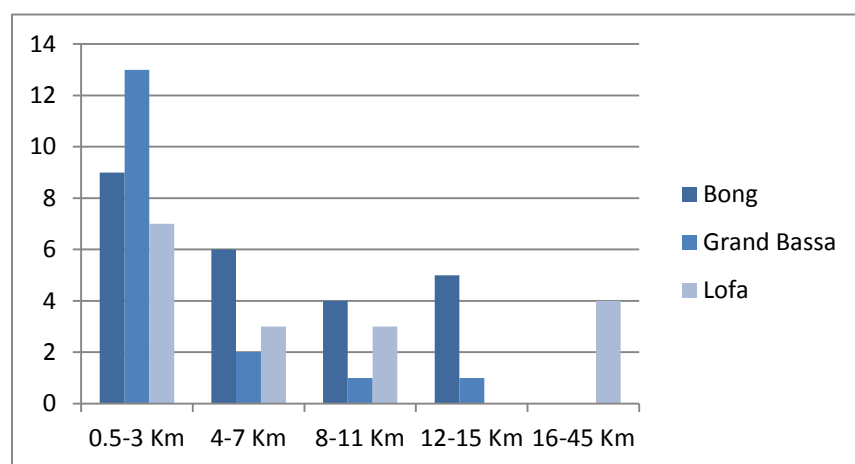
Yes, all students get their temperature checked two times a week. Two persons are trained to do the temperature checks, the principal and the vice principal, sometimes we are absent or have busy schedule, and we only do it two times a week.

Other focus groups and interviews in this county were mixed in their description of health protocols. One student stated that “our temperature is not check[ed] and I do not know the reason for which our temperature is not check[ed]. We only wash our hands.” However, most others affirmed that schools followed the safety procedures.

According to the Safe School Protocol, schools were supposed to have a referral system with a nearby health facility, including a transport arrangement. For three quarters of schools in Lofa County, children were consequently required to get a sick slip from school before accessing

healthcare. Schools in Grand Bassa County were split in requiring this slip, and in Bong County, just a quarter of schools required sick slips. The EVD questionnaire also inquired as to whether schools had a dedicated health worker. Just six of 59 schools had a health worker, with four of these workers present at the schools every day. Unfortunately, the schools with health workers were not those that were located the furthest from clinics. Schools thus improvised in their response to students that need medical assistance. One student in Bong explained “no, the school does not have a health worker, but a teacher helps to treat students if there is medication on campus.” While just under half of all the schools surveyed had a health clinic in their community or up to 3 kilometers away, a third of schools were located 8 or more kilometers away; schools in Bong and Lofa Counties fare particularly badly in terms of their access to a health facility, with four schools in Lofa located between 16 and 45 kilometers from a clinic.

Figure 14. Distance From School to Nearest Clinic



Financial Constraints to Reenrollment

Students and families consistently cited financial constraints as a significant challenge in reenrolling girls in schools. Despite families’ preexisting financial situations, EVD caused undue financial stress on students’ families by disrupting their livelihoods. Students and parents mentioned the inability to pay school fees and buy school materials as major challenges to reenrolling in school. One parent from Bong explained their difficulty in paying school fees, “[The] EVD crisis affected us financially. We were not doing any business or any activity to really make money. To send children to school is costly.” Students also mentioned the challenges associated with obtaining school fees after the EVD outbreak:

I will need school materials to come back to school. My parents were helping to provide them before but during the Ebola break her market broke down, she spent her market money to take care of the family. This year she does not have money to buy my school materials.

The GOAL Plus interventions directly addressed this critical challenge many families found themselves in post-EVD.

Changes in Students' Interpersonal Relationships

Many changes occurred in students' physical environments that extended beyond their experience in school. One student from Lofa stated, "Yes, we are doing things that we didn't do last year; we are sitting on armchairs. Also because of Ebola, we do not have a general drinking bucket, because we don't want to use the same cup." Numerous students across the three districts also mentioned changes in how teachers allowed students to interact in schools. A handful of students referenced that their relationships with friends also changed, one female student in Bong explained, "We do not play as we use to last year because of Ebola. Some of my friends stopped me from touching them, I feel bad about that sometimes."

Beyond EVD's impact on modifying health practices and typical behaviors, many respondents referenced the toll it took on their home lives. Multiple students mentioned that they had family members who had died of the disease. In several instances, a family member's death strained families not only emotionally, but also financially, as one person stated "Ebola killed people that others are depending on for support." Several students mentioned that they had friends who did not return to school when it reopened either because they were afraid of EVD or because they had relocated to different towns.

Students living with their parents who had long-standing ties to the community were more likely to reenroll in school after the EVD crisis, as their parents and other community members could successfully provide these students with the resources needed to reenroll. Most of the girls who did not reenroll in school described significant changes in their lives during school closure that impacted their ability to reenroll in school. Family members who previously provided financial support passed away. Girls were forced to move to new communities in search of financial security. Others became pregnant, which presented a different set of financial challenges. One of the girls who decided not to reenroll in school shared her experiences during school closure:

Yes, my living situation changed recently, my uncle died from Ebola. He left Lofa for Monrovia, and we received news that he died from Ebola. He was [the one] that provided [money] for the house, and to send us to school.

Many students faced increased challenges to reenrollment in the wake of the EVD epidemic because of their exacerbated financial hardships. The epidemic negatively impacted social cohesion by changing social habits and affecting familial support systems. The epidemic further weakened the community by causing migration and internal displacement, as discussed in the following section.

Fear of EVD and Effect on Reenrollment

Many students mentioned the possibility of contracting EVD was a major barrier to their reenrollment in school. Students' fear of EVD acted as a major challenge in school reenrollment efforts. One student referenced the contagious nature of EVD: "I'm worried every day about me or my family getting Ebola, because when one person gets Ebola, everybody else will also get it." Additionally, students believed that they were more likely to come in contact with EVD at school because of the large number of children who could unknowingly be spreading the disease. One student pointed out that at school children, "play together and eat together," which increased their likelihood of coming in contact with a person infected with EVD.

Because of the increased risk of exposure to themselves and their families, some students chose not to reenroll. Others were traumatized by the recent loss of friends and family members to EVD, and found it difficult to return to school. One female student from Lofa aptly summarized students' worries surrounding close contact with EVD in school:

People can get Ebola from anywhere, but school worries me more because I have less contact at home and more at school. At school we sit with each other, at the house I don't have to touch anybody. I was told that Ebola is spread from touching.

Initially, parents prevented their children from reenrolling in school because of their own fears of EVD. The PTA described the challenges that they faced when encouraging parents to send their children to school after the EVD outbreak. A handful of parents did not trust the schools and the protocols they had put in place to prevent the spread of the disease. A few PTA members mentioned that, "parents refused to send their children to school because they believed that the Ebola preventive materials are used to infect their children." Some parents refused to send their children back to school because they feared that government schools were being used to spread EVD and that the EVD vaccine was being used to infect children. One female student from Grand Bassa described these fears:

People told us that, at school, the supply of things like bulgur wheat, hand wash buckets are used to spread the Ebola, they also told us the water in the hand wash buckets are mixed with something; if we wash our hands with it we will catch the virus. At the house the water is safe. But since school reopened I haven't seen anyone catch Ebola from washing hands. I think the house is safer than the school.

While many parents named EVD as one of the reasons that prevented their children from returning to school, few parents mentioned that they had been directly affected by EVD in their local community. The EVD epidemic caused many Liberians to travel or relocate, which changed the composition of local communities. This meant that some communities witnessed an influx of newcomers. Parents feared outsiders in their communities and often described outsiders as the ones most likely to spread EVD.

Factors Facilitating Student Reenrollment

This section primarily addresses the second research question regarding community resiliency: What factors in communities that received GOAL Plus interventions are associated with quick recovery and restoration of education as a centerpiece of their community? In this section we will discuss:

1. GOAL Plus interventions and how they provided a mechanism through which the community organized disaster recovery efforts;
2. How implementation of government-mandated health protocols allayed fears about returning to school; and
3. How community members valued education, which motivated them to restore education as a community centerpiece.

While there were certainly numerous obstacles to student reenrollment in schools as Liberia recovered from the EVD outbreak, many factors ultimately facilitated students' reentry into

schools and demonstrated strong community resiliency. As schools reopened, GOAL Plus resumed its distribution of scholarships, grants, and school materials, all of which helped ease financial constraints to schooling. Perhaps most notable was the role that the PTA played in assisting with health protocol implementation and mobilizing communities to contribute to school reopenings, whether through donating labor or funds to rebuild damaged infrastructure. Finally, data revealed that the communities themselves placed a premium on the value of education, and their encouragement motivated students to continue their studies.

GOAL Plus Interventions Supporting Reenrollment

Primary Activities of the GOAL Plus Project

1. Combined scholarship plus grant program
2. PTA capacity building
3. Supplemental tutoring
4. Gender-sensitive pedagogy training
5. Outreach awareness campaign re: girls' education

In addition to conducting EVD prevention and awareness activities while schools were closed, GOAL Plus continued to implement three interventions as they reopened: (1) a scholarship program, (2) PTA capacity building and community grants to improve the learning environments of schools, and (3) an outreach awareness campaign to create support among parents and communities for girls' education and appropriate age enrollment.

Scholarships. In March 2015, GOAL Plus initiated its distribution of scholarship items, school supplies and teachers' kits in all 60 schools. The distribution was carried out in close collaboration with the MOE Girls' Unit, local MOE offices, and PTA leadership of each school. GOAL Plus distributed book bags to girls and supplies to teachers; additionally, boys who enrolled in Grade 1 at an appropriate age of 6 or 7 also received school supplies. Teachers and principals also benefitted from this distribution and received school materials. At the end of one focus group with school teachers and principals, the participants deviated from the structure of the discussion and shared the following statement:

We want to thank GOAL Plus for their assistance. GOAL is doing more than Ministry of Education in our school. GOAL please don't leave. If you do, we will be finished.

Because of GOAL more girls are in school. The books that GOAL provided the school is in line with curriculum, but the books that the Ministry issued are not. Sometime last year, we did not even have a chalk, GOAL provided it.

In EVD's wake, GOAL Plus helped schools overcome the financial challenge of procuring school supplies, which provided teachers with the tools that they needed to teach effectively.

The EVD epidemic financially strained many families in the GOAL Plus communities, making it difficult for parents to cover the costs of enrolling and attending school. The scholarship program GOAL Plus implemented helped girls reenroll in school in situations where they otherwise

would not have been able to. One girl who did not reenroll said that she could not afford the L\$500 that it cost to register. Interview and focus group participants consistently mentioned that more girls were able to attend school because of GOAL Plus's financial assistance: "The school materials from GOAL Plus encourage me to continue school, because our mothers can't afford to buy the school materials we get from GOAL Plus." The scholarship program's effect on girls' reenrollment was clearly highlighted by parents in focus group discussions who, at the same time, pointed out the disparity of treatment by the project of girls and boys. When asked what differences existed between enrolling their son and enrolling their daughters, one respondent stated "For boys, lack of finance to provide school materials for them," while "for girls GOAL Plus provided school materials for them." Thus, while the scholarships successfully contributed to the goal of raising girls' reenrollment, families emphasized that their sons also faced hurdles to reenrollment that the project could not address.

Grants. The first round of school improvement grant implementation began in May 2014 but was interrupted due to the EVD outbreak. The grants program recommenced in January 2015, coinciding neatly with school reopenings in the following month. Of the six schools that the GOAL Plus team visited, five participated in the school improvement grant implementation. The schools that received the grants used the money to prepare the school for reopening through activities such as plastering classrooms and floors; purchasing desks, tables, and chairs; replacing essential infrastructure such as doors, windows, and bookshelves; and installing fences and renovating latrines. School PTAs and administrators worked together and dedicated a significant amount of time to ensuring that schools were safe learning spaces when they reopened.

The PTA used the grant money to repair damaged infrastructure, such as the floors and doors. Some of the repairs were carried out to ensure proper implementation of the health protocols, and many created a sense of safety for students. For example, two schools used their grants to construct a fence, creating a single entry point that made it easier for Safety Management Committees to ensure compliance with hand washing and temperature check protocols. In another school, the PTA used their money to repair armchairs, which replaced benches and provided students with more space. One student explained,

It is easy to get Ebola at school, because in school we sit next to each other. Before we were sitting 3–4 persons on benches, but now GOAL Plus provided us with armchairs so we don't have to sit close to each other.

By procuring armchairs, the PTA obeyed the MOE regulations to create space between seats in the classroom and eased student fears of EVD. Finally, in a different school, the PTA used the money to renovate the latrines. This renovation was critical because a number of participants expressed concerns about getting sick while using school toilets. The toilets had been so dirty that some students used the bush instead of the school toilet. All of these measures created a sense of safety among students and parents.

PTA Capacity Building. GOAL Plus had a PTA capacity building component, which included training sessions on effective communication strategies, promotion of gender and inclusive participation, and the use of local resources for school improvements. The PTA leadership changed significantly during school closure, as many PTA members moved from their communities, leaving a gap in PTA leadership. In some communities, new but untrained leaders

took their place. In spite of significant turnover, the PTA continued to employ the skills acquired from trainings to overcome the challenges associated with school reopening. Before the EVD epidemic, the PTA had used monitoring as a tool to ensure proper use of expenditures and to ensure regular teacher and student attendance. During the discussions, most PTAs said that they regularly monitor schools, but there were two PTAs that specifically named monitoring as a tool to identify challenges at school or to ensure that school operations were running smoothly: “The PTA visits the school regularly, sometimes two times a week to check student’s attendance, teacher’s attendance, illness, and hand wash and temperature checks.” This example highlights how the PTA built on their GOAL Plus training to address a new challenge.

The existence of GOAL Plus interventions prior to the EVD epidemic, particularly PTA capacity building, facilitated communities’ effective recovery efforts to ready schools for reopening. The project’s intervention structures also provided a mechanism through which key actors could address challenges posed in the post-EVD environment. The school community used grants to make much-needed repairs at school; students received financial support through scholarships; and the PTA employed tools that they learned in GOAL Plus training to solve EVD-related challenges. Each of these interventions demonstrated unintended utility in the months following the EVD outbreak.

PTAs and Community Members

The activities that the PTA took part in as communities recovered from EVD were critical to school reopening and student reenrollment. PTAs contributed their time and money to ready schools for reopening and engaged in community outreach to ensure that children returned to the classroom. Most parents interviewed by the research team were members of the PTA, while several others were among the PTA leadership and responsible for managing and directing the organization. The terms “PTA members” and “community members” were often used interchangeably, and discussions with the research team highlighted that no clear boundary in differentiating PTA members and community members existed. Both the PTA and the community provided their labor to clean, repair, and expand school infrastructure; in-kind and monetary donations; and community engagement to reenroll students and to ensure that school operations ran smoothly.

Labor. Labor was the most common and visible way in which PTAs contributed to the school community. The school community worked to create awareness in communities regarding school reopening and conducted cleanup exercises on school grounds to ready them for opening. Preparing schools for reopening proved challenging, as during the EVD epidemic, people weren’t allowed to congregate or perform any kind of activity on school grounds; this left grounds in disrepair. After months of closure, the schools endured damage, vandalism, and theft, leaving them in need of significant renovation prior to students entering the classroom. Furthermore, all schools were required to comply with safety protocols before they were allowed to reopen. The protocols included disinfecting school infrastructure and materials with chlorine and constructing a single entry point where administrators would implement temperature check and hand washing protocols. To prepare the school for opening, parents and other community members repaired damaged school infrastructure such as classroom floors, doors, and toilets, cut the grass, and cleaned the school yard. The PTA and community members built additional school

infrastructure such as new buildings and fences, which helped schools accommodate new students and implement the Ministry of Health’s safety protocols.

Donations. PTA and community members contributed both materials to repair or construct school infrastructure and money to pay volunteer teachers. They provided sticks for building school fences and blocks for renovating school buildings. To address the challenges posed by the EVD epidemic, the Liberian government ensured that all government teachers were paid during school closure. Discussions with teachers and principals confirmed that all teachers on the government payroll were indeed paid during the closure. However, many schools also had volunteer teachers who were not paid by the government. Some communities rectified this issue by collecting money through the PTA and paying volunteer teachers a small monthly stipend. In one instance, the PTA provided volunteer teachers with labor as compensation: “The volunteers were maintained by the PTA through helping them with labor on their farm work and cash.” The PTA’s use of alternative means to ensure that schools reopened and were staffed highlights their effectiveness in building relationships and morale within their community.

Community Engagement. The PTA became a primary actor during this period to engage in community outreach regarding updates related to school. Once key leaders learned that school would reopen, they convened the PTA and organized communication efforts through its members. “Yes, the PTA did announce to the community that school was opening. We did this by calling a general meeting, and participants of the meeting were tasked to spread the news in their communities.” When the government announced that the schools were reopening, the communities leveraged the PTA to spread information throughout the school communities alongside school administrators.

The PTA worked with school administrators to encourage students to enroll and to ensure school operations ran smoothly. PTA members were largely responsible for spreading the news of school reopening and encouraging student enrollment. As one participant shared, this was not easy: “The students’ recruitment process was challenging because we had to walk from long distances between villages to preregister students for the new school year.” Community resilience and recovery efforts were organized through the PTA. Key community actors leveraged the PTA to implement tasks such as preparing school for reopening and organizing various resilience and recovery efforts, all of which were vital to community well-being.

Importance of Health Protocols in Supporting Reenrollment

The health protocols that were put in place in schools across Liberia to ensure the safety and security of students were key drivers of school reenrollment. In January 2015, *Protocols for Safe School Environments in the Ebola Outbreak in Liberia* were published, defining minimum requirements that must be administered at every school to ensure that schools were safe places for all students and personnel. In following these requirements, all but three GOAL Plus schools created an emergency plan in the event of a future EVD outbreak. In addition, the protocols required that there be a single entry to schools that could be controlled in order for school administrators to enforce temperature checks and hand washing prior to entry. The temperature checking team was supposed to consist of two people, and the school administration was responsible for making hand washing facilities available on school grounds. Initially, when schools reopened and followed new safety protocols, many parents and students were afraid or

suspicious of the thermometers and other equipment being used to conduct these health checks. In order to address their concerns, in Bong one focus group participant explained, “we demonstrated the use of the materials (hand wash buckets, thermometers) in front of the families to show them that they were not harmful.” Demonstrating these procedures calmed fears that the health protocols would spread EVD and encouraged parents to send their children to school, complementing the efforts of the safety committees established at schools.

Community Encouragement

A wide range of community members, friends, and family played a significant role in motivating students to return to school. Indeed, the majority of students interviewed mentioned that their teachers, parents, and other families had encouraged them to reenroll in school once the schools opened. And in many cases, students themselves also valued their education and were committed to returning to school.

Family. Interviews and focus group discussions revealed that many parents and family members valued and recognized the importance of having an education. Their desire for their children to achieve an education was critical to facilitating students’ return to schools after they reopened. Many parents reiterated to the research team that “education is the key to success.” Respondents during interview and focus groups held high expectations of what an education can ultimately provide for their families.

Parents were invested in their children’s education in part because they counted on their children for future support. Respondents explained that if their children became educated, they could embark on successful careers that would enable them to take care of the family: “Everybody wants to win; when your child is educated, you win. They will care for you in your old age.” At the same time, many parents described wanting a better life for their child as the main justification for encouraging their children to return to school. One member of the PTA in Lofa described her reasons for encouraging her children to reenroll in school:

I want my children to have a good future, to be able to do something better for themselves. I want them to complete college. The bush (Farm work) work is hard, you see my body now? It’s weak. I want them to learn and live a better life.

Parents described that education opens doors for both their children and their families. One parent cited education as the reason for Ellen Johnson Sirleaf’s ascension to the Liberian presidency, which encouraged her to send her children to school. Parents encouraged their daughters to study by telling them that they could be like President Sirleaf.

School Groups and Administrators. Numerous students reported that the Girls’ Club and PTA also played a key role in encouraging students to reenroll in school. Many students mentioned receiving visits from members of their local Girls’ Clubs encouraging them to return to school. Parents also mentioned “PTA members calling meetings [with parents] to encourage students to return to school.” A handful of students and parents also stated that they had received visits from teachers and principals reassuring them that it was now safe to return to school. One student mentioned that her school had formed a special committee of teachers and administrators to conduct at home visits with students and their families.

The Community. The broader communities of the GOAL Plus schools held high expectations of their children, and their perceptions of what constitutes success also played a role in reenrolling students in school. School community members valued and prioritized academic success, and most expressed the expectation that their children would finish school through Grade 12. They also subtly spread the message that attending school at a younger age is better. A student expressed her concern over the closure’s impact on her education: “This year I am happy, because the more I sit and wait for school my age is increasing.” GOAL Plus reinforced this message through a media campaign and through providing scholarship materials to boys in school at a certain age. School community members perceived education to be the prerequisite for a successful career and prioritized education for their children because they saw it as a necessary prerequisite for a career that provides economic stability.

Students. Most important of all, students themselves remained motivated to return to school after schools reopened. Many expressed sentiments similar to those of their families and other community members, explaining that finishing their education would propel them toward valuable careers. One girl said, “I want to graduate from 12 grade. If I am educated, I could become a Nurse, or a Doctor or a Minister, or a Vice President.” Students believed that if they did not receive a full education, they were likely to remain in positions that they perceived to be of poor standing. In interviews, they described that if they were educated, they could occupy important roles, and that conversely, if they did not receive an education, they would not: “I want to complete my education. I want to reach 12 grade, because I don’t want to suffer, live here in the bush.”²⁴ The girls who dropped out of school were viewed as examples of people who will not have successful careers. By far, most of the girls who dropped out said that they were doing farm work, and several of them expressed how difficult it was to see their friends in school without them: “I feel bad that I’m not in school. My friends are going forward and were promoted to the next classes and I’m leaving behind.” Multiple students echoed this feeling, explaining that seeing their friends return to school ultimately motivated them to return as well.

²⁴*Bush* refers to rural areas. If a participant says she does not want to be a bush girl, it is the equivalent of saying that she does not want to be a village girl.

Chapter 5: Conclusions

Introduction

Findings from the 2010–2013 GOAL project helped inform the 2013–2016 GOAL Plus project. GOAL Plus extended and expanded the most comprehensive and most promising intervention model under GOAL—scholarships plus grants—that had been adopted in 2011 at 20 schools to a total of 60 schools, including 20 schools that received either grants or scholarships but not both under GOAL, along with 20 schools that had received no support under GOAL.

These 60 schools received Girls’ Assistance Packages that paid school-related fees and provided in-kind supplies for girls, teachers kits, school supplies, awards to students, Girls’ Clubs, mentoring, tutoring, health training, PTA training and community mobilization, and grants to improve school facilities. This mix of supports was intended to contribute to the USAID Development Objective of Better Educated Liberians by providing two intermediate results—IR 4.1: Improved Basic Education Opportunities, and Sub IR 4.1.2: Increased Equitable Access. As this research report indicates, the GOAL Plus supports also helped increase school and community resiliency when the EVD epidemic unexpectedly struck.

Quantitative Findings

Despite the limited scope of outcome data available for this study and the relatively small number of schools in each of the four treatment conditions, there is encouraging evidence regarding the effectiveness of the GOAL Plus project. As expected, there was little additional effect of GOAL Plus on scholarship plus grant schools on any student outcome. These schools already had relatively more girls enrolling, attending, completing, and being promoted than boys, having received grant and scholarship support under GOAL. We find, however, that these schools were able to sustain their success in reducing gender gaps while continuing to receive scholarships and grants, providing further evidence beyond the original findings from GOAL that this is an effective mix of support.

The biggest changes in schools associated with GOAL Plus occurred where we expect, namely among schools that received no services under GOAL, especially in terms of enrollment and attendance. Effects of GOAL Plus were also observed at schools that had previously received only grants (which were found to have little effect on outcomes under GOAL) and at schools that had had received scholarships without grants in terms of enrollment. Although supports were primarily focused on improving the outcomes of girls, we found evidence that there were increases in outcomes for boys (though not as large as girls) under GOAL Plus, possibly reflecting improved school-level supports such as improvement grants and class-level supports including supplies and teacher training.

GOAL Plus also was associated with improvements in school conditions over time. Similar to results for student outcomes, the significant changes were mostly observed in comparison schools and grant schools. There was also a significant result for scholarship schools as they received grants. Comparison schools improved more in terms of notebooks to write and having textbooks visible during visits. Grant schools improved most in terms of water and hygiene and

also had more notebooks to write on. Scholarship schools also improved in terms of having more notebooks for students to write on.

The analyses we present here come with a number of important caveats:

1. Schools were not randomly assigned to the different intervention groups. This means that any differences we found and attributed to GOAL could be due to uncontrolled underlying differences between the schools, their leaders, their teachers, their students, or the communities they are located in.
2. Many of the differences we presented were not statistically significant. This means that they could be the result of chance alone. (The fact that the overall pattern of impact estimates is consistent offers some protection against this possibility.)
3. Most of the outcomes presented here are based on school records maintained by teachers and principals reports. It is possible that principals whose schools were in GOAL Plus were more likely to report higher enrollment and completion numbers than principals whose schools were not. Such reporting bias may also explain why the attendance data (which were collected directly by AIR enumerators) show smaller impacts than other outcome data sources. This risk is mitigated by the enrollment verification process, in which girls receiving scholarships sign for receipt of the packages in the presence of GOAL Plus staff.

Given these caveats, our key finding from quantitative analysis is that the GOAL Plus project built upon the success of the GOAL project and that schools that received additional services under the GOAL Plus project improved their student outcomes for girls at those schools. The effects of additional supports on girls are largest when scholarships are provided to girls that help their families overcome financial constraints and also provide them with needed school supplies. There is also some evidence that improvements at schools through grants and other supports for students throughout schools may also positively affect boys, though as noted the addition of grants to schools has relatively small effects.

Another key finding from the quantitative data is that both boys and girls returned to schools after they reopened following closure due to EVD, and enrollments and attendance did not decline from pre-EVD levels in about three quarters of the GOAL Plus Schools. We do not have data for other schools in Liberia over this time, but the result is very encouraging as an indicator of resilience of GOAL Plus schools. Once data on trends in school enrollments and other outcomes generally become available for schools in Liberia, it will be interesting to see if they show the same pattern of resilience shown by schools that received support under GOAL Plus.

Qualitative Findings

Qualitative data gathered from interviews and focus groups at GOAL Plus schools highlighted challenges that schools faced in reopening and reenrolling students, including extensive damage to school infrastructure, inconsistently implemented health protocols, financial constraints, the transformation of social norms, and a continued fear of EVD. Extensive damage took place to school property during school closures, and damage to school infrastructure also decreased

students' motivation to attend school and contributed to low morale. A shortage of teachers and loss of nearly a year's education also took a toll.

Schools inconsistently implemented health protocols, and many students mentioned the possibility of contracting EVD was a major barrier to their reenrollment in school. In addition to EVD's impact on modifying health practices and typical behaviors, many respondents referenced the toll it took on their home lives. Finally, students and families consistently cited financial constraints as a significant challenge in reenrolling girls in schools. EVD disrupted families' livelihoods and caused financial stress.

We found the supports provided by GOAL Plus to engage the community through activities such as PTA provided the framework to sustain interest in education during the time of school closure and to disseminate information on health protocols that encouraged parents to reenroll their children. The supports provided by GOAL Plus helped schools repair damage and assure that adequate supplies were available. Additionally, the availability of scholarships for girls under GOAL Plus helped families overcome financial burdens that may have kept girls out of schools.

School communities took action to overcome these challenges, and GOAL Plus activities helped ease the financial burden that many families faced in sending their children to school. GOAL Plus capacity building before the outbreak of EVD, such as PTA training and outreach campaigns, may have also contributed to community resiliency.

Conclusion

The lessons learned from studying GOAL Plus interventions before, during, and after a severe education system disruption such as the EVD outbreak may be useful for other countries experiencing crises. This research provides valuable evidence in favor of designing flexible education interventions in order to allow for shifting community needs. Furthermore, this study highlights the importance of prioritizing capacity building in local communities and avenues of available funding as a way to increase students' participation in education. While some externally-funded projects can result in promising outcomes that decline once funding ceases, the findings from GOAL Plus suggest that some capacity building activities—such as PTA training, community mobilization, and grant programs that require community contributions and buy-in—may have positive impacts even when external resources decline, as during the EVD outbreak. As GOAL Plus concludes the 5 years of support it provided to 60 schools in Bong, Grand Bassa, and Lofa Counties, these research findings may suggest ways to implement future education interventions that can result in improved enrollment, attendance, completion, and promotion for girls and enhanced community resilience for supporting education.

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