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REPORT

DRAFT REPORT

Baseline Report for the Georgia Improving General Education Quality Project's School Rehabilitation Activity

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The opinions, conclusions, and any errors in this report are the sole responsibility of the authors and do not reflect the official views of MCC or Mathematica.

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EXECUTIVE SUMMARY

A large proportion of the buildings in the public school system in the Republic of Georgia are inadequately maintained, dilapidated, and uncomfortable for students and teachers, particularly during winter months. To address these issues, the Millennium Challenge Corporation (MCC) is supporting Georgia's efforts to improve the quality of the facilities in public schools by sponsoring the Improved Learning Environment Infrastructure (ILEI) activity of the Improving General Education Quality (IGEQ) Project, which invests in school rehabilitation to provide safe learning environments that include adequate school facilities such as functional lighting, adequate heating, and improved air quality in classrooms. Mathematica Policy Research is implementing a rigorous evaluation of the ILEI activity to determine its ultimate impact on both intermediate and long-term educational outcomes.[1]

This report provides baseline results for the evaluation of the ILEI activity. It describes the evaluation design chosen for the ILEI activity and summarizes findings regarding the baseline conditions in schools scheduled for rehabilitation (treatment schools) and in a group of control schools that will not be rehabilitated during the Compact. Analyses in this report include an assessment of the extent to which schools in the treatment and control groups are similar at baseline, and an examination of the baseline data to evaluate potential risks to the program logic of the ILEI activity.

Evaluation research questions and methods

The evaluation of the ILEI activity will use a mixed-methods study design, with three components: (1) a process evaluation examining the program's implementation and costs; (2) a randomized controlled trial (RCT) impact evaluation using a school-level stratified random assignment design, and (3) in-depth analysis of the relationship between changes in school infrastructure and changes in the learning environment, using qualitative methods in a subset of study schools.

Our process evaluation of the ILEI activity will aim to answer questions related to program design and implementation including: (1) Was the ILEI activity budgeted and planned appropriately, forecasting key risks? (2) Did the ILEI activity deliver improved facilities? (3) How was the program rolled out? (4) How much did rehabilitation differ by school? and (5) What is the current and future status of facility-maintenance funding for treatment and control schools? To answer these questions, Mathematica will begin by reviewing ILEI activity documents, including program cost data, program implementation records, and school rehabilitation design assessment reports, as available, to develop a basic understanding of program implementation and inputs. We will supplement the document review by conducting a series of in-depth, semi-structured interviews targeting three groups of respondents: key

[1] The IGEQ Project includes two additional activities, both of which are also being evaluated by Mathematica Policy Research; the Training Educators for Excellence (TEE) activity, which supports professional development by training and mentoring teachers in subjects related to science and math and by training principals to strengthen school management, and the Education Assessment Support (EAS) activity, which supports Georgia's ongoing efforts to improve educational outcomes through rigorous assessments and fostering a result-oriented education system.

Government of Georgia (GoG) staff, implementers including the activity's design contractor(s), and rehabilitation supervisors. We will use these data to examine implementation successes and challenges and to document key lessons learned about implementation of school rehabilitation programs, as well as implications that could help inform implementation of similar programs in other contexts.

The impact evaluation and in-depth qualitative analyses will aim to answer questions related to the program's effects on school infrastructure, teachers, and students: (1) What are the impacts of the ILEI activity on the school infrastructure environment, such as regulation of classroom temperature, maintenance policy, and maintenance practice? (2) Did the activity affect perceptions of student and teacher health and safety? (3) What are the impacts of the ILEI activity on teacher behavior, such as attendance and time spent teaching? (4) What were the impacts of the ILEI activity on student outcomes, such as attendance, enrollment, drop-out and retention rates, time spent studying in and out of school, and learning outcomes?

To estimate the impacts of the school rehabilitation activity, our study uses a school-level, stratified random assignment design. Schools assigned to the treatment group will at minimum receive detailed rehabilitation design assessments, and—where rehabilitation is feasible—treatment schools will receive the program's full set of infrastructure rehabilitation services (to date, rehabilitation has been deemed infeasible in 10 of 104 treatment schools), and schools assigned to the control group will only receive "business as usual" maintenance and operations support during the life of the five-year compact (until July 2019).

The random assignment process took place in three phases, corresponding to the program's staggered implementation schedule. Each of Georgia's regions was assigned to a different implementation phase. At the beginning of a given phase, Mathematica randomly selected which schools would be eligible to receive the program from a list of schools in each region that had been vetted by MCC, Millennium Challenge Account-Georgia (MCA-G), and GoG stakeholders. Mathematica completed the random assignment process for schools in the Phase I regions in September 2014, for schools in the Phase II regions in July 2015, and for schools in the Phase III regions in July 2016. In total, 104 of 194 schools selected for the ILEI evaluation were randomly assigned to the treatment group. The evaluation assigned more schools to the treatment group and fewer schools to the control group. The difference in assignment reflects the fact that some schools in Phase I had full rehabilitation designs in place before randomization; MCC and MCA-G stakeholders requested the disproportionate selection of these schools for treatment in order to use as many of the completed designs as possible while preserving the evaluation design. Due to the staggered rollout schedule, the evaluation conducted baseline data collection for each Phase in the school year following randomization for that Phase: during the 2014–2015 school year for Phase I schools, 2015–2016 school year for Phase II schools, and 2016–2017 school year for Phase III schools.

Study population

As a result of the screening process and the design of the stratified randomization, the distribution of the 194 schools in the ILEI evaluation sample across regions was similar to the national distribution in rural areas (excluding the cities of Tbilisi and Batumi and the disputed regions of Abkhazia and Tskhinvali) (Table ES.1). However, because the selection process

focused on schools with relatively high enrollments, evaluation schools had higher enrollment (and a lower ratio of school building size to school enrollment) than the national average in rural areas. The schools in the evaluation sample also had a somewhat smaller proportion of socially vulnerable students than the average rural school in Georgia (24 versus 27 percent nationwide), but, because of a larger average student body, the average number of socially vulnerable students is larger in the schools in the evaluation sample (94.6 versus 46.8 students).

Table ES.1. Characteristics of schools eligible for random assignment to rehabilitation services

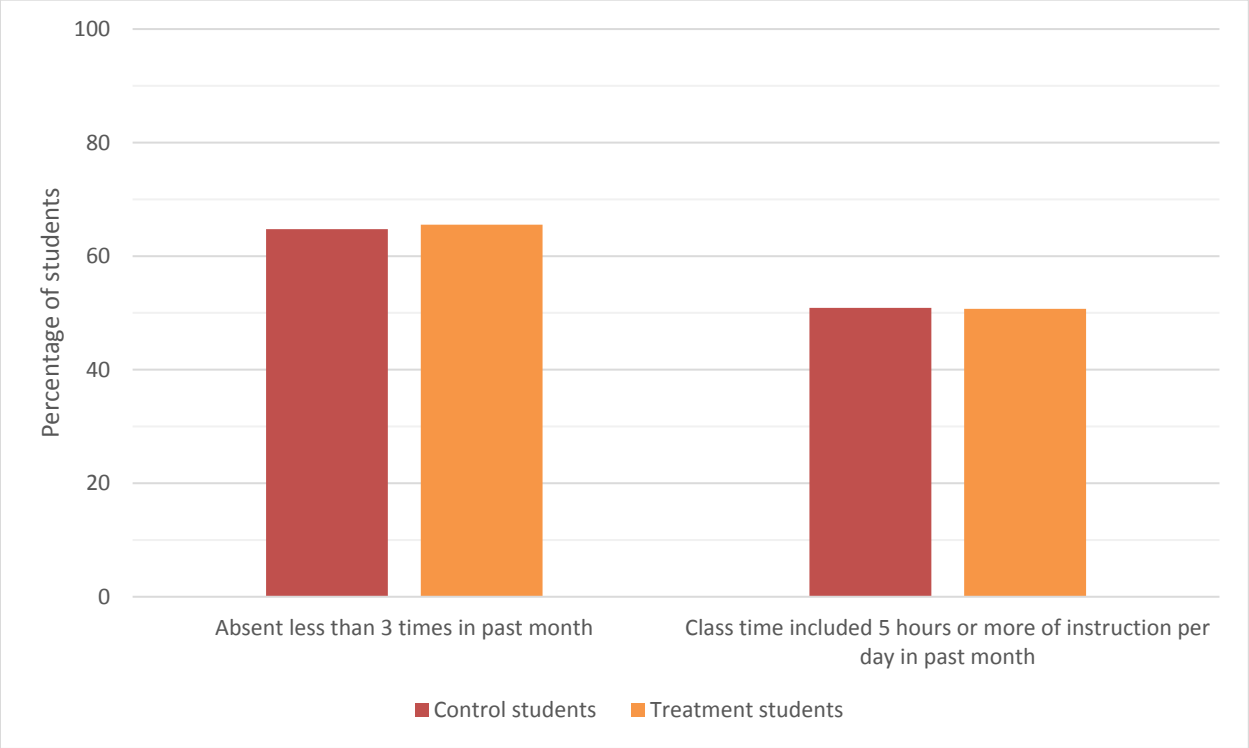
	Evaluation sample	Rural areas of Georgia
Number of schools	194	1,692
Average total enrollment	394.3	173.4
Average school building size (m^2)	2,642	2,896
Ratio of school building size (m^2) to student enrollment	6.7	16.7
Percentage of socially vulnerable students	24	27
Average number of socially vulnerable students	94.6	46.8
Regional distribution of schools (percentage)		
Adjara	0	12
Guria	4	5
Imereti	21	20
Kakheti	21	10
Kvemo Kartli	16	14
Mtskheta-Mtianeti	2	4
Racha-Lechkhumi and Kvemo Svaneti	4	3
Samegrelo-Zemo Svaneti	8	12
Samtskhe-Javakheti	6	11
Shida Kartli	19	8

Note: The sample of rural Georgian schools summarized in this table excluded schools in the cities of Tbilisi and Batumi (because urban areas are not eligible for the program) and schools in the disputed regions of Abkhazia and Tskhinvali. Schools outside Batumi in the Adjara region were excluded from the evaluation because implementers, MCC, and MCA-G decided to exclude the region from random assignment.

Baseline equivalence

We found that the treatment and control groups are equivalent on most of the evaluation's baseline measures of school and stakeholder outcomes. We found no evidence of differences in 6 of 7 measures of school infrastructure, 11 of 12 measures of the relationship between infrastructure and educational outcomes, and 12 of 13 measures of educational outcomes, including student reported absences and class time spent on instruction (Figure ES.1) and scores on assessments administered by evaluation staff to 8th and 10th grade students covering literacy in Georgian (or minority languages), mathematics, and science (Table ES.2).

Figure ES.1. Comparison of frequency of school absences and class time spent on instruction reported by students in treatment and control schools



Sources: Baseline MCC Georgia Student Surveys (2015, 2016, 2017).

Notes: Sample included between 9,454 and 10,548 students in schools.

Table ES.2. Comparison between student test scores in intervention and control schools

	Control mean	Treatment mean[a]	Difference	*p*-value
Student test scores (standardized z-scores)[c]				
Grade 8				
Georgian (or minority language)	0.03	-0.03	-0.07	0.17
Math	0.03	0.01	-0.02	0.56
Science	0.04	-0.01	-0.05	0.34
Grade 10				
Georgian (or minority language)	0.04	-0.02	-0.06	0.22
Math	-0.01	0.07	0.07	0.39
Science	0.02	0.04	0.02	0.72

Notes: Student test scores were standardized within the sample for each grade and subject. Differences between control and treatment means and *p*-values of those differences were estimated using multivariate ordinary least squares (OLS) regressions of treatment status on each measure of baseline infrastructure. The regressions included controls for the probability that each school could be selected into the treatment group (not reported). Standard errors were clustered at school-level.

[a] Treatment means were regression adjusted (estimated by adding the control mean to the difference between treatment and control means estimated using multivariate OLS regressions).

Unlike our measures of infrastructure quality, we found differences in 5 of 20 measures of stakeholders' perceptions of school infrastructure. All five differences were in measures related to perceptions of classroom temperature in the winter (three differences) and perceptions of classroom air quality (two differences) for different stakeholders. We also tested our primary measures of school infrastructure quality (the key inputs in the program logic) and educational outcomes together for differences between the treatment and controls groups in order to reduce the risk of identifying differences that arise from chance alone.[2] This test found no evidence of systematic differences between treatment and control groups.[3] While it is not possible to be certain of the source of the observed differences in the individual tests, the results of the joint test suggest that chance was the most likely factor.

Assessment of risks to the program logic

We also used the evaluation's baseline data to test the ILEI activity's original assumptions. We recorded whether the activity had the expected number of beneficiaries, infrastructure gaps, and barriers to educational attainment in treatment schools that were assumed in the design of the activity. This makes it possible to examine whether the set of programmatic impacts assumed in the activity's design remained plausible at baseline. In estimating the economic rate of return (ERR) for the ILEI activity, MCC and MCA-G assumed that approximately 45,500 students would be enrolled in a given year across all rehabbed schools and would benefit from the program. Based on the sample of 104 schools randomly assigned to the intervention group, there were a total of approximately 40,976 students enrolled in the evaluation's treatment schools in 2014. This suggests that there may be at least 10 percent fewer students who benefit from the activity than assumed in the preliminary ERR estimate However, the estimate is subject to uncertainty for two reasons: additional schools in the treatment group may be deemed ineligible for rehabilitation (to date, 10 of the 104 treatment schools have been deemed ineligible), and schools outside the treatment group may also be rehabilitated.

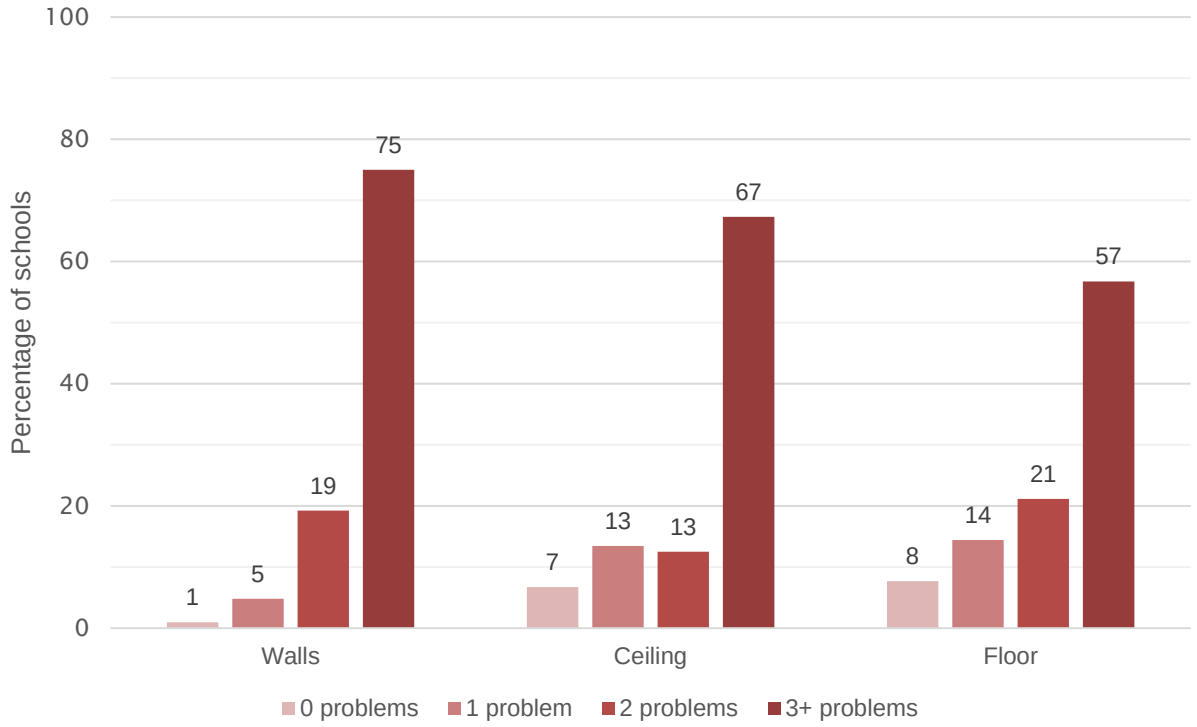
The ILEI activity was designed to upgrade the quality of the physical infrastructure of program schools, such as building interiors, lighting, heating, water and plumbing, lavatories, and science laboratories. To assess if these investments will likely create meaningful improvements in the facilities and educational outcomes in schools targeted for rehabilitation, we examined the baseline quality of school infrastructure, baseline educational outcomes, and stakeholders' baseline perceptions of the impact of school infrastructure on education outcomes in schools in the treatment group.

We found substantial evidence of problems with the infrastructure in schools targeted for improvement. For example, evaluation staff observed that nearly all treatment schools had one or more classrooms with at least one structural problem in the classroom's walls, ceiling, and floor, and most treatment schools had one or more classrooms with at least three different problems (Figure ES.2).

[2] Each additional test that we conducted increased the chances that at least one of the tests would identify a significant difference that arose by chance alone, so we conducted an F-test of the differences for many measures estimated by a single OLS regression in order to reduce the number of tests to one.

[3] The F-statistic for the joint test was 0.38 with a *p*-value of 0.98.

Figure ES.2. Percentage of treatment schools with infrastructure problems in at least one classroom



Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).
Notes: Evaluation sample included a total of 104 treatment schools.

The furniture and equipment in classrooms was also in need of rehabilitation in most treatment schools (illustrated in Figure ES.3). At least one teacher reported a problem with classroom equipment (desks, chairs, blackboard/whiteboard, and instructional materials) in over 90 percent of treatment schools, and at least one teacher reported problems with all four types of equipment in 35 percent of treatment schools.

We found evidence that in most treatment schools classroom air quality and the sanitation environment posed risks to students' health. Most treatment schools that were measured in winter (when heating systems were likely to be in use) had at least one classroom with levels of particulate matter above World Health Organization (WHO) recommendations for long-term exposure (WHO 2013).[4] In addition, most treatment schools did not have functioning flush toilets or latrines or soap available near toilets or latrines for students to wash their hands.

We also found evidence that a significant number of stakeholders believed that the quality of their school's infrastructure harmed their teaching or student learning. For example, some students reported that classroom lighting (20 percent) and classroom temperature (32 percent) and classroom air quality (31 percent) in February made it hard for them to concentrate on their

[4] WHO guidelines recommend keeping long-term exposure to particulate matter (PM) at or below 10 micrograms for PM 2.5 (less than or equal to 2.5 microns) and at or below 20 micrograms for PM 10 (between 2.5 and 10 microns).

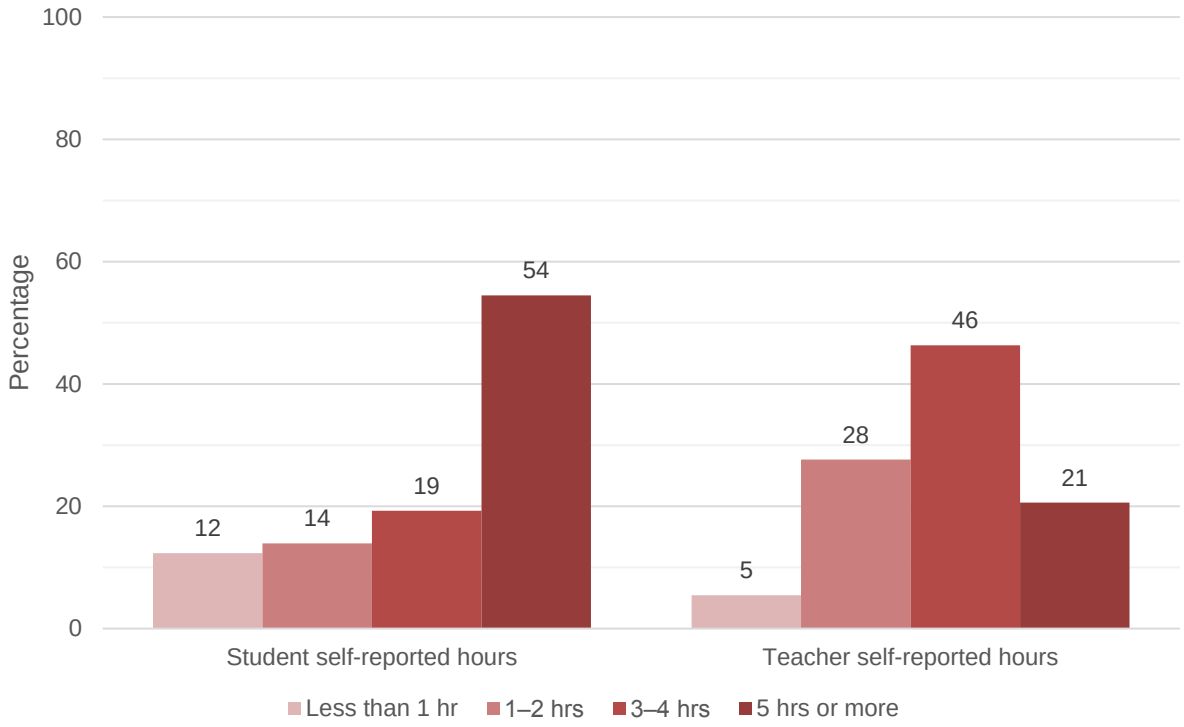
school work. Students and teachers also reported a pattern of problems with school sanitation—56 percent of students and 30 percent of teachers reported being uncomfortable with using the sanitary facilities at school and 40 percent of students believed that the water at school was not safe to drink. These findings suggested that low quality facilities in public schools may hurt educational outcomes, such as students' learning and comfort attending school, which was consistent with the program logic of the ILEI activity.

Figure ES.3. Illustration of furniture and equipment in a classroom in need of rehabilitation and a rehabilitated classroom

Classroom in need of rehabilitation Rehabilitated classroom

Our analysis of the study's baseline data indicated that there is substantial room for improvement in educational outcomes in treatment schools. For example, 46 percent of students and 79 percent of teachers reported spending less than 5 hours per day on classroom instruction (Figure ES.4). The overall distributions of student learning assessment test scores were approximately normal, meaning that there was no evidence of strong ceiling effects (i.e., perfect scores were rare). This indicated that the study was successful in developing learning assessments that were well-calibrated to capture variation and improvements in achievement over time, as part of the impact evaluation.

Figure ES.4. Instructional class time per day in the past month in treatment schools



Sources: Baseline MCC Georgia Student and Teacher Survey (2015, 2016, 2017).
Notes: Samples included 5,206 students and 883 teachers in treatment schools.

Next steps for the evaluation

This baseline report constitutes the first in a series of reports that will be produced as part of the overall IGEQ evaluation. Mathematica will present preliminary versions of the study's baseline, interim, and final evaluation findings to MCC and to stakeholders in Georgia, and will carefully consider stakeholder feedback before finalizing each report.

The next report in this series—scheduled for release in 2019—will present interim findings regarding the preliminary impacts of both the ILEI activity and the TEE activity. The evaluation's final, integrated report will examine the longer-term results of all of the Compact's IGEQ activities following the completion of data collection during the 2019–2020 school year.

I. INTRODUCTION

The Millennium Challenge Corporation (MCC) is supporting Georgia's efforts to improve educational outcomes by sponsoring the Improving General Education Quality (IGEQ) Project, which includes three components. The Improved Learning Environment Infrastructure (ILEI) component invests in school rehabilitation to provide safe learning environments that include adequate facilities and heating. The Training Educators for Excellence (TEE) component supports professional development by training and mentoring teachers in subjects related to science and math, and by training principals to strengthen school management. Finally, the Education Assessment Support (EAS) component supports Georgia's ongoing efforts to improve educational outcomes through rigorous assessments and fostering a result-oriented education system. MCC chose Mathematica Policy Research to implement a rigorous evaluation of these components to determine their ultimate impact on both intermediate and long-term outcomes.

This baseline report describes the evaluation design chosen for the ILEI (school rehabilitation) activity, and summarizes a set of baseline findings related to the conditions in schools scheduled for rehabilitation and baseline conditions in a group of control schools that will not be rehabilitated during the Compact. We begin by presenting an overview of the activity and the existing literature examining the relationship between school infrastructure investments and student outcomes. Later chapters of the report present the evaluation's design, data collection, and analysis plans, and discuss the study's baseline findings.

A. Overview of the school rehabilitation activity design

The school rehabilitation activity is designed to upgrade the quality of physical infrastructure and create an improved learning environment in program schools. Examples of potential rehabilitation areas include:

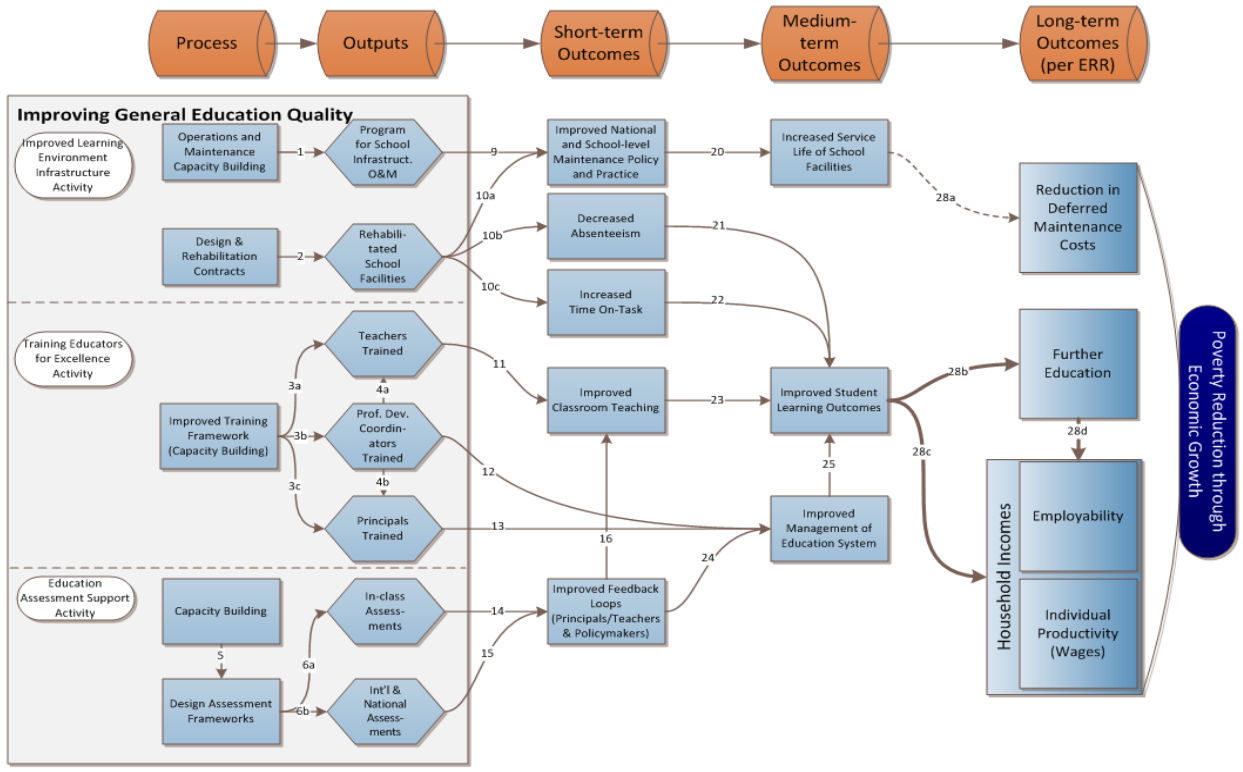
- Systems for heating (replacing wood stoves with central heating)
- Lighting
- Water and plumbing
- Lavatories
- Recreational facilities
- Science laboratories
- Building interiors (flooring, stairs, and classroom walls)
- Building exteriors (roofing and masonry)

Through a random assignment process, the activity selected 104 schools throughout Georgia to receive detailed rehabilitation designs. Where rehabilitation is feasible, work in these schools is scheduled to take place over the course of several construction seasons (the 2015–2016 school year, the 2016–2017 school year, the 2017–2018 school year, and the 2018–2019 school year).

According to the program's logic model (Figure 1.1), these inputs are intended to decrease students' and teachers' absenteeism and improve time on task during the school day, leading to improved student learning and higher educational attainment outcomes. Although it is not

reflected in the program's current logic model, we also believe it is plausible that rehabilitating schools could improve the health and well-being of students, which might provide another pathway for the intervention to affect learning and other long-term outcomes.[5] The program logic developed by MCC and Millennium Challenge Account-Georgia (MCA-G) staff presents a series of (hypothesized) causal links among program inputs and outputs and short-, medium-, and long-term outcomes that potentially support the project's overarching goal of poverty reduction through economic growth. Each of the links in the program logic represents an assumption by IGEQ program designers about how the activities will affect the compact's beneficiaries and stakeholders, which include students, teachers, school administrators, and policymakers in relevant Government of Georgia (GoG) ministries and centers. Assumptions in the program logic also provide the basis for MCC's economic rate of return (ERR) calculations for each activity.

Figure I.1. The IGEQ program logic



Source: MCC Georgia II Compact Investment Memo.

Note: Arrows with dotted lines refer to links that MCC does not expect to be evaluable or measurable. "O&M" refers to operations and maintenance expenses. Links are uniquely numbered (e.g., "1," "2," "3a," "3b," "3c").

[5] Children may also be exposed to poor air quality and sanitation at home, meaning that rehabilitating schools is unlikely to remove all of the health risks that students face. Because treatment was assigned randomly in this evaluation, we can expect home air quality and sanitation to remain equivalent in treatment- and control-group homes both at baseline and in the follow-up periods of the study. Thus, this study will be able to attribute any health improvements observed in the treatment group to the school rehabilitation intervention.

Several components of the baseline data collection—particularly infrastructure assessments of schools scheduled for rehabilitation—provide information about the inputs in logic model and the potential relationships between these inputs and evaluation outcomes. We discuss these findings about assumptions in the logic model in Section IV.3. In addition, to assess the IGEQ program logic and associated ERR calculations, we reviewed the available evidence on the impacts of similar program designs in other contexts and have held extensive discussions with local education experts and IGEQ stakeholders. These discussions have included MCA-G staff, stakeholders in relevant GoG centers and ministries, and the team's site visits to schools selected for the ILEI rehabilitation program. We examined the program logic for each of the three components of the IGEQ separately, noting potential concerns where applicable in a logic assessment report (Nichols-Barrer et al. 2013). Our review of the relevant literature is summarized in the next section.

B. Literature review

There is an extensive academic literature investigating the relationship between educational infrastructure inputs and measures of student learning, educational attainment, and employment outcomes. However, much less is known about the impacts of these infrastructure-related interventions in developing countries, and little empirical work exists on the education system in Georgia. In our view, the existing evidence base does not support strong predictions about the size of the program's expected impacts. We provide an overview of the relevant literature below.

According to the ERR calculations used for the school rehabilitation activity, MCC aims for this intervention to produce the following improvements in students' long-term outcomes: a 10 percent improvement in the number of students enrolling in upper secondary school; and a 10 percent improvement in postsecondary enrollment rates. In terms of evidence from prior studies, there is great uncertainty regarding the relationship between school infrastructure inputs and all of these aforementioned outcomes. Some evaluations of school construction and rehabilitation activities have found positive impacts on students' enrollment and attainment in some contexts (Burde and Linden 2013; Levy et al. 2009; Durán-Narucki 2008; Woolner et al. 2007; Bagby et al. 2014; Bagby et al. 2017) and limited to no short-term impact in other contexts (Dumitrescu et al. 2011). There is very limited rigorous research that assesses whether there is a causal link between school rehabilitation inputs and long-run improvements in employment rates or income levels; in fact, we are not aware of any studies that have tested this question using reliable empirical methods in developing countries. Measuring these long-term outcomes as part of an extended evaluation study would be a substantial contribution to the research literature and fill a significant gap in knowledge.

A major focus of past studies on school infrastructure has been the relationship between school-building interventions or infrastructure improvements and student attendance. Specifically, researchers have tested whether attendance rates improve following upgrades to school infrastructure. Several studies in both domestic and developing country contexts have shown that improving schools' physical infrastructure can lead to an increase in school enrollment and attendance. However, the impacts of infrastructure improvements likely depend on preexisting conditions in the affected facilities or communities. For example, if a program improves a school that is already functioning well, one would expect the benefits of the program to be relatively modest. Conversely, in a community with very limited school facilities, construction or rehabilitation programs can produce large benefits.

For example, impact evaluations of the BRIGHT program in Burkina Faso, an initiative that constructed and later expanded primary schools in 132 rural villages throughout the 10 provinces with the lowest girls' school enrollment rates, specifically targeted communities that did not previously have ready access to a school. The evaluations found that BRIGHT schools had a positive impact on school enrollment and a large impact on test scores, primarily driven by large improvements in grade attainment (Levy et al. 2009; Kazianga et al. 2013; Davis et al. 2016). Several descriptive studies of school conditions in the United States have found analogous results. A study in New York City examining the relationship between poor school facilities and various student outcomes found that students in the most deteriorated buildings attended fewer days of school and had lower test scores in English language arts and mathematics (Durán-Narucki 2008). A pre-post case study on the effects of the renovation of a run-down elementary school in Washington, DC found evidence of improved student attendance and test scores (Berry 2002). However, other studies show that investment in schools' physical infrastructure may improve student attendance but not necessarily in the short-term. The IMAGINE program in Niger constructed schools in 10 communities with low enrollment and primary school completion rates for girls, but—unlike the BRIGHT program implemented in Burkina Faso—many of these areas already had an existing school. Although the study did find that the newly constructed schools raised enrollment by 4.3 percentage points, there was no short-term impact on attendance rates, math test scores, or French test scores (Dumitrescu et al. 2011). However, an evaluation conducted seven years after the program was implemented found that the program raised enrollment by 10.3 percentage points and attendance by 13.6 percentage points (Bagby et al. 2017).[6]

Substantial evidence suggests that increases in the amount of time students spend on learning tasks in school can improve their test scores. However, few studies have examined the impacts of infrastructure on time use during the school day, and it is not clear whether school building improvements lead to increases in the hours of functional instruction students receive. That said, if we assume (as shown in the rehabilitation activity's logic model) that the intervention could increase learning time, evidence suggests that, in turn, this could produce important learning gains.

Studies in the United States and developing countries provide evidence that additional time spent on learning tasks can plausibly improve students' test scores. For example, a randomized evaluation on the effects of short-term tutoring on cognitive and non-cognitive skills in Chile found that students from low-performing and poor schools improved their reading test scores after participating in the three-month program (Cabezas et al. 2011). Similarly, a participatory program in India trained local village volunteers on pedagogical techniques for teaching basic reading skills and subsequently tasked them to hold daily reading classes outside of school in an effort to improve the learning of village children. A randomized evaluation of the program found the additional instruction had a positive effect on the reading skills of children who attended the camp (Banerjee et al. 2010). A great deal of research in the United States has also examined the relationship between the amount of instructional time and student learning. Studies of New York City charter schools have found that high-achieving charter schools tend to have a longer

[6] The IMAGINE program was later combined with a package of complementary interventions under the NECS program, which were designed to increase access to high quality education and to improve reading achievement. As a result, the impacts estimated under the 10-year evaluation reflect the combined impacts of both the IMAGINE and NECS programs.

instructional year and longer school days than other charter schools (Hoxby et al. 2009; Dobbie and Fryer 2013). One of these studies found that these characteristics, coupled with frequent teacher feedback, data-driven instruction, and a focus on academic achievement, explained almost half of the variation in school effectiveness (Dobbie and Fryer 2013). A national study of the relationships between the practices of individual charter-school management organizations (CMOs) and their effects on student achievement found that CMOs with lengthened instructional hours (alongside school-wide behavior policies and more intensive teacher coaching) had larger impacts on student achievement in math and reading than other categories of CMOs (Furgeson et al. 2012).

We were unable to find any rigorous studies of the impact of school infrastructure in Georgia. Without evidence and knowledge on the determinants of enrollment, attendance, achievement, and attainment in the Georgian context, it is difficult to predict whether infrastructure improvements in Georgian schools will have a positive effect on student outcomes. Likewise, although studies in other countries suggest that increased time on task can have a positive effect on student learning, it is unclear whether in the Georgian context teachers will be able to use additional instruction time effectively to raise student test scores. This evaluation represents an important opportunity to fill these gaps in the research literature.

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II. IMPACT EVALUATION DESIGN FOR THE ILEI ACTIVITY

The school rehabilitation activity seeks to decrease student and teacher absenteeism, increase students' time on task, and, ultimately, improve learning and labor market outcomes. This section describes our evaluation design for assessing how the ILEI activity is implemented and estimating its impacts on these outcomes.

A. Evaluation type

The evaluation uses a mixed-methods study design, with three components: (1) a process evaluation examining the program's implementation and costs; (2) an impact evaluation that uses a random assignment design, and (3) a qualitative analysis of the relationship between changes in school infrastructure and changes in the learning environment in a subset of study schools. This report summarizes the baseline findings related to the second component of the study—the impact evaluation.

B. Evaluation questions

Table II.1 presents the key research questions to be investigated. Our process evaluation will examine outcomes related to program design and implementation, and the impact evaluation and in-depth qualitative analyses will examine the program's effects on school infrastructure, teachers, and students. The table also summarizes the data sources we will use for each research.

C. Methodology

In this section, we explain the methods associated with each component of our evaluation for the school rehabilitation activity.

1. Process evaluation examining program implementation and costs

For the process evaluation, Mathematica will begin by reviewing ILEI activity documents, including program cost data, program implementation records, and school rehabilitation design assessment reports, as available. These reports should document site assessments, rehabilitation recommendations, and implementation records for the program's treatment schools. From this, we can develop a basic understanding of program implementation and inputs.

We will supplement the document review by conducting a series of in-depth, semi-structured interviews targeting three groups of respondents: key GoG staff, implementers including the activity's design contractor(s), and rehabilitation supervisors. We will develop the interview guides around numerous themes that will include, but not be limited to, respondent knowledge, attitudes, perceptions, and commitment to the ILEI activity; documentation and impressions of implementation activities; specific barriers to and challenges with rehabilitating schools; and suggestions on alternative strategies for supporting school rehabilitation efforts. We will use the major topics and themes that emerge from the review of program documents to help develop these semi-structured interview protocols. We will use these data to examine implementation successes and challenges and to document key lessons learned about implementation of school rehabilitation programs, as well as implications that could help inform implementation of similar programs in other contexts.

Table II.1. Evaluation questions for the ILEI activity and approaches to answering them

Key evaluation questions	Evaluation components
Program design and implementation	**Process evaluation**
Was the ILEI activity budgeted and planned appropriately, forecasting key risks?	• Compare implementer's projected and actual cost data and examine risk assessment documents
Did the ILEI activity deliver improved facilities? How was the program rolled out? How much did rehabilitation differ by school?	• Use implementer data to compare time lines, budgets, work plans, and material use
What is the current and future status of facility-maintenance funding for schools? Do treatment schools have ongoing operations and maintenance funding to use in improved facilities? What maintenance/rehabilitation funding did control schools receive?	• Interview school directors to gather data on operations and maintenance funding and maintenance practices • Review GoG budget allocation methods to schools as they pertain to operations costs
Impacts on infrastructure, teachers, and students	**Impact evaluation (RCT) and qualitative analysis**
What are the impacts of the ILEI activity on the school infrastructure environment, such as temperature, maintenance policy, and maintenance practice? Did the activity affect perceptions of student and teacher health and safety?	• Assess quality of school facilities, including observational data from enumerators on temperatures during the school day; conduct surveys and in-depth interviews with school directors regarding operations practices and equipment usage
What are the impacts of the ILEI activity on teacher behavior, such as attendance and time spent teaching?	• Analyze teacher and student survey data; conduct in-depth interviews with teachers and student focus groups
What were the impacts of the ILEI activity on student outcomes? What are the impacts on attendance, enrollment, drop-out and retention rates, time spent studying in and out of school, and learning outcomes?	• Analyze teacher and student attendance through school visits (preferred) or administrative data; analyze time on task and teaching practices through classroom observation (video) data • Analyze student test scores
Impacts on attainment and employment	**Impact evaluation (RCT)**
What are the long-term impacts of the ILEI activity? What are the impacts on school-level student attainment (transition to secondary school and secondary school graduation) and on teacher qualifications at rehabilitated schools?	• Analyze administrative data on student attainment rates and teacher qualifications • If the study is extended beyond 2019, a long-term follow-up survey of students could examine postsecondary attainment and employment outcomes

2. Impact evaluation applying a randomized controlled trial (RCT) design

To estimate the impacts of the school rehabilitation activity, our study uses a school-level, stratified random assignment design. Schools assigned to the treatment group will at minimum receive detailed rehabilitation design assessments, and—where rehabilitation is feasible—treatment schools will receive the program's full set of infrastructure rehabilitation services. As part of the Georgia II Compact agreement, GoG stakeholders have agreed that schools assigned to the control group will only receive "business as usual" maintenance and operations support during the life of the five-year compact (until July 2019).

To develop the random assignment procedure, the design first stratified the sample of schools by region. Within regions that had a sufficient number of schools, we further stratified the sample on the following school-level characteristics:

- Minority language status (indicator for instruction primarily in Azeri or Armenian)
- Rural status (indicator for school located in a village or mountainous area)
- Average baseline test scores in math, history, and literacy

In addition, the stratification approach took into account the design status of schools in the sample in September 2014, when the first phase of random assignment took place. During the 2013–2014 school year, MCA-G hired a design contractor (Louis Berger) and partially or fully completed rehabilitation designs for several schools in the Phase I regions. Due to implementation delays, no rehabilitation work took place in these schools during the 2014 summer construction season, meaning the predesigned cases could be included in the random assignment pool for this evaluation. In total, 29 program-eligible schools had existing rehabilitation designs in September 2014. To realize cost savings from this prior design work, at the request of MCA-G and MCC, the evaluation gave the predesigned schools a higher probability of being assigned to treatment (66 percent) than the schools currently lacking designs. To do so, our approach placed the pool of predesigned schools in its own separate set of region-level random assignment blocks. The study's impact analyses will adjust statistically for differences in the probability of selection into treatment associated with these predesigned strata.

This random assignment process took place in three phases, corresponding to the program's staggered implementation schedule. Each of Georgia's regions was assigned to a different implementation phase (Table II.2)—this enabled the rehabilitation work in each phase to take place in a set of regions that are close to each other, facilitating program logistics. At the beginning of a given phase, Mathematica randomly selected which schools would be eligible to receive the program from a list of schools in each region that has been vetted by MCC, MCA-G, and GoG stakeholders. Mathematica completed the random assignment process for schools in the Phase I regions in September 2014, for schools in the Phase II regions in July 2015, and for schools in the Phase III regions in July 2016. Baseline data collection was conducted in the first school year following randomization for schools in each phase: 2014–2015 for Phase I schools, 2015–2016 for Phase II schools, and 2016–2017 for Phase III schools. If construction occurs as planned, the study will complete its first full analyses of the program's Year 1 and Year 2 follow-up impacts after data is collected during the 2018–2019 school year and the 2019–2020 school year, respectively.

Table II.2. Regional rollout of the ILEI activity

Phase	Regions	Number of treatment group schools	Tentative schedule for completing rehabilitation
I	Mtskheta-Mtianeti, Racha-Lechkhumi and Kvemo Svaneti, Samtskhe-Javakheti, Shida Kartli	37	Summer 2017
II	Kakheti, Kvemo Kartli	35	Summer 2018
III	Guria, Imereti, Samegrelo-Zemo Svaneti	32	December 2018

3. In-depth qualitative research on the effects of school rehabilitation

In addition to the process and quantitative impact evaluation, our approach also includes qualitative research designed to enrich the study's quantitative impact analyses by generating

hypotheses about how school rehabilitation changes the learning environment and student outcomes. Qualitative methods provide a means of investigating potential mechanisms responsible for driving the program's impacts by collecting the type of extensive, open-ended interview and focus group data that would not be feasible to collect and analyze in all study schools. The qualitative analysis will collect data in the second follow-up year after rehabilitation in each treatment school. In total, Mathematica will select a subset of approximately 10 percent of the schools in the impact evaluation sample (20 schools—10 treatment and 10 control), and the local data collection firm will collect in-depth, qualitative data about program implementation and results at these schools. The data collection will pay particular attention to maintenance and operations practices, perceptions of school quality and safety, time on task, and the use of various school facilities. This information will be acquired by conducting in-depth interviews with school directors and teachers and by conducting focus group discussions with secondary school students. The in-depth interviews with school directors will assess infrastructure usage patterns, school operations, and maintenance practices; the in-depth interviews with teachers will assess how school facilities are used, time on task, perceptions of school building quality and safety, and teacher attendance; and the focus groups with students will likewise assess how school facilities are used, time on task, perceptions of school quality and safety, and determinants of student attendance.

We expect insights from these qualitative research activities to be important and valuable, but it is important to note that qualitative methods have certain limitations. As with most qualitative research, findings from stakeholder interviews and focus groups will be illustrative and do not have the sample size to support rigorous hypothesis tests to directly estimate the program's impacts on the population being studied. We will focus on capturing how the activity was implemented, gaining an understanding of a broad set of implementation issues from a diverse set of stakeholders, and investigating the ways that school rehabilitation might affect teachers and students to improve attendance and learning outcomes. From these data, it will be possible to draw some conclusions about the potential reasons for the pattern of impacts uncovered by the impact evaluation, lessons learned in relation to implementation strategies and their potential to support school rehabilitation projects, and the potential relationships between various school infrastructure inputs and key program outcomes.

D. Analysis plan

We will estimate the impacts of the school rehabilitation activity using the following ordinary least squares (OLS) regression:

$$(1) \qquad Y_{ist} = \alpha_t + \beta_t * TREAT_s + \boldsymbol{X_{is}} * \boldsymbol{\gamma_t} + \varepsilon_{ist}$$

where Y_{ist} is the outcome of interest (for example, test scores in science) for student *i* in school *s* measured at time *t*, which is either the first or second follow-up year in this case (in other words, impacts will be estimated separately for each outcome year). $TREAT_s$ is the treatment dummy variable indicating whether a school was randomly assigned to receive treatment; X_{is} is a set of student-level demographic characteristics, a set of school-level variables defining the random assignment blocks, and measures controlling for differences in the probability of treatment across random assignment blocks; and finally, ε_{ist} is the random error. The estimated value of the coefficient β_t represents the impact of the school rehabilitation program on the outcome of interest at time *t*. Standard errors in the model will be clustered at the school-level using the

standard Huber-White estimator to account for the possibility of correlations among individuals' characteristics within schools.

The study will also include subgroup analyses designed to measure whether there is a statistically significant difference between the magnitudes of programmatic impacts for key subgroups of students (relative to the impacts of the program among students outside each subgroup). Subgroup analyses will include disaggregated impact estimates based on gender, baseline test score levels, and measures of social vulnerability. In addition, we will examine the study's baseline survey data to investigate other potential subgroups of interest. In particular, if there is substantial variation before program implementation in baseline levels of school infrastructure quality, we will perform subgroup analyses to test whether the program was particularly effective in settings where building quality was especially low before program implementation.

The RCT-based estimates of the program's impact will also be used to estimate the activity's ERR and conduct beneficiary analyses. The ERR is a summary statistic that reflects the economic merits of the investment. Conceptually, it is the discount rate at which the cumulative benefits of an intervention over time are exactly equal to its costs; a higher (positive) ERR represents higher benefits and lower costs. According to the ERR documentation provided to Mathematica, MCC initially modeled the ERR for the IGEQ Project and produced an ex-ante ERR estimate of 11 percent, based on expected costs and benefits of the program's activities. After we complete impact analyses for this activity, we will conduct a similar exercise ex-post by comparing the activity's realized costs to evaluation-based estimates of the program's benefits. The exercise will enable MCC and other stakeholders to determine whether the project was a sound investment; it will also permit comparisons to other investments in Georgia. The accuracy of cost-benefit analyses depend on the plausibility of economic modeling assumptions and the precision of the impact estimates used to calculate program benefits over time. To address these issues, we plan to test the sensitivity of our ex-post ERR estimates to key parameters by using the confidence bounds of our impact estimates rather than point estimates.

The evaluation will also include an ex-post beneficiary analysis, which is an extension of the ERR that seeks to disaggregate income gains attributable to the investment for different segments of society. Such an analysis is critical to identifying the beneficiaries of the investment and determining if the activity is likely to lead to a reduction in poverty. We will conduct the beneficiary analysis separately by poverty category to determine the extent to which socially vulnerable or poor students reaped the benefits of the program's education investments. For each beneficiary group defined by poverty, we will determine the number of beneficiaries, the present value of benefits accruing to beneficiaries, and the cost-effectiveness of the investment (the present value of benefits per dollar spent).

For analyses of qualitative data, Mathematica will use qualitative transcript-coding software to organize and synthesize the key themes that emerge from document reviews, in-depth interviews, and focus groups. Where appropriate, we will compare and contrast from these data sources with descriptive data available in the study's quantitative surveys of students, teachers, parents, and school directors. These analyses will focus in particular on insights and themes that might play an explanatory role in understanding findings from the study's impact analyses. For example, if the impact analysis uncovered evidence of positive program impacts on some outcomes but not others, we would examine the study's qualitative data to develop a deeper

understanding of the relationship between specific rehabilitation activities (such as constructing science laboratories in treatment schools) and the program's impacts.

E. Study sample and power calculations

To align data collection with the key outcomes envisaged in the ILEI activity's program logic, we targeted data collection efforts to students who will be in grades 9 through 12 during the study's follow-up period. Specifically, in each school, we defined the baseline study sample to be all students enrolled in grades 8 and 10 in the baseline school year. We originally planned to re-interview the students in the baseline sample in later follow-up rounds. However, due to implementation delays and uncertainty regarding the final school rehabilitation schedule, many of the grade 10 students interviewed at baseline would likely have aged out of secondary school by the time rehabilitation was completed. As a result, we abandoned the original longitudinal design and instead will interview a new panel of students in the study's follow-up survey rounds (we will use the baseline data to calculate cross-sectional school-level covariates for the impact analysis; the study will also use administrative data to track longitudinal patterns of enrollment and grade promotion across all grades). The first follow-up data collection round will survey all students enrolled in grades 9 and 11 in the year rehabilitation work was completed, and the second follow-up round will track this follow-up sample longitudinally for a second year.

We present power calculations for the study in Table II.3, showing the statistical precision provided by four illustrative sample configurations. In the benchmark scenario, we calculate the power of the study assuming all of the treatment schools that are currently scheduled to be rehabilitated will receive the program. To date, 11 of the 104 treatment schools have been excluded from the program due to implementation constraints (for example, due to structural problems with a school building that would make rehabilitation work cost prohibitive). Therefore, the benchmark scenario assumes that there will be a treatment-group compliance rate of 89 percent. Note, however, that the final number of treatment schools that will be rehabilitated has yet to be determined. For example, some schools originally selected for the program have yet to be fully assessed and may be excluded for eligibility reasons, or the total number of rehabilitated schools could decline if there are unexpectedly high rehabilitation costs. To reflect these possibilities, the power calculations show a variety of other scenarios regarding the rate at which Phase III schools initially assigned to the treatment group could be classified as ineligible for the program.

Depending on the final number of schools that are rehabilitated as part of the ILEI activity, we estimate that the evaluation will be able to detect statistically significant student-level impacts as small as 0.13 standard deviations in the best case and 0.18 standard deviations in the least favorable case.

Based on our review of other school construction evaluations in developing countries, we believe that the range of detectable effects shown in these scenarios represents a level of statistical precision that is adequate to detect impacts comparable to those reported for school construction in certain other contexts (Levy et al. 2009). However, it is important to note that school construction interventions have not always produced sizeable short-term impacts (e.g., Dumitrescu et al. 2011), and that prior studies have tended to examine wholesale construction of new school buildings rather than rehabilitation of existing facilities. Even with a minimum

detectable effect equal to 0.13 standard deviations (the best-case scenario shown in Table II.3), we cannot say with confidence whether the evaluation will find significant impacts.

Table II.3. ILEI minimum detectable effects (MDE) for different sample sizes and compliance rates

	All Phase III schools completed (no additional exclusions from treatment group)	75% of Phase III schools completed	50% of Phase III schools completed	25% of Phase III schools completed
Evaluation sample of schools	104 treatment 90 control	104 treatment 90 control	104 treatment 90 control	104 treatment 90 control
MDE for all schools assigned to treatment (ITT impacts)	0.12	0.12	0.12	0.12
Compliance with treatment group assignment	89%	82%	74%	66%
Number of rehabilitated schools	93	85	77	69
MDE for rehabilitated schools (TOT impacts)	0.13	0.14	0.16	0.18

Notes: MDE calculations assume a two-tailed test with a 5 percent significance level and 80 percent power. We assume an intraclass correlation (ICC) of 0.1, a school-level R-squared of 0.3, a student-level R-squared of 0.1, and an aggregate student sample comprising 30 students in grade 9 and 30 students in grade 11 enrolled at follow-up in each study school. The ICC and R-squared assumptions are based on U.S. data from school-level cluster randomized trials in education, as reported in Hedges and Hedberg (2007) and Deke et al. (2010). The student-level R-squared was assumed to be a more conservative 0.1 (versus 0.2 with a longitudinal design) in order to account for our cross-sectional design. However the impact of this assumption on the estimated MDEs is minimal. Treatment-on-the-treated (TOT) MDEs were calculated by dividing the intent-to-treat (ITT) MDEs by the compliance rate among treatment schools (this assumes no control schools receive treatment).

For the process evaluation of school rehabilitation activities, we will conduct a series of in-depth interviews targeting three groups of respondents: 1 or 2 key GoG staff, 1 interview with each of the activity's design contractors, 2 interviews with rehabilitation supervisors, and 2 interviews of MCC/MCA staff involved in implementation and oversight of the rehabilitation program. Collecting information from the respondents involved in each area of activity implementation will enable us to develop a full picture of the planned implementation, the actual implementation, and the reasons for any divergences between the planned and actual implementations.

At a subset of treatment schools, we will collect additional descriptive and qualitative data to investigate how rehabilitation affected the learning environment at study schools. We will draw a sample designed to obtain representative information from each of the program's 10 geographic regions, in the second follow-up year after rehabilitation work has been completed. We will include a sample of two schools in each region—one treatment school and one control school—in this additional data collection effort. Across regions, schools will be purposively selected to include a representative range of characteristics, such as school size and urbanicity. Within each of these schools, the local data collection firm will conduct one in-depth interview with the school director, in-depth interviews with four teachers (including at least one science teacher), and two student focus groups. Each focus group will include approximately eight randomly selected students in secondary-level grades. In total, the qualitative sample will consist of 20 schools providing a total of 20 school director interviews, 80 teacher interviews, and 40 student

focus groups. Although we believe these samples will produce meaningful descriptive data for qualitative analysis, this subsample of schools is too small to support quantitative hypothesis testing, and, as a result, we do not show power calculations for this portion of the study.

F. Baseline data analyses

In this report, we used baseline data collected in 2015, 2016, and 2017 to assess differences between treatment and control groups in measurable characteristics of schools, students, and teachers. To measure these differences, we ran OLS regression analyses using the following equation:

$$(2) \qquad Y_{ps(i)} = \alpha + \beta * TREAT_{ps} + \delta_p + \varepsilon_{ps(i)}$$

where $Y_{ps(i)}$ is a baseline measure for individual *i* (if at student or teacher-level) in school *s* in a randomization stratum with probability of selection into treatment group *p*; $TREAT_{ps}$ is a binary indicator that is 1 if school *s* is in the treatment group and 0 if it is in the control group; δ_p is a set of binary indicators, one for each of the five probabilities of selection into treatment group *p* assigned to the strata used in randomization (the groups of probabilities are 1 in 2 for 154 schools, 3 in 5 for 5 schools, 2 in 3 for 15 schools, 5 in 16 for 16 schools, and 3 in 4 for 4 schools).; and $\varepsilon_{ps(i)}$ is a random error term. The parameter of interest in equation (2) is β, which gives the estimated difference in the measure $Y_{ps(i)}$ between treatment and controls groups at baseline. We tested whether the estimated values of β were statistically different from 0 using two-tailed t-tests. The model explicitly controlled for the probability of selection into the treatment group to account for the stratified randomization process.

Our regressions at the student and teacher-level must account for the fact that outcomes among individuals in the same school—which is the level of random assignment—were likely to be correlated because they experienced many of the same conditions (such as the same school building, school director, and school environment). We accounted for this correlation by clustering the regression error terms at the school level and using standard errors that are robust to heteroscedasticity.

The risk of falsely rejecting hypothesis tests grows when interpreting a large number of tests as if they were independent. One would expect that by random chance approximately 5 percent of such tests would suggest significant differences even when two randomly assigned groups were similar. To address this, we also conducted a joint F-test to examine whether there was a systematic pattern of differences across measures between treatment and control groups using a single test (as opposed to several "independent" tests). To do so, we ran a single OLS regression using the following equation:

$$(3) \qquad TREAT_{ps} = \alpha + \beta * INPUT_{ps} + OUTCOME_{ps} * \gamma + \delta_p + \varepsilon_{ps}$$

where $INPUT_{ps}$ is a vector of baseline measures of infrastructure quality in school *s* in a randomization stratum with probability of selection into treatment group *p*; $OUTCOME_{ps}$ is a vector of mean baseline student outcomes in school *s*; and ε_{ps} is a random school-level error term. We then conducted an F-test on the coefficients in vectors β and γ to test whether they were statistically different from zero. Like in equation (2) the model explicitly controlled for the

probability of selection into the control group using indicators to account for the stratified randomization process, and the standard errors were robust to heteroscedasticity.

We also used the baseline data to assess risks to the assumptions in the ILEI activity's logic model, such as whether there was sufficient scope for improvements in infrastructure and educational outcomes for the ILEI activity to succeed in providing its intended benefits to students. To assess these risks, we examined the distributions and means of baseline measures of infrastructure quality, of stakeholders' perceptions of infrastructure quality, of stakeholders' perceptions of the impact of infrastructure conditions on education outcomes, and of educational outcomes of students in treatment schools.[7] For example, when analyzing infrastructure quality in treatment schools we compared whether the number and severity of infrastructure problems aligned with the assumptions in the project's original plans. We also examined whether survey respondents' perceptions of infrastructure issues presented a barrier to classroom learning. These descriptive analyses cannot predict the ultimate impacts of the program, but they do provide an early indication of whether some key assumptions in the program logic are likely to hold in practice, now that the set of beneficiary schools has been selected. We focus on the baseline measures in treatment schools because only treatment schools will receive the program and, based on the logic model, may experience impacts of the program. Because of random assignment, the baseline measures for the control schools should be similar to those in treatment group, and in fact we found that the means and distributions for the full sample are similar those presented for the treatment group alone (see Appendix F).

[7] We present the means of the baseline measures included in the risk assessment (and distributions of student test scores) for both the treatment and control groups in Appendix F.

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III. DATA SOURCES AND OUTCOME DEFINITIONS

The evaluation collected baseline survey data on the ILEI activity's key outcomes from students, parents, teachers, and school directors. Over the course of the evaluation period, these survey data sources will be complemented by a combination of administrative data, study-administered learning assessments, direct observations of student attendance and school infrastructure, and qualitative research. Survey data, learning assessments, direct observations of attendance, and ratings of school infrastructure will be collected by MCA-procured local data collection firms. Mathematica will obtain administrative data from Georgia's education management information system (EMIS) and activity implementation records.

A. Scope and timeline of data collection activities

The data sources for each of the study's key outcomes are summarized in Table III.1.

Each of the quantitative data collection components will be collected from all treatment and comparison schools at three points in time: the baseline school year when random assignment occurs for that program phase, February or March of the first follow-up school year, and February or March of the second follow-up school year. The date when rehabilitation is completed will determine the timing of first and second follow-up surveys in each school. If rehabilitation is completed by December 31 (meaning that students will begin attending the rehabilitated school in time for the spring semester), the first follow-up survey will take place in February or March of that same school year, and the second follow-up survey will take place one year after the first round. However, if rehabilitation is not completed until after December 31, the first follow-up survey will take place in the following school year (and the second follow-up survey will occur one year later). For example, if rehabilitation is completed in November, data collection for the first follow-up will take place in February or March of the same school year (approximately three months later). If rehabilitation is completed in January, data collection for the first follow-up will take place in February or March of the following school year (approximately 14 months after completion of rehabilitation). Tracking outcomes for two follow-up years will enable us to examine immediate impacts shortly after rehabilitation work occurs and two-year impacts examining the program's medium-term effects. The study will also collect qualitative data in a subsample of schools in the second follow-up year after rehabilitation begins.

The data collection schedule is summarized in Table III.2. Because ILEI rehabilitation activities will occur in multiple phases, the data collection rounds will occur in sequence by region (data collection for a given phase encompasses all treatment and comparison schools in the regions assigned to that phase). Note that due to program implementation delays, rehabilitation work in the Phase I regions that was originally scheduled to occur in summer 2015 was delayed until either 2016 or 2017. Note also that in 2019, following the end of construction in Phase III schools, Mathematica will collect additional process evaluation data beyond the surveys, student learning assessments, and qualitative data collected across the other data collection rounds. For example, for the process evaluation the study would collect all available ILEI implementation reports and cost records after completion of rehabilitation work in Phase III.

Table III.1. Data sources and study outcomes for the ILEI evaluation

Component	Description	Outcome
Data to be collected directly by Mathematica		
Administrative EMIS data	Student-level records detailing school of enrollment and grade of enrollment for the study's student sample in all study years. Administrative data might also provide information on student and/or parent characteristics. If possible, we would seek to merge EMIS data with national assessment data to obtain students' test scores on the national secondary-school exit examination.	National assessment test scores in math, science, and literacy Experience of teaching staff; percentage of certified teachers Total school enrollment (all grades), total enrollment in elementary school, total enrollment in grades 9 and 10, and total enrollment in grades 11 and 12
Rehabilitation design and implementation records	To document the design and early implementation of the ILEI activity, Mathematica will obtain any available school rehabilitation design assessment reports, additional program implementation records, and program cost data.	Process analysis
In-depth interviews with implementers	For the study's process evaluation, Mathematica will conduct qualitative, in-depth interviews with implementers including the activity's design contractors, rehabilitation supervisors, and key Ministry of Education and Science of Georgia (ESIDA) staff.	Process analysis
Data to be collected by Georgia's National Assessment and Examination Center (NAEC)		
Assessments of student learning	We expect that assessments of grade 9 and 10 and grade 11 and 12 students' learning in math, science, and literacy will be administered by using NAEC's computer-adaptive testing system. Assessments would be developed and piloted by NAEC with technical oversight from Mathematica to ensure test instruments adequately measure variation in student learning. Baseline assessments took place for students in grades 8 and 10.	Student test scores in math, science, and literacy
Data to be collected by local survey firm procured by MCA-G		
Student survey	Survey data on student characteristics, recall-based measures of attendance (to be validated using site visits), perceived determinants of student attendance, perceptions of school building quality and safety, self-reported respiratory health, and perceptions of time on task during the school day. Baseline assessments took place for students in grades 8 and 10, and follow-up assessments will take place for students in grades 9 through 12.	Student attendance rates, particularly in winter months Students' time on task, including hours of instruction, measures of science laboratory use, and measures of recreational facility use Perceptions of school safety and health
Parent survey	Survey data on family demographics and socioeconomic characteristics, recall-based measures of student attendance, perceived determinants of student attendance, and perceptions of school building quality and safety.	Perceptions of school safety and health
Teacher survey	Survey data on teacher experience, demographic characteristics, certifications, perceptions of the quality and safety of school facilities, recall-based measures of time spent on instruction, and student attendance records.	Perceptions of school safety and health Experience of teaching staff; percentage of certified teachers Time on task, including hours of instruction, science laboratory use, and recreational facility use

Table III.1 (*continued*)

Component	Description	Outcome
School director survey	Survey data on school director operations and maintenance practices, average operations and maintenance expenditures, school facility usage, and student attendance records.	Student attendance rates, particularly in winter months Average expenditure on heating, lighting, and other operations/maintenance expenses Changes in maintenance and school management practices
Attendance	During site visits, the local data collection firm will directly measure attendance by (a) visually confirming the presence/absence of the study's student sample and (b) completing student headcounts for comparison against national administrative data recording the number of enrolled students. This will provide the most reliable attendance measure possible and is the gold standard for participation measurement. Additionally, by collecting this data, Mathematica can validate the other measures of attendance that will be collected; if other measures are reliable, those data might provide more detailed participation rate records than what can be observed directly.	Student attendance rates
Ratings of school infrastructure	The local data collection firm will provide enumerators to visit all study schools and visually assess the quality of schools' infrastructure systems. Enumerators will collect data on classroom conditions related to heating, (for example, temperature, air quality from wood stoves), lighting, water, lavatory, and recreational facilities. The evaluation team and local data collection firm will consider ways to limit manipulation of school conditions during data collection, including unannounced visits and multiple visits per school year.	Measures of classroom conditions, including indoor temperature, air quality related to wood stoves, and adequate lighting Measure of overall building infrastructure quality
Qualitative research	In the second follow-up year, qualitative data collection will occur in a subsample of treatment and comparison schools. This will include: in-depth interviews with school directors to assess infrastructure usage patterns, community usage of the school building outside the school day, school operations, and maintenance practices; in-depth interviews with teachers to assess infrastructure usage patterns, time on task, and perceptions of school building quality and safety; and focus groups with students to assess infrastructure usage patterns, time on task, determinants of student attendance, and perceptions of school quality and safety.	Changes in maintenance and school management practices Perceptions of school safety and health Student and teacher time on task, including hours of instruction, science laboratory use, and recreational facility use

Notes: Surveys and learning assessments will be procured by MCA-G during the life of the Compact (through the 2018—2019 survey round), but all survey and learning assessment costs will be paid by Mathematica in the 2019—2020 round because the compact will have expired.

Table III.2. Data collection schedule

Collection round (Second semester of each school year).	Phase I regions (rehabilitation completed in 2016) (Mtskheta-Mtianeti, Racha-Lechkhumi and Kvemo Svaneti, Samtskhe-Javakheti, Shida Kartli)	Phase I regions (rehabilitation completed in 2017) (Mtskheta-Mtianeti, Racha-Lechkhumi and Kvemo Svaneti, Samtskhe-Javakheti, Shida Kartli)	Phase II regions (Kakheti, Kvemo Kartli)	Phase III regions (Guria, Imereti, Samegrelo-Zemo Svaneti)
2015	Baseline data collection with grade 8 and 10 students	Baseline data collection with grade 8 and 10 students	None	None
2016	None	None	Baseline data collection with grade 8 and 10 students	None
2017	One-year follow-up with grade 9 and 11 students	None	None	Baseline data collection with grade 8 and 10 students
2018	Two-year follow-up with grade 10 and 12 students. Qualitative data collection	One-year follow-up with grade 9 and 11 students	One-year follow-up with grade 9 and 11 students	None
2019	None	Two-year follow-up with grade 10 and 12 students. Qualitative data collection	Two-year follow-up with grade 10 and 12 students. Qualitative data collection	One-year follow-up with grade 9 and 11 students
2020	None	None	None	Two-year follow-up with grade 10 and 12 students. Qualitative data collection

If the ILEI implementation plan changes, the study team will consider appropriate revisions to the data collection schedule. Likewise, we will consider alternative or extended data collection schedules as the program develops. In coordination with MCA-G, the study team has recommended the use of a year-by-year contract with the local survey firm and the use of a year-by-year implementing entity agreement with NAEC covering student learning assessments. This approach will provide an opportunity to assess whether the existing data collection plan is still advisable following each data collection round, since the contract structure facilitates making adjustments on a yearly basis. The study team will maintain a flexible approach, and will discuss the merits of changes to the study design and data collection plan with MCC, MCA-G, and other stakeholders as needed throughout the life of the study.

B. Data Collection Procedures

While Mathematica oversaw all of the data collection activities, a local data collection firm in Georgia was procured by MCA-G to implement enumerator training, coordinate field work,

and conduct data entry for all of the evaluation's baseline surveys and baseline infrastructure assessments. MCA-G, MCC, and other stakeholders made a joint decision to procure student learning assessments for the evaluation through NAEC. NAEC has a unique set of capabilities pertaining to test development and computer-based test administration that made it well-suited for collecting all of the learning assessment data needed for the study. MCA-G entered into an agreement with NAEC to design and conduct grade-appropriate learning assessments for the baseline data collection, which included testing student learning in Georgian literacy, mathematics, and science in grades 8 and 10.

1. Administration of surveys and learning assessments

As discussed in the previous section, Mathematica developed five data collection instruments in English: survey questionnaires of students, their parents, teachers, and school directors, as well as school building infrastructure assessments. The infrastructure assessment instrument provided the enumerators with consistent metrics for measuring a variety of school structures and systems. The infrastructure assessment teams were comprised of enumerators with engineering backgrounds who received training on how to consistently measure air quality, light levels, and temperature. Mathematica provided the technical measurement devices needed for this work, and oversaw the training of the data collection team to ensure the protocols were carried out consistently. For example, Mathematica ensured that light levels inside classrooms were consistently measured in the same part of the classroom across all sites. Mathematica also oversaw that all air quality measurement devices, such as those for measuring levels of particulate matter and carbon monoxide, were used according to consistent protocols.

IPM translated all of the survey instruments into Georgian, Armenian, Azeri, and Russian to accommodate Georgia's diverse linguistic makeup. IPM was also responsible for hiring and training enumerators, pre-testing the survey instruments, and implementing the baseline data collection in Phase I-III schools. Mathematica provided guidance to IPM throughout all data collection activities. When field work was completed, IPM staff entered the survey data into SPSS format to produce a final data set which was then delivered to Mathematica, along with a final data collection completion report.

NAEC was responsible for assessing the students' knowledge in science, math, and Georgian language for students in grades 8 and 10, as part of the baseline data collection effort. NAEC administers computer-based testing on a nationwide basis in Georgia for selected grades. However, the pre-existing assessments used by NAEC do not cover the subjects and grades of interest for this study. Thus, MCA-G commissioned NAEC to develop new assessments in Georgian, Azeri, and Armenian for use in this evaluation. The instruments were pre-tested in a set of schools outside of the study sample, and Mathematica confirmed that the set of test questions used in the assessment appropriately discriminated between student ability levels in each grade and subject (in the sense that the distribution of student scores for each exam was approximately normal and did not produce ceiling or floor effects).

Baseline learning assessments were administered to the students in the study sample under strict supervision. One NAEC-staff member was required to observe every testing day to confirm that the computer-based testing systems were operating properly and that the school's test administrators were monitoring students to ensure that tests were taken independently. Mathematica attended some of the testing days to confirm that these procedures were

implemented as planned. NAEC then entered and cleaned the test data and provided Mathematica with a student-level data file showing the assessment results of each tested student.

The sample sizes for each baseline data collection round are summarized in Table III.3.

Table III.3. Baseline data collection samples

Phase	Data collection dates	Number of schools	Number of students	Number of teachers	Number of school directors	Number of parents
Phase I	Apr 30 – Jun 7, 2015	60	3,150	462	60	2,901
Phase II	Apr 1 – May 29, 2016	70	4,044	600	70	3,778
Phase III	Feb 6 – Apr 17, 2017	64	4,429	609	64	4,152
Total		194	11,623	1,671	194	10,831

2. Data processing

Mathematica performed a careful data review and quality assurance process of all received data sets, and worked closely with IPM and NAEC to fix any mistakes found. Data cleaning steps undertaken by Mathematica included confirming that variable lists and variable labels were complete and accurate for each survey, confirming that school names and codes matched the sample lists and were consistent within all five data sets, and checking that all student IDs are unique and non-missing. Mathematica then identified outliers, such as unreasonable ages for enrolled students, or unrealistic temperatures in the building infrastructure assessment data. Responses that were out of range were investigated with IPM, and where a correct value could not be determined, responses were set to missing. The cleaning team also corrected issues with variable labels and value-codes, and verified that all variables that should have been skipped based on answers to previous questions were correctly skipped by the respondents; these variables were given missing values when skip errors were found.

Mathematica merged the student survey data collected by IPM with student assessment data collected by NAEC for each phase. NAEC and IPM worked together to create unique student-level study ID numbers to facilitate the merging process in order to merge the data sets without using national ID numbers, which served to protect students' anonymity. Merge rates using these unique ID numbers were high; 97.4 percent of the students surveyed by IPM in the baseline data collection effort (11,326 out of 11,623) merged with the student assessment data collected by NAEC during the baseline data collection rounds.[8]

C. Key outcomes and outcome definitions

The primary outcomes of interest in the evaluation are the quality of school infrastructure (the inputs described in the activity's logic model) and educational outcomes (the outputs described in the logic model), such as student enrollment, student attendance, teacher attendance,

[8] Additionally, as part of the cleaning process, Mathematica merged the parent survey data with the student survey and assessment data. Approximately 7 percent of parents had more than one child in the sample (due to the presence of siblings). These parents were asked to respond to an additional survey section to gather information about the second child. In these cases, the resulting data set contains duplicate observations for the same parent.

student time use in school, and academic achievement. We also explored stakeholders' perceptions of the quality of school infrastructure and their perceptions of the impact of school infrastructure on teaching and student learning, in order to better understand the connection between school infrastructure and students' educational choices and outcomes.

1. Quality of school infrastructure

We constructed indices for most aspects of baseline school infrastructure using data collected as part of the baseline school infrastructure assessment and student and teacher surveys. Data reduction is necessary for several reasons. The research team collected hundreds of data items through a baseline school infrastructure assessment, student surveys, and teacher surveys. Reporting separately on each item would be impractical and could potentially mislead readers because of something known as the multiple comparisons problem. The multiple comparisons problem arises when researchers report the results of a large number of hypothesis tests, where some of them are bound to be falsely rejected due to pure chance. This is the same logic whereby flipping a coin many times will eventually yield "streaks" of all heads or all tails, even if the coin is fair.

To define the key outcome indices for the evaluation, we used principal components analysis (PCA) to combine multiple measures related to aspects of school infrastructure into single indices.[9] Each index is a weighted average of related infrastructure measures, in which the weights are aligned with measures with the highest component scores (that is, an infrastructure measure that explains a greater amount of variation across schools will receive a larger weight than measures explaining less of the variation in the sample). We further standardized the indices within the sample of schools to z-scores, so each index has a mean of 0 and a standard deviation of 1. Although the specific values of the indices cannot be directly interpreted, each index was coded to represent the presence of infrastructure gaps or problems and can be used to compare the infrastructure in treatment and controls schools. For example, a school with a higher score on the index of physical classroom conditions would have worse conditions than a school with a lower score. The weights for each index included in the baseline findings are shown in Tables G.1 through G.7 in Appendix G. Indices were created for the following aspects of school infrastructure:

- **Better condition of school building exterior.** Includes measures of the condition of the school building roof, the condition of rain water drainage system, the condition of main entrance doors, and whether the exterior of the building is painted.
- **Better condition of interior structures.** Includes summary measures of the condition of the walls, ceilings, and floors in all classrooms and the indoor gym (if present).

[9] A PCA is a statistical procedure that determines how a number of "factors" (in our case, related measures of infrastructure) are correlated with one another and condenses this information into linear combinations of the factors called "principal components." Each principal component consists of a number of weights or "factor loadings" that define how much of the variation in the principal component is driven by each factor. We adopted the weights estimated for the "first principal component" to calculate our indices because, by design, the first principal component contains the set of factor weights that captures as much of the correlation between the factors as possible.

- **Better condition of stairs in main school building.** Includes measures of the condition of the stairwells in the main school building, whether the stairs are level, and whether the stairs are evenly spaced (if two or more floors present in main school building).
- **Better air quality in classrooms.** Includes measures of the presence of particulate matter equal to or smaller than 2.5 microns in width (PM 2.5) and between 2.5 and 10 microns in width (PM 10) in parts per million (ppm) (there is extensive evidence that exposure to PM can have negative health consequence; WHO 2013), the presence of carbon monoxide (CO) in ppm, and whether smoke was visible in the classroom.
- **Better condition of classroom teaching facilities.** Includes measures of whether all classrooms in a school have working lights, a lockable door, and a blackboard visible from the back of the classroom and the condition of teaching equipment in classrooms.
- **Specialized teaching facilities are present in school.** Includes measures of the presence of an outdoor recreation space, an indoor gym, and a science laboratory.

In addition to the summary indices listed above, the baseline equivalence analysis included one direct measure (not an index) of school infrastructure related to heating systems:

- **Functional central heating is present in classrooms.** All classrooms in the school have functional central heating.

2. Educational outcomes

The primary educational outcomes are defined as follows:

- **Student enrollment.** Total student enrollment reported by school director.
- **Student attendance.** Student absent from school less than three times in the past month.
- **Student class time use.** Student was taught five hours or more per day in the past month.
- **Georgian test scores.** For the Georgian (or minority language) assessment, a summary score is calculated and converted into standard deviations by normalizing by grade (8th or 10th).
- **Math test scores.** For the math assessment, a summary score is calculated and converted into standard deviations by normalizing by grade (8th or 10th).
- **Science test scores.** For the science assessment, a summary score is calculated and converted into standard deviations by normalizing by grade (8th or 10th).

We also examine a small number of other educational outcomes, including an index that we construct to measure the regularity of student exposure to science facilities (using the same PCA process used for the infrastructure indices, described above). These other outcomes are defined as follows:

- **Use of indoor gym.** Student reports using an indoor gym at least once in an average week.
- **Use of outdoor recreation facility.** Student reports using an outdoor recreation facility at least once in an average week.

- **Index of regular exposure to science facilities.** Includes measures of frequent use of science, exposure to science demonstrations, and conducting science experiments.

3. Stakeholders' perceptions of school infrastructure and its impacts on learning environment

The study's outcomes also include survey-based measures examining how school directors, teachers, students, and parents view school infrastructure and the relationship between school infrastructure and the learning environment. Key measures in these domains include:

- **School safety.** Whether stakeholder feels that the school is safe and healthy. (Teachers were asked about safety and healthiness separately.)
- **Classroom safety.** Whether stakeholder feels safe in the classroom. Whether stakeholder feels that students are safe in the classroom.
- **Stairwell safety.** Whether stakeholder feels safe using the stairs at school. Whether stakeholder feels that students are safe using the stairs at school.
- **Classroom temperature.** Whether stakeholder feels that the classroom is too cold in February.
- **Classroom air quality.** Whether stakeholder feels that air quality is poor or unhealthy. Whether stakeholder feels that air quality is uncomfortable or inadequate for students (school directors).
- **Impact of classroom temperature.** Whether student feels that classroom temperature negatively affected his or her ability to concentrate on school work in February. Whether teacher feels that classroom temperature negatively affected his or her ability to teach in February. Whether teacher feels that classroom temperature disrupted class instruction in February.
- **Impact of classroom air quality.** Whether student feels that classroom air quality negatively affected his or her ability to concentrate on school work over the past month. Whether teacher feels that classroom air quality negatively affected his or her ability to teach over the past month.
- **Impact of classroom lighting.** Whether student feels that classroom lighting negatively affected his or her ability to concentrate on school work in February. Whether student feels that classroom lighting makes it difficult to read. Whether student feels that classroom lighting makes it difficult to read the blackboard. Whether teacher feels that classroom lighting negatively affected his or her ability to teach over the past month. Whether teacher feels that classroom temperature disrupted class instruction in February. Whether teacher feels that classroom lighting makes it difficult for students to read. Whether teacher feels that classroom lighting makes it difficult for students to read the blackboard.

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IV. BASELINE FINDINGS

A. Study population

To identify the program sample, MCC and MCA-G developed recommendations regarding the percentage of program schools that should be allocated to each of Georgia's regions, excluding schools in major urban areas such as Tbilisi and Batumi, and excluding the disputed Abkhazia and Tskhinvali regions. Within each region, schools were then ranked on a set of eligibility criteria including having high enrollment, high space utilization (i.e., a high number of students relative to the building's size, implying that rehabilitation investments would be more efficient), poor building conditions, and a high percentage of enrolled students who are classified by the government as socially vulnerable. While all of these factors were included in the ranking formula, to maximize the cost-effectiveness of the program (that is, the number of benefiting students per dollar spent) MCC requested that the ranking approach place a greater weight on space utilization than other criteria.

These criteria were used to identify an initial list of 425 potential schools. Next, MCA-G and GoG stakeholders reviewed this list and recommended that 108 schools be removed from consideration due to issues such as major structural faults (which are not cost effective to address), environmental risks, or concerns over unclear land titles. Of the remaining list of 317 eligible schools, schools with the highest utilization rates within each region were selected to form a sample of 184 schools eligible for random assignment, with the number of schools in each region being allocated in the same proportion as previously agreed (the list of potential schools for the evaluation also did not include the Adjara region, because the implementers, MCC, and MCA-G decided to exclude the region from random assignment). The schools in this list with lower utilization rates in each region were used to form a separate list of 117 reserve-pool schools. Some schools assigned to treatment were later deemed ineligible for rehabilitation; to replace a portion of these schools, 10 reserve-pool schools with the highest utilization rates (located in the same regions as excluded treatment schools) were later added to the program sample for random assignment. These steps are summarized in Table IV.1.

Table IV.1. Selection process for schools in the evaluation sample

Selection Step	Remaining schools eligible for the evaluation sample
1. Apply nationwide eligibility formula	425
2. GoG stakeholder review of school list	317
3. Highest-utilization schools selected for initial rounds of random assignment	184
4. Final evaluation sample (10 high-utilization schools added from reserve pool)	194
Final number assigned to the treatment group	*104*
Final number assigned to the control group	*90*

In Table IV.2, we present summary characteristics for the rehabilitation program's final pool of 194 schools that comprise the final evaluation sample. In the regions included in the evaluation, the characteristics of schools in the evaluation sample is broadly similar to schools in the other rural regions of Georgia (that is, regions excluding the cities of Tbilisi and Batumi and the disputed regions of Abkhazia and Tskhinvali). However, the evaluation focuses on schools with substantially higher enrollments (and a lower ratio of school building size to school enrollment). The schools in the evaluation sample also have a somewhat smaller proportion of socially vulnerable students than the

average rural school in Georgia (24 versus 27 percent nationwide), but, because of a larger average student body, the average number of socially vulnerable students is larger in the schools in the evaluation sample (94.6 versus 46.8 students).

Table IV.2. Characteristics of schools in final evaluation sample

	Evaluation sample	Rural areas of Georgia
Number of schools	194	1,692
Average total enrollment	394.3	173.4
Average school building size (m^2)	2,642	2,896
Ratio of school building size (m^2) to student enrollment	6.7	16.7
Percentage of socially vulnerable students	24	27
Average number of socially vulnerable students	94.6	46.8
Regional distribution of schools (percentage)		
Adjara	0	12
Guria	4	5
Imereti	21	20
Kakheti	21	10
Kvemo Kartli	16	14
Mtskheta-Mtianeti	2	4
Racha-Lechkhumi and Kvemo Svaneti	4	3
Samegrelo-Zemo Svaneti	8	12
Samtskhe-Javakheti	6	11
Shida Kartli	19	8

Note: The sample of rural Georgian schools summarized in this table excludes schools in the cities of Tbilisi and Batumi (because urban areas are not eligible for the program) and schools in the disputed regions of Abkhazia and Tskhinvali. Schools outside Batumi in the Adjara region are excluded from the evaluation because implementers, MCC, and MCA-G decided to exclude the region from random assignment.

B. Baseline equivalence

Given that we conducted random assignment to select the study's treatment and control schools, the only differences between the two groups arise, by definition, from statistical chance (random noise in the data). To confirm that random chance was the only source of any differences, we compared the baseline characteristics of the two groups. The analysis did not reveal any systematic pattern of differences between the two groups, indicating that we performed random assignment correctly. To check that the treatment and control schools were indeed comparable at baseline, we compared the baseline characteristics and baseline education outcomes of the two groups of schools. As discussed in Section II.6, we measured whether these differences were statistically significant using t-tests from multivariate OLS regressions of treatment status on each characteristic. As we discuss below, we also performed a separate statistical test to examine if there was a systematic pattern of differences across these characteristics.

1. Conditions of school infrastructure

Because the primary goal of ILEI activity is to improve educational outcomes by improving the quality of the infrastructure and learning environment in treatment schools, we began by comparing the baseline quality of school infrastructure and learning environments in treatment and control schools. It is important to examine the equivalence of infrastructure quality because differences in baseline infrastructure could bias the results for one or more of the evaluation's outcomes if not directly accounted for in the impact analyses. As discussed in Section III.3, we combined a number of

related infrastructure measures from the baseline surveys into indices, which reduced the risk of falsely attributing statistical significance to differences that actually result from chance alone in the baseline equivalence analyses by reducing the information in many related measures into a single measure. The indices were designed to reflect the condition of a particular aspect of the school's infrastructure (for example, conditions in the school building's exterior) and can be used to make comparisons of these conditions between treatment and control schools. All of the indices for school infrastructure have been coded such that increasing index scores indicate better infrastructure conditions.

Table IV.3 presents comparisons of the baseline levels of infrastructure quality found in the treatment group of schools and control group of schools. There were no significant differences between treatment and control school means for seven of the eight measures of baseline infrastructure. The exception was the index of better stair conditions in the main school building, which was 0.31 standard deviations smaller in treatment schools than control schools (implying worse stair conditions in treatment schools) at baseline.[10]

Table IV.3. Comparison of baseline infrastructure between treatment and control schools

	Control mean	Treatment mean[a]	Difference	*p*-value
Better condition of school building exterior (z-score)	0.06	-0.02	-0.07	0.61
Better condition of walls, ceilings, and floors in all classrooms and indoor gym (z-score)[b]	0.05	-0.04	-0.09	0.52
Better condition of stairs in main school building (z-score)[c]	0.14	-0.17	-0.31*	0.03
All classrooms have functional central heating (p.p.)	44.4	48.1	3.7	0.62
Better air quality in school classrooms (z-score)	-0.03	-0.03	0.00	0.99
Better condition of classroom teaching facilities (z-score)	-0.06	0.10	0.16	0.27
Specialized teaching facilities present (z-score)[d]	-0.01	0.01	0.02	0.89
Indoor gym has functional central heating (p.p.)[e]	56.5	49.7	-6.8	0.42

Notes: Differences between control and treatment means and *p*-values of those differences were estimated using multivariate OLS regressions of treatment status on each measure of baseline infrastructure. The regressions included indicator controls for the probability of selection in the intervention group that was assigned to the randomization strata of each school (not reported). Standard errors were robust to heteroscedasticity. "p.p." indicates that the reported means and differences were in percentage points.

**/* indicates that differences were significant at the 1/5 percent levels.

[a] Treatment means were regression adjusted (estimated by adding the control mean to the difference between treatment and control means estimated using multivariate OLS regressions).

[b] Index of interior building structures included conditions in all classrooms and indoor gyms, if present.

[c] The analysis of conditions of school stairs was restricted to the 188 schools (of 194 total schools) with at least two floors in the main school building.

[d] Specialized teaching facilities included indoor gyms, outdoor recreation areas, and science laboratories. Libraries and computer laboratories were excluded because nearly all schools have those facilities.

[e] The analyses of heating and air quality in indoor gyms was restricted to the 155 schools (of 194 total schools) with an indoor gym.

[10] Because the baseline difference in the condition of school stairwells was statistically significant, we will control for it in the study's impact analysis by including this baseline index as a covariate in the impact analysis for any outcome related to stair quality.

2. Stakeholder perceptions of school infrastructure

The baseline surveys also included measures of stakeholders' perceptions of the condition of school infrastructure and teaching environment. Table IV.4 presents comparisons of baseline perceptions of overall school safety, classroom safety, classroom temperature, and classroom air quality reported by various stakeholders in treatment and control schools. The table includes four panels, which present the perceptions reported by students (Panel A), parents (Panel B), teachers (Panel C), and school directors (Panel D).

We found that overall stakeholders in treatment schools more likely to have negative perceptions of school infrastructure than stakeholders in control schools, but the differences were largely small and most differences (15 out of 20) were not statistically significant. Across the various types of survey respondents, including male and female students, there were no significant differences between treatment and control schools in perceptions of school, classroom, and stairwell safety. However, there were patterns that suggest that stakeholders in treatment schools were significantly less likely to feel that classrooms were not too cold in February or that school or classroom air quality was not poor or unhealthy than stakeholders in comparison schools. These measures included all five statistically significant differences and ranged from 5 to 8 percentage points (or 17 to 47 percent of control group means).

3. Perceptions of how school infrastructure affects teaching and student learning

We also examined baseline differences related to perceptions about how school infrastructure affects the quality of teaching and student learning. Table IV.5 presents comparisons between baseline perceptions of students (Panel A) and teachers (Panel B) in treatment and control schools regarding how classroom temperature, air quality, and lighting affected teachers' ability to teach and students' ability to learn. More students and teachers in treatment schools believed that their classroom environment reduced the quality of teaching and students' ability to learn than in control schools. However, the differences between the treatment and control schools were small and not statistically significant for 11 of the 12 measures.

Table IV.4. Comparison of baseline perceptions of school infrastructure and learning environment

	Control mean	Treatment mean[a]	Difference	*p*-value
Panel A. Students				
Student agrees that the school is safe and healthy (p.p.)	0.52	0.49	-0.03	0.12
Male students	0.56	0.52	-0.04	0.08
Female students	0.48	0.45	-0.02	0.30
Student feels safe in the classroom (p.p.)	0.58	0.53	-0.05	0.22
Male students	0.60	0.56	-0.05	0.24
Female students	0.56	0.51	-0.05	0.22
Student feels safe using stairwells (p.p.)	0.58	0.53	-0.06	0.07
Male students	0.60	0.54	-0.06	0.06
Female students	0.57	0.51	-0.06	0.10
Student feels that classroom is not too cold in February (p.p.)	0.68	0.60	-0.07*	0.02
Student feels that air quality in classroom is not poor or unhealthy (p.p.)	0.64	0.57	-0.06	0.07
Panel B. Parents				
Parent agrees that the school is safe and healthy (p.p.)	0.69	0.66	-0.03	0.06
Parent feels that students are very safe in the classroom (p.p.)	0.50	0.47	-0.04	0.32
Parent feels that stairwells are very safe (p.p.)	0.50	0.45	-0.05	0.14
Parent feels that classroom is not too cold in February (p.p.)	0.74	0.66	-0.07*	0.02
Parent feels that air quality in classroom is not poor or unhealthy (p.p.)	0.70	0.64	-0.05*	0.05
Panel C. Teachers				
Teacher agrees that the school is safe (p.p.)	0.77	0.75	-0.02	0.58
Teacher agrees that the school is healthy (p.p.)	0.80	0.81	0.00	0.84
Teacher feels very safe in the classroom (p.p.)	0.75	0.71	-0.04	0.35
Teacher feels that students are very safe in the classroom (p.p.)	0.73	0.71	-0.03	0.50
Teacher feels very safe using stairwells (p.p.)	0.66	0.60	-0.05	0.26
Teacher feels that students are very safe using stairwells (p.p.)	0.78	0.73	-0.05	0.08
Teacher feels that classroom is not too cold in February (p.p.)	0.83	0.75	-0.08**	0.01
Teacher feels that air quality in classroom is not poor or unhealthy (p.p.)	0.79	0.72	-0.07**	0.01
Panel D. School directors				
Director agrees that the school is safe (p.p.)	0.53	0.66	0.13	0.08
Director feels that the air quality in the school when it is heated is comfortable and adequate for students (p.p.)	0.18	0.21	0.02	0.69

Notes: Differences between control and treatment means and *p*-values of those differences were estimated using multivariate OLS regressions of treatment status on each measure of baseline infrastructure. The regressions included indicator controls for the probability of selection in the intervention group that was assigned to the randomization strata of each school (not reported). Standard errors in Panel A were robust to heteroscedasticity. Standard errors in Panels A, B, and C were clustered at school-level. "p.p." indicates that the reported means and differences were in percentage points.

**/* indicates that differences were significant at the 1/5 percent levels.

[a] Treatment means were regression adjusted (estimated by adding the control mean to the difference between treatment and control means estimated using multivariate OLS regressions).

Table IV.5. Comparison of baseline perceptions of the impact of school infrastructure on teaching and student learning

	Control mean	Treatment mean[a]	Difference	*p*-value
Panel A. Students				
Student feels that classroom temperature negatively affected his or her ability to concentrate in February (p.p.)	0.33	0.36	0.03	0.11
Student feels that classroom air quality negatively affected his or her ability to concentrate over the past month (p.p.)	0.29	0.31	0.02	0.17
Student feels that classroom lighting negatively affected his or her ability to concentrate in February (p.p.)	0.19	0.20	0.00	0.85
Student feels that classroom lighting makes it difficult to read (p.p.)	0.27	0.28	0.02	0.52
Student feels that classroom lighting makes it difficult to read the blackboard (p.p.)	0.64	0.66	0.02	0.54
Panel B. Teachers				
Teacher feels that classroom temperature negatively affected his or her ability to teach in February (p.p.)	0.14	0.17	0.03	0.20
Teacher feels that classroom temperature disrupted class instruction in February (p.p.)	0.16	0.18	0.02	0.63
Teacher feels that classroom air quality negatively affected his or her ability to teach over the past month (p.p.)	0.11	0.15	0.04*	0.05
Teacher feels that classroom lighting negatively affected his or her ability to teach over the past month (p.p.)	0.11	0.15	0.04	0.31
Teacher feels that classroom lighting disrupted class instruction in February (p.p.)	0.16	0.17	0.01	0.73
Teacher feels that classroom lighting makes it difficult for student to read (p.p.)	0.75	0.70	-0.05	0.27
Teacher feels that classroom lighting makes it difficult for students to read the blackboard (p.p.)	0.46	0.50	0.04	0.54

Notes: Differences between control and treatment means and *p*-values of those differences were estimated using multivariate OLS regressions of treatment status on each measure of baseline infrastructure. The regressions included indicator controls for the probability of selection in the intervention group that was assigned to the randomization strata of each school (not reported). Standard errors were clustered at school level. "p.p." indicates that the reported means and differences were in percentage points.

**/* indicates that differences were significant at the 1/5 percent levels.

[a] Treatment means were regression adjusted (estimated by adding the control mean to the difference between treatment and control means estimated using multivariate OLS regressions).

4. Educational outcomes

Finally, we compared the treatment and control means for the ultimate outcomes of interest in the impact evaluation of the ILEI activity—student education outcomes. Table IV.6 presents comparisons of baseline educational outcomes, including total school enrollment (as reported by the school director), student absences, class time spent being taught (as reported by students), and student test scores. Test scores came from three subject tests (Georgian, math, and science) that were designed by NAEC specifically for the ILEI evaluation and administered by evaluation staff to students in the baseline sample (separate exams were designed and administered to students in 8th and 10th grade for each subject). For students whose primary language is not Georgian, the Georgian exam was replaced

with an exam in their primary language (Azeri or Armenian). To account for the different exams by grade and language, we compared test scores separately for 8th and 10th grade students and each comparison regression included a control for whether the student received a non-Georgian language exam.

Educational outcomes were largely similar across treatment and control schools. Twelve of the 13 outcomes presented in Table IV.6 did not have statistically significant baseline differences between treatment and control groups, including total enrollment, student absences, or the amount of time students report being taught in class each day.[11] We also found no significant differences in test scores across both grades and subjects and in an index of more frequent exposure to science laboratories, science demonstrations, or science experiments. However, students in treatment schools appeared to be less likely to report using an outdoor recreation facility at least once in an average week and more likely to report using any recreation facility (although this difference was not statistically significant).

Table IV.6. Comparison of baseline educational outcomes

	Control mean	Treatment mean[a]	Difference	*p*-value
Total enrollment in school[b]	397	408	12	0.77
Student absent less than 3 times in the past month (p.p.)	0.65	0.66	0.01	0.63
Student was taught 5 hours or more per day in the past month (p.p.)	0.51	0.51	0.00	0.92
Student test scores [c]				
Grade 8				
Georgian (or minority language) (z-score)[d]	0.03	-0.03	-0.07	0.17
Math (z-score)	0.03	0.01	-0.02	0.56
Science (z-score)	0.04	-0.01	-0.05	0.34
Grade 10				
Georgian (or minority language) (z-score)[d]	0.04	-0.02	-0.06	0.22
Math (z-score)	-0.01	0.07	0.07	0.39
Science (z-score)	0.02	0.04	0.02	0.72
Use of specialized school facilities				
Student uses an indoor gym at least once in an average week (p.p.)	0.76	0.83	0.07	0.08
Student uses an outdoor recreation facility at least once in an average week (p.p.)	0.65	0.59	-0.06*	0.01
Student use an indoor gym or an outdoor recreation facility at least once in an average week (p.p.)	0.91	0.91	0.01	0.23
Student more frequently exposed to a science laboratory or science demonstrations or conducted science experiments (z-score)	0.05	-0.06	-0.11	0.23

Notes: Differences between control and treatment means and *p*-values of those differences were estimated using multivariate OLS regressions of treatment status on each measure of baseline infrastructure. The regressions included indicator controls for the probability of selection in the intervention group that was assigned to the randomization strata of each school (not reported). Standard errors for "Total enrollment in school" were robust to heteroscedasticity. Other standard errors were clustered at school level. "p.p." indicates that the reported means and differences were in percentage points.

[11] To simplify the results, Table IV.6 focuses on measures of classroom instruction time and absences reported by students. The study also collected similar measures from teachers, and the results were very similar (no significant baseline differences).

**/* indicates that differences were significant at the 1/5 percent levels.

[a] Treatment means were regression adjusted (estimated by adding the control mean to the difference between treatment and control means estimated using multivariate OLS regressions).

[b] Total enrollment in school reported by school director.

[c] Student test scores were standardized within the sample for each grade and subject.

[d] Comparisons of "Georgian (or minority language)" included a control for whether the student's primary language is a minority language.

5. Assessment of systematic differences in school infrastructure and education outcomes

Many researchers have concerns about interpreting a large number of individual t-tests as independent tests in order to evaluate baseline equivalence because of the increased risk of falsely rejecting the hypotheses of the tests due to pure chance. To address this concern we also conducted a joint test of the primary measures of interest—infrastructure and educational outcomes—to test for systematic patterns of differences between the treatment and controls groups across all of the primary measures. To do this, we estimated an OLS regression of the measures of interest on treatment status and conducted an F-test of whether the estimated differences of the measures of interest were all equal to zero.[12]

After conducting the F-test, we did not find evidence of systematic differences between the treatment and control groups. Table IV.7 presents the infrastructure and education outcomes included in the joint regression as well as the F-statistic and *p*-value of the F-test of those measures. The F-statistic was small—0.54—with a *p*-value of 0.92, which suggests that the treatment and control groups were equivalent on baseline infrastructure and education outcomes (or that the test was underpowered).

C. Assessment of risks to the program logic

While the baseline data collected for the evaluation does not provide evidence about the activity's eventual impacts, it does provide a way to assess the conditions in treatment schools prior to rehabilitation. Specifically, we can compare the activity's original assumptions about the number of beneficiaries, likely infrastructure gaps, and barriers to educational attainment to the actual conditions in treatment schools. This descriptive analysis will help to indicate whether the planned set of programmatic impacts remain plausible at this stage of implementation.

1. Number of beneficiary students and schools

In estimating the ERR for the ILEI activity, MCC and MCA-G assumed that approximately 130 schools would be rehabbed under the activity with 350 students enrolled in each school on average, meaning there would be approximately 45,500 students enrolled in a given year across all rehabbed schools. The final ILEI sample includes 104 schools randomly assigned to the intervention group. In 2014, there were, on average, 394 students enrolled in each intervention school, meaning that there are a total of approximately 40,976 students enrolled in the evaluation's treatment schools in a given

[12] Note that, in order to jointly estimate both school-level and student-level outcomes, we had to convert the student-level outcomes to the school-level before including them in the school-level regression. For the student-level outcomes included in the test (student absences, class time being taught, and test scores), we calculated the school-level mean of each outcome. Also note that the school infrastructure measures excludes the quality of stairs in order to include single story school buildings in the test. The findings were the same when we included an index of stair quality and restricted the test to multistory schools.

year.[13] This suggests that there will be at least 10 percent fewer students benefitting from the activity than assumed in the preliminary ERR estimate. However, the estimate is subject to uncertainty. Additional schools in the treatment group may be deemed ineligible for rehabilitation (to date, 10 of the 104 treatment schools have been deemed ineligible), and it is possible that schools outside the evaluation sample may also be rehabilitated.

Table IV.7. Joint test of equality in baseline school infrastructure and educational outcomes between intervention and control groups

Measures included in joint test	
School infrastructure	
Better condition of school building exterior (z-score)	
Better condition of walls, ceilings, and floors in all classrooms and indoor gym (z-score)[a]	
Better air quality in school classrooms (z-score)	
Better condition of teaching facilities (z-score)	
Specialized teaching facilities present (z-score)[b]	
All classrooms have functional central heating (p.p.)	
Educational outcomes	
Total enrollment in school	
Students absent less than 3 times in the past month in school (p.p.)	
Students taught 5 hours or more per day in the past month in school (p.p.)	
Mean student test scores	
Grade 8	
Georgian (or minority language) (z-score)	
Math (z-score)	
Science (z-score)	
Grade 10	
Georgian (or minority language) (z-score)	
Math (z-score)	
Science (z-score)	
F-statistic	0.39
***p*-value**	0.98

Notes: The regression included controls for the probability that each school could be selected into the treatment group (not included in F-test). Standard errors were robust to heteroscedasticity. The F-test was a joint test that estimates whether the treatment-control differences on each of the measures in the table (as estimated in the regression) were jointly distinguishable from zero. The *p*-value of 0.98 indicates that these differences were not jointly statistically significant. "p.p." indicates that the reported means and differences were in percentage points.

[a] Index of interior structures included conditions in both classrooms and indoor gyms, if present.

[b] Specialized teaching facilities included indoor gyms, outdoor recreation areas, and science laboratories. Libraries and computer laboratories were excluded because nearly all schools have those facilities.

In addition to the total number of beneficiaries, the ERR projections also depend on the estimated benefits of the ILEI activity for each student. The remainder of this section examines the assumptions that are likely to play a role in determining the extent to which the project will benefit individual students enrolled in intervention schools.

[13] The total enrollment in treatment schools reported by school directors in the baseline surveys was similar to the 2014 EMIS data—391 students per school or 40,679 total students.

2. Evidence of infrastructure gaps in intervention schools

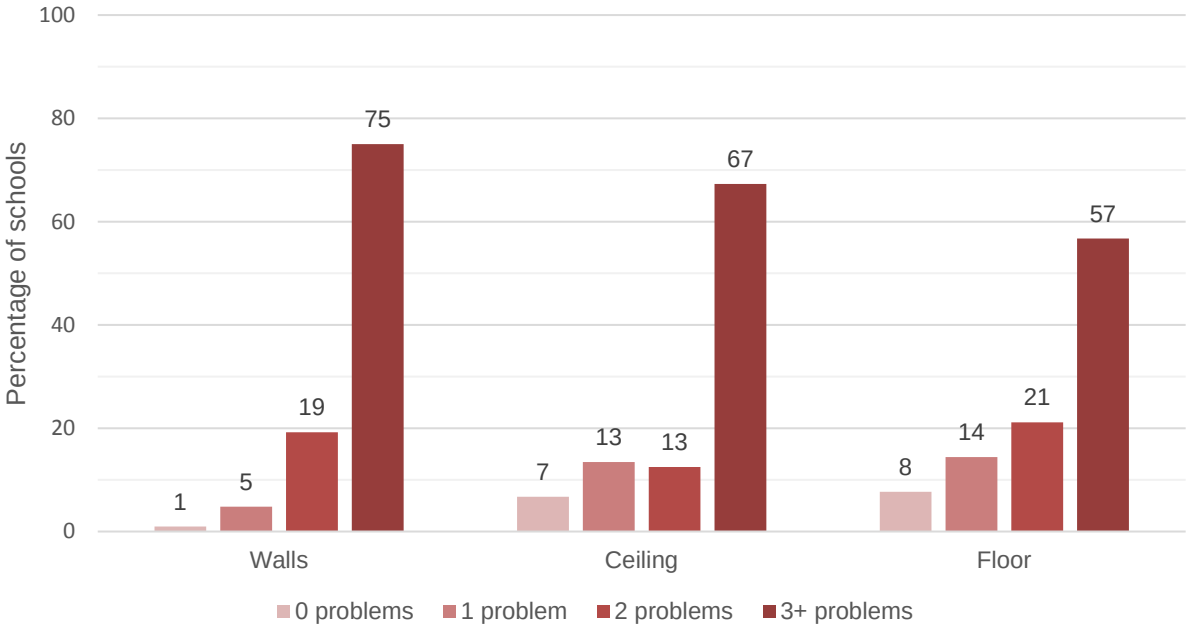
The ILEI activity is designed to upgrade the quality of the physical infrastructure of program schools, such as building interiors, lighting, heating, water and plumbing, lavatories, and science laboratories, in order to create an improved learning environment and improve educational outcomes. To assess if these investments are likely to meaningfully improve facilities at treatment schools, we examined the baseline quality of school infrastructure in the treatment group.

While there is some variation in the quality of classroom structures (walls, ceilings, and floors) in the treatment group, most of these schools had at least some structures that are in very poor condition (illustrated in Figure IV.1). Figure IV.2 presents the distribution of the largest number of problematic conditions observed by interviewers in the walls, ceiling, and floor in any classroom in each treatment school. Interviewers reported on whether they observed any of five problematic conditions in each structural element (such as cracks, water damage, mold, chipped or peeling paint, or holes in the case of classroom walls). For all three structural elements, nearly all treatment schools had one or more classrooms with at least one infrastructure problem, and most treatment schools had one or more classrooms with at least three of the five conditions present.[14]

Figure IV.1. Illustration of damage in classroom walls

[14] There was only one treatment school in which no problems were observed in the walls, ceiling, and floor in any classrooms.

Figure IV.2. Percentage of treatment schools with infrastructure problems in at least one classroom



Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).
Notes: Sample includes 104 treatment schools.

There was a similarly high prevalence of problems with the quality of classroom equipment across treatment schools (illustrated in Figure IV.3). Teachers reported in the baseline survey whether any of four types of classroom equipment—desks, chairs, blackboard/whiteboard, and instructional materials—were not functioning as well as they should. Over 90 percent of treatment schools had one or more teachers who reported that at least one type of classroom equipment was functioning poorly, and over a third of schools (35 percent) had one or more teachers who reported problems with all four types of classroom equipment.

Figure IV.3. Illustration of furniture and equipment in classrooms

Classroom in need of rehabilitation

Rehabilitated classroom

While there was a high prevalence of baseline infrastructure problems in the classrooms of treatment schools, this was not always reflected in baseline perceptions about school safety. Most students (53 percent) and teachers (71 percent) in treatment schools reported that they feel very safe in their classrooms. However, over a third of schools had one or more teachers who felt that students were rarely safe or are unsafe in their classroom. This suggests that improving the physical conditions of classrooms may help some students across most schools feel safer in class, although the magnitude of these potential benefits is unclear.

As with the physical condition of classrooms, there were also widespread problems with the physical condition of stairwells in treatment schools at baseline. Of the 100 treatment schools with at least two floors, over 90 percent had stairwells with at least one infrastructure problem (including unstable rails, visible cracks, holes in steps, and missing steps), and a third had stairwells with at least three problems. For example, the stairs were uneven in over two-thirds (68 percent) of treatment schools with stairwells, and stairs were not evenly spaced in close to half of the schools (44 percent). Despite the poor conditions of stairwells, a majority of students and teachers perceived stairs to be safe. Over 50 percent of students (52 percent) and teachers (59 percent) reported that the stairwells in the main school building were very safe to use. However, these perceptions varied substantially across respondents who did not feel safe using stairs: 36 percent of students and 32 percent of teachers reported that stairways were somewhat safe, and the remaining 12 percent of students and 9 percent of teachers reported that stairways were rarely safe or unsafe.

Another important input of the ILEI activity is improvements to the electrical systems and lighting in classrooms. According to the program logic, improving lighting may help to improve the quality of teaching and the ability of students to read and learn, particularly during the winter. The baseline evidence presented in Table IV.8 suggests that there is significant room for improvement in the quality of lighting in treatment schools. For example, there was no working electric lighting in one or more classrooms in over half of treatment schools. Some students reported having difficulty reading because of lighting (29 percent) and that lighting negatively affected their ability to concentrate on school work in the past month (20 percent). A similar percentage of teachers also expressed concern with lighting: 30 percent of teachers reported that classroom lighting was insufficient for students to read and follow lessons comfortably. In addition, difficulties with being able to read what teachers write on the blackboard appeared to be a common issue for students—65 percent of students reported having experienced difficulty reading the blackboard because of classroom lighting.

Table IV.8. Quality of lighting and its effect on the learning environment

	Percentage
Schools	
At least one classroom without working lighting in school	59
Students	
Ever have difficulty reading because of lighting	29
Ever have difficulty reading blackboard because of lighting	65
Feels lighting negatively affected ability to concentrate on school work in past month	20
Teachers	
Feels lighting is insufficient for students	30

Sources: Baseline MCC Georgia School Infrastructure, Student, and Teacher Surveys (2015, 2016, 2017).

Notes: Samples included 104 treatment schools, between 5,734 and 6,143 students, and 876 teachers.

Another important component of the ILEI activity program logic is improving the quality of heating in classrooms during winter months. The baseline data collection confirmed that consistent heating across all classrooms was a widespread problem in treatment schools. At baseline, 44 percent of classrooms lacked functional central heating, and most treatment schools (52 percent) had at least one such classroom (Table IV.9). As a result, over a third of the classrooms in treatment schools visited in February (35 percent) had a temperature measured at or below 15 degrees Celsius (59 degrees Fahrenheit), and the median classroom temperature was only 16.5 degrees Celsius (61.7 degrees Fahrenheit).[15] We also examined the lowest observed classroom temperature in each school (for classrooms that were in active use). The lowest temperature in an occupied classroom in February varied substantially, ranging from 6.9 to 21.2 degrees Celsius (44.4 to 70.2 degrees Fahrenheit), with a median value of 15 degrees (59 degrees Fahrenheit).

Inconsistent heating and low temperature were also reflected in the perceptions of students and, to a lesser degree, of teachers. A substantial minority of students (40 percent) felt that the average classroom temperature in February was too cold, and 32 percent of students reported that classroom temperatures adversely affected their ability to concentrate on their school work (Table IV.9). These perceptions also appear to be closely related to the classroom temperatures measured by survey staff. In schools with an average temperature below the median, more students reported that classrooms were too cold (57 percent) and that temperatures adversely affected concentration (42 percent) than students in schools with an average temperature at or above the median in this sample (28 and 23 percent, respectively). Fewer teachers were concerned about classroom temperature and its effect on the learning environment: 23 percent of teachers felt that classroom temperature was too cold in February on average, but only 11 percent felt that classroom temperature in February negatively affected their ability to teach.

In addition to the direct effects of low temperatures on classroom learning, the type of heating system may also affect air quality in ways that impact the learning environment. In particular, the use of wood-burning stoves may harm air quality in measurable ways, particularly if classroom-specific stoves and their chimneys were poorly sealed and ventilated (illustrated in Figure IV.4). Figure IV.5 presents the distribution of levels of small particulate matter (PM), called PM 2.5, and larger particles, called PM 10, in parts per million (ppm) measured in classrooms in treatment schools visited in winter. Both PM 2.5 and PM 10 are byproducts of wood- or coal-fire heating systems and can pose health risks at high levels (WHO 2013). WHO guidelines recommend keeping long-term exposure at or below 10 micrograms for PM 2.5 and at or below 20 micrograms for PM 10 (the lowest categories in the Figures V.2 and V.3). There was a large degree of variation in the largest levels of PM 2.5 and PM 10 measured in February in treatment schools, ranging from 5 to 496 ppm for PM 2.5 and 9 to 992 ppm for PM 10. Most treatment schools measured in February had at least one classroom with unhealthy levels of particulate matter—in the median school in the treatment group, the classroom with the worst air quality had PM 2.5 of 13 ppm and PM 10 of 24 ppm.

[15] Classroom temperature was collected by measuring the surface temperature of a student's desk in the center of the classroom.

Table IV.9. Presence and perceptions of central heating in classrooms

	Percentage
Classrooms	
Lacked functional central heating	44
Schools	
At least one classroom without functional central heating in school	52
Students[a]	
Feels classroom is too cold on average in February	40
In school with low average classroom temperature (below median)[b]	57
In school with high average classroom temperature (at/above median)[c]	28
Feels temperature negatively affected ability to concentrate in February	32
In school with low average classroom temperature (below median)[b]	43
In school with high average classroom temperature (at/above median)[c]	23
Teachers[a]	
Feels classroom is too cold on average in February	23
Feels temperature negatively affected ability to teach in February	11

Sources: Baseline MCC Georgia School Infrastructure, Student, and Teacher Surveys (2015, 2016, 2017).

Notes: Samples included 371 classrooms in 104 treatment schools, between 1,981 and 1,982 students, and 289 teachers.

[a] Students and teachers restricted to treatment schools visited in the month of February.

[b] Students restricted to 927 students in 17 treatment schools visited in February with an average classroom temperature below the median of all treatment schools visited in that month.

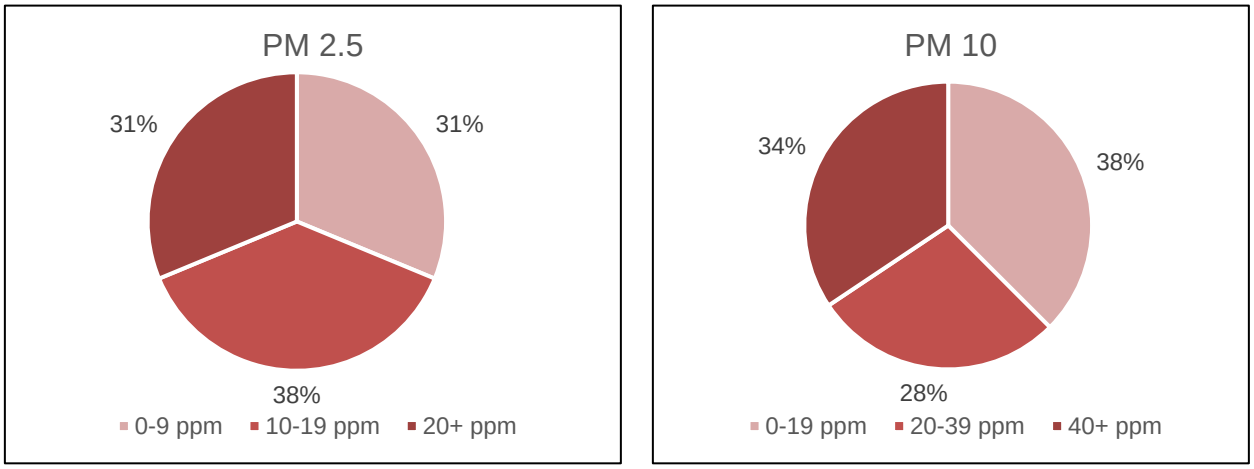
[c] Students restricted to 1,215 students in 15 treatment schools visited in February with an average classroom temperature at or above the median of all treatment schools visited in that month.

Figure IV.4. Illustration of wood-burning stove and central heating in classrooms

Wood-burning stove in classroom

Central heating in rehabilitated classroom

Figure IV.5. Highest level of particulate matter (PM) measured in classrooms in winter



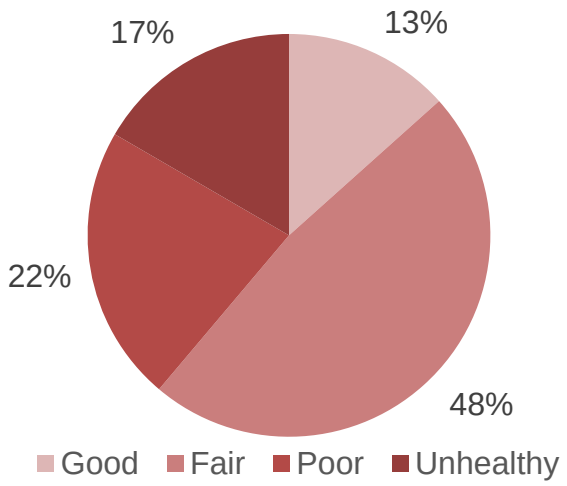
Sources: Baseline MCC Georgia School Infrastructure Survey (2015, 2016, 2017).
Notes: Samples included 32 treatment schools visited in February.

We also examined the levels of carbon monoxide (CO) measured in classrooms visited in the winter because CO is a common byproduct of burning carbon-based fuels (like coal, natural gas, and wood), odorless, and poses significant risks to health. The highest level of CO measured across treatment schools visited in February is fairly low, ranging from 0 to 4 ppm with most classrooms at 0 ppm. These findings suggest that CO was a less important factor for the air quality in treatment school classrooms than particulate matter.

Figure IV.6 presents evidence of how students perceive classroom air quality during winter months.[16] Most students perceived that classroom air quality could be improved (48 percent believed the air quality is fair, 22 percent believed it is poor, and 16 percent believed it is unhealthy). Teachers had similar but slightly less negative perceptions of classroom air quality (59 percent believed that air quality is poor, 13 percent believed it is poor, and 5 percent believed it is unhealthy). This difference may result from the fact that students were more likely than teachers to experience breathing difficulties (22 percent compared to only 10 percent for teachers) or coughing (43 percent compared to 15 percent) in school.

[16] Like the analyses of PM and CO, we restricted the analyses of perceptions of air quality to treatment schools visited in the month of February to focus on school air quality in winter months when heating systems were likely to be used.

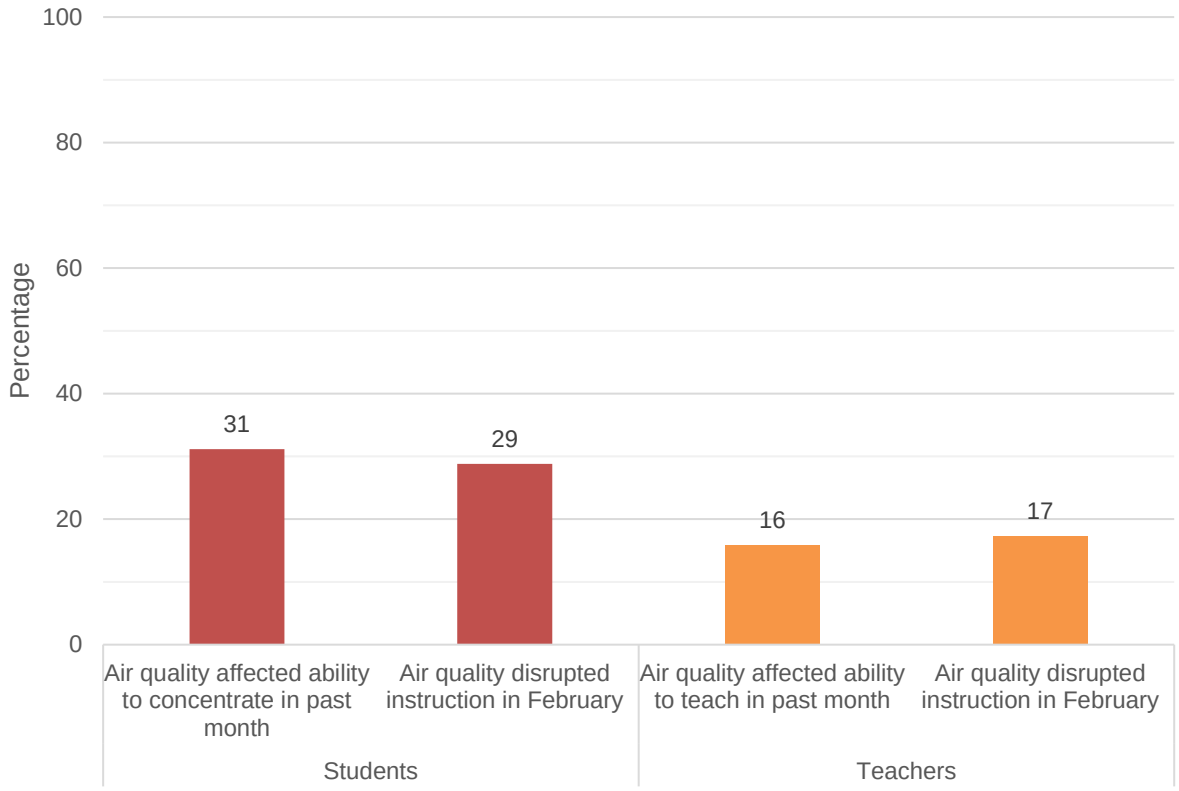
Figure IV.6. Student perception of classroom air quality in winter



Sources: Baseline MCC Georgia Student Survey (2015, 2016, 2017).
Notes: Sample included 2,026 students in treatment schools visited in February.

Evidence from the baseline surveys also suggest that some students and teachers believed that poor air quality in winter months negatively impacted teaching and student learning. Nearly a third of students reported that classroom air quality affected their ability to concentrate on school work in the past month (31 percent) or disrupted classroom instruction in February (29 percent) (Figure IV.7). Teachers reported less of an impact of classroom air quality on the learning environment—less than 20 percent of teachers reported that classroom air quality affected their ability to teach in the past month (16 percent) or disrupted classroom instruction in February (17 percent).

Figure IV.7. Perceived effect of classroom air quality in winter on the learning environment



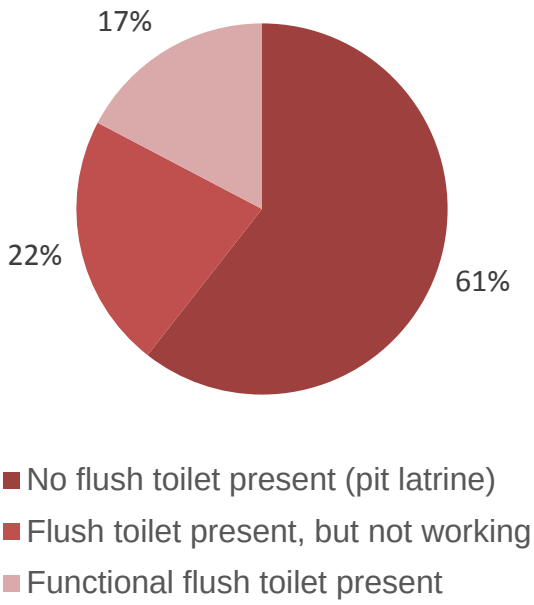
Sources: Baseline MCC Georgia Student and Teacher Surveys (2015, 2016, 2017).

Notes: Samples included between 5,509 and 5,763 students and between 869 and 873 teachers in treatment schools.

The ILEI activity will also include investments in improving sanitation facilities and the quality of drinking water. According to the program logic, these inputs are intended to improve health outcomes and lead to increases in student and teacher interest in attending school consistently. Evidence from the baseline surveys indicates that significant improvements can be made with regard to the condition of sanitary facilities in treatment schools. As presented in Figure IV.8, most treatment schools did not have flush toilets present in the primary sanitary facility (61 percent), and an additional 22 percent of schools had flush toilets that were not functional.[17] Most schools did not have soap available near the toilets or latrines (76 percent) and had an odor in the sanitary facilities (84 percent) (Figure IV.9). In addition, 49 percent of treatment schools did not have running water for hand washing available near the toilets or latrines.

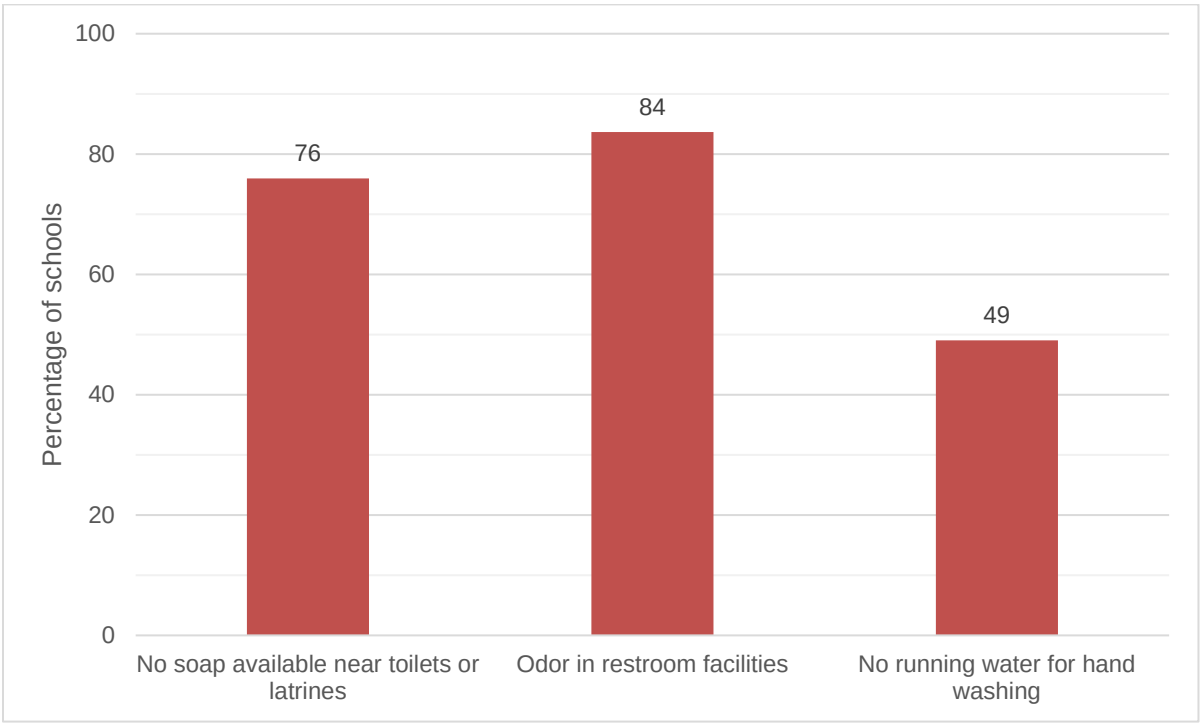
[17] In addition, 80 percent of the schools with flush toilets were connected to pit latrines rather than to sewer systems.

Figure IV.8. Presence of flush toilets in primary sanitary facility



Sources: Baseline MCC Georgia School Infrastructure Survey (2015, 2016, 2017).
Notes: Sample included 104 treatment schools.

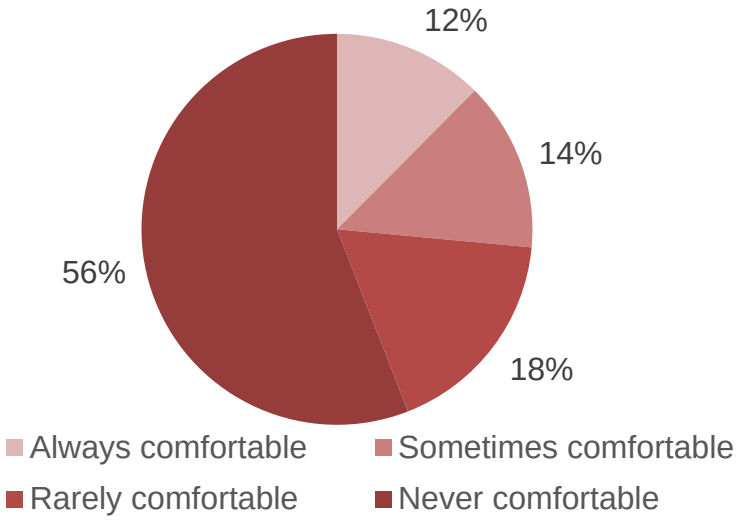
Figure IV.9. Sanitary conditions in primary sanitary facility



Sources: Baseline MCC Georgia School Infrastructure Survey (2015, 2016, 2017).
Notes: Sample included 104 treatment schools.

The poor conditions in treatment school sanitary facilities were reflected in students' and teachers' comfort with using the sanitary facilities. Most students (56 percent) report that they were never comfortable with using the sanitary facilities in their school, whereas only 12 percent were always comfortable (Figure IV.10). Male and female students reported very similar levels of discomfort with using the sanitary facilities in treatment schools—55 percent of male students and 56 percent of female students were never comfortable (Figure IV.11). Students were particularly uncomfortable with using the sanitary facilities in schools without functioning flush toilets—58 percent of students in schools with nonfunctioning flush toilets and 60 percent of students in schools without flush toilets were never comfortable with using the sanitary facilities (Figure IV.12). Students in schools with functional flush toilets were somewhat more comfortable with using sanitary facilities in their school, but nearly half still reported that they were never comfortable (46 percent).[18] Teachers reported more variation in their perceptions about sanitary facilities, with 30 percent reporting that they were never comfortable and 35 percent always comfortable. There were also some indications of concerns with the drinking water at the treatment schools among both students (40 percent) and teachers (39 percent).

Figure IV.10. Student comfort with using sanitary facilities in school

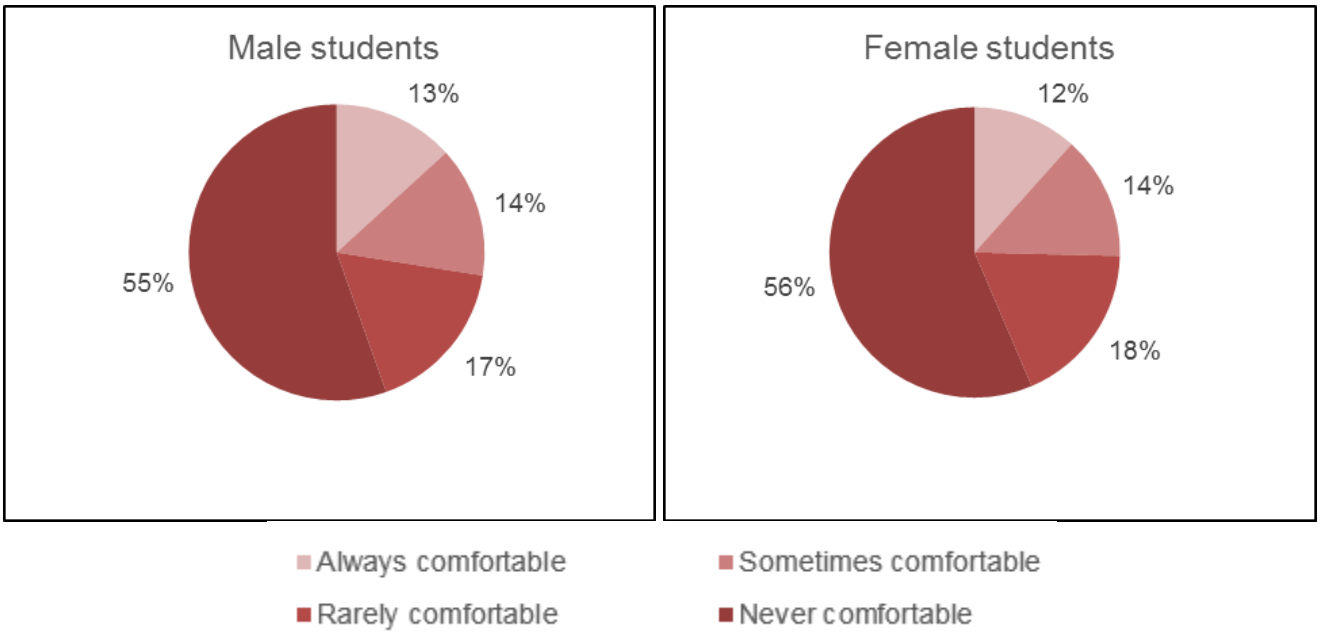


Sources: Baseline MCC Georgia Student Survey (2015, 2016, 2017).

Notes: Sample included 5,975 students in treatment schools.

[18] Most flush toilets connected to a pit latrine (80 percent of schools with flush toilets) rather than to sewers, but there were no meaningful differences in students' perceived comfort with either system as long as the flush system worked (or did not work).

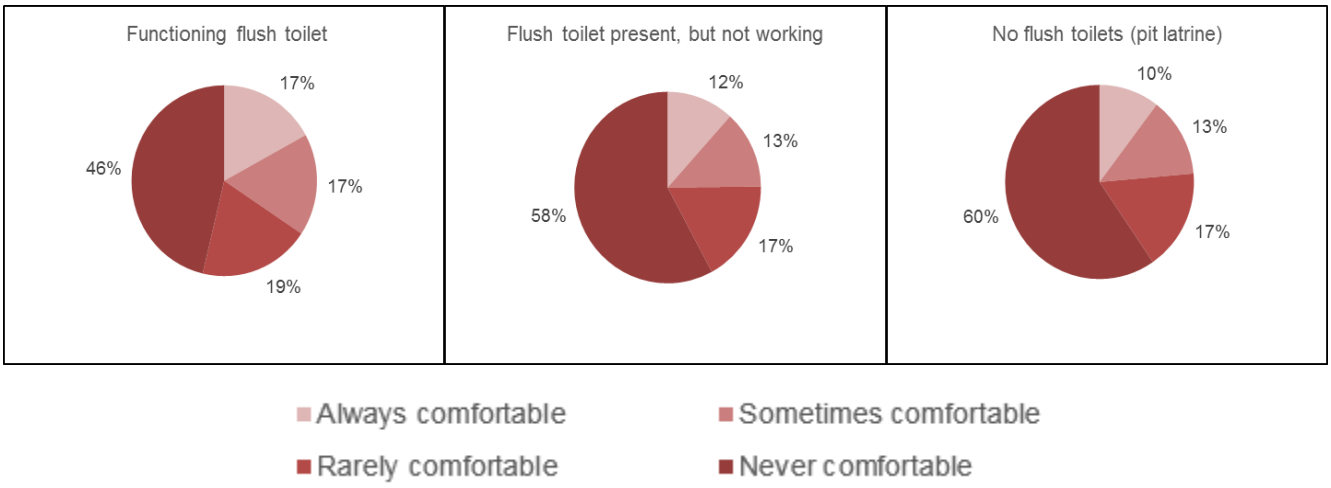
Figure IV.11. Student comfort with using sanitary facilities, by gender



Sources: Baseline MCC Georgia Student Survey (2015, 2016, 2017).

Notes: Sample included 3,084 male and 2,891 female students in treatment schools.

Figure IV.12. Student comfort with using sanitary facilities, by presence of flush toilets

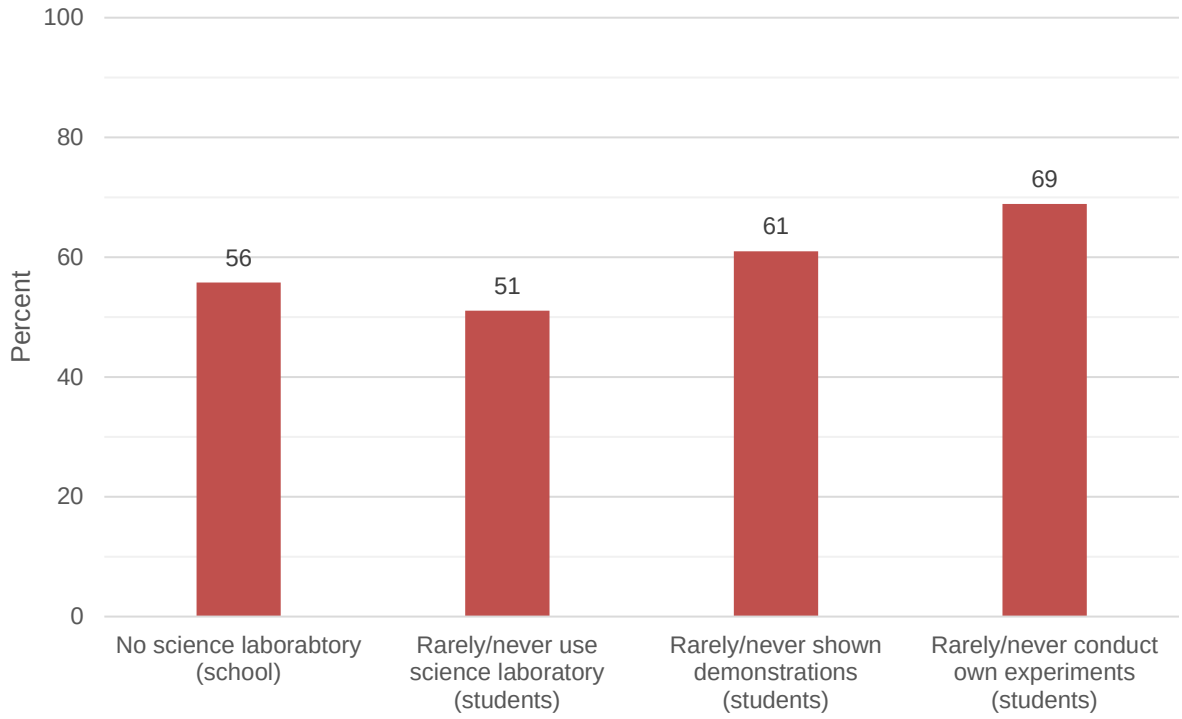


Sources: Baseline MCC Georgia School Infrastructure and Student Surveys (2015, 2016, 2017).

Notes: Sample included 1,202 students in treatment schools with functioning flush toilets, 1,355 students in treatment schools with flush toilets that were not working, and 3,418 students in treatment schools without flush toilets.

In order to improve the quality of science education in treatment schools, the ILEI activity will include building new science laboratories and providing new science equipment. Most treatment schools did not have a pre-existing science laboratory (Figure IV.13). However even in schools that had science laboratories, most of the students rarely or never used the science laboratory. Most students also reported that teachers rarely or never demonstrate science experiments (and of the students who did report being demonstrated experiments by teachers, most rarely or never conduct their own experiments).

Figure IV.13. Exposure to science laboratories, demonstrations, and experiments



Sources: Baseline MCC Georgia Student Survey (2015, 2016, 2017).

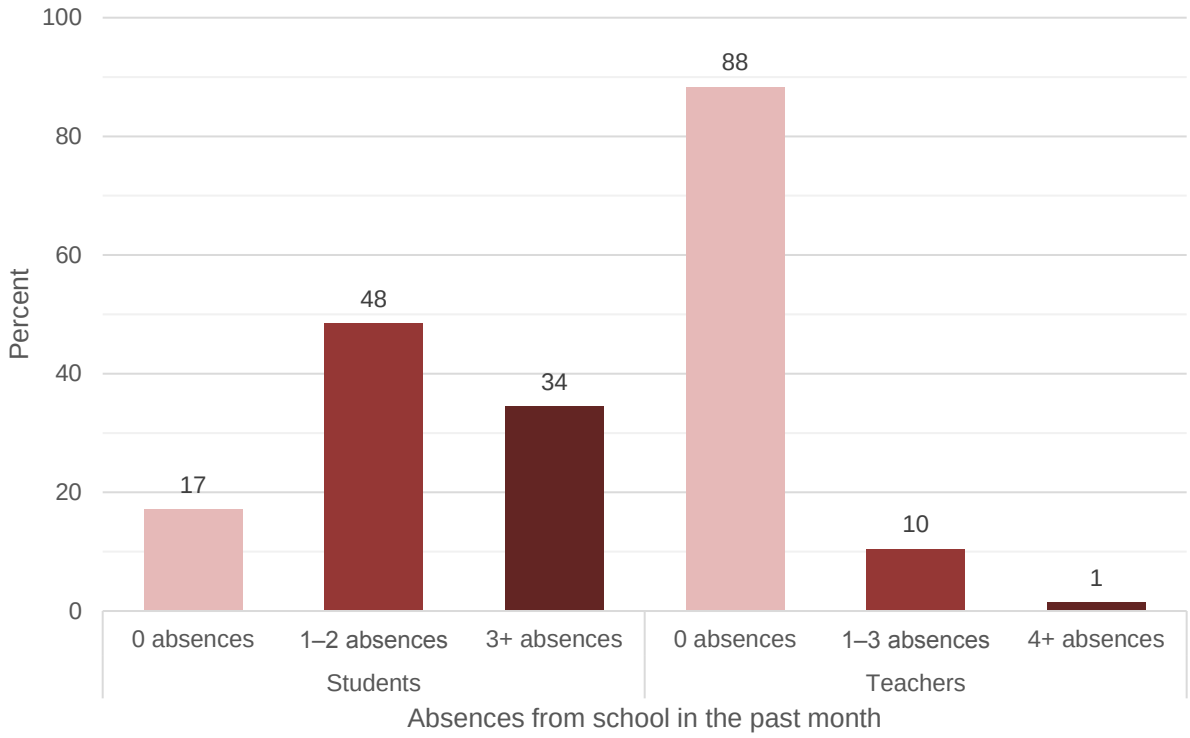
Notes: Samples included 104 treatment schools and between 3,342 and 5,418 students. "Rarely/never used science lab (Students)" only included students who reported that school has a science laboratory (3,342 students). "Rarely/never conducted own experiments (Students)" only included students who reported that teachers rarely, sometimes, or always demonstrated science experiments (5,113 students).

3. Evidence of barriers to student learning

In order for the school infrastructure investments made by the ILEI activity to improve educational outcomes (as presented in the program logic) at baseline there must be room for these outcomes to improve. For example, if schools already had nearly perfect attendance rates at baseline, it would not be possible for the ILEI activity to produce meaningful additional gains in attendance outcomes.

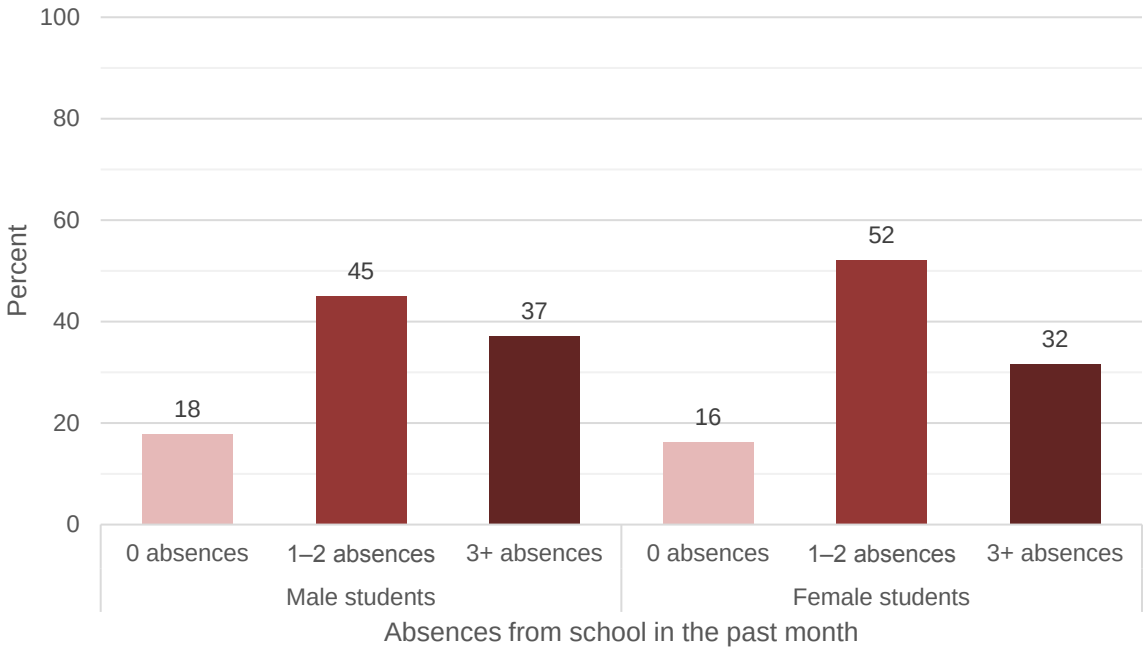
The first set of baseline outcomes that we examined is student and teacher attendance. In Figure IV.14, we present the frequency of student and teacher absences from school in the past month. There was wide variation in student absences (83 percent of students were absent at least one day, and 34 percent were absent at least three days). For comparison, only 56 percent of grade 8 students in the United States were absent at least one day in the last month during the 2013–2014 school year, and only 19 percent were absent at least three days (Snyder and Dillow 2015). Unlike students, most teachers were rarely absent from school (88 percent of teachers were not absent at all in the last month, while fewer than 2 percent were absent more than three times). This ceiling effect indicated that the impact evaluation is unlikely to find large impacts of the ILEI activity on teacher absences because there is relatively little scope for improvement. However, there appeared to be scope for improvement in student absences, including for both male and female students (Figure IV.15).

Figure IV.14. Student and teacher attendance



Sources: Baseline MCC Georgia Student and Teacher Survey (2015, 2016, 2017).
Notes: Samples included 5,666 students and 884 teachers in treatment schools.

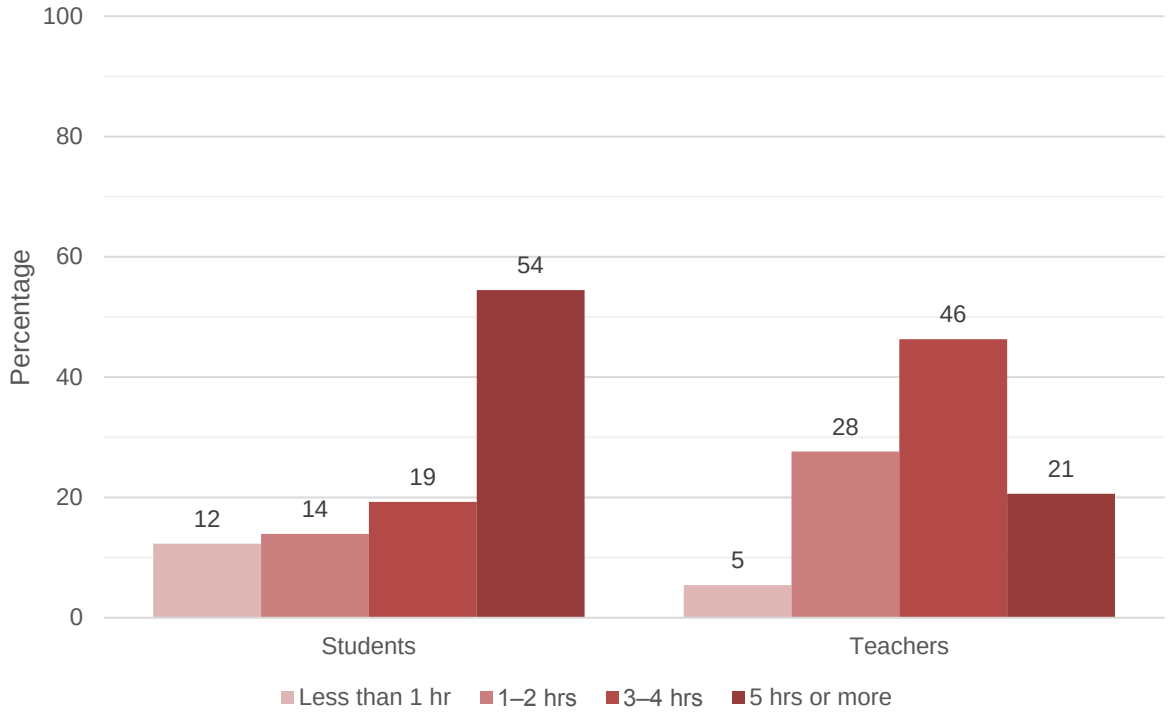
Figure IV.15. Student attendance, by gender



Sources: Baseline MCC Georgia Student and Teacher Survey (2015, 2016, 2017).
Notes: Samples included 2,934 male and 2,732 female students in treatment schools.

The next set of baseline educational outcomes that we examined is the amount of class time teachers spent teaching students in an average day. As with attendance, our primary concern with class time was whether there are ceiling effects, which would prevent the ILEI activity from having a meaningful impact on instructional time-on-task outcomes. The baseline surveys collected information about the hours teachers spent teaching students on an average day, and the distributions of these measures are presented in Figure IV.16. Slightly more than half of students reported being taught for five hours or more, but there was significant variation in the remaining responses across the less frequent categories (less than one hour, one to two hours, and three to four hours). Few teachers reported actively teaching for less than one hour per day, but the modal response was three to four hours (as opposed to five hours or more, like with the students). Given the limited evidence of ceiling effects in the baseline measures, it appears that there is scope for meaningful impacts of the ILEI activity on class time spent on teaching.

Figure IV.16. Instructional class time per day in the past month

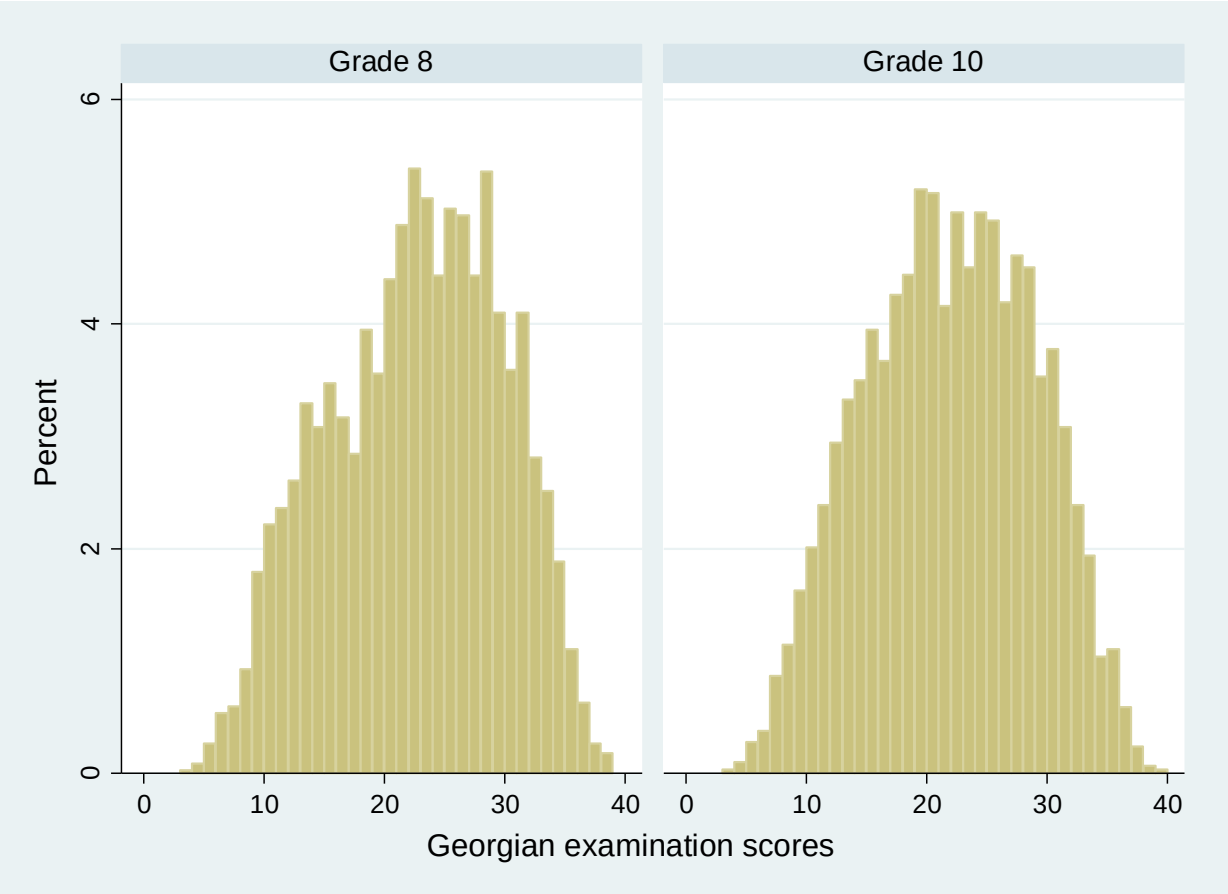


Sources: Baseline MCC Georgia Student and Teacher Survey (2015, 2016, 2017).
Notes: Samples included 5,206 students and 883 teachers in treatment schools.

The final set of outcomes that we examined is student learning. To measure student learning the evaluation administered examinations designed by NAEC, to 8th and 10th grade students in the evaluation sample, covering Georgian (or minority languages), mathematics, and science. The examinations were specifically designed by NAEC for the evaluation to capture variation in learning outcomes, which should eliminate floor and ceiling effects from the baseline data. Figures IV.17, IV.18, and IV.19 present the exam score distributions of grade 8 and grade 10 students for Georgian, math, and science exams, respectively. While there was a modest right-skew in these distributions, the overall distributions were approximately normal, and there was no evidence of strong ceiling effects (i.e., perfect scores are rare). The fact that we did not see any evidence of ceiling or floor effects in the

distributions also indicates that NAEC was successful in developing learning assessments that are well-calibrated to capture variation in achievement in grades 8 and 10 in these subjects.

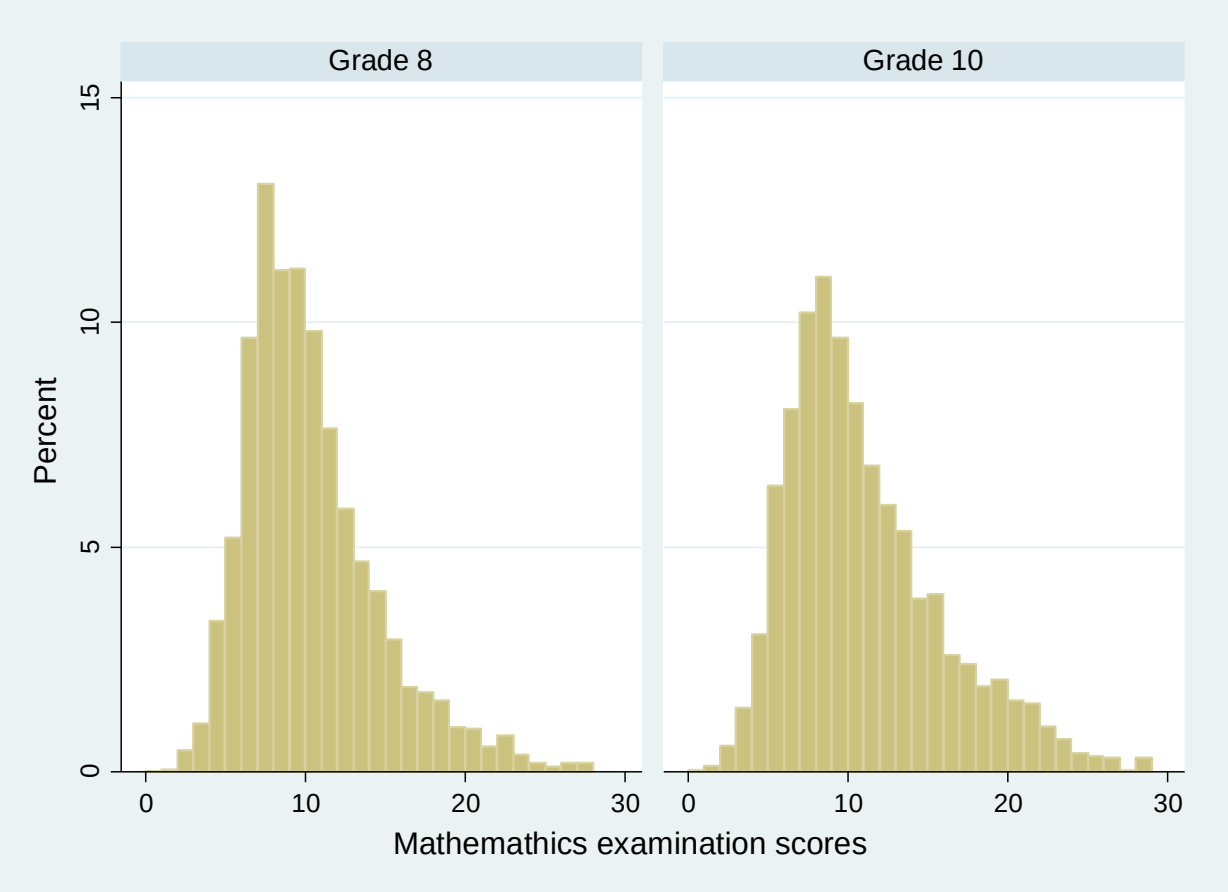
Figure IV.17. Georgian examination scores, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,341 grade 8 students and 2,885 grade 10 students in treatment schools.

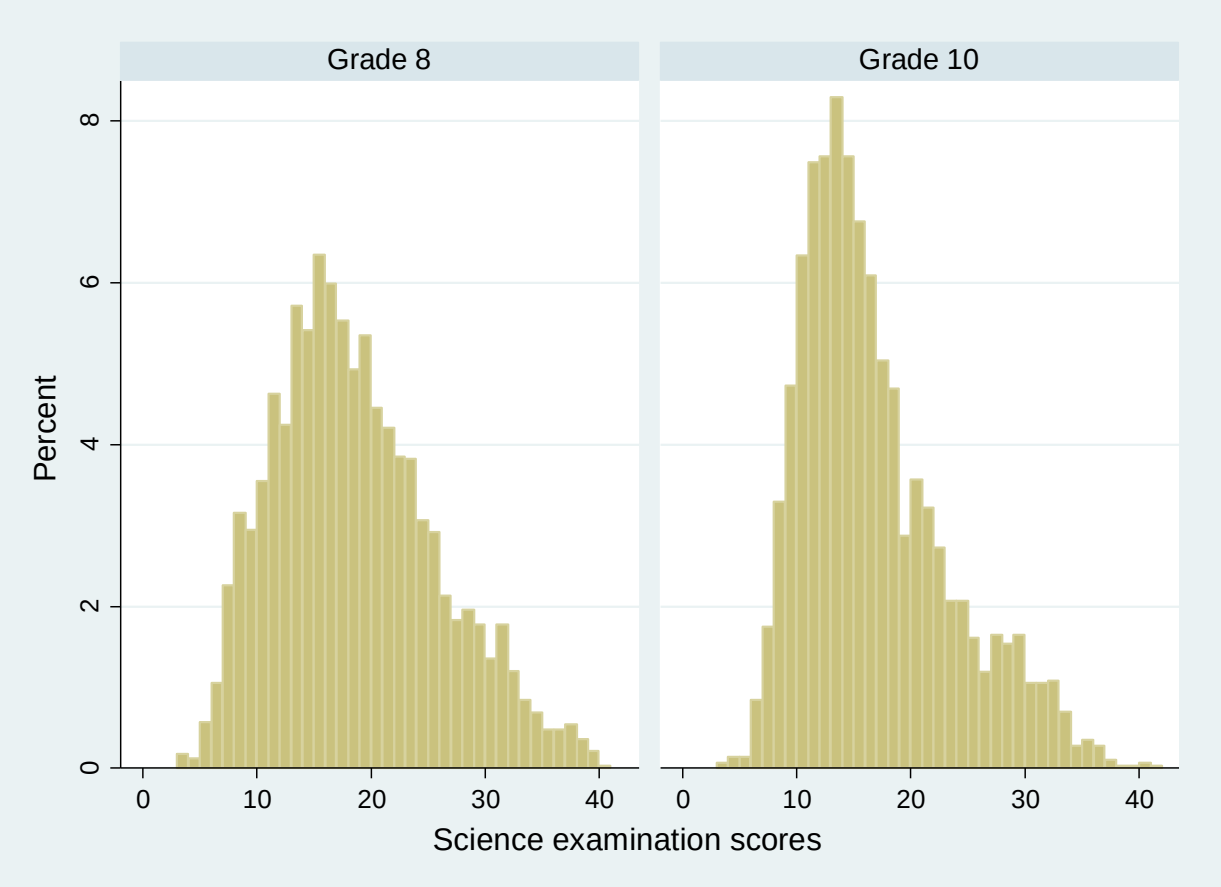
Figure IV.18. Mathematics examination scores, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,333 grade 8 students and 2,876 grade 10 students in treatment schools.

Figure IV.19. Science examination scores, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,324 grade 8 students and 2,857 grade 10 students in treatment schools.

V. ADMINISTRATIVE CONSIDERATIONS

A. Institutional Review Board requirements and clearances

Mathematica prepared and submitted an institutional review board (IRB) application for approval of the research and data collection plans. The application materials included three sets of documents: (1) a research protocol, which drew heavily on the evaluation's design report and added more information about plans for protecting study participants' confidentiality and human rights; (2) copies of all data collection instruments; and (3) a completed IRB questionnaire that summarized the key elements of the research protocol, plans for protecting participants' human rights, and possible threats to participants if their confidentiality were compromised. The application was approved by the IRB for one year from the approval date and has been renewed by Mathematica on an annual basis.

We coordinated with MCA-G to ensure the data collector and local stakeholders agreed on the data collection and confidentiality protocols in the study. Because Mathematica does not have a contractual relationship with the data collector, the data collector's contract with MCA-G specified that they would abide by the IRB's recommendations.

B. Data access, privacy, and documentation plan

After each of the evaluation's analytical reports is produced, we will prepare corresponding de-identified data files, user manuals, and codebooks that may be made available to the public. These data files, user manuals, and codebooks will be de-identified according to the most recent guidelines set forth by MCC. The public use data files will be free of personal or geographic identifiers that would permit unassisted identification of individual respondents or their household, and we will remove or adjust variables that introduce reasonable risks of deductive disclosure of the identity of individual participants. Mathematica will remove all individual identifiers, including names, addresses, telephone numbers, government-issued identification numbers, and any other similar variables. We will also remove unique and rare data using local suppression, replacing these observations with missing values instead. If necessary, we will also use top/bottom coding, setting upper and lower bounds to remove outliers and collapse any variables that make an individual highly visible depending on geographic or other factors (such as ethnic classifications or languages spoken) into less easily identifiable categories. Finally, we will introduce random errors into any gathered geographic data (for example, global positioning system or geographic information system coordinates), displacing urban points 0 to 2 km and rural points 0 to 5 km, and additional 1 percent of rural points 0 to 10 km. Data perturbation will take place in a manner that will still permit reasonably accurate aggregate reporting of results and will not bias the data.

C. Dissemination plan

Mathematica will present baseline, interim, and final evaluation findings in person to MCC and to stakeholders in Georgia. The timing of the analysis and reporting for the study will be determined by the program's phased rollout schedule. Thus, the baseline analysis occurred after data collection was completed for all three phases, following the 2016–2017 school year, and the final analysis of the program's second-year impacts will occur following the 2019–2020 school year. We will work with MCC to increase the visibility of the project's findings, particularly

among education policymakers and development practitioners. We will collaborate with MCC and stakeholders to identify a variety of forums—including conferences, workshops, and publications—to share results and encourage donors, implementers, and policymakers to integrate the findings into future programming.

For example, in addition to the project's full impact reports, we will develop short issue briefs summarizing and visualizing key findings for a broader audience of readers and stakeholders. Potential conferences for presenting evaluation findings will include forums hosted by the Comparative International Education Society, the American Evaluation Association, or the Association for Public Policy Analysis and Management. We will also seek to publish peer-reviewed articles disseminating the study's results in journals such as the *Journal of Development Economics, American Economic Journal: Applied Economics,* or the *World Bank Economic Review.*

D. Evaluation team roles and responsibilities

Matt Sloan is the program manager for the evaluation, acting as the primary point of contact for MCC. He manages the relationships with government agencies and other local entities and contractors, while supervising the evaluation design and implementation process and ensuring high data quality. **Ira Nichols-Barrer** is the principal investigator for the evaluation, providing methodological and technical oversight and serving as a senior analyst supporting the project team. **Nicholas Ingwersen** oversees the study's quantitative data collection and analyses, and**. Camila Fernandez** oversees the qualitative data collection and analyses. **Natia Gorgadze** serves as the project's in-country consultant, providing substantive knowledge of Georgia's education system and assisting with the study's data collection and other local evaluation-management tasks.

E. Evaluation timeline and budget

The evaluation period presented in this study's original proposal and budget was scheduled to end in September 2018. Following revisions in the contract's period of performance and scope of work to accommodate delays in completing school rehabilitation, the current version of the budget has incorporated the additional time and costs necessary to complete the evaluation. This includes data collection rounds in the 2018–2019 school year and the 2019–2020 school year. The final report for this evaluation is scheduled to be released in 2021. Mathematica will work closely with MCC and MCA-G to ensure data collection is feasible within the evaluation's updated budget parameters.

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APPENDIX A

SCHOOL INFRASTRUCTURE SURVEY

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Mathematica Ref. No. 40306.300

MATHEMATICA
Policy Research

MCC Georgia School Infrastructure Survey

February, 2017

SECTION A: For Field Supervisor

a1. Supervisor name

_____

a2. Supervisor number

|__|__|

a3. Completed questionnaire checked and approved by supervisor?

1 ☐ Yes

0 ☐ No

a4. Date approved

|__|__| / |__|__| / |2|0|__|__|
DAY MO YEAR

SECTION B: For Data Entry Supervisor

b1. Data Entry Supervisor name

_____

b2. Data Entry Supervisor number

|__|__|

b3. Completed questionnaire checked and approved by office?

1 ☐ Yes

0 ☐ No

b4. Date approved

|__|__| / |__|__| / |2|0|__|__|
DAY MO YEAR

b5. Name of data entry clerk for first data entry

_____

b6. Date of first data entry

|__|__| / |__|__| / |2|0|__|__|
DAY MO YEAR

b7. Name of data entry clerk for second data entry

b8. Date of second data entry

|__|__| / |__|__| / |2|0|__|__|
DAY MO YEAR

b9. Data Entry Supervisor number

|__|__|

b10. Survey number

|__|__|__|__|__|

SECTION C: Basic School Information

c1. DATE OF SURVEY

|__|__| / |__|__| / |2|0|__|__|
DAY MO YEAR

c2. TIME OF SURVEY (BEGINNING)

|__|__| : |__|__|

c3. LOCATION OF SCHOOL

_____LATITUDE

_____LONGITUDE

c4. TOWN/VILLAGE SCHOOL IS LOCATED IN

_____

c5. REGION SCHOOL IS LOCATED IN (FILL IN CHOICES OF REGIONS WHERE SCHOOLS ARE LOCATED):

1 ☐ Samegrelo-Zemo Svaneti

2 ☐ Guria

3 ☐ Adjara

4 ☐ Racha-Lechkhumi and Kvemo Svaneti

5 ☐ Imereti

6 ☐ Samtskhe-Javakheti

7 ☐ Shida Kartli

8 ☐ Mtskheta-Mtianeti

9 ☐ Kvemo Kartli

10 ☐ Kakheti

c6. MEASURE AND RECORD THE SURFACE TEMPERATURE OF THE GROUND OUTSIDE THE MAIN BUILDING ENTRANCE IN "SURFACE TEMP" MODE

|__|__|
TEMPERATURE (Celsius)

1 ☐ Positive

2 ☐ Negative

c7. OUTDOOR AMOUNT OF CLOUDS ON DAY OF SURVEY

1 ☐ No clouds

2 ☐ Partly cloudy (mix of clouds and clear sky)

3 ☐ Fully cloudy (no clear sky)

c8. NAME OF SCHOOL

_____

c9. SCHOOL CODE

|__|__|__|__|

SECTION D: Main Building Inspection

Sub-section IV.A: General Structures

d1. Roof Condition: Do you see any of the following in the roof? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Rotten or deteriorated material
4 ☐ Mold
5 ☐ Holes
6 ☐ Other (*specify*) _____

0 ☐ None of the above

d2. In what condition is the rain water drainage system on the roof?

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused
n ☐ There is no rain water drainage system

d3. In what condition are the main entrance doors?

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused
n ☐ There are no main entrance doors

d4. Are there visible gaps around the main entrance doors that allow outside air to enter?

1 ☐ Yes
0 ☐ No

d5. Are the exterior walls of the school building painted?

1 ☐ Yes
0 ☐ No

d6. How many separate main buildings does the school have?

|__|__| BUILDINGS

0 ☐ There are no separate buildings **GO TO d7**

d6a. If more than one, are the buildings connected in a way that allows people to go from one building to another without going outside?

1 ☐ Yes
0 ☐ No

d7. Does the school have 2 or more floors?

1 ☐ Yes
0 ☐ No **GO TO NEXT SECTION**

d7a. (IF YES) **Do the stairs have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Fully stable rails
2 ☐ Visible cracks
3 ☐ Holes in steps
4 ☐ Missing steps
0 ☐ None of the above

d7b. Are the stairs level?

1 ☐ Yes
0 ☐ No

d7c. Are the stairs evenly spaced?

1 ☐ Yes
0 ☐ No

Sub-section E: Classrooms

Instructions for Enumerators: For the following questions, inspect all of the classrooms where grades 8 and 10 are taught (up to 6 classrooms). If there are more than 6 classrooms, choose 3 classrooms where grade 8 is taught, and 3 where grade 10 is taught. If the school has several floors, choose at least one classroom from each floor. If the school is large, choose classrooms from different parts of the building (non-adjacent). If more than one grade is taught in a classroom, grades 8 and/or 10 must be taught in the classroom in order to be included in this assessment.

CLASSROOM 1

e1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

e2. Measure and record the surface temperature of a student desk in the center of the classroom using "surface temp" mode

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

e3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

e4. Measure and record PM2.5 in classroom

|__|__|__| PM 2.5

e5. Measure and record PM10 in classroom

|__|__|__| PM 10

e6. Measure and record carbon monoxide (CO) in classroom

|__|__| CO (PPM)

e7. Measure and record light level in classroom at the student desk that is furthest from a window

|__|__|__|__|__| LX

e7a. Outdoor amount of clouds right now

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

e8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

e9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO e10**

e9a. How many light bulbs turn on in the classroom?

|__|__|

e10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO e11**

e10a. (IF **YES**) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

e11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

e12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

e13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors (*specify*) _____
9 ☐ Walls are not painted

e14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

e15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

e16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

e17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO e18**

e17a (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

e18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO e18a**
0 ☐ No **GO TO CLASSROOM 2**

e18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

CLASSROOM 2

f1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

f2. Measure and record the surface temperature of a student desk in

the center of the classroom using "surface temp" mode

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

f3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

f4. Measure and record PM2.5 in classroom

|__|__|__| PM 2.5

f5. Measure and record PM10 in classroom

|__|__|__| PM 10

f6. Measure and record carbon monoxide (CO) in classroom

|__|__| CO (PPM)

f7. Measure and record light level in classroom at the student desk that is furthest from a window

|__|__|__|__|__| LX

f7a. Outdoor amount of clouds right now

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

f8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

f9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO f10**

f9a. How many light bulbs turn on in the classroom?

|__|__|

f10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO f11**

f10a. (IF YES) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel- based space heaters)

f11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

f12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

f13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors *(specify)* _____
9 ☐ Walls are not painted

f14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

f15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

f16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

f17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO f18**

f17a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

f18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO f18a**
0 ☐ No **GO TO CLASSROOM 3**

f18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

CLASSROOM 3

g1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

g2. Measure and record the surface temperature of a student desk in the center of the classroom using "surface temp" mode

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

g3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

g4. Measure and record PM2.5 in classroom

|__|__|__| PM

g5. Measure and record PM10 in classroom

|__|__|__| PM

g6. Measure and record carbon monoxide (CO) in classroom

|__|__| CO (PPM)

g7. Measure and record light level in classroom at the student desk that is furthest from a window

|__|__|__|__|__|LX

g7a. Outdoor amount of clouds right now

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

g8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

g9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO g10**

g9a. How many light bulbs turn on in the classroom?

|__|__|

g10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO g11**

g10a. (IF YES) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

g11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

g12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

g13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors *(specify)* _____
9 ☐ Walls are not painted

g14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

g15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

g16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

g17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO g18**

g17a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

g18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO g18a**
0 ☐ No **GO TO CLASSROOM 4**

g18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

CLASSROOM 4

h1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

h2. Measure and record the surface temperature of a student desk in the center of the classroom using "surface temp" mode.

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

h3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

h4. Measure and record PM2.5 in classroom

|__|__|__| PM

h5. Measure and record PM10 in classroom

|__|__|__| PM

h6. Measure and record carbon monoxide (CO) in classroom

|__|__| CO (PPM)

h7. Measure and record light level in classroom at the student desk that is furthest from a window

|__|__|__|__|__| LX

h7a. Outdoor amount of clouds right now

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

h8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

h9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO h10**

h9a. How many light bulbs turn on in the classroom?

|__|__|

h10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO h11**

h10a. (IF YES) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

h11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

h12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

h13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors *(specify)* _____
9 ☐ Walls are not painted

h14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

h15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

h16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

h17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO h18a**

h17a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

h18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO h18a**
0 ☐ No **GO TO CLASSROOM 5**

h18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

CLASSROOM 5

i1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

i2. Measure and record the surface temperature of a student desk in the center of the classroom using "surface temp" mode.

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

i3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

i4. Measure and record PM2.5 in classroom

|__|__|__| PM

i5. Measure and record PM10 in classroom

|__|__|__| PM

i6. Measure and record carbon monoxide (CO) in classroom at the student desk that is furthest from a window

|__|__| CO (PPM)

i7. Measure and record light level in classroom

|__|__|__|__|__| LX

i7a. Outdoor amount of clouds right now

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

i8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

i9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO i10**

i9a. How many light bulbs turn on in the classroom?

|__|__|

i10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO i11**

i10a. (IF YES) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

i11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

i12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

i13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors *(specify)* _____
9 ☐ Walls are not painted

i14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

i15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

i16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

i17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO i18**

i17a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

i18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO i18a**
0 ☐ No **GO TO CLASSROOM 6**

i18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

CLASSROOM 6

j1. Which grades are taught in this classroom?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12

(INTERVIEWER: choose a different classroom if grade 8 or 10 is not taught in this classroom)

j2. Measure and record the surface temperature of a student desk in the center of the classroom using "surface temp" mode.

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

j3. Measure and record humidity (RH) in classroom (%)

|__|__| % HUMIDITY (RH)

j4. Measure and record PM2.5 in classroom

|__|__|__| PM

j5. Measure and record PM10 in classroom

|__|__|__| PM

j6. Measure and record carbon monoxide (CO) in classroom

|__|__| CO (PPM)

j7. Measure and record light level in classroom at the student desk that is furthest from a window

|__|__|__|__|__| LX

j7a. Outdoor amount of clouds on day of survey

1 ☐ No clouds
2 ☐ Partly cloudy (mix of clouds and clear sky)
3 ☐ Fully cloudy (no clear sky)

j8. Is there window ventilation in the classroom?

1 ☐ Yes
0 ☐ No

j9. Can you turn the electric lights on in the classroom?

1 ☐ Yes
0 ☐ No **GO TO j10**

j9a. How many light bulbs turn on in the classroom?

|__|__|

j10. Are there visible functioning heating systems in the classroom? (ex: broken heating radiators are not functional)

1 ☐ Yes
0 ☐ No **GO TO j11**

j10a. (IF YES) **What is the primary heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

j11. Is there visible smoke in the air in the classroom?

1 ☐ Yes
0 ☐ No

j12. Do the walls inside the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

j13. What is the main color of the wall?

1 ☐ White
2 ☐ Red
3 ☐ Orange
4 ☐ Brown
5 ☐ Yellow
6 ☐ Green
7 ☐ Blue
8 ☐ Other or multiple colors *(specify)* _____
9 ☐ Walls are not painted

j14. Does the ceiling in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

j15. Does the floor in the classroom have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

j16. Does the classroom have a door that can open and close and can lock?

1 ☐ Yes
0 ☐ No

j17. Does the classroom have at least one window?

1 ☐ Yes
0 ☐ No **GO TO j18**

j17a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

j18. Is there a blackboard/white board in the classroom?

1 ☐ Yes **GO TO j18a**
0 ☐ No **GO TO NEXT SECTION**

j18a. (IF YES) **Is writing on the board visible from the back of the class?**

1 ☐ Yes
0 ☐ No

Sub-section K: Gym

k6. Is there an outdoor space for exercising and playing sports?

1 ☐ Yes
0 ☐ No **GO TO k7**

k6a. (IF YES) **Does this area appear to have been used in the past month?**

1 ☐ Yes
0 ☐ No

k7. Is there an indoor gym?

1 ☐ Yes
0 ☐ No **GO TO SUB-SECTION IV.D**

k7a. (IF YES) **Does this area appear to have been used in the past month?**

1 ☐ Yes
0 ☐ No

The following questions should only be answered if there is an indoor gym facility.

k1. Measure and record the surface temperature of the floor in the center of the gymnasium in "surface temp" mode

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive
2 ☐ Negative

k2. Measure and record humidity (RH) in gym

|__|__| % HUMIDITY (RH)

k3. Measure and record PM2.5 in gym

|__|__|__| PM 2.5

k4. Measure and record PM10 in gym

|__|__|__| PM 10

k5. Measure and record carbon monoxide (CO) in gym

|__|__| CO (PPM)

k8. Is there window ventilation in the gym?

1 ☐ Yes
0 ☐ No

k9. Is there functioning electrical lighting in the gym?

1 ☐ Yes
0 ☐ No\

k10. Are there visible functioning heating systems in the gym? (ex: broken heating radiators that are not functional)

1 ☐ Yes **GO TO k10a**
0 ☐ No **GO TO k11**

k10a. (IF YES) **What is the *primary* heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)
2 ☐ Room-specific stoves (i.e. wood stoves)
3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

k11. Is there visible smoke in the air in the gym?

1 ☐ Yes
0 ☐ No

k12. Do the walls inside the gym have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Chipped or peeling paint
5 ☐ Holes
0 ☐ None of the above

k13. Does the ceiling in the gym have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Mold
4 ☐ Holes
0 ☐ None of the above

k14. Does the floor in the gym have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

k15. Does the gym have a door that can open and close and can lock?

1 ☐ Yes

0 ☐ No

k16. Does the gym have at least one window?

1 ☐ Yes **GO TO k16a**

0 ☐ No **GO TO NEXT SUB-SECTION**

k16a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks

2 ☐ Water damage

3 ☐ Gaps or spaces between the window and the molding/wall

4 ☐ Holes

0 ☐ None of the above

Sub-section L: Toilet facilities

I1. Measure and record the surface temperature on the floor when you first walk into the primary toilet facility using "surface temp" mode

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive

2 ☐ Negative

I5. Are there clearly separated facilities for boys and girls?

1 ☐ Yes

0 ☐ No

I6. How many students can use the facilities at the same time in the primary toilet facility?

|__|__| NUMBER OF TOILETS

0 ☐ There is only 1 toilet in the primary facility **GO TO I8**

I7a. Are there interior doors for toilet stalls?

1 ☐ Yes

0 ☐ No

I8. Does the primary toilet facility as a whole have a door that can open and close and can lock?

1 ☐ Yes

0 ☐ No

I9. What type of toilets does the school have in the primary facility?

MARK ALL THAT APPLY

1 ☐ Flush toilet with sewer connection

2 ☐ Flush toilet with pit latrine

3 ☐ Non-flush pit latrine **GO TO I11**

4 ☐ Other

I10. (IF FLUSH TOILETS) **Is the flush working?**

1 ☐ Yes

0 ☐ No

I11. Is there running water for hand washing available near the toilets?

1 ☐ Yes

0 ☐ No

I12 Is there soap available near the toilets?

1 ☐ Yes

0 ☐ No

I13. Is there an odor in the toilet facilities?

1 ☐ Yes

0 ☐ No

I14. Are there visible functioning heating systems in the toilets? (ex: broken heating radiators are not functional)

1 ☐ Yes **GO TO I14a**

0 ☐ No **GO TO I15**

I14a. (IF YES) **What is the *primary* heating system?**

1 ☐ Centralized (i.e. functional radiators/vents)

2 ☐ Room-specific stoves (i.e. wood stoves)

3 ☐ Other room specific systems (electric or other types of fuel- based space heaters)

I15. Is there visible smoke in the air in the toilet facilities?

1 ☐ Yes

0 ☐ No

I16. Is there window ventilation in the toilet facilities?

1 ☐ Yes

0 ☐ No

I17. Is there functioning electrical lighting in the toilet facilities?

1 ☐ Yes

0 ☐ No

I18. Do the walls inside the toilet facilities have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks

2 ☐ Water damage

3 ☐ Mold

4 ☐ Chipped or peeling paint

5 ☐ Holes

0 ☐ None of the above

I19. Does the ceiling in the toilet facilities have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks

2 ☐ Water damage

3 ☐ Mold

4 ☐ Holes

0 ☐ None of the above

I20. Does the floor in the toilet facilities have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

I21. Do the toilet facilities have at least one window?

1 ☐ Yes **GO TO I21a**
0 ☐ No **GO TO SUB-SECTION IV.E**

I21a. (IF YES) **Does the window(s) have any of the following? (If you see only one instance of an item, you should still mark it)**

MARK ALL THAT APPLY

1 ☐ Cracks
2 ☐ Water damage
3 ☐ Gaps or spaces between the window and the molding/wall
4 ☐ Holes
0 ☐ None of the above

Sub-section M: Corridors

m1. Measure and record temperature in the first corridor you can access from the main school entrance using "surface temp" mode.

|__|__| TEMPERATURE (Celsius)

1 ☐ Positive

2 ☐ Negative

m2. Measure and record humidity (RH) in the first corridor you can access from the main school entrance

|__|__| % HUMIDITY (RH)

m3. Measure and record PM2.5 in the first corridor you can access from the main school entrance

|__|__|__| PM 2.5

m4. Measure and record PM10 in the first corridor you can access from the main school entrance

|__|__|__| PM 10

m5. Measure and record carbon monoxide (CO) in the first corridor you can access from the main school entrance

|__|__| CO (PPM)

For the following questions, make an overall assessment of all the main corridors

m6. Do the walls in the corridors have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks

2 ☐ Water damage

3 ☐ Mold

4 ☐ Chipped paint

5 ☐ Holes

0 ☐ None of the above

m7. Do the ceilings in the corridors have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Cracks

2 ☐ Water damage

3 ☐ Mold

4 ☐ Holes

0 ☐ None of the above

m8. Do the floors in the corridors have any of the following? (If you see only one instance of an item, you should still mark it)

MARK ALL THAT APPLY

1 ☐ Unevenness

2 ☐ Cracks

3 ☐ Holes

4 ☐ Water damage

5 ☐ Missing flooring material/tiles

0 ☐ None of the above

m9. Is there functioning electrical lighting in the corridors?

1 ☐ Yes

0 ☐ No

m10. Are there visible functioning heating systems in the corridors? (broken heating radiators are not functional)

1 ☐ Yes **GO TO m10a**

0 ☐ No **GO TO NEXT SECTION**

m10a. If yes, what is the *primary* heating system?

1 ☐ Centralized (i.e. functional radiators/vents)

2 ☐ Room-specific stoves (i.e. wood stoves)

3 ☐ Other room specific systems (electric or other types of fuel-based space heaters)

m11. Is there visible smoke in the air in the corridors?

1 ☐ Yes

0 ☐ No

m12. Is there window ventilation in the corridors?

1 ☐ Yes

0 ☐ No

Names of the group members:

_____

SECTION V: Additional Information

Record any additional (if any) major problems affecting the school's learning environment or safety. If no additional major problems affecting the school's learning environment and safety are observed, leave blank.

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APPENDIX B

PARENT SURVEY

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Mathematica Ref. No. 40306.300

MATHEMATICA Policy Research

MCC Georgia Parent Survey

February, 2017

SECTION I: CONSENT WORDING

a1. **The following is a survey of parents of students in selected Georgian schools. We are also conducting a similar survey of students and teachers in selected Georgian schools. In addition to this survey, we are also conducting assessments of student learning and examining test scores as part of the overall study. The following survey is mostly focused on the physical conditions of your child's school and how these conditions affect your child's ability to learn effectively. These activities are part of a research project that MCA-G is carrying out to learn about student, parent, and teacher perceptions of their school environment. This survey is just for research purposes. All the information you or your child provide will be confidential and will be combined with the responses of other parents and students to help us learn about the education experiences of youth and to help us improve the school learning environment. Your name and your child's name will not be associated with any of your responses in the analysis and subsequent reporting. You can feel free not to respond to any question that you do not want to answer.**

You also do not have to participate in this interview if you do not wish to do so. It will take approximately 20 minutes for you to complete this survey. Would you like to participate?

1 ☐ Yes

0 ☐ No

a2. **These questions will reference the school experience of [Child Name/Child ID]. Do you give permission for [Child Name/Child ID] to participate in the student survey?**

1 ☐ Yes

0 ☐ No

a3. **Are you completing this survey at your child's school, or at home?**

1 ☐ School

0 ☐ Home

SECTION B: MODULE 1 – FAMILY PROFILE

b1. **STUDENT ID OF THE HOUSEHOLD CHILD IN THE STUDY SAMPLE**

|__|__|__|__|__|__|__|__|__|__| STUDENT ID

b2. (FULL NAME OF STUDENT) **Is this [CHILD'S] first and last name?**

FIRST NAME: _____

LAST NAME: _____

d ☐ Don't know

r ☐ Refused

b3. (NAME OF PARENT) **What is your first and last name?**

FIRST NAME: _____

LAST NAME: _____

d ☐ Don't know

r ☐ Refused

b4. How old are you?

|__|__| YEARS OLD

d ☐ Don't know

r ☐ Refused

b5. PARENT GENDER

MARK ONE ONLY

1 ☐ Male

2 ☐ Female

b6 What is the primary language spoken in this home?

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

b7. What is the primary language spoken at [CHILD'S] school?

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

b8. How many adults (age 18 or older) live in this household?

MARK ONE ONLY

1 ☐ One

2 ☐ Two

3 ☐ Three

4 ☐ Four

5 ☐ More than five

d ☐ Don't know

r ☐ Refused

b9. What is the highest level of education you have completed?

MARK ONE ONLY

1 ☐ Less than upper secondary school
2 ☐ Upper secondary school
3 ☐ Some post-secondary school
4 ☐ Post-secondary degree or greater
d ☐ Don't know
r ☐ Refused

b10. What is your employment status?

MARK ONE ONLY

1 ☐ Employed full-time **GO TO b11**
2 ☐ Employed part-time **GO TO b11**
3 ☐ Unemployed **GO TO b12**
d ☐ Don't know **GO TO b12**
r ☐ Refused **GO TO b12**

b11. In what sector is your current occupation?

MARK ONE ONLY

1 ☐ Agriculture
2 ☐ Education
3 ☐ Government
4 ☐ Healthcare
5 ☐ Transportation
6 ☐ Service sector
7 ☐ Manufacturing
8 ☐ Banking or finance
9 ☐ Self-employed or other private business
10 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

b12. What is your marital status?

MARK ONE ONLY

1 ☐ Married **GO TO b13**
2 ☐ Not married but living with partner **GO TO b13**
3 ☐ Divorced **GO TO b16**
4 ☐ Widowed **GO TO b16**
5 ☐ Separated **GO TO b16**
6 ☐ Single, never married **GO TO b16**
d ☐ Don't know **GO TO b16**
r ☐ Refused **GO TO b16**

b13. What is the highest level of education your spouse or partner has completed?

MARK ONE ONLY

1 ☐ Less than upper secondary school

2 ☐ Upper secondary school

3 ☐ Some post-secondary school

4 ☐ Post-secondary degree or greater

d ☐ Don't know

r ☐ Refused

b14. What is the employment status of your spouse or partner?

MARK ONE ONLY

1 ☐ Employed full-time

2 ☐ Employed part-time

3 ☐ Unemployed

d ☐ Don't know

r ☐ Refused

b15. In what sector is the current occupation of your spouse or partner?

MARK ONE ONLY

1 ☐ Agriculture

2 ☐ Education

3 ☐ Government

4 ☐ Healthcare

5 ☐ Transportation

6 ☐ Service sector

7 ☐ Manufacturing

8 ☐ Banking or finance

9 ☐ Self-employed or other private business

10 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

b16 What is your household's average monthly income before expenses?

If your family has no monthly income please put 0

$ |___|___|___| **,** |___|___|___| AVERAGE MONTHLY INCOME (LARI)

d ☐ Don't know

r ☐ Refused

b17. **Has your household ever applied to the Government of Georgia's unified database for socially vulnerable families? This database is designed to determine who is eligible for social programs that provide money to socially vulnerable families.**

0 ☐ No **GO TO NEXT MODULE**
1 ☐ Yes **GO TO b18**
d ☐ Don't know **GO TO b18**
r ☐ Refused **GO TO b18**

b18. (IF YES, DON'T KNOW, OR REFUSED) **Is your household currently receiving funds from any program that provides money to socially vulnerable families?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

SECTION C: MODULE 2 – STUDENT PROFILE

c1. (NAME OF SCHOOL) **Is this the name of [CHILD'S] school?**

d ☐ Don't know
r ☐ Refused

c2. **SCHOOL CODE**

|__|__|__|__|

d ☐ Don't know

c3. **What is the current grade level of [CHILD]?**

MARK ONE ONLY

1 ☐ 8th grade **GO TO c4**
2 ☐ 9th grade **GO TO c4**
3 ☐ 10th grade **GO TO c5**
4 ☐ 11th grade **GO TO c5**
5 ☐ 12th grade **GO TO c5**
d ☐ Don't know **GO TO c5**
r ☐ Refused **GO TO c5**

c4. (IF [CHILD] IS CURRENTLY IN 8TH OR 9TH GRADE) **Do you expect he/she will enroll in further grades and complete his/her secondary education**

1 ☐ Yes **GO TO c5**
0 ☐ No **GO TO c4a**
d ☐ Don't know **GO TO c4a**
r ☐ Refused **GO TO c4a**

c4a. (IF NO, DON'T KNOW OR REFUSED) **Why don't you believe [CHILD] will enroll in further grades and complete his/her secondary education?**

MARK ALL THAT APPLY

1 ☐ Schools are in poor condition
2 ☐ Poor instruction provided in schools
3 ☐ Intend to begin working instead
4 ☐ Intend to pursue vocational school or apprenticeship
5 ☐ Domestic/family obligations
6 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

c5. **Do you expect [CHILD] will pursue higher education after secondary school?**

1 ☐ Yes **GO TO SD1**
0 ☐ No **GO TO c5a**
d ☐ Don't know **GO TO c5a**
r ☐ Refused **GO TO c5a**

c5a. (IF NO OR DON'T KNOW OR REFUSED) **Why don't you expect [CHILD] to pursue higher education after secondary school?**

MARK ALL THAT APPLY

1 ☐ School is too far away
2 ☐ Cost of private tutoring for entrance exams
3 ☐ Cost of higher education tuition
4 ☐ Intend to begin working instead
5 ☐ Intend to start a family
6 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

sd1. **Have you heard of SDSU?**

1 ☐ Yes **GO TO SD2**
0 ☐ No **GO TO c6**

sd2. **If so, how did you hear about it?**

1 ☐ Representatives of SDSU came to the school
2 ☐ TV
3 ☐ Internet media (social networks, internet publications, etc.)
4 ☐ Other *(specify)* _____
5 ☐ Other *(specify)* _____
6 ☐ Other *(specify)* _____

sd3. Would you have your child apply to attend the SDSU?

1 ☐ Definitely would apply

2 ☐ I would apply

3 ☐ I have not decided yet

4 ☐ No, I would not apply

5 ☐ Definitely would not apply

c6. How often was your child absent from school in the past month?

MARK ONE ONLY

1 ☐	No absences	**GO TO c8**
2 ☐	1-2 times	**GO TO c7**
3 ☐	3-6 times	**GO TO c7**
4 ☐	7-10 times	**GO TO c7**
5 ☐	More than 10 times	**GO TO c7**
d ☐	Don't know	**GO TO c7**
r ☐	Refused	**GO TO c7**

c7. Typically, what were the reasons for [CHILD] being absent from school in the past month?

MARK ALL THAT APPLY

1 ☐ Lack of money (for transportation, clothing, or school supplies)
2 ☐ Work obligations
3 ☐ Family obligations
4 ☐ School closure
5 ☐ Illness
6 ☐ Snow
7 ☐ Rain/flooding
8 ☐ Cold temperature
9 ☐ Excessive teacher absences
10 ☐ Received sufficient instruction through private tutoring
11 ☐ Poor school conditions
12 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

c8. In February, how often was [CHILD'S] school closed for all or part of the school day?

MARK ONE ONLY

1 ☐ Never **GO TO NEXT MODULE**
2 ☐ 1-2 times **GO TO c9**
3 ☐ 3-4 times **GO TO c9**
4 ☐ 5 or more times **GO TO c9**
d ☐ Don't know **GO TO c9**
r ☐ Refused **GO TO c9**

c9. What were the reasons for [CHILD'S] school being closed in February?

MARK ALL THAT APPLY

1 ☐ Snow
2 ☐ Rain/flooding
3 ☐ Cold temperature
4 ☐ Poor school conditions
5 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

SECTION D: MODULE 3 – PARENT PERCEPTIONS OF HEALTH AND SCHOOL SAFETY

d1. Overall, are you satisfied or dissatisfied with the quality of the building and equipment at [CHILD'S] school?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

d2. Do you agree or disagree with this statement: "Overall, the school environment is safe (meaning free from harm or danger) and healthy."

MARK ONE ONLY

1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Neither agree nor disagree
4 ☐ Disagree
5 ☐ Strongly disagree
d ☐ Don't know
r ☐ Refused

d3. Do you think [CHILD'S] school needs any immediate repairs or improvements?

1 ☐ Yes **GO TO d3a**
0 ☐ No **GO TO d4**
d ☐ Don't know **GO TO d4**
r ☐ Refused **GO TO d4**

d3a. (IF YES) **Which items do you think need immediate repairs or improvements?**

MARK ALL THAT APPLY

1 ☐ Heating systems
2 ☐ Water systems
3 ☐ Toilet facilities
4 ☐ Indoor lighting
5 ☐ Roof
6 ☐ Stairs
7 ☐ Flooring
8 ☐ Foundation
9 ☐ Building structure
10 ☐ Recreational zone (sports ground/gyms, tennis courts etc.)
11 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

d4. **Is there a canteen/cafeteria at [CHILD'S] school?**

1 ☐ Yes **GO TO d4a**
0 ☐ No **GO TO d4b**
d ☐ Don't know **GO TO d4b**
r ☐ Refused **GO TO d4b**

d4a. (IF YES) **How satisfied are you with the cleanliness and overall condition of the canteen/cafeteria in [CHILD'S] school?**

MARK ONE ONLY

1 ☐ Very satisfied **GO TO d5**
2 ☐ Satisfied **GO TO d5**
3 ☐ Neither satisfied nor dissatisfied **GO TO d5**
4 ☐ Dissatisfied **GO TO d5**
5 ☐ Very dissatisfied **GO TO d5**
d ☐ Don't know **GO TO d5**
r ☐ Refused **GO TO d5**

d4b. (IF NO) **Is there a clean place in the schools for [CHILD] to eat his/her meals?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

d5. **Due to concerns about cleanliness, do you prefer that [CHILD] returns home for meals rather than eat at school?**

1 ☐ Yes
0 ☐ No
2 ☐ No preference
d ☐ Don't know
r ☐ Refused

d6. Are the stairwells in [CHILD'S] school safe (meaning that it is protected from danger and damage)?

MARK ONE ONLY

1 ☐ Very safe **GO TO d7**
2 ☐ Somewhat safe **GO TO d6a**
3 ☐ Rarely safe **GO TO d6a**
4 ☐ Unsafe **GO TO d6a**
d ☐ Don't know **GO TO d7**
r ☐ Refused **GO TO d7**

d6a. (IF SOMEWHAT, RARELY, OR UNSAFE) **In what ways are the stairwells unsafe?**

MARK ALL THAT APPLY

1 ☐ Poorly lit
2 ☐ No guardrail
3 ☐ Stairs are not level
4 ☐ Stairs are uneven
5 ☐ Stairs appear damaged/unusable
6 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

d7. Overall, how satisfied or dissatisfied are you about the conditions in [CHILD'S] classroom?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

d8. How safe (meaning free from harm or danger) do you feel your child is in the classrooms at school?

MARK ONLY ONE

1 ☐ Very safe **GO TO d9**
2 ☐ Somewhat safe **GO TO d8a**
3 ☐ Rarely safe **GO TO d8a**
4 ☐ Unsafe **GO TO d8a**
d ☐ Don't know **GO TO d9**
r ☐ Refused **GO TO d9**

d8a. (IF SOMEWHAT, RARELY, OR UNSAFE) **Why do you feel as though the classrooms are unsafe?**

MARK ALL THAT APPLY

1 ☐ Broken windows
2 ☐ Cracked walls
3 ☐ Cracked floors
4 ☐ Poor air quality
5 ☐ Water damage
6 ☐ Ceiling is in a bad condition
7 ☐ Mold
8 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

d9. Has [CHILD], or anyone you know, been injured at the school due to poor building conditions?

1 ☐ Yes **GO TO d9a**
0 ☐ No **GO TO d10**
d ☐ Don't know **GO TO d10**
r ☐ Refused **GO TO d10**

d9a. (IF YES) **Where did this/these injury/injuries occur?**

MARK ALL THAT APPLY

1 ☐ Classroom
2 ☐ Hallway
3 ☐ Stairwell
4 ☐ Indoor recreation facility
5 ☐ Outdoor recreation facility
6 ☐ Science lab
7 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

d10. How often do you think the water at [CHILD'S] school is clean and safe to drink?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
5 ☐ No water is available at the school
d ☐ Don't know
r ☐ Refused

d11. How often do you feel that the toilet facilities at [CHILD'S] school are functional?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d12. How comfortable do you typically feel with [CHILD] using the toilet facilities at their school?

MARK ONLY ONE

1 ☐ Always comfortable **GO TO d13**
2 ☐ Sometimes comfortable **GO TO d12a**
3 ☐ Rarely comfortable **GO TO d12a**
4 ☐ Never comfortable **GO TO d12a**
d ☐ Don't know **GO TO d13**
r ☐ Refused **GO TO d13**

d12a. (IF SOMETIMES, RARELY OR NEVER) **Why do you feel uncomfortable?**

MARK ALL THAT APPLY

1 ☐ Unisex facilities
2 ☐ Unclean facilities
3 ☐ Broken toilets
4 ☐ Broken stalls
5 ☐ Lack of heating
6 ☐ No sinks/running water for hand-washing
7 ☐ Toilet facility is outside
8 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

d13. What was your perception of the temperature in [CHILD'S] school during the month of February?

MARK ONLY ONE

1 ☐ It was too warm
2 ☐ It was too cold
3 ☐ It was comfortable
d ☐ Don't know
r ☐ Refused

d14. In February, how often do you think [CHILD] needed to wear outerwear (such as a jacket, hat, or gloves/mittens) inside his/her school to keep warm?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d15. How often are [CHILD'S] classrooms heated in cold months?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d16. Do any of [CHILD'S] classrooms use wood stoves for heat?

1 ☐ Yes, all classrooms
2 ☐ Yes, some classrooms
0 ☐ None of the classrooms
d ☐ Don't know
r ☐ Refused

d17. How often do you feel that there was sufficient heat in [CHILD'S] classroom during the cold months?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d18. Do you currently have a wood stove in your household?

1 ☐ Yes **GO TO d19**
0 ☐ No **GO TO d18a**
d ☐ Don't know **GO TO d18a**
r ☐ Refused **GO TO d18a**

d18a. (IF NO) **Have you ever had a wood stove in your household?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

d19. Does [CHILD] smoke?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

d20. Does anyone else in your household smoke?

1 ☐ Yes **GO TO d20a**
0 ☐ No **GO TO d21**
d ☐ Don't know **GO TO d21**
r ☐ Refused **GO TO d21**

d20a. (IF YES) **Typically, approximately how many cigarettes are smoked inside your house per day?**

MARK ONLY ONE

1 ☐ 1-10
2 ☐ 11-20
3 ☐ 21-60
d ☐ Don't know
r ☐ Refused

d21. Do you have any animals that are normally in the house you sleep in at night (for example, dogs, cats, or birds)?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

d22. Has [CHILD] ever been diagnosed with asthma?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

d23. Has [CHILD] ever been diagnosed with any other respiratory ailments?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

d24. Has [CHILD] experienced any of the following in the past 30 days?

MARK ALL THAT APPLY

1 ☐ Cough

2 ☐ Cough with blood

3 ☐ Cold

4 ☐ Flu

5 ☐ Difficulty breathing (wheezing, shortness of breath, tightness in chest)

6 ☐ None of the above

d ☐ Don't know

r ☐ Refused

d25. What is your opinion of the air quality in [CHILD'S] classroom over the past month? (Examples of air quality problems include smoke, dust, and bad odors).

MARK ONLY ONE

1 ☐ Good air quality

2 ☐ Fair air quality

3 ☐ Poor air quality

4 ☐ Unhealthy air quality

d ☐ Don't know

r ☐ Refused

d26. How often do you feel [CHILD'S] classroom is adequately lit?

MARK ONLY ONE

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

d27. Does [CHILD'S] school have an indoor gym for exercise and games?

1 ☐ Yes **GO TO d27a**

0 ☐ No **GO TO d30**

d ☐ Don't know **GO TO d30**

r ☐ Refused **GO TO d30**

d27a. (IF YES) **What is the condition of this recreational facility?**

MARK ONLY ONE

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

d28. How often is the indoor recreational facility heated to a comfortable temperature during the winter months?

MARK ONLY ONE

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

d29. How safe (meaning free from harm or danger) do you think [CHILD] is when they are using their school's indoor recreational facility?

MARK ONLY ONE

1 ☐ Very safe

2 ☐ Somewhat safe

3 ☐ Rarely safe

4 ☐ Unsafe

d ☐ Don't know

r ☐ Refused

d30. Does [CHILD'S] school have an outdoor area for exercise and games?

1 ☐ Yes **GO TO d30a**

0 ☐ No **GO TO d32**

d ☐ Don't know **GO TO d32**

r ☐ Refused **GO TO d32**

d30a. (IF YES) **What is the condition of this outdoor recreational facility?**

MARK ONLY ONE

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

d31. **How safe (meaning free from harm or danger) do you think [CHILD] is when they use their school's outdoor recreational area?**

MARK ONLY ONE

1 ☐ Very safe
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know
r ☐ Refused

d32. **Do you think that there are adequate facilities for learning about biology, chemistry, and physics in [CHILD'S] school?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

SECTION E: MODULE 4 – PRIVATE TUTORING

e1. **Has [CHILD] received any private tutoring during the current academic year?**

1 ☐ Yes **GO TO e1a**
0 ☐ No **GO TO e5**
d ☐ Don't know **GO TO e5**
r ☐ Refused **GO TO e5**

e1a. (IF YES) **In how many subjects has [CHILD] received private tutoring during the current academic year?**

MARK ONE ONLY

1 ☐ 1 subject
2 ☐ 2 subjects
3 ☐ 3 subjects
4 ☐ 4 subjects
5 ☐ 5 or more subjects
d ☐ Don't know
r ☐ Refused

e1b. Please name the subjects in which [CHILD] has received private tutoring during the current academic year.

MARK ALL THAT APPLY

1 ☐ Math

2 ☐ Social sciences (history, civics and geography)

3 ☐ Natural sciences (physics, chemistry, biology)

4 ☐ Georgian literature and grammar

5 ☐ English, French, German, or Russian

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

e2. On average, how often has [CHILD] been receiving private tutoring in the past month?

MARK ONE ONLY

1 ☐ Daily

2 ☐ Several times per week

3 ☐ Once a week

4 ☐ Once every two weeks

5 ☐ Once a month

6 ☐ Has not received it in the past month

d ☐ Don't know

r ☐ Refused

e3. Who is [CHILD] receiving private tutoring from?

MARK ALL THAT APPLY

1 ☐ Own teacher

2 ☐ Other teacher

3 ☐ Outside tutoring service

4 ☐ Friend

5 ☐ Relative

5 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

e4. Did [CHILD] ever attend private tutoring sessions instead of going to school in the past month?

1 ☐ Yes **GO TO e4**

0 ☐ No **GO TO e5**

d ☐ Don't know **GO TO e5**

r ☐ Refused **GO TO e5**

e4a. (IF YES) **How many times did [CHILD] do this in the past month?**

MARK ONE ONLY

1 ☐ Once in the past month

2 ☐ Twice in the past month

3 ☐ Once every week

4 ☐ 2 times per week

5 ☐ More than 2 times per week

d ☐ Don't know

r ☐ Refused

e5. **Do you feel as though private tutoring is more effective than the lessons provided at [CHILD'S] school?**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

SECTION F: MODULE 5 – SECOND CHILD IN SURVEY SAMPLE

f1. **Please only complete this section if you have more than one child in grade 8 or grade 10. If you only have one child in grade 8 or grade 10, please proceed to the end of the survey.**

STUDENT ID OF THE HOUSEHOLD CHILD IN THE STUDY SAMPLE

|__|__|__|__|__|__|__|__|__| STUDENT ID

f2. (FULL NAME OF STUDENT) **Is this [CHILD'S] first and last name?**

FIRST NAME: _____

LAST NAME: _____

d ☐ Don't know

r ☐ Refused

f3. **What is the current grade level of [CHILD]?**

MARK ONE ONLY

1 ☐ 8th grade **GO TO f4**

2 ☐ 9th grade **GO TO f4**

3 ☐ 10th grade **GO TO f5**

4 ☐ 11th grade **GO TO f5**

5 ☐ 12th grade **GO TO f5**

d ☐ Don't know **GO TO f5**

r ☐ Refused **GO TO f5**

f4. (IF [CHILD] IS CURRENTLY IN 8TH OR 9TH GRADE) **Do you expect he/she will enroll in further grades and complete his/her secondary education**

1 ☐ Yes **GO TO f5**

0 ☐ No **GO TO f4a**

d ☐ Don't know **GO TO f4a**

r ☐ Refused **Go to f4A**

f4a. (IF NO, DON'T KNOW OR REFUSED) **Why don't you believe [CHILD] will enroll in further grades and complete his/her secondary education?**

MARK ALL THAT APPLY

1 ☐ Schools are in poor condition

2 ☐ Poor instruction provided in schools

3 ☐ Intend to begin working instead

4 ☐ Intend to pursue vocational school or apprenticeship

5 ☐ Domestic/family obligations

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

f5. **Do you expect [CHILD] will pursue higher education after secondary school?**

1 ☐ Yes **GO TO f6**

0 ☐ No **GO TO f5a**

d ☐ Don't know **GO TO f5a**

r ☐ Refused **GO TO f5a**

f5a. (IF NO OR DON'T KNOW OR REFUSED) **Why don't you expect [CHILD] to pursue higher education after secondary school?**

MARK ALL THAT APPLY

1 ☐ School is too far away

2 ☐ Cost of private tutoring for entrance exams

3 ☐ Cost of higher education tuition

4 ☐ Intend to begin working instead

5 ☐ Intend to start a family

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

f6. How often was your child absent from school in the past month?

MARK ONE ONLY

1 ☐ No absences **GO TO f8**

2 ☐ 1-2 times **GO TO f7**

3 ☐ 3-6 times **GO TO f7**

4 ☐ 7-10 times **GO TO f7**

5 ☐ More than 10 times **GO TO f7**

d ☐ Don't know **GO TO f7**

r ☐ Refused **GO TO f7**

f7. Typically, what were the reasons for [CHILD] being absent from school in the past month?

MARK ALL THAT APPLY

1 ☐ Lack of money (for transportation, clothing, or school supplies)

2 ☐ Work obligations

3 ☐ Family obligations

4 ☐ School closure

5 ☐ Illness

6 ☐ Snow

7 ☐ Rain/flooding

8 ☐ Cold temperature

9 ☐ Excessive teacher absences

10 ☐ Received sufficient instruction through private tutoring

11 ☐ Poor school conditions

12 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

f8. Does [CHILD] smoke?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f9. Has [CHILD] ever been diagnosed with asthma?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f10. Has [CHILD] ever been diagnosed with any other respiratory ailments?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

f11. Has [CHILD] experienced any of the following in the past 30 days?

MARK ALL THAT APPLY

1 ☐ Cough
2 ☐ Cough with blood
3 ☐ Cold
4 ☐ Flu
5 ☐ Difficulty breathing (wheezing, shortness of breath, tightness in chest)
6 ☐ None of the above
d ☐ Don't know
r ☐ Refused

f12. Has [CHILD] received any private tutoring during the current academic year?

1 ☐ Yes **GO TO f12a**
0 ☐ No **GO TO END OF SURVEY**
d ☐ Don't know **GO TO END OF SURVEY**
r ☐ Refused **GO TO END OF SURVEY**

f12a. (IF YES) **In how many subjects has [CHILD] received private tutoring during the current academic year?**

MARK ONE ONLY

1 ☐ 1 subject
2 ☐ 2 subjects
3 ☐ 3 subjects
4 ☐ 4 subjects
5 ☐ 5 or more subjects
d ☐ Don't know
r ☐ Refused

f12b. Please name the subjects in which [CHILD] has received private tutoring during the current academic year.

MARK ALL THAT APPLY

1 ☐ Math

2 ☐ Social sciences (history, civics and geography)

3 ☐ Natural sciences (physics, chemistry, biology)

4 ☐ Georgian literature and grammar

5 ☐ English, French, German, or Russian

6 ☐ Other*(specify)* _____

d ☐ Don't know

r ☐ Refused

f13. On average, how often has [CHILD] been receiving private tutoring in the past month?

MARK ONE ONLY

1 ☐ Daily

2 ☐ Several times per week

3 ☐ Once a week

4 ☐ Once every two weeks

5 ☐ Once a month

6 ☐ Has not received it in the past month

d ☐ Don't know

r ☐ Refused

f14. Who is [CHILD] receiving private tutoring from?

MARK ALL THAT APPLY

1 ☐ Own teacher

2 ☐ Other teacher

3 ☐ Outside tutoring service

4 ☐ Friend

5 ☐ Relative

6 ☐ Other (*specify*) _____

d ☐ Don't know

r ☐ Refused

f15. Did [CHILD] ever attend private tutoring sessions instead of going to school in the past month?

1 ☐ Yes **GO TO f15a**

0 ☐ No **GO TO f16**

d ☐ Don't know **GO TO f16**

r ☐ Refused **GO TO f16**

f15a. (IF YES) **How many times did [CHILD] do this in the past month?**

MARK ONE ONLY

1 ☐ Once in the past month

2 ☐ Twice in the past month

3 ☐ Once every week

4 ☐ 2 times per week

5 ☐ More than 2 times per week

d ☐ Don't know

r ☐ Refused

f16. **Do you feel as though private tutoring is more effective than the lessons provided at [CHILD'S] school?**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

Thank you for taking the time to complete this survey.

SECTION I: FOR FIELD SUPERVISOR

i1. **Supervisor name**

FIRST NAME: _____

LAST NAME: _____

i2. **Supervisor number**

|__|__|

i3. **Completed questionnaire checked and approved by supervisor?**

1 ☐ Yes

0 ☐ No

i4. **Date approved**

|__|__| / |__|__| / |__|__|__|__|

Month Day Year

SECTION II: FOR DATA ENTRY SUPERVISOR

q1. Data Entry Supervisor name

FIRST NAME: _____

LAST NAME: _____

q2. Data Entry Supervisor number

|__|__|

q3. Completed questionnaire checked and approved by office?

1 ☐ Yes

0 ☐ No

q4. Date approved

|__|__| / |__|__| / |2|0|__|__|
Month Day Year

q5. Name of data entry clerk for first data entry

FIRST NAME: _____

LAST NAME: _____

q6. Date of first data entry

|__|__| / |__|__| / |2|0|__|__|
Month Day Year

q7. Name of data entry clerk for second data entry

FIRST NAME: _____

LAST NAME: _____

q8. Date of second data entry

|__|__| / |__|__| / |2|0|__|__|
Month Day Year

q9. Data Entry Supervisor number

|__|__|

q10. Survey number

|__|__|__|__|__|

SECTION III: FOR INTERVIEWER

s1. What was the language used to complete this survey?

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other (*specify*) _____

APPENDIX C

DIRECTOR SURVEY

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Mathematica Ref. No. 40306.300

MATHEMATICA Policy Research

MCC Georgia School Director Survey

February, 2017

SECTION I: For Field Supervisor

aa1. Supervisor name

_____

aa2. Supervisor number

|__|__|

aa3. Completed questionnaire checked and approved by supervisor?

1 ☐ Yes

0 ☐ No

aa4. Date approved

|__|__| /|__|__| / |2|0|__|__|
DAY MO YEAR

SECTION II: For Data Entry Supervisor

bb1. Data Entry Supervisor name

_____

bb2. Data Entry Supervisor number

|__|__|

bb3. Completed questionnaire checked and approved by office?

1 ☐ Yes

0 ☐ No

bb4. Date approved

|__|__| /|__|__| / |2|0|__|__|
DAY MO YEAR

bb5. Name of data entry clerk for first data entry

_____

bb6. Date of first data entry

|__|__| /|__|__| / |2|0|__|__|
DAY MO YEAR

bb7. Name of data entry clerk for second data entry

_____

bb8. Date of second data entry

|__|__| /|__|__| / |2|0|__|__|
DAY MO YEAR

bb9. Data Entry Supervisor number

|__|__|

bb10. Survey number

|__|__|__|__|__|

SECTION III: CONSENT WORDING

cc1. The following is a survey of school directors in selected Georgian Schools. This survey is for a research project that MCA-G is carrying out to learn about school directors' perceptions of their school environment and operations and maintenance practices and how the physical conditions of schools affect students' ability to learn effectively. This survey is just for research purposes. All the information you provide will be confidential and will be combined with the responses of other school directors to help us learn about the education experiences of youth and to help us improve the school learning environment. Your name will not be associated with any of your responses in the analysis or subsequent reporting. You can feel free not to respond to any question that you do not want to answer. You also do not have to participate in this interview if you do not wish to do so. It will take approximately 30 minutes for you to complete this survey. Would you like to participate?

1 ☐ Yes

0 ☐ No

SECTION A. Basic School Information

a1. DATE OF SURVEY

|__|__| /|__|__| / |2|0|__|__|
DAY MO YEAR

a2. TIME OF SURVEY (BEGINNING)

|__|__| : |__|__|

a3. LOCATION OF SCHOOL

_____LATITUDE

_____LONGITUDE

a4. TOWN/VILLAGE SCHOOL IS LOCATED IN

_____

a5. REGION SCHOOL IS LOCATED IN (FILL IN CHOICES OF REGIONS WHERE SCHOOLS ARE LOCATED):

1 ☐ Samegrelo-Zemo Svaneti
2 ☐ Guria
3 ☐ Adjara
4 ☐ Racha-Lechkhumi and Kvemo Svaneti
5 ☐ Imereti
6 ☐ Samtskhe-Javakheti
7 ☐ Shida Kartli
8 ☐ Mtskheta-Mtianeti
9 ☐ Kvemo Kartli
10 ☐ Kakheti

a6. NAME OF SCHOOL

_____

a7. SCHOOL CODE

|__|__|__|

a8. NAME OF DIRECTOR (What is your first and last name?)

_____

a9. How long have you been school director of this school (years)?

|__|__| YEARS AS SCHOOL DIRECTOR

d ☐ Don't know
r ☐ Refused

a10. How many years of experience do you have being school director total?

|__|__| TOTAL YEARS OF EXPERIENCE

d ☐ Don't know
r ☐ Refused

a11. What year was the school building built (completed) in?

|__|__|__|__| YEAR OF SCHOOL COMPLETION

d ☐ Don't know
r ☐ Refused

a12. To your knowledge, do you know if there is more than 1 claim to the land that the school is on?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

a13. How many students are enrolled in the school?

|__|__|__|__| NUMBER OF ENROLLED STUDENTS

d ☐ Don't know
r ☐ Refused

a14. How many teachers work in the school?

|__|__|__|__| NUMBER OF TEACHERS

d ☐ Don't know
r ☐ Refused

a15. Which grades are taught in the school?

MARK ALL THAT APPLY

1 ☐ 1
2 ☐ 2
3 ☐ 3
4 ☐ 4
5 ☐ 5
6 ☐ 6
7 ☐ 7
8 ☐ 8
9 ☐ 9
10 ☐ 10
11 ☐ 11
12 ☐ 12
d ☐ Don't know
r ☐ Refused

a16. How many different rooms does the school have for student instruction?

|__|__|__| NUMBER OF CLASSROOMS

d ☐ Don't know

r ☐ Refused

a17. Out of those classrooms, how many are used on a daily basis?

|__|__|__| NUMBER OF CLASSROOMS USED

d ☐ Don't know

r ☐ Refused

a18. Are there enough desks and tables in the school for all of the students?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

a19. Does the school have more than one shift of students per day?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

a20. What is your overall perception of the condition of the school building/facilities?

MARK ONE ONLY

1 ☐ Good (fully functional)

2 ☐ Fair (partially functional)

3 ☐ Poor (barely functional)

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

SECTION B: General Structures

b1. For the remainder of this survey, please consider the school building used most often by grade 8 and grade 10 students. What material is the roof made out of?
MARK ALL THAT APPLY

1 ☐ Metal (tin, aluminum, or steel)

2 ☐ Roof tile

3 ☐ Wood

4 ☐ Asbestos

5 ☐ Other (specify) _____

d ☐ Don't know

r ☐ Refused

b2. To your knowledge, does the roof contain any water proofing material?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

b3. To your knowledge, is there any asbestos in the roof?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

b4. In your opinion, what is the condition of the roof?
MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

b5. Has the roof ever leaked water into the inside of the building in the past school year?

1 ☐ Yes

0 ☐ No GO TO b6

d ☐ Don't know GO TO b6

r ☐ Refused GO TO b6

b5a. (IF YES) Have those leaks been repaired?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

b6. Are the floors in the school damaged or deteriorated?

1 ☐ Yes
0 ☐ No GO TO b7
d ☐ Don't know GO TO b7
r ☐ Refused GO TO b7

b6a. (IF YES) Are there any of the following in any of the flooring materials of the school?
MARK ALL THAT APPLY

1 ☐ Unevenness
2 ☐ Cracks
3 ☐ Holes
4 ☐ Water damage (rotten floors, sunken floors, etc.)
5 ☐ Missing flooring material/tiles
0 ☐ None of the above

b7. Does the school have any stairs?

1 ☐ Yes
0 ☐ No GO TO b8
d ☐ Don't know GO TO b8
r ☐ Refused GO TO b8

b7a. (IF YES) What is the overall condition of the staircases?
MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

b8. SPECIAL LEARNING FACILITIES: Does the school have any of the following structures:
MARK ALL THAT APPLY

1 ☐ Computer room GO TO b9
2 ☐ Library GO TO b9
3 ☐ Science laboratory GO TO b9
4 ☐ Indoor gym GO TO b8b
5 ☐ Outdoor recreational area GO TO b8a
0 ☐ None of the above GO TO b9

b8a. (IF THE SCHOOL HAS AN OUTDOOR AREA FOR EXERCISE AND GAMES) What is your overall perception of the condition of this area?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
d ☐ Don't know
r ☐ Refused

b8b. (IF THE SCHOOL HAS AN INDOOR GYM) What is your overall perception of the condition of the indoor gym?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

b9. Do you agree with the following statement: The students have adequate facilities to be able to exercise safely at school.

MARK ONE ONLY

1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Neither agree nor disagree
4 ☐ Disagree
5 ☐ Strongly disagree
d ☐ Don't know
r ☐ Refused

b10. Does the school have any students with special needs (physical or mental disabilities, etc.)?

1 ☐ Yes
0 ☐ No GO TO b11
d ☐ Don't know GO TO b11
r ☐ Refused GO TO b11

b10a. (IF YES) Does the school have dedicated facilities for children with special needs?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

Sub-section VI.A: Heating

c1. What is the primary type of heating that the school uses regularly?

MARK ALL THAT APPLY

1 ☐ Central heating system

2 ☐ Separate heating in each room (stoves) GO TO c1b

3 ☐ Other (specify) GO TO c2

_____

d ☐ Don't know

r ☐ Refused

c1a. If central heating, please specify fuel type.

MARK ONE ONLY

1 ☐ Gas GO TO c2

2 ☐ Liquid fuel GO TO c2

3 ☐ Coal stove GO TO c1c

4 ☐ Wood stove GO TO c1c

5 ☐ Other (specify) GO TO c2

_____

d ☐ Don't know

r ☐ Refused

c1b. If localized room heating, please specify fuel type.

MARK ONE ONLY

1 ☐ Gas GO TO c2

2 ☐ Liquid fuel GO TO c2

3 ☐ Coal stove

4 ☐ Wood stove

5 ☐ Other (specify) GO TO c2

_____

d ☐ Don't know

r ☐ Refused

c1c. If wood or coal heating, how often does the stove have to be loaded every day during the coldest months?

|__|__| NUMBER OF TIMES STOVE IS LOADED

d ☐ Don't know

r ☐ Refused

c1d. Out of the times that the stove needs to be loaded per day during the coldest months, how many of those times is it loaded by students on average?

|__|__| AVERAGE NUMBER OF TIMES STOVE IS LOADED BY STUDENTS

d ☐ Don't know

r ☐ Refused

c1e. In general, how much time does it take to load a wood/coal stove (including retrieving the fuel)?

|__|__|__| MINUTES TO LOAD FUEL

d ☐ Don't know

r ☐ Refused

c2. Have issues with the heating system ever negatively impacted classroom instruction at anytime during this school year?

1 ☐ Yes

0 ☐ No GO TO c3

d ☐ Don't know GO TO c3

r ☐ Refused GO TO c3

c2a. (IF YES) Have issues with this system ever negatively impacted classroom instruction at anytime during the month of February?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

c3. How many months out of the school year do you use the heating system?

|__|__| MONTHS

d ☐ Don't know

r ☐ Refused

c4. What is your overall perception of the condition of the heating facilities in the school?

MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

c5. Is the heating in the classrooms adequate for students to be able to learn comfortably?

MARK ONE ONLY

1 ☐ Heating is ideal (students can learn comfortably)

2 ☐ Heating is acceptable (possible to learn, but uncomfortable)

3 ☐ Heating is inadequate (students cannot learn in this environment)

d ☐ Don't know

r ☐ Refused

Subsection D: Ventilation

d1. Does the school have a ventilation system?

1 ☐ Yes
0 ☐ No GO TO d2
d ☐ Don't know GO TO d2
r ☐ Refused GO TO d2

d1a. (IF YES) What kind of ventilation system does the school have?

MARK ALL THAT APPLY

1 ☐ Natural
2 ☐ Mechanical
3 ☐ Other (specify)

_____

d ☐ Don't know
r ☐ Refused

d1b. How many months out of the school year do you use the ventilation system?

|__|__| MONTHS

d ☐ Don't know
r ☐ Refused

d1c. What is your overall perception of the condition of the ventilation system?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

d2. When the school is heated, is the air quality inside adequate for students to be able to learn comfortably?

MARK ONE ONLY

1 ☐ Air quality is ideal (students can learn comfortably)
2 ☐ Air quality is acceptable (possible to learn, but uncomfortable)
3 ☐ Air quality is inadequate (students cannot learn in this environment)
d ☐ Don't know
r ☐ Refused

Subsection E: Electricity and light

e1. What type of electricity source does the school have?

MARK ALL THAT APPLY

1 ☐ From central municipality
2 ☐ Local transformer
3 ☐ Generator
4 ☐ Other (specify)

_____

d ☐ Don't know
r ☐ Refused

e2. Which of the following structures have electrical lighting?

MARK ALL THAT APPLY

1 ☐ Classrooms
2 ☐ Corridors
3 ☐ Indoor gym
4 ☐ Toilets
5 ☐ Computer room
6 ☐ Other (offices, etc.)
d ☐ Don't know
r ☐ Refused

e3. What is your overall perception of the condition of the electricity system?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

e4. Are the classrooms adequately lit for students to be able to learn comfortably?

MARK ONE ONLY

1 ☐ Adequately lit (students can learn comfortably)
2 ☐ Barely lit (possible to learn, but uncomfortable)
3 ☐ Inadequately lit (students cannot learn in this environment)
d ☐ Don't know
r ☐ Refused

Subsection F: Water

f1. What is the main type of water source in the school?

MARK ONE ONLY

1 ☐ Water piped into school building

2 ☐ Water piped outside school building (in yard, plot, etc.)

3 ☐ Non-piped (well/borehole/spring)

4 ☐ Non-piped (truck delivery/bottled water)

5 ☐ Other (specify)

_____

d ☐ Don't know

r ☐ Refused

f2. Are there any working pipes bringing water to the school?

1 ☐ Yes

0 ☐ No GO TO f3

d ☐ Don't know GO TO f3

r ☐ Refused GO TO f3

f2a. (IF YES) During the last 12 months, did the water pipes ever freeze?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f3. If the school uses pipes, have there been any leaking pipes during this school year?

1 ☐ Yes

0 ☐ No GO TO f4a

d ☐ Don't know GO TO f4a

r ☐ Refused GO TO f4a

f3a. (IF YES) Have those leaking pipes been fixed?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f4. Is there a way to get drinking water inside the building, without going outside?

1 ☐ Yes GO TO f5

0 ☐ No

d ☐ Don't know

r ☐ Refused

f4a. (IF NO) How long does it take to fetch water?

|__|__| MINUTES

d ☐ Don't know

r ☐ Refused

f5. What is your overall perception of the condition of the water system in the school?

MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

f6. How often does the school experience water shortages or cuts?

1 ☐ Daily

2 ☐ Weekly

d ☐ Don't know

r ☐ Refused

SECTION G: Toilet Facilities

g1. Are the primary toilet facilities inside the main building or in an exterior structure?

1 ☐ Inside the main building GO TO g3

0 ☐ In an exterior structure

d ☐ Don't know

r ☐ Refused

g2. What is the proximity of the primary toilet facilities to the main school building? (Estimate in meters)

|__|__| METERS

d ☐ Don't know

r ☐ Refused

g3. What type of toilets does the school have?

MARK ALL THAT APPLY

1 ☐ Flush toilet with sewer connection

2 ☐ Flush toilet with pit latrine GO TO g4

3 ☐ Non-flush pit latrine GO TO g4

4 ☐ Other (specify) GO TO g4

_____

d ☐ Don't know GO TO g4

r ☐ Refused GO TO g4

g3a. (IF FLUSH) How often do you have issues with blocked sewer pipes?

MARK ONE ONLY

1 ☐ Almost everyday
2 ☐ Once a week on average
3 ☐ Several times a month
4 ☐ Once a month
5 ☐ Less than once a month
6 ☐ Never
d ☐ Don't know
r ☐ Refused

g4. What is your overall perception of the condition of the toilet facilities?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

g5. Is there piped water available near latrines for hand washing?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

g6. Is there soap available near latrines for washing?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

Subsection H: Sewage

h1. What type of wastewater and sewage drainage does the school have?

MARK ONE ONLY

1 ☐ Drainage to local pipes GO TO h2
2 ☐ Open surface water drains GO TO h2
3 ☐ Infiltration in the soil (septic)
4 ☐ Pit latrine GO TO h2
5 ☐ Other (specify) GO TO h2
0 ☐ None GO TO h2
d ☐ Don't know GO TO h2
r ☐ Refused GO TO h2

h1a. Has the wastewater and sewage system experienced any problems in the last school year related to any of the following:

MARK ALL THAT APPLY

1 ☐ Clogs/backups
2 ☐ Leaks exterior to the building
3 ☐ Leaks interior to the building
4 ☐ No problems in the past year
d ☐ Don't know
r ☐ Refused

h2. What is your overall perception of the sewage system conditions?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

SECTION I: Weather Conditions

i1. Do any of the following weather conditions/events occur in your area during a typical school year?

MARK ALL THAT APPLY

1 ☐ Heavy rainfall/flood
2 ☐ Snowfall
3 ☐ Flooding
4 ☐ Landslide
5 ☐ Earthquake
6 ☐ Lightning/fires
7 ☐ Other (specify) _____
8 ☐ None of the above
d ☐ Don't know
r ☐ Refused

i2. How concerned are you about the risk that each of the following weather conditions poses to your school's infrastructure

SELECT ONE RESPONSE PER ROW

	VERY CONCERNED	CONCERNED	UNCONCERNED	NOT AT ALL CONCERNED	DON'T KNOW	REFUSED
a. Heavy rainfall/flood	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
b. Snowfall	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
c. Flooding	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
d. Landslide	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
e. Earthquake	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
f. Lightning/fires	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐
g. Other (specify) .____	1 ☐	2 ☐	3 ☐	4 ☐	d☐	r☐

i3. Estimate how many days the school has and will close for due to any of the following weather conditions during this school year?

IF NONE, PLEASE ENTER 0.

	DAYS CLOSED	DON'T KNOW	REFUSED
a. Cold temperature.....	|__|__|	d☐	r☐
b. Heavy snowfall.....	|__|__|	d☐	r☐
c. Heavy rainfall/flooding	|__|__|	d☐	r☐
d. Heat.....	|__|__|	d☐	r☐
e. Other (specify) _____	|__|__|	d☐	r☐

i4. When it snows, is there risk of roof failure?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

i5. When it rains, is any part of the school affected by leaks or flooding related to rainfall?

1 ☐ Yes
0 ☐ No GO TO i6
d ☐ Don't know GO TO i6
r ☐ Refused GO TO i6

i5a. (IF YES) What is the degree of flooding/leaking?

MARK ONE ONLY

1 ☐ The entire school is flooded
2 ☐ Some parts of the school are flooded and unusable
3 ☐ Flooding is minimal and all parts of the school remain functional
d ☐ Don't know
r ☐ Refused

i6. What are the hottest outdoor temperatures during the time that students are in class during the academic year? (Celsius)

|__|__| TEMPERATURE

d ☐ Don't know
r ☐ Refused

i7. During which months do [TEMPERATURE] temperatures occur while students are in class during the academic year, and for how many days? For how many of those days does the school close?

IF NONE, PLEASE ENTER 0.

	NO	YES	HIGH TEMP DAYS	DAYS CLOSED	DON'T KNOW	REFUSED
a. January	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
b. February	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
c. March	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
d. April	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
e. May	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
f. June	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
g. July	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
h. August	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
i. September	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
j. October	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
k. November	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
l. December	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐

i8. What are the minimum outdoor temperatures during the time that students are in class during the academic year?

|__|__| TEMPERATURE(Celsius)

1 ☐ Positive

2 ☐ Negative

d ☐ Don't know

r ☐ Refused

i9. During which months do you get freezing temperatures during the day, and for how many days? For how many of those days does the school close?

IF NONE, PLEASE ENTER 0.

	NO	YES	LOW TEMP DAYS	DAYS CLOSED	DON'T KNOW	REFUSED
a. January	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
b. February	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
c. March	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
d. April	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
e. May	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
f. June	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
g. July	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
h. August	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
i. September	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
j. October	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
k. November	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐
l. December	0 ☐	1 ☐	|__|__|	|__|__|	d ☐	r ☐

i10 In your opinion, what is the optimal indoor temperature for students to learn comfortably? (Celsius)

|__|__| TEMPERATURE

d ☐ Don't know

r ☐ Refused

i11. During which months (if any) are you unable to consistently maintain this temperature inside the school?

IF NONE, PLEASE ENTER 0.

	NO	YES	DON'T KNOW	REFUSED
a. January	0 ☐	1 ☐	d ☐	r ☐
b. February	0 ☐	1 ☐	d ☐	r ☐
c. March	0 ☐	1 ☐	d ☐	r ☐
d. April	0 ☐	1 ☐	d ☐	r ☐
e. May	0 ☐	1 ☐	d ☐	r ☐
f. June	0 ☐	1 ☐	d ☐	r ☐
g. July	0 ☐	1 ☐	d ☐	r ☐
h. August	0 ☐	1 ☐	d ☐	r ☐
i. September	0 ☐	1 ☐	d ☐	r ☐
j. October	0 ☐	1 ☐	d ☐	r ☐
k. November	0 ☐	1 ☐	d ☐	r ☐
l. December	0 ☐	1 ☐	d ☐	r ☐

SECTION J: Health and Hazardous Materials

j1. Please estimate how common it is for students to have respiratory difficulties, such as persistent coughing or shortness of breath?
MARK ONE ONLY

1 ☐ Less than 1 out of 10 children is sick at any given time
2 ☐ About 1 out of 10 children is sick at any given time
3 ☐ 2 out of 10 children are sick at any given time
4 ☐ Half of all children are sick at any given time
d ☐ Don't know
r ☐ Refused

j2. Do you agree with this statement: "Respiratory difficulties, such as persistent coughing or shortness of breath, are common among the students in this school"

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

j3. Have you, or anyone you know, been injured at your school due to poor building conditions?

1 ☐ Yes
0 ☐ No GO TO j4
d ☐ Don't know GO TO j4
r ☐ Refused GO TO j4

j3a. (IF YES) Please check off where this/these injury/injuries occurred.

MARK ALL THAT APPLY

1 ☐ Classroom
2 ☐ Hallway
3 ☐ Stairwell
4 ☐ Indoor recreation facility
5 ☐ Outdoor recreation facility
6 ☐ Science lab
7 ☐ Restrooms/toilets
8 ☐ Other (specify)
d ☐ Don't know
r ☐ Refused

j4. How many accidents have occurred in the school related to the facilities in the past 2 months (ex: tripping due to uneven floors, falling due to broken stairs, etc.)

|__|__| NUMBER OF ACCIDENTS

d ☐ Don't know
r ☐ Refused

j5. To your knowledge, does any part of the school building contain asbestos?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

j6. To your knowledge, does any part of the school building contain lead?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

j7. To your knowledge, does any part of the school building contain mold?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

j8. Do you agree with this statement: "Overall, the school environment is safe and healthy."

MARK ONE ONLY

1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Neither agree nor disagree
4 ☐ Disagree
5 ☐ Strongly disagree
d ☐ Don't know
r ☐ Refused

SECTION K: Expenses Module

k1. Is the overall school budget sufficient to pay for both utility and maintenance costs as well as educational activities?

1 ☐ Yes GO TO k2

0 ☐ No

d ☐ Don't know

k1a. (IF NO) Which costs do you prioritize paying the most? (Select one as the most important, and rank the others)

SELECT ONE RESPONSE PER ROW & PER COLUMN

	MOST IMPORTANT	2nd MOST IMPORTANT	3rd MOST IMPORTANT	LEAST IMPORTANT
a. Teaching activities (ex: teacher salary)	1 ☐	2 ☐	3 ☐	4 ☐
b. Utility costs	1 ☐	2 ☐	3 ☐	4 ☐
c. Building repair costs	1 ☐	2 ☐	3 ☐	4 ☐
d. Building maintenance costs	1 ☐	2 ☐	3 ☐	4 ☐

k2. How often are you unable to fully pay for school utilities (water, electricity, heat, etc.) with the funds available in the school budget?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

k3. In the month of February, did you ever turn off some or all of the utilities at the school to reduce the school's utility costs?

1 ☐ Yes

0 ☐ No GO TO k4

d ☐ Don't know GO TO k4

r ☐ Refused GO TO k4

k3a. (IF YES) Choose which utilities you turned off during February to save costs, and please estimate how long each one was off (days)

	DAYS TURNED OFF	DON'T KNOW	REFUSED
a. Electricity	|___|	d☐	r☐
b. Heating	|___|	d☐	r☐
c. Water	|___|	d☐	r☐
d. Other (specify) _____	|___|	d☐	r☐

k4. Please give an estimate of the heating costs for the month of February.

\|_____\| COST (LARI)

d ☐ Don't know

r ☐ Refused

k5. Please give an estimate of the electricity costs for the month of February.

\|_____\| COST (LARI)

d ☐ Don't know

r ☐ Refused

k6. Please give an estimate of the water costs for the month of February.

\|_____\| COST (LARI)

d ☐ Don't know

r ☐ Refused

SECTION L: Other

l1. How often do any of the students have any hands on/interactive activities for learning science material?

MARK ONE ONLY

1 ☐ Often
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

l2. Is there a functional canteen/cafeteria at the school?

1 ☐ Yes
0 ☐ No GO TO l2b
d ☐ Don't know GO TO l2b
r ☐ Refused GO TO l2b

l2a. (IF YES)Is the canteen/cafeteria clean and safe for eating?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

l2b. (IF NO) Is there a clean place in the school for the students to eat meals?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

Subsection L.2: Internet

l3. Is there any internet access available at the school?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

l3a. How reliable is the internet?

MARK ONE ONLY

1 ☐ Very reliable
2 ☐ Somewhat reliable
3 ☐ Unreliable
d ☐ Don't know
r ☐ Refused

l3b. Is the cost of internet access paid out of the school's general operations and maintenance budget?

1 ☐ Yes
0 ☐ No GO TO l4
d ☐ Don't know GO TO l4
r ☐ Refused GO TO l4

l3c. (IF YES) Did you ever choose to not pay for internet access in the past year to fund other priorities?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

Subsection L.3: School Operations and Maintenance

l4. Aside from yourself, do you have a designated staff-member who is responsible for managing the building's operations and maintenance?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

l5. Aside from yourself, do you have a designated staff-member who is responsible for the school's budget for operations and maintenance? (This may be the same staff-member referenced in the previous question).

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

l6. When you have an urgent operations and maintenance need in your school building, do you know how to report the issue to the Ministry of Education (ESIDA)?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

I7. In the past year, how quickly has the Ministry of Education (ESIDA) addressed/repaired the operations and maintenance issues at your school?

1 ☐ Immediately
2 ☐ In a timely manner
3 ☐ Slowly
4 ☐ No maintenance issues in the past year
d ☐ Never
r ☐ Refused

I8. In the past year, has your school received any direct support from private business or local organizations in terms of funding, building repairs, or new equipment?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

I9. Has the overall number of students enrolled at this school increased, decreased or stayed the same this school year compared to the previous school year?

MARK ONE ONLY

1 ☐ Increased
2 ☐ Decreased GO TO I10
3 ☐ Stayed the same GO TO I10
d ☐ Don't know GO TO I10
r ☐ Refused GO TO I10

I9a. (IF ENROLLMENT HAS INCREASED) Did the change cause any of the following?

MARK ALL THAT APPLY

1 ☐ Introduced double shifts
2 ☐ Increased average class size
3 ☐ Other (specify)
0 ☐ None of the above
d ☐ Don't know
r ☐ Refused

I9b. (IF ENROLLMENT HAS INCREASED) Has the change made it easier or harder to manage the school budget for maintenance and education activities?

MARK ONE ONLY

1 ☐ Easier
2 ☐ Same (no effect)
3 ☐ Harder
d ☐ Don't know
r ☐ Refused

I10. Can you give an estimate of the overall attendance rate at your school today?

|__|__|__| PERCENTAGE OF ENROLLED STUDENTS ATTENDING SCHOOL

d ☐ Don't know
r ☐ Refused

I11. Can you give an estimate of the overall attendance rate at your school on an average day in February? (% of enrolled students attending school)

|__|__|__| PERCENTAGE OF ENROLLED STUDENTS ATTENDING SCHOOL IN FEBRUARY

d ☐ Don't know
r ☐ Refused

I12. What are the three most common causes of student absences? (Mark the three most common causes)

	MARK THREE	DON'T KNOW	REFUSED
a. Illness	1 ☐	d ☐	r ☐
b. Snow	2 ☐	d ☐	r ☐
c. Rain/flooding	3 ☐	d ☐	r ☐
d. Cold temperature	4 ☐	d ☐	r ☐
e. Excessive teacher absences	5 ☐	d ☐	r ☐
f. Received sufficient instruction through private tutoring	6 ☐	d ☐	r ☐
g. Poor school conditions	7 ☐	d ☐	r ☐
h. Lack of money (for transportation, clothing, or school supplies)	8 ☐	d ☐	r ☐
i. Other (specify) _____	9 ☐	d ☐	r ☐

I13. Typically, how many days was an average teacher absent from school in the past month?

MARK ONE ONLY

1 ☐ No absences
2 ☐ 1 day
3 ☐ 2 days
4 ☐ 3 days
5 ☐ 4 days
6 ☐ More than 4 days
d ☐ Don't know
r ☐ Refused

I14. In the past month, how often was there a substitute teacher present in class to teach lessons when the regular teacher was absent?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ No substitute teacher
d ☐ Don't know
r ☐ Refused

I15. How many academic hours per day do you think a full-time teacher spends providing direct instruction to students?

MARK ONE ONLY

0 ☐ No time
1 ☐ 1/2 hour
2 ☐ 1 hour
3 ☐ 1 1/2 hours
4 ☐ 2 hours
5 ☐ 3 hours
6 ☐ 4 hours
7 ☐ 5 hours
8 ☐ 6 hours
9 ☐ More than 6 hours
d ☐ Don't know
r ☐ Refused

I16. How many hours per day do you think a full-time teacher spends on tasks other than classroom instruction (such as planning, school operations or maintenance issues)?

MARK ONE ONLY

0 ☐ No time
1 ☐ 1/2 hour
2 ☐ 1 hour
3 ☐ 1 1/2 hours
4 ☐ 2 hours
5 ☐ 3 hours
6 ☐ 4 hours
7 ☐ 5 hours
8 ☐ 6 hours
9 ☐ More than 6 hours
d ☐ Don't know
r ☐ Refused

I17. How many hours per day do you think the typical student actively engages in learning-related tasks?

MARK ONE ONLY

1 ☐ Less than 1 hour
2 ☐ 1-2 hours
3 ☐ 3-4 hours
4 ☐ 5 hours or more
d ☐ Don't know
r ☐ Refused

Subsection L.3: Security

I18. Is access to school property outside of school hours restricted with a fence/wall?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

I19. Overall, how secure do you think the school building is?

MARK ONE ONLY

1 ☐ Fully secure
2 ☐ Partially secure
3 ☐ Not secure
d ☐ Don't know
r ☐ Refused

Subsection L.4: Overall Conditions

I20. Overall, are you satisfied or dissatisfied with the overall physical conditions of the building(s) at your school?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

I21. Do you think your school needs immediate repairs or improvements?

1 ☐ Yes
0 ☐ No GO TO end
d ☐ Don't know GO TO end
r ☐ Refused GO TO end

I21a. (IF YES) Which items do you think need immediate repairs or improvements?

MARK ALL THAT APPLY

1 ☐ Heating systems
2 ☐ Water systems
3 ☐ Toilet facilities
4 ☐ Indoor lighting
5 ☐ Roof
6 ☐ Stairs
7 ☐ Flooring
8 ☐ Foundation
9 ☐ Building structure
10 ☐ Recreational facilities (indoor or outdoor)
11 ☐ Doors
12 ☐ Other (specify)
_____
d ☐ Don't know
r ☐ Refused

SD1) Have you heard of SDSU?

1. Yes (go to SD2)

2. No (complete the interview)

SD2) If so, how did you hear about it?

1. Representatives of SDSU came to the school

2. TV

3. Internet media (social networks, internet publications etc.)

4. Other (please. Specify) _____

5. Other (please. Specify) _____

6. Other (please. Specify) _____

SD3) /would you have your student apply to attend the SDSU?

1. Definitely would apply

2. I would apply

3. I have not decided yet

4. No, I would not apply

5. Definitely would not apply

Thank you for taking the time to complete this survey.

Section I: Interviewer's Notes About The Interview

s1. What was the language used to complete this survey?

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Other (specify)

s2. Settlement Type:

1 ☐ City

2 ☐ Village

APPENDIX D

STUDENT SURVEY

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Mathematica Ref. No. 40306.300

MATHEMATICA Policy Research

MCC Georgia Student Survey

February, 2017

SECTION I: CONSENT WORDING

a1. **The following is a survey of students in selected Georgian Schools. In addition to this survey, we are also conducting assessments of student learning and examining test scores as part of the overall study. These activities are part of a research project that MCA-G is carrying out to learn about student perceptions of their school environment and how the physical conditions of your school affect your ability to learn effectively. This survey is just for research purposes. All the information you provide will be confidential and will be combined with the responses of other students to help us learn about the education experiences of youth and to help us improve the school learning environment. Your name will not be associated with any of your responses during the analysis and subsequent reporting. You can feel free not to respond to any question that you do not want to answer. You also do not have to participate in this interview if you do not wish to do so. It will take approximately 45 minutes for you to complete this survey. Would you like to participate?**

1 ☐ Yes

0 ☐ No

a2. STUDENT ID. **Please record your 11 digit personal number form the birth certificate.**

|__|__|__|__|__|__|__|__|__|__|__| STUDENT ID

a3. (FULL NAME OF STUDENT) **What is your first and last name as it appears in your birth certificate?**

FIRST NAME: _____

LAST NAME: _____

a4. (NAME OF SCHOOL) **What is the name of your school?**

_____

d ☐ Don't know

r ☐ Refused

a5. SCHOOL CODE

|__|__|__|__|

SECTION B: MODULE 1 – STUDENT PROFILE

b1. **What is your date of birth?**

|__|__| / |__|__| / |__|__|__|__|
DAY MO YEAR

d ☐ Don't know

r ☐ Refused

b2. (STUDENT GENDER) **What is your gender?**

MARK ONE ONLY

1 ☐ Male

2 ☐ Female

r ☐ Prefer not to answer/refused

b3. **What is the primary language spoken in your home?**

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other*(specify)* _____

d ☐ Don't know

r ☐ Refused

b4. **What is the primary language spoken at your school?**

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

b5. **Did you attend this same school last year?**

1 ☐ Yes **GO TO b6**

0 ☐ No **GO TO b5a**

d ☐ Don't know **GO TO b5a**

r ☐ Refused **GO TO b5a**

b5a. (IF NO) **What was the name of the school you attended last year?**

_____

d ☐ Don't know

r ☐ Refused

b6. **What region is your school located in?** (FILL IN CHOICES OF REGIONS WHERE YOUR SCHOOL IS LOCATED)

MARK ONE ONLY

1 ☐ Samegrelo-ZemoSvaneti
2 ☐ Guria
3 ☐ Adjara
4 ☐ Racha-Lechkhumi and KvemoSvaneti
5 ☐ Imereti
6 ☐ Samtskhe-Javakheti
7 ☐ Shida Kartli
8 ☐ Mtskheta-Mtianeti
9 ☐ Kvemo Kartli
10 ☐ Kakheti
d ☐ Don't know
r ☐ Refused

b7. **What is your current grade level?**

MARK ONE ONLY

1 ☐ 8th grade **GO TO b8**
2 ☐ 9th grade **GO TO b8**
3 ☐ 10th grade **GO TO b9**
4 ☐ 11th grade **GO TO b9**
5 ☐ 12th grade **GO TO b9**
d ☐ Don't know **GO TO b9**
r ☐ Refused **GO TO b9**

b8. (IF CURRENTLY IN 8TH OR 9TH GRADE) **Are you going to enroll in further grades and complete your secondary education?**

1 ☐ Yes **GO TO b9**
0 ☐ No **GO TO b8a**
d ☐ Don't know **GO TO b8a**
r ☐ Refused **GO TO b8a**

b8a. (IF NO OR I DON'T KNOW, OR REFUSED) **Why don't you intend to enroll in upper secondary school?**

MARK ALL THAT APPLY

1 ☐ Schools are in poor condition

2 ☐ Poor instruction provided in schools

3 ☐ Intend to begin working instead

4 ☐ Intend to pursue vocational school or apprenticeship

5 ☐ Domestic/family obligations

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

b9. Do you intend to pursue higher education after secondary school?

1 ☐ Yes **GO TO SD1**

0 ☐ No **GO TO b9a**

d ☐ Don't know **GO TO b9a**

r ☐ Refused **GO TO b9a**

b9a. (IF NO OR DON'T KNOW OR REFUSED) **Why don't you intend to pursue higher education after secondary school?**

MARK ALL THAT APPLY

1 ☐ Educational institution is too far away

2 ☐ Cost of private tutoring for entrance exams

3 ☐ Cost of higher education tuition

4 ☐ Intend to begin working instead

5 ☐ Intend to start a family

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

SD1) Have you heard of SDSU?

1. Yes (go to next question)

2. No (go C1)

SD2) If so, how did you hear about it?

1. Representatives of SDSU came to the school
2. TV
3. Internet media (social networks, internet publications etc.)
4. Other (please. Specify) _____
5. Other (please. Specify) _____
6. Other (please. Specify) _____

SD3) would you apply to attend the program at the SDSU?

1. Definitely would apply
2. I would apply
3. I have not decided yet
4. No, I would not apply
5. Definitely would not apply

SECTION C: MODULE 2 – STUDENT TIME ON TASK

c1. How often were your teachers absent from school in the past month?

MARK ONE ONLY

1	☐	No absences	**GO TO c4**
2	☐	1 time	**GO TO c2**
3	☐	2 times	**GO TO c2**
4	☐	3 times	**GO TO c2**
5	☐	4 times	**GO TO c2**
6	☐	More than 4 times	**GO TO c2**
d	☐	Don't know	**GO TO c2**
r	☐	Refused	**GO TO c2**

c2. In the past month think about when your teacher was not present to teach you. How often was there a substitute teacher there to teach your lesson?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ No substitute teacher
d ☐ Don't know
r ☐ Refused

c3. How often does the substitute teacher provide lesson instruction that is similar to that of the primary teacher? (Quality, clarity, usefulness)

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

c4. How often were you absent from school in the past month?

MARK ONE ONLY

1 ☐	No absences	**GO TO c5**
2 ☐	1-2 times	**GO TO c4a**
3 ☐	3-6 times	**GO TO c4a**
4 ☐	7-10 times	**GO TO c4a**
6 ☐	More than 10 times	**GO TO c4a**
d ☐	Don't know	**GO TO c4a**
r ☐	Refused	**GO TO c4a**

c4a. Typically, what were your reasons for being absent from school in the past month?

MARK ALL THAT APPLY

1 ☐ Lack of money (for transportation, clothing, or school supplies)

2 ☐ Paid work/labor

3 ☐ Family obligations (ex: doing chores, taking care of family members, etc.)

4 ☐ School closure

5 ☐ Illness

6 ☐ Snow

7 ☐ Rain/Flooding

8 ☐ Cold temperature

9 ☐ Excessive teacher absences

10 ☐ Received sufficient instruction through private tutoring

11 ☐ Poor school conditions

12 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

c5. In the past month, how many days did you ever arrive late or leave early from school (missing more than half an hour during the school day)?

|___|___| DAYS DURING PAST MONTH

d ☐ Don't know

r ☐ Refused

c6. In the past month, did you ever leave school during the day to eat meals at home?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

c7. How often was your school closed in February?

MARK ONE ONLY

1 ☐ Never **GO TO c8**

2 ☐ 1-2 times **GO TO c7a**

3 ☐ 3-4 times **GO TO c7a**

4 ☐ 5 or more times **GO TO c7a**

d ☐ Don't know **GO TO c7a**

r ☐ Refused **GO TO c7a**

c7a. What were the reasons for your school being closed in February?

MARK ALL THAT APPLY

1 ☐ Snow

2 ☐ Rain/Flooding

3 ☐ Cold temperature

4 ☐ Building repairs

5 ☐ Other*(specify)* _____

d ☐ Don't know

r ☐ Refused

c8. Based on the past month, normally, how many hours are you taught per day?

MARK ONE ONLY

1 ☐ Less than 1 hour total

2 ☐ 1-2 hours total

3 ☐ 3-4 hours total

4 ☐ 5 hours total or more

d ☐ Don't know

r ☐ Refused

c9. Based on the past month, approximately what portion of your time in class are you leaning new information?

MARK ONE ONLY

0 ☐ None of the time

1 ☐ A quarter of the time

2 ☐ Half of the time

3 ☐ Most of the time

d ☐ Don't know

r ☐ Refused

c10. Compared to the current amount of daily lesson time, would you like your teachers to spend more time teaching during the day to help you understand the material at your grade level?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

SECTION D: MODULE 3 – Science Lab Use

d1. Does your school have a room with equipment used for teaching exact and natural science and performing science experiments (also called a science lab)?

1 ☐ Yes **GO TO d2**

0 ☐ No **GO TO d5**

d ☐ Don't know **GO TO d5**

r ☐ Refused **GO TO d5**

d2. Think about the rooms used for the biology, chemistry and physics, and the equipment in the lab. Overall, how functional are these facilities for science lessons?

MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

d3. How often do you use the science lab for your biology, chemistry and physics classes?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

d4. How safe (meaning free from harm or danger) do you typically feel using your school's science lab?

MARK ONE ONLY

1 ☐ Very safe

2 ☐ Somewhat safe

3 ☐ Rarely safe

4 ☐ Unsafe

d ☐ Don't know

r ☐ Refused

d5. How often does the teacher demonstrate science experiments?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO NEXT MODULE**
d ☐ Don't know
r ☐ Refused

d6. How often is there equipment available for the teacher to demonstrate hands-on experiments?

MARK ONE ONLY

1 ☐ Always **GO TO d6a**
2 ☐ Sometimes **GO TO d6a**
3 ☐ Rarely **GO TO d6a**
4 ☐ Never **GO TO d7**
d ☐ Don't know **GO TO d7**
r ☐ Refused **GO TO d7**

d6a. (IF THERE IS EQUIPMENT AVAILABLE) **What condition is the equipment in?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

d7. How often do the students conduct experiments?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d8. How often is there equipment available for students to conduct hands-on experiments?

MARK ONE ONLY

1 ☐ Always **GO TO d8a**

2 ☐ Sometimes **GO TO d8a**

3 ☐ Rarely **GO TO d8a**

4 ☐ Never **GO TO d9**

d ☐ Don't know **GO TO d9**

r ☐ Refused **GO TO d9**

d8a. (IF THERE IS EQUIPMENT AVAILABLE) **What condition is the equipment in?**

MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

d9. What type of science equipment is available for use in your science class?

MARK ALL THAT APPLY

1 ☐ Microscope

2 ☐ Heating devices

3 ☐ Chemicals or other materials for experiments

4 ☐ Lab coats

5 ☐ Protective eyewear

6 ☐ Beakers

7 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

d10. What type of electronic equipment is available in your science class?

MARK ALL THAT APPLY

1 ☐ Computer

2 ☐ Internet access

3 ☐ Projection screen

4 ☐ T.V.

5 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

SECTION E: MODULE 4 – RECREATIONAL FACILITY USE

e1. Does your school have an indoor recreational facility (gym)?

1 ☐ Yes **GO TO e1a**

0 ☐ No **GO TO e6**

d ☐ Don't know **GO TO e6**

r ☐ Refused **GO TO e6**

e1a. (IF YES) **What is the condition of the gym?**

MARK ONE ONLY

1 ☐ Perfect condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Dilapidated (non-functional)

d ☐ Don't know

r ☐ Refused

e2. Standing in the center of the gym, how often is the temperature uncomfortable during the winter months?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

e3. How safe do you typically feel using your school's gym?

MARK ONE ONLY

1 ☐ Very safe

2 ☐ Somewhat safe

3 ☐ Rarely safe

4 ☐ Unsafe

d ☐ Don't know

r ☐ Refused

e4. On average, how many times per week do you use your school's gym?

MARK ONE ONLY

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

e5. How often is there equipment, such as soccer balls or jump ropes, available for students to use in the gym?

MARK ONE ONLY

1 ☐ Always **GO TO e5a**
2 ☐ Sometimes **GO TO e5a**
3 ☐ Rarely **GO TO e6**
4 ☐ Never **GO TO e6**
d ☐ Don't know **GO TO e6**
r ☐ Refused **GO TO e6**

e5a. What is the condition of the recreational equipment available for your use?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

e6. Does your school have an outdoor recreational area?

1 ☐ Yes **GO TO e6a**
0 ☐ No **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

e6a. (IF YES) **What is the condition of the facility for outdoor recreation activities (gym, tennis courts, etc.)?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

e7. How safe do you typically feel using your school's outdoor recreational area (gym, tennis courts, etc.)?

MARK ONE ONLY

1 ☐ Very safe
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know
r ☐ Refused

e8. On average, how many times per week do you use your school's outdoor recreational area (gym, tennis courts, etc.)?

MARK ONE ONLY

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

e9. How often is there equipment, such as soccer balls or jump ropes, available for students to use in the outdoor recreational facility (gym, tennis courts, etc.)?

MARK ONE ONLY

1 ☐ Always **GO TO e9a**
2 ☐ Sometimes **GO TO e9a**
3 ☐ Rarely **GO TO e9a**
4 ☐ Never **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

e9a. What is the condition of the recreational (sport/entertainment) equipment available for use by the students?

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

SECTION F: MODULE 5 – STUDENT PERCEPTIONS OF HEALTH AND SCHOOL SAFETY

f1. Overall, are you satisfied or dissatisfied with the quality of the building and equipment at your school?

MARK ONE ONLY

1 ☐ Very satisfied

2 ☐ Satisfied

3 ☐ Neither satisfied nor dissatisfied

4 ☐ Dissatisfied

5 ☐ Very dissatisfied

d ☐ Don't know

r ☐ Refused

f2. Do you agree or disagree with this statement? "Overall, the school environment is safe and healthy."

MARK ONE ONLY

1 ☐ Strongly agree

2 ☐ Agree

3 ☐ Neither agree nor disagree

4 ☐ Disagree

5 ☐ Strongly disagree

d ☐ Don't know

r ☐ Refused

f3. Do you think your school needs any immediate repairs or improvements?

1 ☐ Yes **GO TO f3a**

0 ☐ No

d ☐ Don't know

r ☐ Refused

f3a. (IF YES) **Which items do you think need immediate repairs or improvements?**

MARK ALL THAT APPLY

1 ☐ Heating systems
2 ☐ Water systems
3 ☐ Toilet facilities
4 ☐ Indoor lighting
5 ☐ Roof
6 ☐ Stairs
7 ☐ Flooring
8 ☐ Foundation
9 ☐ Building structure
10 ☐ Recreational facilities
11 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

f4. **Is there a canteen/cafeteria at your school?**

1 ☐ Yes **GO TO f4a**
0 ☐ No **GO TO f4b**
d ☐ Don't know **GO TO f4b**
r ☐ Refused **GO TO f4b**

f4a. (IF YES) **How satisfied are you with the cleanliness and overall condition of the canteen/cafeteria at your school?**

MARK ONE ONLY

1 ☐ Very satisfied **GO TO f5**
2 ☐ Satisfied **GO TO f5**
3 ☐ Neither satisfied nor dissatisfied **GO TO f5**
4 ☐ Dissatisfied **GO TO f5**
5 ☐ Very dissatisfied **GO TO f5**
d ☐ Don't know **GO TO f5**
r ☐ Refused **GO TO f5**

f4b. (IF NO) **Is there a clean place in the schools for you to eat your meals?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

f5. Normally, do you to return home for meals rather than eat at school?

1 ☐ Yes
2 ☐ No
3 ☐ No preference
d ☐ Don't know
r ☐ Refused

f6. Do you use the toilet facilities at your school?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

f7. How often are the toilet facilities at your school functional?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f8. How often do you feel comfortable using the toilet facilities at your school?

MARK ONE ONLY

1 ☐ Always **GO TO f9**
2 ☐ Sometimes **GO TO f8a**
3 ☐ Rarely **GO TO f8a**
4 ☐ Never **GO TO f8a**
d ☐ Don't know **GO TO f9**
r ☐ Refused **GO TO f9**

f8a. (IF SOMETIMES, RARELY OR NEVER) **Why do you feel uncomfortable using the toilet facilities?**

MARK ALL THAT APPLY

1 ☐ Unisex facilities
2 ☐ Unclean facilities
3 ☐ Broken toilets
4 ☐ Broken stalls
5 ☐ Lack of heating
6 ☐ No sinks/running water for hand-washing
7 ☐ Toilet facility is outside
8 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

f9. **How safe do you feel using the stairwells in the main building of your school?**

MARK ONE ONLY

1 ☐ Very safe **GO TO f10**
2 ☐ Somewhat safe **GO TO f9a**
3 ☐ Rarely safe **GO TO f9a**
4 ☐ Unsafe **GO TO f9a**
d ☐ Don't know **GO TO f10**
r ☐ Refused **GO TO f10**

f9a. (IF SOMEWHAT RARELY OR UNSAFE) **Why do you feel unsafe using the stairwells?**

MARK ALL THAT APPLY

1 ☐ Poorly lit
2 ☐ No guardrail
3 ☐ Stairs are not level
4 ☐ Stairs are uneven
5 ☐ Stairs appear damaged/unusable
6 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

f10. **How often do you feel comfortable with the conditions in your classrooms at school?**

MARK ONE ONLY

1 ☐ Always **GO TO f11**
2 ☐ Sometimes **GO TO f10a**
3 ☐ Rarely **GO TO f10a**
4 ☐ Never **GO TO f10a**
d ☐ Don't know **GO TO f11**
r ☐ Refused **GO TO f11**

f10a. (IF SOMETIMES, RARELY OR NEVER) **Why do you feel uncomfortable in your classrooms?**

MARK ALL THAT APPLY

1 ☐ Too cold
2 ☐ Too warm
3 ☐ Poor air quality
4 ☐ Poor lighting
5 ☐ Lack of seating
6 ☐ Lack of desk space
7 ☐ Poor flooring
8 ☐ Ceiling is in a bad condition
9 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

f11. How safe do you feel in the classrooms at school?

MARK ONE ONLY

1 ☐ Very safe **GO TO f12**
2 ☐ Somewhat safe **GO TO f11a**
3 ☐ Rarely safe **GO TO f11a**
4 ☐ Unsafe **GO TO f11a**
d ☐ Don't know **GO TO f12**
r ☐ Refused **GO TO f12**

f11a. (IF SOMEWHAT, RARELY OR UNSAFE) **Why do you feel unsafe in your classrooms?**

MARK ALL THAT APPLY

1 ☐ Broken windows
2 ☐ Cracked walls
3 ☐ Cracked floors
4 ☐ Poor air quality
5 ☐ Water damage
6 ☐ Ceiling is in a bad condition
7 ☐ Mold
8 ☐ Other*(specify)* _____
d ☐ Don't know
r ☐ Refused

f12. Do you drink the water available at school?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

f13. Do you think the water at the school is clean and safe to drink?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

f14. Have you, or anyone you know, been injured at your school due to poor building conditions?

1 ☐ Yes **GO TO f14a**
0 ☐ No **GO TO f15**
d ☐ Don't know **GO TO f15**
r ☐ Refused **GO TO f15**

f14a. (IF YES) **Where in the school did this/these injury/injuries occur?**

MARK ALL THAT APPLY

1 ☐ Classroom
2 ☐ Hallway
3 ☐ Stairwell
4 ☐ Indoor recreation facility
5 ☐ Outdoor recreation facility
6 ☐ Science lab
7 ☐ Restrooms/toilets
8 ☐ Other *(specify)* _____
d ☐ Don't know
r ☐ Refused

f15. During the winter months, do you have difficulty breathing while in your school's hallways or classrooms (wheezing, shortness of breath, tightness in chest)?

1 ☐ Yes **GO TO f15a**
0 ☐ No **GO TO f16**
d ☐ Don't know **GO TO f16**
r ☐ Refused **GO TO f16**

f15a. (IF YES) **How many times per week (on average) do you have difficulty breathing at school?**

MARK ONE ONLY

1 ☐ 1-2 times
2 ☐ 3-4 times
3 ☐ 5-6 times
4 ☐ 7 or more times
d ☐ Don't know
r ☐ Refused

f15b. How often have breathing difficulties impacted your ability to do schoolwork to the best of your abilities?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

f16. Do you find yourself regularly coughing while in school?

1 ☐ Yes

2 ☐ Sometimes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f17. What is your opinion of the air quality in your classroom over the past month? (Smoke, burning smell, specific smell, dust, etc)

MARK ONE ONLY

1 ☐ Good air quality

2 ☐ Fair air quality

3 ☐ Poor air quality

4 ☐ Unhealthy air quality

d ☐ Don't know

r ☐ Refused

f18. Over the past month, has the air quality in your classroom ever negatively impacted your ability to concentrate on your school work?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f19. In February, how often were your lessons interrupted or curtailed due to poor air quality in your school?

MARK ONE ONLY

1 ☐ Never

2 ☐ 1-2 times

3 ☐ 3-4 times

4 ☐ 5 or more times

d ☐ Don't know

r ☐ Refused

f20. **Do you currently have a wood stove in your household?**

1 ☐ Yes **GO TO f21**

0 ☐ No

d ☐ Don't know

r ☐ Refused

f20a. (IF NO) **Have you ever had a wood stove in your household?**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f21. **Normally, do you have any animals inside the house you sleep in at night? (ex: cats, dogs, or birds)**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f22. **Have you ever been diagnosed with asthma?**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f23. **Have you ever been diagnosed with any other respiratory ailments?**

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f24. **Have you experienced any of the following in the past 30 days?**

MARK ALL THAT APPLY

1 ☐ Cough

2 ☐ Cough with blood

3 ☐ Cold

4 ☐ Flu

5 ☐ Difficulty breathing (wheezing, shortness of breath, tightness in chest)

d ☐ Don't know

r ☐ Refused

6 ☐ None of the above

f25. Have you ever smoked? If you ever smoked in the past please mark "yes".

1 ☐ Yes **GO TO f25a**

0 ☐ No **GO TO f26**

d ☐ Don't know **GO TO f26**

r ☐ Refused **GO TO f26**

f25a. Do you currently smoke? Please write down how many cigarettes you have smoked in the past week.

|___|___| Write number of cigarettes

1 ☐ Yes

2 ☐ No

d ☐ Don't know

r ☐ Refused

f26. Does anyone else in your household currently smoke?

1 ☐ Yes **GO TO f26a**

0 ☐ No **GO TO f27**

d ☐ Don't know **GO TO f27**

r ☐ Refused **GO TO f27**

f26a. (IF YES) **On average how many cigarettes are smoked inside the house on a typical day?**

MARK ONE ONLY

0 ☐ 0 (cigarettes are only smoked outside the house)

1 ☐ 1-10

2 ☐ 11-20

3 ☐ 21-60

d ☐ Don't know

r ☐ Refused

f27. Think about the average temperature inside the school in February. Was the temperature too warm, too cold or comfortable?

MARK ONE ONLY

1 ☐ It was too warm

2 ☐ It was too cold

3 ☐ It was comfortable

d ☐ Don't know

r ☐ Refused

f28. In February, did you wear outerwear (such as a jacket, hat, or gloves/mittens) inside your school to keep warm?

MARK ONE ONLY

1 ☐ Never

2 ☐ 1-2 times

3 ☐ 3-4 times

4 ☐ 5 or more times

d ☐ Don't know

r ☐ Refused

f29. In February, did the temperature in your classroom negatively impact your ability to concentrate on your school work?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f30. In February, how often did the temperature inside the school cause disruptions in lesson instruction?

MARK ONE ONLY

1 ☐ Never

2 ☐ 1-2 times

3 ☐ 3-4 times

4 ☐ 5 or more times

d ☐ Don't know

r ☐ Refused

f31. Do you ever have a hard time seeing well enough to read in any of your classrooms due to poor lighting?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f32. How often do you have difficulty clearly seeing what your teachers write on the board in the classroom?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

f33. Over the past month, has the lighting in your classroom negatively impacted your ability to concentrate on your school work?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

f34. In February, how often were your lessons interrupted or curtailed due to poor lighting in your school?

MARK ONE ONLY

1 ☐ Never

2 ☐ 1-2 times

3 ☐ 3-4 times

4 ☐ 5 or more times

d ☐ Don't know

r ☐ Refused

f35. Overall, what condition are your textbooks in?

MARK ONE ONLY

1 ☐ Good condition

2 ☐ Fair condition

3 ☐ Poor condition

4 ☐ Unusable

d ☐ Don't know

r ☐ Refused

SECTION G: MODULE 6 – WOOD STOVE HEATING

g1. How often are your classrooms heated in cold months?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

g2. Do any of your classrooms use wood stoves for heat?

1 ☐ Yes, all classrooms **GO TO g3**

2 ☐ Yes, some classrooms **GO TO g3**

0 ☐ None of the classrooms **GO TO NEXT MODULE**

d ☐ Don't know **GO TO NEXT MODULE**

r ☐ Refused **GO TO NEXT MODULE**

g3. During the month of February, do you spend classroom time due to the wood stove? (Adding wood, bringing firewood, cleaning, etc)

1 ☐ Yes **GO TO g3a**

0 ☐ No **GO TO g4**

d ☐ Don't know **GO TO g4**

r ☐ Refused **GO TO g4**

g3a. (IF YES) **How much time during your day do you typically spend keeping the wood stove running?**

MARK ONE ONLY

1 ☐ Less than 20 minutes

2 ☐ 21-40 minutes

3 ☐ 41-60 minutes

4 ☐ More than 60 minutes

d ☐ Don't know

r ☐ Refused

g3b. What activities do you do to keep the wood stove running?

MARK ONE ONLY

1 ☐ Gather wood from outside

2 ☐ Feed wood to the stove

3 ☐ Clean the stove out

4 ☐ Adjust the woodstove due to smoke

5 ☐ Other (*specify*) _____

d ☐ Don't know

r ☐ Refused

g4. How often do you feel that the wood stove provides sufficient heat to your classroom during the cold months?

MARK ONE ONLY

1 ☐ Always

2 ☐ Sometimes

3 ☐ Rarely

4 ☐ Never

d ☐ Don't know

r ☐ Refused

g5. **How often do you feel that the wood stove negatively affects your breathing ability in the classroom?**

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

g6. **How often do you feel that the wood stove negatively affects your ability to see and read things clearly in the classroom?**

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

SECTION H: MODULE 7 – Private Tutoring

h1. **Have you received any private tutoring during the current academic year?**

1 ☐ Yes **GO TO h1a**
0 ☐ No **GO TO END**
d ☐ Don't know **GO TO END**
r ☐ Refused **GO TO END**

h1a. (IF YES) **In how many subjects have you received private tutoring during the current academic year?**

MARK ONE ONLY

1 ☐ 1 subject
2 ☐ 2 subjects
3 ☐ 3 subjects
4 ☐ 4 subjects
5 ☐ 5 or more subjects
d ☐ Don't know
r ☐ Refused

h1b. Please name the subjects in which you have received private tutoring during the current academic year

MARK ALL THAT APPLY

1 ☐ Math

2 ☐ Social sciences (history, civics and geography)

3 ☐ Natural sciences (physics, chemistry, biology)

4 ☐ Georgian literature and grammar

5 ☐ English, French, German or Russian

6 ☐ Other *(specify)* _____

d ☐ Don't know

r ☐ Refused

h2. On average, how often have you been receiving private tutoring in the past month?

MARK ONE ONLY

1 ☐	Daily	**GO TO h3**
2 ☐	Several times per week	**GO TO h3**
3 ☐	Once a week	**GO TO h3**
4 ☐	Once every two weeks	**GO TO h3**
5 ☐	Once a month	**GO TO h3**
6 ☐	Have not received it in the past month	**GO TO h5**
d ☐	Don't know	**GO TO h3**
r ☐	Refused	**GO TO h3**

h3. Who are you receiving private tutoring from?

MARK ALL THAT APPLY

1 ☐ Own teacher

2 ☐ Other teacher

3 ☐ Outside tutoring service (tutor is not at your school)

4 ☐ Friend

5 ☐ Relative

6 ☐ Other (*specify*) _____

d ☐ Don't know

r ☐ Refused

h4. In the past month, did you ever attend private tutoring sessions instead of going to school?

1 ☐	Yes	**GO TO h4a**
0 ☐	No	**GO TO h5**
d ☐	Don't know	**GO TO h5**
r ☐	Refused	**GO TO h5**

h4a. (IF YES) **How many times did you do this in the past month?**

MARK ONE ONLY

1 ☐ Once in the past month

2 ☐ Twice in the past month

3 ☐ Once every week

4 ☐ 2 times per week

5 ☐ More than 2 times per week

d ☐ Don't know

r ☐ Refused

h5. Do you ever miss school for private tutoring before important examinations?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

h6. Have yo ı ever missed school to study for an important examination?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

SECTION III: CONCLUSION

j1. What was the language used to complete this survey?

MARK ONE ONLY

1 ☐ Georgian

2 ☐ Azeri

3 ☐ Armenian

4 ☐ Russian

5 ☐ Other (*specify*)

j2. What is the contact information of your caregiver or guardian?

PARENT FIRST NAME: _____

PARENT LAST NAME: _____

PARENT ADDRESS: _____

ADDRESS (CONT): _____

PARENT PHONE NUMBER: _____

PARENT EMAIL: _____

Thank you for taking the time to complete this survey.

SECTION IV: FOR FIELD SUPERVISOR

1. Supervisor name

FIRST NAME: _____

LAST NAME: _____

2. Supervisor number

|__|__|

3. Completed questionnaire checked and approved by supervisor?

1 ☐ Yes

0 ☐ No

4. Date approved

|__|__| / |__|__| / |2|0|__|__|

DAY MO YEAR

SECTION V: FOR DATA ENTRY SUPERVISOR

1. Data Entry Supervisor name

FIRST NAME: _____

LAST NAME: _____

2. Data Entry Supervisor number

|__|__|

3. Completed questionnaire checked and approved by office?

1 ☐ Yes

0 ☐ No

4. Date approved

|__|__| / |__|__| / |2|0|__|__|

DAY MO YEAR

5. Name of data entry clerk for first data entry

FIRST NAME: _____

LAST NAME: _____

6. Date of first data entry

|__|__| / |__|__| / |2|0|__|__|

DAY MO YEAR

7. Name of data entry clerk for second data entry

FIRST NAME: _____

LAST NAME: _____

8. Date of second data entry

|__|__| / |__|__| / | 2 | 0 |__|__|
DAY MO YEAR

9. Data Entry Supervisor number

|__|__|

10. Survey number

|__|__|__|__|__|

APPENDIX E

TEACHER SURVEY

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Mathematica Ref. No.40306.300

MATHEMATICA
Policy Research

MCC Georgia Teacher Survey

February,
2017

SECTION I: For Field Supervisor

aa1. Supervisor name

_____

aa2. Supervisor number

|__|__|

aa3. Completed questionnaire checked and approved by supervisor?

1 ☐ Yes

0 ☐ No

aa4. Date approved

|__|__| / |__|__| / |_2_|_0_|__|__|
MO DAY YEAR

SECTION II: For Data Entry Supervisor

bb1. Data Entry Supervisor name

_____

bb2. Data Entry Supervisor number

|__|__|

bb3. Completed questionnaire checked and approved by office?

1 ☐ Yes

0 ☐ No

bb4. Date approved

|__|__| / |__|__| / |_2_|_0_|__|__|
DAY MO YEAR

bb5. Name of data entry clerk for first data entry

_____

bb6. Date of first data entry

|__|__|/ |__|__| / |_2_|_0_|__|__|
DAY MO YEAR

bb7. Name of data entry clerk for second data entry

_____

bb8. Date of second data entry

|__|__| / |__|__| / |_2_|_0_|__|__|
DAY MO YEAR

bb9. Data Entry Supervisor number

|__|__|

bb10. Survey number

|__|__|__|__|__|

SECTION III: CONSENT WORDING

cc1. The following is a survey of teachers in selected Georgian Schools. This survey is for a research project that MCA-G is carrying out to learn about teacher and student perceptions of their school environment and how the physical conditions of schools affect students' ability to learn effectively and teachers' ability to teach effectively. This survey is just for research purposes. All the information you provide will be confidential and will be combined with the responses of other teachers to help us learn about the education experiences of youth and their teachers and to help us improve the school learning environment. Your name will not be associated with any of your responses in the analysis or subsequent reporting. You can feel free not to respond to any question that you do not want to answer. You also do not have to participate in this interview if you do not wish to do so. It will take approximately 30 minutes for you to complete this survey. Would you like to participate?

1 ☐ Yes

0 ☐ No

SECTION A: Module 1 - Teacher Profile

a1. (FULL NAME OF TEACHER) **What is your first and last name?**

_____

d ☐ Don't know

r ☐ Refused

a2. (TEACHER AGE) **How old are you?**

|__|__| YEARS OLD

d ☐ Don't know

r ☐ Refused

a3. TEACHER GENDER

1 ☐ Male

2 ☐ Female

r ☐ Prefer not to say/Refused

a4. FULL NAME OF SCHOOL

_____

d ☐ Don't know

r ☐ Refused

a5. SCHOOL CODE

_____

a6. What is the highest level of education you've completed?

MARK ONE ONLY

1 ☐ Lower secondary

2 ☐ Upper secondary

3 ☐ College/professional

4 ☐ Graduate degree

d ☐ Don't know

r ☐ Refused

a7. What grade level(s) do you currently teach?

MARK ALL THAT APPLY

1 ☐ 1

2 ☐ 2

3 ☐ 3

4 ☐ 4

5 ☐ 5

6 ☐ 6

7 ☐ 7

8 ☐ 8

9 ☐ 9

10 ☐ 10

11 ☐ 11

12 ☐ 12

d ☐ Don't know

r ☐ Refused

a8. Are you currently a head teacher (tutor) for any of the grades at your school?

1 ☐ Yes

0 ☐ No **GO TO a9**

d ☐ Don't know **GO TO a9**

r ☐ Refused **GO TO a9**

a8a. (IF YES) **What grade level(s)?**

MARK ALL THAT APPLY

1 ☐ 1

2 ☐ 2

3 ☐ 3

4 ☐ 4

5 ☐ 5

6 ☐ 6

7 ☐ 7

8 ☐ 8

9 ☐ 9

10 ☐ 10

11 ☐ 11

12 ☐ 12

d ☐ Don't know

r ☐ Refused

a9. What subject(s) do you currently teach?

MARK ALL THAT APPLY

1 ☐ Math

2 ☐ Social Sciences (History, Civics, Education, Geography)

3 ☐ Natural Sciences (Physics, chemistry, biology)

4 ☐ Georgian Language and Literature

5 ☐ French, English, German, Russian

6 ☐ History

7 ☐ Other (*specify*)

_____

d ☐ Don't know

r ☐ Refused

a10. How many years of teaching experience do you have in total, across your full career?

|__|__| YEARS

d ☐ Don't know

r ☐ Refused

a11. As of now, have you fully passed the professional certification process for teachers?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

a12. What is the primary language spoken in your home?

MARK ONE ONLY

1 ☐ Georgian
2 ☐ Azeri
3 ☐ Armenian
4 ☐ Russian
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

a13. What is the primary language spoken at your school?

MARK ONE ONLY

1 ☐ Georgian
2 ☐ Azeri
3 ☐ Armenian
4 ☐ Russian
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

SECTION B: MODULE 2 - Teacher Time on Task

b1. How often were you not working at the school in the past month for any reason?

MARK ONE ONLY

1 ☐ No absences **GO TO b3**
2 ☐ 1-3 times
3 ☐ 4-7 times
4 ☐ 8-10 times
5 ☐ More than 10 times
d ☐ Don't know
r ☐ Refused

b2. Typically, what were your reasons for being absent from school in the past month?

MARK ALL THAT APPLY

1 ☐ Lack of money (for transportation, clothing, or supplies)
2 ☐ Family obligations
3 ☐ School closure
4 ☐ Illness
5 ☐ Snow
6 ☐ Rain/Flooding
7 ☐ Cold Temperature
8 ☐ Building repairs
9 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

b3. How often was your school closed in February?

MARK ONE ONLY

1 ☐ Never **GO TO b5**
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

b4. What were the reasons for your school being closed in February?

MARK ALL THAT APPLY

1 ☐ Snow
2 ☐ Rain/Flooding
3 ☐ Cold Temperature
4 ☐ Building repairs
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

b5. On an average day in the past month, approximately how many academic hours during the school day did you actively provide students with instruction?

MARK ONE ONLY

1 ☐ Less than 1 academic hour total
2 ☐ 1-2 academic hours total
3 ☐ 3-4 academic hours total
4 ☐ 5 academic hours total or more
d ☐ Don't know
r ☐ Refused

b6. What was the grade level of the first 8th or 10th grade class you taught today? If you did not teach one of these grade levels today, please note the level of your most recent class with either of these grades.

|__|__| GRADE LEVEL

d ☐ Don't know
r ☐ Refused

b7. How many students attended your most recent lesson for this class? (Please estimate the number of enrolled students and then the number of students who were actually present)

|__|__| number of enrolled students

|__|__| number of students present for most recent lesson

d ☐ Don't know
r ☐ Refused

b8. Can you give an estimate of how many students attend the lessons for this class on an average day? (Please estimate the number of enrolled students and then the number of students typically present)

|__|__| number of enrolled students

|__|__| number of students typically present

d ☐ Don't know
r ☐ Refused

b9. Do boys or girls have higher attendance rates in this class on an average day?

MARK ONE ONLY

1 ☐ Boys have higher attendance rates
2 ☐ Girls have higher attendance rates
3 ☐ Their rates are about the same
d ☐ Don't know
r ☐ Refused

b10. What are the three (3) most common causes of student absences?

		MARK 3	DON'T KNOW	REFUSED
a.	Lack of money (for transportation, clothing, or schools supplies).....	1 ☐	d ☐	r ☐
b.	Work obligations.....	2 ☐	d ☐	r ☐
c.	Family obligations.....	3 ☐	d ☐	r ☐
d.	School closure.....	4 ☐	d ☐	r ☐
e.	Illness	5 ☐	d ☐	r ☐
f.	Snow.....	6 ☐	d ☐	r ☐
g.	Rain/Flooding	7 ☐	d ☐	r ☐
h.	Cold temperature.....	8 ☐	d ☐	r ☐
i.	Excessive teacher absences	9 ☐	d ☐	r ☐
j.	Received sufficient instruction through private tutoring.....	10 ☐	d ☐	r ☐
k.	Poor school conditions ..	11 ☐	d ☐	r ☐
l.	Other (*specify*).....	12 ☐	d ☐	r ☐

_____

b11. In the past month, did any of your students ever attend tutoring sessions instead of going to school?

1 ☐ Yes **GO TO b11a**
0 ☐ No **GO TO b12**
d ☐ Don't know **GO TO b12**
r ☐ Refused **GO TO b12**

b11a. (IF YES) **How often did this happen in the past month?**

MARK ONE ONLY

1 ☐ Once in the last month
2 ☐ 2 times in the last month
3 ☐ Every week
4 ☐ 2 times per week
5 ☐ More than 2 times per week
d ☐ Don't know
r ☐ Refused

b12. How many hours per day do you spend on issues related to operating and maintaining the physical building (tasks related to the general upkeep of the school or classroom)?

MARK ONE ONLY

0 ☐ None
1 ☐ 0.25 hour
2 ☐ 0.5 hour
3 ☐ 1 hour
4 ☐ 1.5 hours
5 ☐ 2 or more hours
d ☐ Don't know
r ☐ Refused

b13. Compared to the amount of lesson time you provide now, would you like to be able to spend more time teaching each day?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

b14. Do you think that improving the building infrastructure in your school would allow you to increase the amount of time spent providing lessons and instruction each day?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

b15. How many hours per day do you spend in the school building outside of students' normal school day? Before or after the students arrive or after they have left

|__|__| HOURS SPENT **GO TO b15a**

1 ☐ None **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

b15a. (IF GREATER THAN 0) **What is that time used for?**

MARK ALL THAT APPLY

1 ☐ Lesson planning
2 ☐ Tutoring individual students
3 ☐ Tutoring groups of students
4 ☐ Operations and maintenance (tasks related to the general upkeep of the school or classroom)
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

SECTION C: MODULE 3 - Science Lab Use - FOR SCIENCE TEACHERS ONLY

c1. Do you currently teach any science classes? Here "science classes" refers specifically to biology, chemistry or physics.

1 ☐ Yes
0 ☐ No **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

c2. Does your school have a room with equipment used for teaching science and performing science experiments (also called a science lab)?

1 ☐ Yes
0 ☐ No **GO TO C8**
d ☐ Don't know **GO TO C8**
r ☐ Refused **GO TO C8**

c3. How often do you use the science lab for your science class?
MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO c8**
d ☐ Don't know
r ☐ Refused

c4. Think about the room used for the science lab and the equipment in the lab. Overall, what is the condition of these facilities for science lessons?
MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

c5. Have you ever received instruction or guidance on how to safely use the science lab?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

c6. How safe (meaning free from harm or danger) do you typically feel using your school's science lab?
MARK ONE ONLY

1 ☐ Very safe
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know
r ☐ Refused

c7. Do you feel the science lab provides adequate space and materials to effectively teach science lessons?

1 ☐ Yes, the lab is adequate
0 ☐ No, the lab needs improvements
d ☐ Don't know
r ☐ Refused

c8. How often are you able to demonstrate biology, physics or chemistry experiments?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO C10**
d ☐ Don't know **GO TO C10**
r ☐ Refused **GO TO C10**

c9. How often is there equipment available for you to demonstrate hands-on experiments?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO C10**
d ☐ Don't know **GO TO C10**
r ☐ Refused **GO TO C10**

c9a. (IF ALWAYS, SOMETIMES, OR RARELY) **What condition is the equipment in?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

c10. How often do the students conduct experiments?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

c10. How often is there enough equipment available for all students to conduct hands-on experiments?

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO C12**
d ☐ Don't know **GO TO C12**
r ☐ Refused **GO TO C12**

c11a. (IF ALWAYS, SOMETIMES OR RARELY) **What condition is the equipment in?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

c12. What type of science equipment is available for use in your science class?
(READ ANSWERS ONE AT A TIME AND MARK ONE AT A TIME)

MARK ALL THAT APPLY

1 ☐ Microscope
2 ☐ Heating devices
3 ☐ Chemicals or other materials for experiments
4 ☐ Lab coats
5 ☐ Protective eyewear
6 ☐ Beakers
7 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

c13. What type of electronic equipment is available in your science class?

MARK ALL THAT APPLY

1 ☐ Computer
2 ☐ Internet access
3 ☐ Projection screen
4 ☐ TV
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

SECTION D: MODULE 4 - Gymnasium Use

d1. Does your school have an indoor recreational facility (gym)?

1 ☐ Yes
0 ☐ No **GO TO D6**
d ☐ Don't know **GO TO D6**
r ☐ Refused **GO TO D6**

d1a. (IF YES) **What is the condition of the gym?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

d2. How often the indoor recreational facility heated to a comfortable temperature during the winter months?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

d3. How safe (meaning free from harm or danger) do you think students are when they use your school's indoor gym?

MARK ONE ONLY

1 ☐ Very safe
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know
r ☐ Refused

d4. On average, how many times per week do students use your school's indoor gym?

MARK ONE ONLY

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

d5. How often is there equipment, such as soccer balls or jump ropes, available for students to use in the indoor recreational facility?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO D6**
d ☐ Don't know **GO TO D6**
r ☐ Refused **GO TO D6**

d5a. (IF ALWAYS, SOMETIMES OR RARELY) **What is the condition of the recreational equipment available for use by the students?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

d6. Does your school have an outdoor recreational area?

1 ☐ Yes
0 ☐ No **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

d6a. (IF YES) **What is the condition of this facility?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

d7. How safe (meaning free from harm or danger) do you think students are when they use your school's outdoor recreational area?

MARK ONE ONLY

1 ☐ Very safe
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know
r ☐ Refused

d8. On average, how many times per week do students use your school's outdoor recreational area in May?

MARK ONE ONLY

1 ☐ Never **GO TO NEXT MODULE**
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

d9. How often is there equipment, for example soccer balls or jump rope, available for students to use in the outdoor recreational facility (gym, tennis courts)?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO NEXT MODULE**
d ☐ Don't know **GO TO NEXT MODULE**
r ☐ Refused **GO TO NEXT MODULE**

d9a. (IF ALWAYS, SOMETIMES OR RARELY) **What is the condition of the recreational equipment available for use by the students?**

MARK ONE ONLY

1 ☐ Perfect condition
2 ☐ Fair condition
3 ☐ Poor condition
4 ☐ Dilapidated (non-functional)
d ☐ Don't know
r ☐ Refused

SECTION E: MODULE 5 - Teacher Perceptions of Health and School Safety

e1. Overall, are you satisfied or dissatisfied with the quality of the building and equipment at your school?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

e2a. Do you agree or disagree with this statement: "Overall, the school environment is safe."

MARK ONE ONLY

1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Neither agree nor disagree
4 ☐ Disagree
5 ☐ Strongly disagree
d ☐ Don't know
r ☐ Refused

e2b. Do you agree or disagree with this statement: "Overall, the school environment is healthy."

MARK ONE ONLY

1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Neither agree nor disagree
4 ☐ Disagree
5 ☐ Strongly disagree
d ☐ Don't know
r ☐ Refused

e3. Do you think your school needs any immediate repairs or improvements?

1 ☐ Yes
0 ☐ No **GO TO e4**
d ☐ Don't know **GO TO e4**
r ☐ Refused **GO TO e4**

e3a. (IF YES) **Which items do you think need immediate repairs or improvements?**

MARK ALL THAT APPLY

1 ☐ Heating systems
2 ☐ Water systems
3 ☐ Toilet facilities
4 ☐ Indoor lighting
5 ☐ Roof
6 ☐ Stairs
7 ☐ Flooring
8 ☐ Foundation
9 ☐ Building structure
10 ☐ Recreational facilities
11 ☐ Other *(specify)*

_____

d ☐ Don't know
r ☐ Refused

e4. Is there a canteen/cafeteria at your school?

1 ☐ Yes
0 ☐ No **GO TO e4b**
d ☐ Don't know **GO TO e4a**
r ☐ Refused **GO TO e4a**

e4a. (IF YES) **How satisfied are you with the cleanliness and overall condition of the canteen/cafeteria at your school?**

MARK ONE ONLY

1 ☐ Very satisfied **GO TO e5**
2 ☐ Satisfied **GO TO e5**
3 ☐ Neither satisfied nor dissatisfied **GO TO e5**
4 ☐ Dissatisfied **GO TO e5**
5 ☐ Very dissatisfied **GO TO e5**
d ☐ Don't know **GO TO e5**
r ☐ Refused **GO TO e5**

e4b. (IF NO) **Is there a clean place in the school for students to eat their meals?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e5. Is the exterior of your school painted?

1 ☐ Yes
0 ☐ No **GO TO e6**
d ☐ Don't know **GO TO e6**
r ☐ Refused **GO TO e6**

e5a. (IF YES) **Are you satisfied with the condition of the exterior paint?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e6. Are the classroom(s) you teach in painted?

2 ☐ Yes, all of them
0 ☐ Yes, some of them
0 ☐ No **GO TO e7**
d ☐ Don't know **GO TO e7**
r ☐ Refused **GO TO e7**

e6a. (IF YES) **Are you satisfied with the condition of the paint in your classroom?**

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e7. How safe do you feel using the stairwells in your school?

1 ☐ Very safe **GO TO e8**
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know **GO TO e8**
r ☐ Refused **GO TO e8**

e7a. (IF SOMEWHAT, RARELY, OR UNSAFE) **Why do you feel unsafe? (**READ ANSWERS ONE AT A TIME AND MARK ONE AT A TIME)

MARK ALL THAT APPLY

1 ☐ Poorly lit
2 ☐ No guardrail
3 ☐ Stairs are not level
4 ☐ Stairs are uneven
5 ☐ Stairs appear damaged/unusable
6 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

e8. Do you think students are safe (meaning free from harm or danger) using the stairwells in your school?

1 ☐ Yes **GO TO e9**
0 ☐ No
d ☐ Don't know **GO TO e9**
r ☐ Refused **GO TO e9**

e8a. (IF NO) **Why do you think students are unsafe?**

MARK ALL THAT APPLY

1 ☐ Poorly lit
2 ☐ No guardrail
3 ☐ Stairs are not level
4 ☐ Stairs are uneven
5 ☐ Stairs appear damaged/unusable
6 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

e9. Have you or anyone you know, been injured at your current school due to poor building conditions?

1 ☐ Yes
0 ☐ No **GO TO e10**
d ☐ Don't know **GO TO e10**
r ☐ Refused **GO TO e10**

e9a. (IF YES) **Please check off where this/these injury/injuries occurred**

MARK ALL THAT APPLY

1 ☐ Classroom
2 ☐ Hallway
3 ☐ Stairwell
4 ☐ Indoor recreation facility
5 ☐ Outdoor recreation facility
6 ☐ Science lab
7 ☐ Restrooms/toilets
8 ☐ Other (s*pecify*)

_____

d ☐ Don't know
r ☐ Refused

e10. Do you feel satisfied or dissatisfied with the general physical environment in your classroom?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

e11. Do you consider any of the following environmental issues to be a problem in your classroom?

MARK ALL THAT APPLY

1 ☐ Heating
2 ☐ Windows
3 ☐ Air quality
4 ☐ Flooring
5 ☐ Lighting
d ☐ Other , specify _____
r ☐ Don't Know
r ☐ Refused
r ☐ None of the above

e12. Are you satisfied or dissatisfied with the condition of the equipment in your classroom, such as desks, chairs, blackboards/whiteboards, and textbooks?

MARK ONE ONLY

1 ☐ Very satisfied
2 ☐ Satisfied
3 ☐ Neither satisfied nor dissatisfied
4 ☐ Dissatisfied
5 ☐ Very dissatisfied
d ☐ Don't know
r ☐ Refused

e13. Do you consider any of the following pieces of equipment to be a problem in your classroom, meaning they do not function the way they are supposed to?

MARK ALL THAT APPLY

1 ☐ Desks
2 ☐ Chairs
3 ☐ Blackboard/whiteboard
4 ☐ Instructional materials
d ☐ Don't know
r ☐ Refused
0 ☐ None of these are a problem.

e14. Do students seem to be comfortable in your classroom at school, meaning they are comfortable with the temperature, air quality, and lighting?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

e15. Do students ever seem to be uncomfortable for any of the following reasons?

MARK ALL THAT APPLY

1 ☐ Too cold
2 ☐ Too warm
3 ☐ Poor air quality
4 ☐ Poor lighting
5 ☐ Lack of seating
6 ☐ Lack of desk space
7 ☐ Poor quality floor
7 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused
0 ☐ None of the above

e16. How safe (meaning free from harm or danger) do you feel in your classroom at school?

MARK ONLY ONE

1 ☐ Very safe **GO TO e17**
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know **GO TO e17**
r ☐ Refused **GO TO e17**

e16a. (IF SOMEWHAT, RARELY, OR UNSAFE) **Why do you feel unsafe in your classroom at school?**

MARK ALL THAT APPLY

1 ☐ Broken windows
2 ☐ Cracked walls
3 ☐ Cracked floors
4 ☐ Poor air quality
5 ☐ Water damage
6 ☐ Mold
7 ☐ Condition of the ceiling
8 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

e17. How safe (meaning free from harm or danger) are the students in your classroom at school?

MARK ONLY ONE

1 ☐ Very safe **GO TO e18**
2 ☐ Somewhat safe
3 ☐ Rarely safe
4 ☐ Unsafe
d ☐ Don't know **GO TO e18**
r ☐ Refused **GO TO e18**

e17a. (IF SOMEWHAT, RARELY OR UNSAFE) **Why do you think students are unsafe in your classroom?**

MARK ALL THAT APPLY

1 ☐ Broken windows
2 ☐ Cracked walls
3 ☐ Cracked floors
4 ☐ Poor air quality
5 ☐ Water damage
6 ☐ Mold
7 ☐ Condition of the ceiling
8 ☐ Other (*specify*) _____
d ☐ Don't know
r ☐ Refused

e18. How often do you drink the water available at school?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never **GO TO e21**
d ☐ Don't know
r ☐ Refused

e19. Do you think the water at the school is clean and safe to drink?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e20. Do students typically drink the water available at school?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e21. Do you use the toilet facilities at your school?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e22. How often do you feel that the toilet facilities at your school are clean?

MARK ONLY ONE

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

e23. How often you feel comfortable using the toilet facilities at your school?

MARK ONLY ONE

1 ☐ Always **GO TO e24**
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know **GO TO e24**
r ☐ Refused **GO TO e24**

e23a. (IF SOMETIMES, RARELY OR NEVER) **Why do you feel uncomfortable?**

MARK ALL THAT APPLY

1 ☐ Unisex facilities
2 ☐ Unclean facilities
3 ☐ Broken toilets
4 ☐ Broken stalls
5 ☐ Lack of heating
6 ☐ No sinks/running water for hand-washing
7 ☐ Toilet facility is outside
8 ☐ Other (*specify*) _____
d ☐ Don't know
r ☐ Refused

e24. How often do students seem to be comfortable using the toilet facilities at your school?

MARK ONLY ONE

1 ☐ Always **GO TO e25**
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know **GO TO e25**
r ☐ Refused **GO TO e25**

e24a. (IF SOMETIMES, RARELY OR NEVER) **Why might they feel uncomfortable?**

MARK ALL THAT APPLY

1 ☐ Unisex facilities
2 ☐ Unclean facilities
3 ☐ Broken toilets
4 ☐ Broken stalls
5 ☐ Lack of heating
6 ☐ No sinks/running water for hand-washing
7 ☐ Toilet facility is outside
8 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

e25. During the winter months, do you have difficulty breathing while in your school's hallways or classrooms (wheezing, shortness of breath, tightness in chest)?

1 ☐ Yes
0 ☐ No **GO TO e26**
d ☐ Don't know **GO TO e26**
r ☐ Refused **GO TO e26**

e25a. (IF YES) **How many times per week (on average) do you have difficulty breathing at school?**

MARK ONE ONLY

1 ☐ 1-2 times
2 ☐ 3-4 times
3 ☐ 5-6 times
4 ☐ 7 or more times
d ☐ Don't know
r ☐ Refused

e25b. How often do you feel as though your breathing difficulties have impacted your capacity to teach to the best of your abilities?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

e26. How often do the students exhibit difficulty breathing while in your school's hallways or classrooms (wheezing, shortness of breath, or report tightness in chest)?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

e27. Do you smoke?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e28. In the past month, do you find yourself regularly coughing while in school?

1 ☐ Yes
2 ☐ Sometimes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e29. In the past month, do the students seem to be regularly coughing while in school?

1 ☐ Yes
2 ☐ Sometimes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e30. On average, was the temperature inside of your classroom in February too warm, too cold, or comfortable?

MARK ONLY ONE

1 ☐ It was too warm
2 ☐ It was too cold
3 ☐ It was comfortable
d ☐ Don't know
r ☐ Refused

e31. In February, did you ever wear outerwear (such as a jacket, hat, or gloves/mittens) inside your classroom to keep warm?

MARK ONLY ONE

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

e32. In February, did the temperature in your classroom negatively impact your ability to teach?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e33. In February, how often did the temperature inside the classroom cause disruptions in lesson instruction?

MARK ONLY ONE

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

e34. Do you feel that the lighting in your classroom is sufficient for the students to read and follow lessons comfortably?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e35. How often do your students report having a difficult time clearly seeing what you write on the board in the classroom?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

e36. Over the past month, has the lighting in your classroom negatively impacted your ability to teach?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e37. In February, how often did the lighting inside of your classroom cause disruption in lesson instruction?

MARK ONLY ONE

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

e38. What is your opinion of the air quality in your classroom over the past month (smoke, specific smells, fumes etc.)?

MARK ONLY ONE

1 ☐ Good air quality
2 ☐ Fair air quality
3 ☐ Poor air quality
4 ☐ Unhealthy air quality
d ☐ Don't know
r ☐ Refused

e39. Over the past month, has the air quality in your classroom negatively impacted your ability to teach?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

e40. In February, how often did the air quality in your classroom cause disruptions in lesson instruction?

MARK ONLY ONE

1 ☐ Never
2 ☐ 1-2 times
3 ☐ 3-4 times
4 ☐ 5 or more times
d ☐ Don't know
r ☐ Refused

SECTION F: MODULE 6 - Wood Stove Heating

f1. How often is your classroom heated in cold months?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f2. Does your classroom use a wood stove for heat?

1 ☐ Yes
0 ☐ No **GO TO END**
d ☐ Don't know **GO TO END**
r ☐ Refused **GO TO END**

f3. (IF YES) **During the month of February, did you typically spend classroom time keeping the wood stove running?**

1 ☐ Yes
0 ☐ No **GO TO f4**
d ☐ Don't know **GO TO f4**
r ☐ Refused **GO TO f4**

f3a. (IF YES) **How much time during your day do you typically spend keeping the wood stove running?**

MARK ONE ONLY

1 ☐ Less than 20 minutes
2 ☐ 21-40 minutes
3 ☐ 41-60 minutes
4 ☐ More than 60 minutes
d ☐ Don't know
r ☐ Refused

f3b. What activities do you do to keep the wood stove running?

MARK ALL THAT APPLY

1 ☐ Gather wood from outside
2 ☐ Feed wood to the stove
3 ☐ Clean the stove out
4 ☐ Adjust the woodstove due to smoke
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

f4. During the month of February, do any of your students spend classroom time keeping the wood stove running?

1 ☐ Yes
0 ☐ No **GO TO f5**
d ☐ Don't know **GO TO f5**
r ☐ Refused **GO TO f5**

f4a. (IF YES) **How much time during the day do your students typically spend keeping the wood stove running?**

MARK ONE ONLY

1 ☐ Less than 20 minutes
2 ☐ 21-40 minutes
3 ☐ 41-60 minutes
4 ☐ More than 60 minutes
d ☐ Don't know
r ☐ Refused

f4b. What activities do your students do to keep the wood stove running?

MARK ALL THAT APPLY

1 ☐ Gather wood from outside
2 ☐ Feed wood to the stove
3 ☐ Clean the stove out
4 ☐ Adjust the woodstove due to smoke
5 ☐ Other (*specify*)

_____

d ☐ Don't know
r ☐ Refused

f5. How often do you feel that the wood stove provides sufficient heat to your classroom during the cold months?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f6. How often do you feel that the wood stove negatively affects your breathing ability in the classroom?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f7. How often do you feel that the wood stove negatively affects your students' breathing ability in the classroom?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f8. How often do you feel that the wood stove negatively affects your ability to see and read things clearly in the classroom?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

f9. How often do you feel that the wood stove negatively affects your students' ability to see and read things clearly in the classroom?

MARK ONE ONLY

1 ☐ Always
2 ☐ Sometimes
3 ☐ Rarely
4 ☐ Never
d ☐ Don't know
r ☐ Refused

SD1) Have you heard of SDSU?

1. Yes (go to next question)
2. No (complete the interview)

SD2) If so, how did you hear about it?

1. Representatives of SDSU came to the school
2. TV
3. Internet media (social networks, internet publications etc.)
4. Other (please. Specify) _____
5. Other (please. Specify) _____
6. Other (please. Specify) _____

SD3) would you have your student apply to attend the SDSU?

1. Definitely would apply
2. I would apply
3. I have not decided yet
4. No, I would not apply
5. Definitely would not apply

For Interviewer:

s1. What was the language used to complete this survey?

MARK ONE ONLY

1 ☐ Georgian
2 ☐ Azeri
3 ☐ Armenian
5 ☐ Other (*specify*)

_____

s2. Settlement type:

1 ☐ City
2 ☐ Village

Thank you for taking the time to complete this survey.

APPENDIX F

PREVALENCE OF BASELINE MEASURES OF TREATMENT AND CONTROL GROUPS

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This appendix presents the prevalence of baseline measures of school infrastructure and stakeholder perceptions of school infrastructure and the distributions baseline student subject exam scores for treatment and controls groups. Table F.1 contains the baseline prevalence (in percentage points) for observed infrastructure problems, stakeholders' perceptions of infrastructure quality and safety; observations and perceptions related to lighting, temperature and heating, air quality, sanitary facilities and hygiene, and science laboratories and experiment demonstrations; and reported school attendance in the sample, by treatment status.

Table F.1. Prevalence of baseline measures for treatment and control groups

Measure	Treatment group (percentage)	Control group (percentage)
Observed infrastructure problems (school)		
Largest number of bad conditions observed in walls in any classroom[a]		
0 problems	1.0	1.1
1 problem	4.8	5.6
2 problems	19.2	21.1
3+ problems	75.0	72.2
Largest number of bad conditions observed in ceiling in any classroom[a]		
0 problems	6.7	4.4
1 problem	13.5	10.0
2 problems	12.5	18.9
3+ problems	67.3	66.7
Largest number of bad conditions observed in floor in any classroom[a]		
0 problems	7.7	4.4
1 problem	14.4	16.7
2 problems	21.2	33.3
3+ problems	56.7	45.6
Largest number of problematic classroom equipment reported by any teacher		
0 problems	8.7	14.4
1 problem	18.3	24.4
2 problems	24.0	22.2
3 problems	14.4	20.0
4 problems	34.6	18.9
Number of bad conditions observed in main stairwell[b]		
0 problems	6.0	15.9
1 problem	31.0	18.2
2 problems	29.0	40.9
3 problems	30.0	21.6
4 problems	4.0	3.4
Stairs in main stairwell in school are not level[b]	68.0	53.4
Stairs in main stairwell in school are uneven[b]	44.0	35.2
No working electric lighting in one or more classrooms[a]	58.7	70.0

Measure	Treatment group (percentage)	Control group (percentage)
Perceptions of infrastructure quality and safety		
At least one teacher feels that students are rarely safe or are unsafe in their classroom (school)	37.5	17.8
Teachers' perceptions of their safety in classroom		
Very safe	71.0	74.9
Somewhat safe	23.3	19.9
Rarely safe	5.2	3.9
Unsafe	0.6	1.3
Students' perceptions of their safety in classroom		
Very safe	52.6	58.4
Somewhat safe	35.2	30.5
Rarely safe	8.0	7.0
Unsafe	4.3	4.1
Students' perceptions of their safety in classroom *(male students)*		
Very safe	54.6	60.3
Somewhat safe	32.9	28.5
Rarely safe	7.8	7.4
Unsafe	4.7	3.9
Students' perceptions of their safety in classroom *(female students)*		
Very safe	50.4	56.4
Somewhat safe	37.6	32.5
Rarely safe	8.3	6.7
Unsafe	3.8	4.4
Teachers' perception of safety of using stairwells in the main school building		
Very safe	59.4	65.5
Somewhat safe	32.0	27.5
Rarely safe	4.1	3.6
Unsafe	4.5	3.4
Students' perception of safety when using stairwells in the main school building		
Very safe	52.0	58.5
Somewhat safe	35.8	30.5
Rarely safe	7.2	6.8
Unsafe	5.1	4.3
Students' perception of safety when using stairwells in the main school building *(male students)*		
Very safe	53.5	60.1
Somewhat safe	33.7	29.4
Rarely safe	7.4	6.6
Unsafe	5.4	3.9
Students' perception of safety when using stairwells in the main school building *(female students)*		
Very safe	50.3	56.8
Somewhat safe	38.0	31.6
Rarely safe	7.0	7.0
Unsafe	4.7	4.6

Measure	Treatment group (percentage)	Control group (percentage)
Lighting		
Students report ever have difficulty reading because of classroom lighting	28.8	26.8
Students report ever have difficulty reading blackboard because of classroom lighting	65.4	64.0
Students feel classroom lighting negatively affected ability to concentrate on school work in past month	19.9	19.3
Teachers feel classroom lighting is insufficient for students	30.1	24.8
Temperature and heating		
Classrooms without functional central heating in school (classroom)	43.7	40.4
At least one classroom without functional central heating in school (school)	51.9	55.6
Indoor gym does not have functional central heating[c]	51.2	43.5
Median temperature measured in classrooms (classroom)[d]	16.5 C	16.5 C
Temperature measured in classrooms below 15 C (59 F)[d]	34.8	33.1
Median of lowest temperature measured across classrooms in school (school)[d]	15.0 C	14.6 C
Median temperature measured in indoor gym[e]	10.7 C	10.0 C
Students feel classroom is too cold on average in February[d]	40.4	30.8
Students feel temperature negatively affected ability to concentrate in February[d]	31.6	29.6
Teachers feel classroom is too cold on average in February[d]	23.2	18.0
Teachers feel temperature negatively affected ability to teach in February[d]	11.1	9.9
Air quality		
Highest level of PM 2.5 in classrooms measured in the winter (school)[d]		
0–9 ppm	31.3	25.0
10—–9 ppm	37.5	28.1
20+ ppm	31.3	46.9
Level of PM 2.5 in indoor gym measured in the winter[e]		
0–9 ppm	32.1	31.0
10–19 ppm	42.9	37.9
20+ ppm	25.0	31.0
Highest level of PM 10 in classrooms measured in the winter (school)[d]		
0–19 ppm	37.5	28.1
20–39 ppm	28.1	28.1
40+ ppm	34.4	43.8
Level of PM 10 in indoor gym measured in the winter[e]		
0–19 ppm	32.1	31.0
20–39 ppm	35.7	34.5
40+ ppm	32.1	34.5
Student perception of air quality in classroom visited in the winter[d]		
Good	13.4	14.9
Fair	47.8	48.3
Poor	22.2	23.7
Unhealthy	16.6	13.1

Measure	Treatment group (percentage)	Control group (percentage)
Teachers perception of air quality in classroom visited in the winter[d]		
Good	22.7	29.7
Fair	59.1	55.6
Poor	13.1	10.2
Unhealthy	5.2	4.5
Students visited in the winter report difficulty breathing in classrooms and hallways[d]	21.9	24.1
Students visited in the winter report coughing regularly in school[d]	42.8	42.7
Teachers visited in the winter report coughing regularly in school[d]	15.0	19.1
Students visited in the winter feel air quality affected ability to concentrate on school work in past month[d]	31.2	28.5
Students visited in the winter feel air quality disrupts instruction[d]	28.8	25.9
Teachers visited in the winter feel air quality affected ability to teach in past month[d]	15.9	10.9
Teachers visited in the winter feel air quality disrupts instruction[d]	17.3	14.1
Sanitary facilities and hygiene		
Presence of flush toilets in primary sanitary facility		
No flush toilets present (pit latrine)	60.6	51.1
Flush toilets present, but not working	22.1	34.4
Functional flush toilets present	17.3	14.4
No soap available near the toilets or latrines	76.0	71.1
Odor observed in the sanitary facilities	83.7	85.6
No running water for hand washing available near the toilets or latrines	49.0	48.9
Teachers are comfortable with using sanitary facilities in school		
Always	35.1	45.5
Sometimes	21.0	19.2
Rarely	13.6	11.0
Never	30.4	24.4
Students are comfortable with using sanitary facilities in school		
Always	12.5	16.4
Sometimes	14.0	15.9
Rarely	17.6	17.0
Never	55.9	50.6
Students are comfortable with using sanitary facilities in school *(male students)*		
Always	13.2	17.4
Sometimes	14.3	15.9
Rarely	17.1	16.5
Never	55.5	50.2
Students are comfortable with using sanitary facilities in school *(female students)*		
Always	11.6	15.4
Sometimes	13.8	16.0
Rarely	18.2	17.6
Never	56.4	51.1
Students are comfortable with using sanitary facilities in school *(no flush toilet present in primary facility)*		
Always	11.7	13.8
Sometimes	13.2	14.5
Rarely	17.3	16.7
Never	57.9	55.0

Measure	Treatment group (percentage)	Control group (percentage)
Students are comfortable with using sanitary facilities in school *(flush toilet present in primary facility, but not working)*		
Always	10.3	17.7
Sometimes	13.3	16.8
Rarely	16.8	18.6
Never	59.6	46.9
Students are comfortable with using sanitary facilities in school *(functioning flush toilet present in primary facility)*		
Always	17.1	19.4
Sometimes	17.3	17.1
Rarely	19.4	14.8
Never	46.3	48.7
Teachers feel water at school is not clean and safe to drink (or never drink the water at school)	31.5	25.8
Students feel water at school is not clean and safe to drink	40.5	39.4
Science laboratories and experiment demonstrations		
No science laboratory in school	55.8	50.0
Frequency students report using a science laboratory[f]		
Often	13.2	11.5
Sometimes	35.7	36.5
Rarely	31.9	36.0
Never	19.2	15.9
Frequency students report being shown science experiments		
Often	6.1	6.4
Sometimes	32.9	36.9
Rarely	39.2	39.2
Never	21.8	17.5
Frequency students report conducting science experiments[g]		
Often	4.1	4.2
Sometimes	27.0	29.8
Rarely	39.0	39.7
Never	29.9	26.2
School attendance		
Frequency students reported being absent from school in past month		
0 absences	17.1	16.8
1–2 absences	48.4	47.9
3 or more absences	34.5	35.3
Frequency students reported being absent from school in past month (male students)		
0 absences	17.9	16.3
1–2 absences	45.0	43.7
3 or more absences	37.1	40.0
Frequency students reported being absent from school in past month (female students)		
0 absences	16.3	17.4
1–2 absences	52.1	52.3
3 or more absences	31.6	30.3

Measure	Treatment group (percentage)	Control group (percentage)
Frequency teachers reported being absent from school in past month		
0 absences	88.2	90.8
1–3 absences	10.4	7.8
4 or more absences	1.4	1.4
Class time spent on instruction		
Average class time spent on instruction per day in past month *(reported by students)*		
Less than 1 hour	12.3	15.7
1–2 hours	13.9	13.0
3–4 hours	19.3	20.4
5 hours or more	54.5	50.9
Average class time spent on instruction per day in past month *(reported by teachers)*		
Less than 1 hour	5.4	3.2
1–2 hours	27.6	27.0
3–4 hours	46.3	49.2
5 hours or more	20.6	20.6

Sources: Baseline MCC Georgia School Infrastructure, Student, and Teacher Surveys (2015, 2016, 2017).

Notes: Treatment group samples without restrictions included 104 schools, between 4,834 and 6,143 students, and between 812 and 884 teachers (treatment group samples with restrictions described in footnotes b, c, d, and e below). Control group samples without restrictions included 90 schools, between 4,852 and 5,332 students, and between 739 and 786 teachers.

[a] School-level measure across classrooms included indoor gymnasium (if present).

[b] Sample included only schools with two or more levels (100 treatment schools and 88 control schools).

[c] Sample included only schools with an indoor gym (86 treatment schools and 69 control schools).

[d] Sample included only schools visited in winter months (in 2016–2017 cohort): 32 treatment schools, between 1,981 and 2,105 treatment students, and between 289 and 293 treatment teachers. The means for the control group included 32 schools, between 2,119 and 2,239 students, and between 305 and 316 teachers.

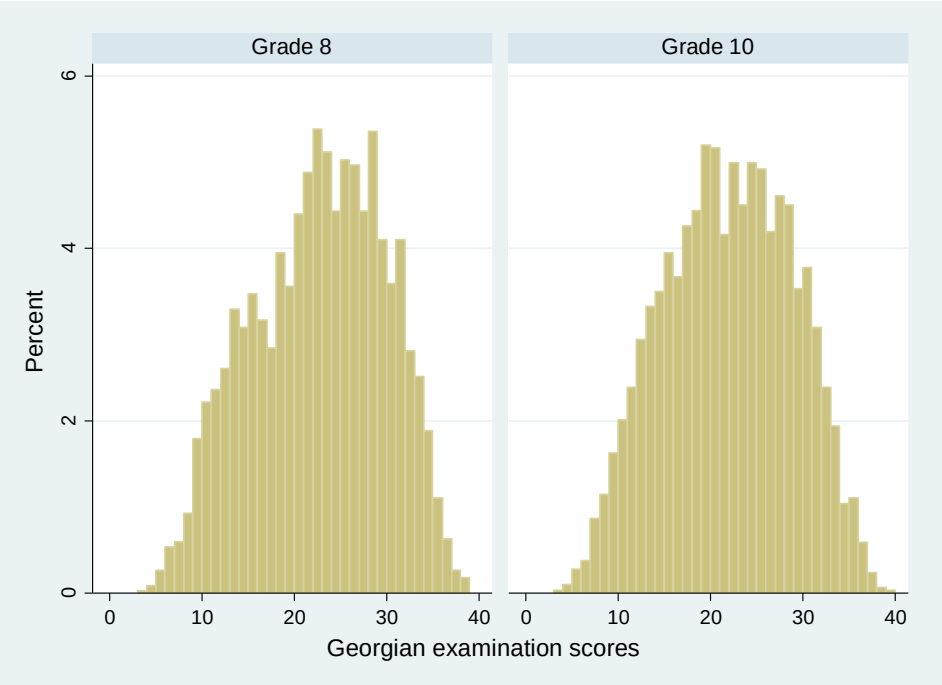
[e] Sample included only schools visited in winter months (in 2016–2017 cohort) with an indoor gym (28 treatment schools and 29 control schools).

[f] Sample included only students who reported that school has a science laboratory (3,342 treatment students and 3,128 control students).

[g] Sample included only students who reported that teachers rarely, sometimes, or always demonstrated science experiments (5,113 treatment students and 4,364 control students).

We present the distributions of subject exam scores for grade 8 and grade 10 students in control and treatment schools in Figures F.1–F.6, below. The distributions for treatment and control group students are very similar.

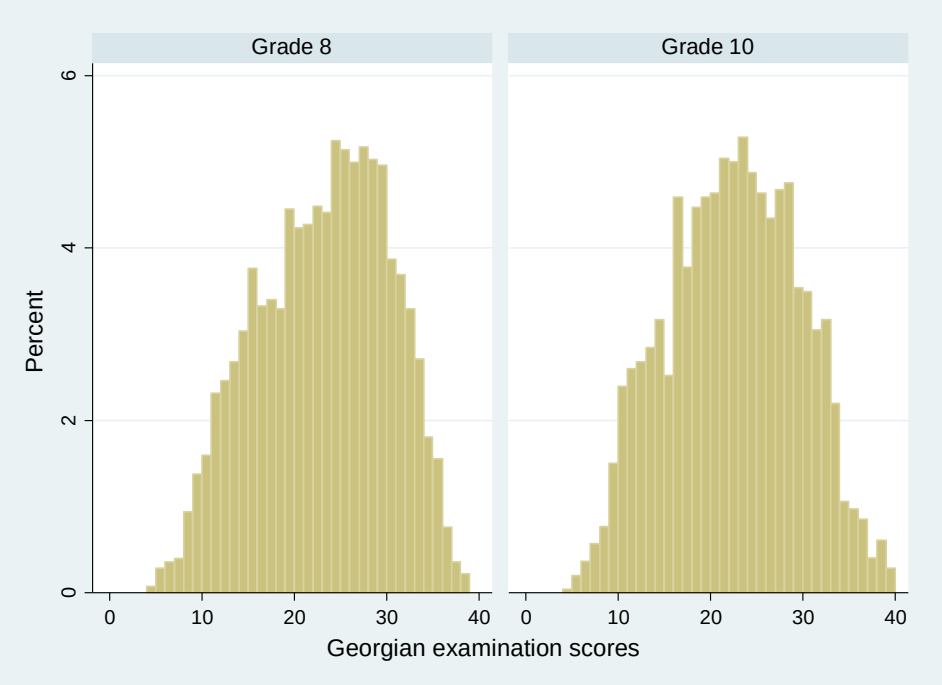
Figure F.1. Georgian examination scores in treatment schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,341 8grade 8 students and 2,885 grade 10 students in treatment schools.

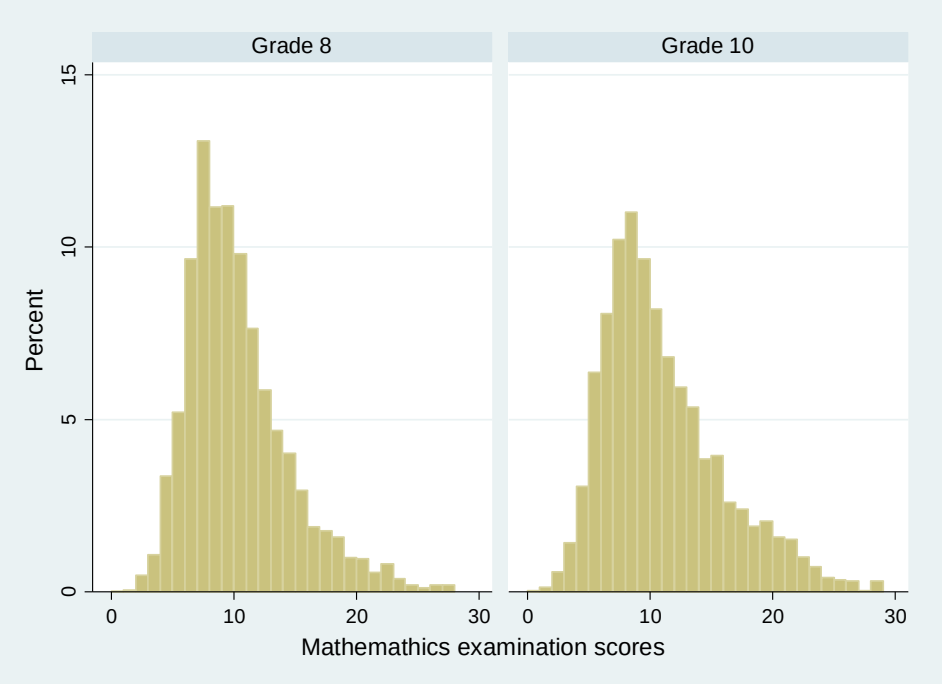
Figure F.2. Georgian examination scores in control schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 2,763 grade 8 students and 2,460 grade 10 students in control schools.

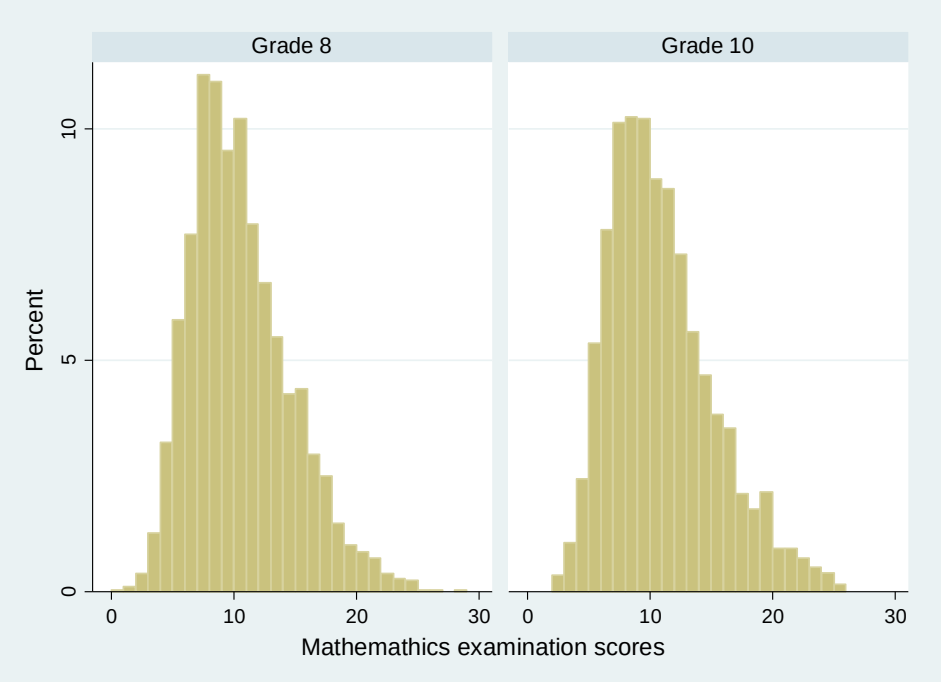
Figure F.3. Mathematics examination scores in treatment schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,333 grade 8 students and 2,876 grade 10 students in treatment schools.

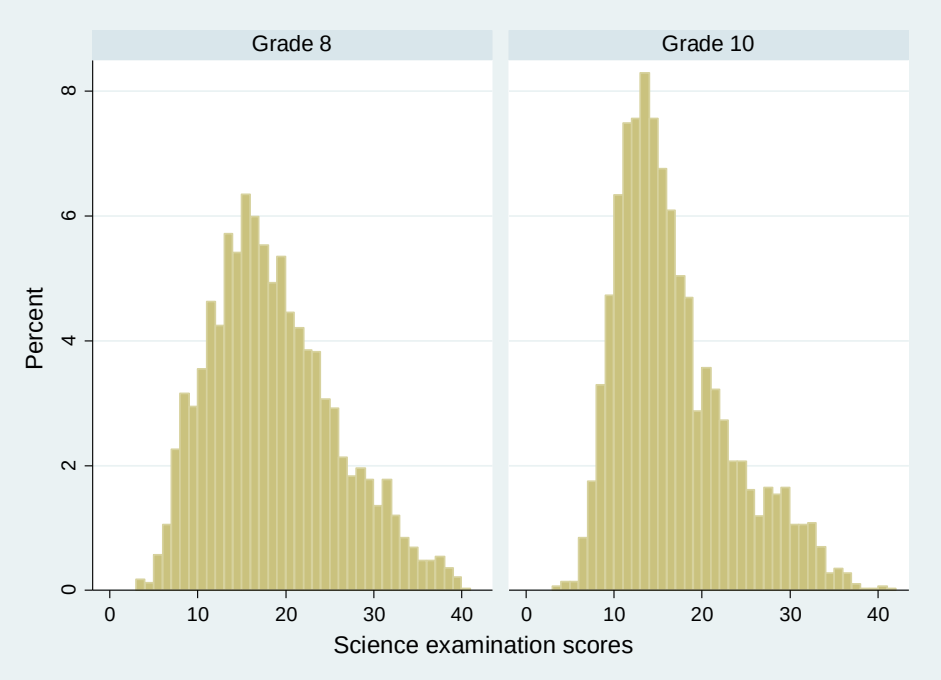
Figure F.4. Mathematics examination scores in control schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 2,758 grade 8 students and 2,457 grade 10 students in control schools.

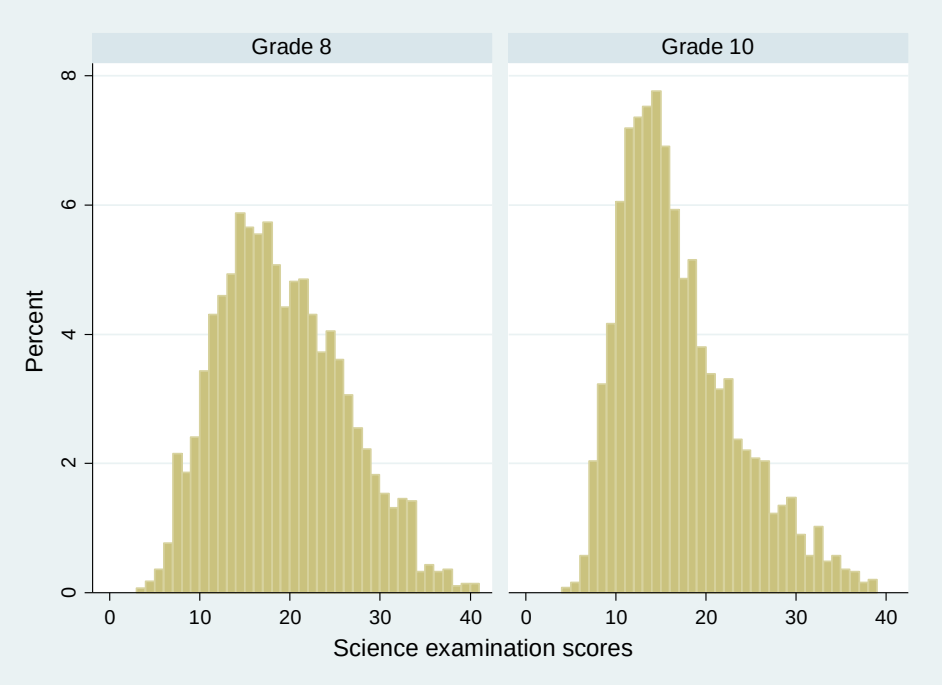
Figure F.5. Science examination scores in treatment schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 3,324 grade 8 students and 2,857 grade 10 students in treatment schools.

Figure F.6. Science examination scores in control schools, by grade



Sources: Baseline MCC Georgia Student Subject Examinations (2015, 2016, 2017).

Notes: Samples included 2,740 grade 8 students and 2,447 grade 10 students in control schools.

APPENDIX G

CONSTRUCTION OF OUTCOME INDICES

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This appendix discusses an approach to reducing the amount of data to be presented in the report. Data reduction is necessary for several reasons. The research team collected hundreds of data items through a baseline school infrastructure assessment, student surveys, and teacher surveys. Reporting separately on each item would be impractical and could potentially mislead readers because of something known as the multiple comparisons problem. The multiple comparisons problem arises when researchers report the results of a large number of hypothesis tests, where some of them are bound to be falsely rejected due to pure chance. This is the same logic whereby flipping a coin many times will eventually yield "streaks" of all heads or all tails, even if the coin is fair. As described in Section III.3, we reduce the amount of data to report on by constructing indices for most aspects of baseline school infrastructure and for student exposure to science facilities.

Each index is a weighted average of three or more measures collected in the baseline surveys related to the same topic. We identified the weights assigned to each the related measures (or factors) using a principal components analysis (PCA) (see, for example, Dunteman 1989). This is a method of index-construction that assigns a greater weight to measures related to the underlying topic that explain a greater amount of the variation in the topic across the sample (and less weight to measures that explain less of the variation). PCA examines how a number of factors are correlated with one another and condenses this information into linear combinations of the factors called "principal components," equal to the number of factors. We adopted the weights estimated for the "first principal component" because, by design, PCA captures as much of the correlation between the factors as possible in the first principal component and therefore accounts for the largest amount of variability in the related measures.

Tables G.1 through G.7 present the "factor score" of the first principal component estimated for each index used in the baseline sample.[19] The factor score is equal to the proportion of variance explained by the principal component multiplied by the number of factors in the principal component. Thus, the factor score can be interpreted as the number of variables "worth" of variance that is captured by the first principal component (for example, a factor score of 2 means that the component captures two variables worth of variance). The factor scores for the first principal components we estimated ranged from 1.46 to 2.68, so all of the first principal components captured more than one variable worth of the variance between the factors. In other words, all of our constructed indices had more explanatory power than any single factor would have in isolation.

Tables G.1 through G.7 present the "factor loadings" of the first principal component estimated for each index used in the baseline report. The factor loadings for a particular principal component are defined as the correlation between each factor and the principal component. We adopted the factor loadings of the first principal component of each principal component as weights to construct our indices. Following Stevens (1992) and Hair et al. (1998), we adopted a cut-off of 0.40 to evaluate whether each factor has practical significance and excluded one factor that did not meet this cut-off.[20] (We excluded a measure of whether the main school building is

[19] By construction, the first principal component has the highest factor score in the PCA.

[20] Hair et al. (1998) suggest different cut-offs for different sample sizes and suggest a cut-off of 0.40 for a sample size of 200, which is close to the size of our full sample of schools (194).

painted from the "Better condition of school building exterior" index presented in Table F.1 because its factor loading was only 0.34.) As a result, all of the factor loadings used to construct the indices are larger than 0.40.

Table G.1. Results of first principal component for PCA of "Better condition of school building exterior" index

	Factor loadings
Number of problems not observed in roof of main school building (0–5)[a]	0.59
Condition of rain water drainage system on the roof of main school building (ranked 1–5)[b]	0.65
Condition of main entrance doors of main school building (ranked 1–5)[b]	0.47
Measures excluded because factor loading was below 0.40 threshold:	
Exterior of main building is painted	
Factor score	**1.47**
Proportion of variance explained by first principal component	0.49

Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).

Notes: Sample included 192 schools.

[a] Problems included (1) cracks, (2) water damage, (3) rotten or deteriorated material, (4) mold, and (5) holes.

[b] Ranked categories included (1) there is no rain drainage system, (2) dilapidated (nonfunctional), (3) poor condition, (4) fair condition, and (5) perfect condition.

Table G.2. Results of first principal component for PCA of "Better condition of walls, ceilings, and floors in all school classrooms and indoor gym" index

	Factor loadings
Smallest number of problems not observed in walls in all classrooms and indoor gym in school (0–5 problems)[a]	0.59
Smallest number of problems not observed in ceilings in all classrooms and indoor gym in school (0–5 problems)[a]	0.59
Smallest number of problems not observed in floors in all classrooms and indoor gym in school (0–5 problems)[b]	0.54
Factor score	**1.96**
Proportion of variance explained by first principal component	0.65

Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).

Notes: Sample included 194 schools.

[a] Problems included (1) cracks, (2) water damage, (3) mold, (4) chipped or peeling paint, and (5) holes.

[b] Problems included (1) uneveness, (2) cracks, (3) holes, (4) water damage, and (5) missing floor material/tiles.

Table G.3. Results of first principal component for PCA of "Better condition of stairs in main school building" index

	Factor loadings
Number of problems not observed in stairs in main school building (0–4 problems)[a]	0.47
Stairs are level	0.63
Stairs are evenly spaced	0.62
Factor score	**2.26**
Proportion of variance explained by first principal component	0.75

Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).

Notes: Samples included 188 schools with two stories.

[a] Problems included (1) unstable rails, (2) visible cracks, (3) holes in steps, and (4) missing steps.

Table G.4. Results of first principal component for PCA of "Better air quality in school classrooms" index

	Factor loadings
Difference between the highest level of PM 2.5 measured across all classrooms in school and the highest level of PM 2.5 measured across all schools (0–500 ppm)	0.55
Difference between highest level of PM 10 measured across all classrooms in school and the highest level of PM 10 measured across all schools (0–1000 ppm)	0.54
All classrooms in school have CO levels at or below 1 ppm	0.45
Smoke was not observed in any classroom in school	0.45
Factor score	**2.77**
Proportion of variance explained by first principal component	0.69

Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).

Notes: Sample included 194 schools.

Table G.5. Results of first principal component for PCA of "Better condition of classroom teaching facilities" index

	Factor loadings
All classrooms in school have working electric lights	0.51
All classrooms in school have lockable doors	0.61
All classrooms in school have a blackboard that is visible from the back of the classroom	0.40
Smallest number of types of class equipment that function properly reported by teachers in school (0–4 types of equipment) [a]	0.46
Factor score	**1.63**
Proportion of variance explained by first principal component	0.41

Sources: Baseline MCC Georgia School Infrastructure and Teacher Surveys (2015, 2016, 2017).

Notes: Sample included 194 schools.

[a] Types of equipment included (1) desks, (2) chairs, (3) blackboard/whiteboard, and (4) instructional materials.

Table G.6. Results of first principal component for PCA of "Specialized teaching facilities present" index

	Factor loadings
School has an outdoor recreation area	0.58
School has an indoor gymnasium	0.66
School has a science laboratory	0.48
Measures excluded because of low variation in responses:	
School has a computer laboratory (only 1 school without)	
School has a library (only 6 schools without)	
Factor score	**1.85**
Proportion of variance explained by first principal component	0.62

Sources: Baseline MCC Georgia School Infrastructure Surveys (2015, 2016, 2017).

Notes: Sample included 194 schools.

Table G.7. Results of first principal component for PCA of "Student more frequently exposed to a science lab or science demonstrations or conducted science experiments" index

	Factor loadings
Student sometimes or always uses science laboratory for biology, chemistry, or physics classes[a]	0.54
Student reports that teachers sometimes or always demonstrate science experiments[b]	0.61
Student sometimes or always conducts experiments[b]	0.59
Factor score	**2.34**
Proportion of variance explained by first principal component	0.78

Sources: Baseline MCC Georgia Student Surveys (2015, 2016, 2017).

Notes: Sample included 9,531 students.

[a] Alternative frequencies reported included "rarely," "never," or school does not have a science laboratory.

[b] Alternative frequencies reported included "rarely" or "never."

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