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DOES CIVIC EDUCATION IMPACT PRIMARY SCHOOL STUDENTS' CIVIC OUTCOMES? EXPERIMENTAL EVIDENCE FROM LIBERIA

Pre-Analysis Plan

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CONTENTS

ACRONYMS

ET   Evaluation team

ICCS   International Civic and Citizenship Education Study

IE   Impact evaluation

IP   Implementing partner

IRT   Item Response Theory

MoE   Ministry of Education

PTA   Parent-teacher association

RQ   Research question

SD   Standard deviation

SES   Socioeconomic status

ToC   Theory of change

BACKGROUND

STUDY OVERVIEW

A new civic education curriculum is being implemented in public primary schools in Liberia by the country's Ministry of Education (MoE) and is supported by local implementing partners (IPs).

The civic education intervention—which includes teachers receiving textbooks, teacher guides, and training on the new civic education curriculum and students receiving textbooks and classroom instruction—will last five years and aims to ultimately reach 10 percent of Liberian primary school students. This program is being piloted in 70 public primary schools in the 2023–2024 school year in three counties: Grand Bassa, Montserrado, and Nimba.

An evaluation team (ET) from New York University and The Cloudburst Group are conducting an impact evaluation (IE) to understand the program's impacts on students' civic outcomes. The evaluation aims to inform further scale-up of the program in Liberia. The review of existing literature also demonstrates the wider need to better understand the impact of civic education in low-income emerging democracies and post-conflict settings, especially at the primary school level.

MOTIVATION

Like many emerging democracies, Liberia continues to face setbacks to democratic consolidation and its democratic processes and systems face a host of challenges, including weak institutions, corruption, weak rule of law, marginalization of minorities, and limitations on the exercise of basic democratic rights (Freedom House, 2021; Mainwaring & Bizzaro, 2019). Scholars have long argued that citizens with strong democratic values are needed to build and sustain a democracy (Almond and Verba, 1963; Dewey, 1916; Lipset, 1959) and highlighted the specific role education can play in promoting political attitudes and beliefs that encourage democracy (Dewey, 1916; Lipset, 1959). Civic education has been specifically developed and delivered with this goal in mind, aiming to develop in students the civic knowledge, skills, attitudes, and behaviors that will allow them to actively engage in a democratic society (Carnegie Corporation of New York & CIRCLE, 2003; Torney-Purta et al., 2001). In post-conflict societies, civic education is often also expected to foster peace, stability, and social cohesion by building a collective civic identity (Levine & Bishai, 2010; Quaynor, 2012). In the Liberian context, the MoE and IPs hope that introducing the new civic education curriculum into primary schools will increase students' understanding of democratic systems, instill in students a sense of civic responsibility, and ultimately fortify Liberian democracy through increased civic participation and social cohesion and reduced lawlessness and political violence.

Previous research on civic education provides insight into what impacts may be expected and what factors may increase the effectiveness of Liberia's civic education program. While several studies across established and emerging democracies have found strong links between the level of civic education students receive and students' civic knowledge, skills, attitudes, and behaviors (Bachner, 2010; Callahan et al., 2010; Niemi & Junn, 1998; Keating et al., 2010; Saha, 2000; Schulz et al., 2010; Torney-Purta et al., 2001), their observational design limits the ET's ability to draw conclusions on civic education's causal effects. A growing evidence base arising from program evaluations on the impact of civic education interventions on student civic knowledge, skills, attitudes, and behaviors—mostly quasi-experimental in nature—has found more mixed results. This existing literature suggests that civic education programs can effectively improve student civic knowledge (Finkel & Ernst, 2005; Maheo, n.d.; McDevitt & Kiousis, 2004; Owen, 2015; Pasek et al., 2008), but their impact on student civic skills, attitudes, and behaviors is less consistent. While some studies found civic education effectively impacted student skills (Soule, 2002), shifted attitudes (Slomczynski & Shabad, 1998), and changed behaviors (Center for Civic Education, 2005;

Gill et al., 2018; Owen, 2015), other studies found little to no effects of civic education on student skills, attitudes, or behaviors (Finkel & Ernst, 2005; Manning & Edwards, 2014; NORC, 2019). Studies have consistently found, however, that ensuring civic education is delivered to students using participatory approaches, such as role-playing and dramatizations, in an open classroom environment that encourages students to openly express themselves and promotes discussions on controversial topics can increase civic education's influence on student skills, attitudes, and behaviors, especially when delivered by well-trained, high-quality teachers whom students consider to be competent and credible (Campbell, 2008; Claire, 2004; Finkel & Ernst, 2005; Hahn, 1998; Hoskins et al., 2021; Niemi & Junn, 1998; Soule, 2002; Torney-Purta, et al 2001). Past research also suggests that emerging post-conflict democracies face special challenges in the implementation of civic education and its effectiveness (Levine & Bishai, 2010; Mason, 2009; Quaynor, 2012).

INTERVENTION

The civic education intervention to be evaluated entails 1) teachers receiving textbooks and training on the new civic education curriculum and 2) students receiving textbooks and classroom instruction. In addition, monthly or bi-monthly school visits will be conducted by the IP to monitor teachers' adherence to the curriculum and determine where additional teacher training or support may be needed.

RESEARCH QUESTIONS

The IE will evaluate the effectiveness of the program to answer the primary research question (RQ):

RQ1: What is the impact of the civic education intervention on students' civic knowledge, attitudes, and behaviors?

The evaluation will also explore several secondary questions related to pre-intervention conditions, the students that benefit most from the curriculum, and the parts of the theory of change (ToC) that worked the most and least as expected. The secondary RQs ask:

RQ2: What are students' initial levels of civic knowledge, skills, attitudes, and behaviors? Which student characteristics predict variation in these outcomes?

RQ3: Which students benefit the most from the intervention?

RQ4: Based on both implementation and impact data, which parts of the ToC seem to have worked the most and least as expected? What are the lessons learned from this pilot and what are the policy implications of the results for the Government of Liberia, USAID/Liberia and its IPs, and the broader, global civic education community?

The ET answered RQ2 using the baseline data by calculating students' average assessment scores as the average proportion answered correctly, calculating the average responses on attitude and behavior measures, and comparing these average outcomes by county, gender, grade, socioeconomic status (SES), ethnic group, and language spoken at home. This pre-analysis plan thus focuses on how the ET will analyze the data from both baseline and endline to answer RQ1, RQ3, and RQ4.

HYPOTHESIS

Following RQ1, the ET hypothesizes that the civic education intervention will result in improvements in students' civic knowledge, attitudes, and behaviors.

Following RQ3, the IE also plans to explore heterogeneous effects for students among particular subgroups, though it is likely that at least some of these analyses will be suggestive, as the ET will likely lack statistical power to determine the statistical significance of interaction effects. The ET included subgroups to analyze variation in students' initial level of civic outcomes (per RQ2) as previous research predicts differential outcomes.[1] The specific subgroups of interest include:

- Male vs. female students.
- Low-income students vs. high-income students.
- Grade three students vs. grade four students.

The IE will also collect implementation and impact data on specific factors that the ET expects to moderate the impact of the intervention as stipulated by the ToC. While these factors will help explore varying levels of impact, the ET does not have a hypothesis derived from RQ4.

RESEARCH STRATEGY

SAMPLING

SAMPLING FRAME

The sampling frame for the study includes public primary schools in the counties of Grand Bassa, Montserrado, and Nimba. Local stakeholders selected these three counties to maximize variability in factors that are likely to affect the implementation of the new curriculum.[2] As of 2020, there is a total of 6,113 primary schools in Liberia and the ET estimates that 44 percent of them are public. There is a total of 139 primary schools in Grand Bassa (~88 percent of which are public) 2,210 primary schools in Montserrado (~10 percent of which are public), and 797 primary schools in Nimba (~68 percent of which are public).[3] In each of these counties, and based on consultation with IPs, the ET excluded from the sample frame schools that are not reasonably accessible by car, motorbike, or walking.

SAMPLE

The sample for the study included 140 schools stratified equally by county (44 schools in Grand Bassa, 48 in Montserrado, and 48 in Nimba). With this target sample, the ET expects to be able to detect average differences between experimental groups (see the section on randomization below). To reconcile representativeness and the feasibility of program implementation and data collection, the ET selected

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[1] As the ET already expects these analyses to likely lack statistical power, exploring heterogeneous effects (EQ3) among subgroups with different ethnicities is excluded, as the ET expects even smaller subgroup sample sizes.

[2] Based on communications with IPs, the ET understands that the program team considered the following factors when selecting the three counties: overall population density and concentration of student populations, poverty index, current levels of trust in public institutions, level of information consumption, and literacy rates.

[3] Total primary schools across Liberia and by county are reported in the Liberia Education Statistics Report 2019–2020 (MoE, 2020), but the total public primary schools by county are not reported. The ET thus estimated these figures based on the portion of total schools that were reported to be public in these counties in the Liberia Education Statistics Report 2015–2016 (MoE, 2016b).

schools from the largest districts in each country that were adjacent to each other. Thus, the results of the IE will generalize to public primary schools in large districts in the three sampled counties (Grand Bassa, Montserrado, and Nimba).

In schools, the ET randomly selected one grade three section and one grade four section, for a total of 280 sections. In each section, the ET aimed to randomly select 10 students for data collection (even if all students in those sections will receive the intervention).

The ET collected baseline data from September 25, 2023–December 4, 2023. The ET collected data at a total of 141 schools (70 treatment and 71 control) and assessed a total of 2,116 students. During the baseline data collection, enumerators ultimately collected data from 141 schools, as four control schools were dropped from the sample due to no longer being in operation, and enumerators visited all five control replacement schools the ET provided. Additionally, due to low enrollment in many schools, selecting 10 students per section (i.e., 20 students per school) was not always possible. On average, the ET assessed 15 students per school.

STATISTICAL POWER

The IE seeks to estimate the impact of an intervention on civic education outcomes, for which there has been relatively little prior experimental research in low- and middle-income countries or with primary school students, and (to the ET's knowledge) none in Liberia. Owing to the lack of previous, relevant studies, the ET does not have all the requisite information to estimate the power for all outcomes in the IE (e.g., the standard deviation [SD] of each outcome in the control group or the expected effect size). Therefore, the ET has performed statistical power calculations for standardized outcomes, which by construction have a mean of 0 and an SD of 1. The ET plans to standardize some main outcomes of the study (e.g., scores on the student assessments) in this fashion. For those outcomes, with 140 "clusters" (schools) and a "cluster size" (number of students per school) of 15, equal probability of assignment to control and treatment groups, and standard assumptions (0.05 significance level and 0.8 statistical power), a correlation between baseline and endline outcomes of 0.4 and an intra-cluster correlation of 0.1, the study would be powered to detect average treatment effects of 0.17 SDs. This is a relatively large effect size in the student achievement literature, but it seems plausible in this context, given that the ET will measure the impact on the materials students are expected to learn during their civic education in school. It is important to consider that none of these statistical power calculations factor in the possibility of stratifying the sample, which is likely to increase power in the impact estimation.

RANDOMIZATION

The ET randomly assigned the 140 schools in the sample either to a treatment group (70 schools that are receiving the intervention in the 2023–2024 school year) or to a control group (70 schools that are not receiving it). In the 70 treatment schools, all grade three and grade four students will receive the intervention. In the 70 control schools, no students in grade three or grade four, or in any other grade, will receive it. However, IPs do intend to implement the civic education program in the 70 control schools during the 2024–2025 school year.

ATTRITION

While reliable data on student dropout rates in Liberia is not readily available, the World Bank estimates that 17 percent of students drop out of primary school after grade one (MoE, 2016a). The ET thus expects there to be some attrition of students from schools and from the study, which would reduce the statistical power by reducing the sample size. The ET collected student information at baseline with which students could be tracked even if they are no longer at school during the endline.

FIELDWORK

BASELINE INSTRUMENTS

Student assessment: The assessment seeks to measure students' knowledge of the civic education curriculum. First, the ET identified the content and cognitive domains that should be included by drawing on the assessment framework of the International Civic and Citizenship Education Study (ICCS) (Schulz et. Al., 2016). Specifically, the ET compared the content and cognitive domains in the ICCS to the grade three and four textbooks from the civic education curriculum in Liberia to identify areas of overlap and create a Liberia civic education assessment framework. For example, one cognitive domain that is included in the ICCS assessment framework and that is also covered in Liberia's textbooks is civic society and systems defined as "the formal and informal mechanisms and organizations that underpin both the civic contracts that citizens have with their societies and the functioning of societies themselves" (Schulz et al., 2016, p.15). This domain, in turn, includes three sub-domains: citizens (i.e., "civic relationships between individuals and groups of citizens and their societies" [Schulz et al., 2016, p.16]), state institutions (i.e., "institutions central to the processes and enacting of civic governance and legislation in the common interest of the people they represent and serve" [Schulz et al., 2016, p.16]), and civil institutions (i.e., "institutions that can mediate citizens' contact with their state institutions and allow citizens to actively pursue many of their roles in their societies" [Schulz et al., 2016, p.16]).

The ET then took several additional steps. First, the ET developed criteria for each sub-domain based on how they were covered in the textbooks. For example, the first criterion for the citizens sub-domain is to "know what a citizen is and how one becomes a citizen (e.g., birth, naturalization, and dual/multiple citizenships)." Next, the ET decided on the proportion of items that should be allocated to each of the domains and sub-domains based on their coverage in the textbooks. For example, for grade three, the domain civic principles, which includes the sub-domains equity and freedom (rights) and rule of law (responsibilities), was allotted nearly half of the items because those two sub-domains receive considerable attention in the grade three textbook. Finally, the ET drafted the items for each assessment, drawing largely on the language from the textbooks. At this stage, the only information the ET has about how the curriculum will be implemented is from the textbooks. As such, the questions in these assessments are lifted directly from the textbooks, with few extensions beyond.

The student assessment measures student civic knowledge across all four domains from the Liberia Civic Education IE Assessment Framework, as illustrated in Table 1 below. The student assessment thus includes the following measures of student knowledge: civic society and systems, civic principles, civic identities, and civic participation. Students are assessed across two cognitive domains. Items in the "knowing" domain measure students' recall of civic concepts, while items in the "reasoning and applying" domain measure students' ability to apply this civic knowledge to new situations and reach broader conclusions.

Table 1: Student Assessment Civic Knowledge Outcomes by Content Domain & Cognitive Domain

CONTENT DOMAINS	CIVIC SOCIETY AND SYSTEMS	CIVIC PRINCIPLES	CIVIC IDENTITIES	CIVIC PARTICIPATION
COGNITIVE DOMAINS				

CONTENT DOMAINS	CIVIC SOCIETY AND SYSTEMS	CIVIC PRINCIPLES	CIVIC IDENTITIES	CIVIC PARTICIPATION
Knowledge: "knowing"	X	X	X	X
Knowledge: "reasoning and applying"	X	X	X	X

The ET has developed one baseline assessment with civics topics that cut across both grade three and four textbooks to assess students in both grades together. Before baseline, the assessment was piloted in May 2023 and refined to ensure questions and flow were easily understandable. The ET used the instrument pilot as a way to ensure the appropriateness of instruments. The IPs and The Khana Group (which undertook data collection for the instrument pilot) edited the wording to ensure the concepts and language were appropriate for primary students in Liberia.

Student survey: The survey measures student civic attitudes and behaviors that are promoted by the civic education curriculum. The ET selected the outcome measures to be included in the survey by reviewing previous literature and associated instruments from similar or relevant studies (these included Afrobarometer, 2021; Chi, 2006; Finkel & Ernst, 2005; Maheo, n.d.; NORC, 2019; Schulz et al., 2018; Slomczynski & Shabad, 1998; and Quaynor, 2012). From this broader list of outcome measures across numerous similar studies, the ET selected the outcome measures that are related to the content of the grade three and four civic education textbooks and that were identified as key outcomes of interest by principal stakeholders. To finalize the items to be included, the ET reviewed which items from similar instruments were used to measure the same constructs and borrowed as much as possible, then updated these items as needed based on the context, age group, and textbook content. The ET also piloted the survey May of 2023 and removed several items, as they were ultimately not appropriate for students in primary school in this context. The final outcome measures in the baseline student survey are listed below in Table 2.

Table 2: Baseline Student Survey Outcome Measures

OUTCOME NAME	OUTCOME MEASURES
Student civic attitudes: Civic attitudes that are promoted by the new civic education curriculum	• Sense of national identity • Positive attitudes toward Liberia
Student civic behaviors: Civic behaviors that are promoted by the new civic education curriculum	• Civic engagement • Future civic engagement

The survey also includes questions measuring student background characteristics, such as student gender, age, ethnicity, language spoken at home, and SES, which the ET can use as covariates in the final analysis and to answer RQ3 (heterogeneous effects of intervention).

The ET's Liberian subject matter expert, the IPs, and The Khana Group (who undertook data collection for the instrument pilot) edited the survey to ensure the concepts and language were appropriate for primary school students in Liberia. The instrument pilot revealed that the student survey was too long for students to complete in the allotted time. In one hour, the average student only completed about 50% of the questions. The ET plans on only surveying students for 30 minutes during baseline data collection, so it has reduced the survey questions by about 75% from the pilot version. The instrument pilot also revealed that certain questions related to civic skills and certain civic attitudes were too difficult for grade three and four students, so the ET removed them from the final version of the student survey.

ENDLINE INSTRUMENTS

Student assessment: The student assessments at endline will mimic those from baseline in the content and cognitive domains to be assessed and the distribution of items across them. They will also include common items with the baseline assessments to allow the ET to fit a common item response theory model across them to put the results on the same scale. Item response theory models allow researchers to calculate the total score in an assessment considering differences across items, such as their difficulty or capacity to distinguish between similarly performing examinees. This linking is called "non-equivalent anchor testing" because it leverages common items across assessments to calibrate the scoring of the non-common items (Kolen et al., 2004). Based on the ET's analysis of the baseline assessment results, the ET has shortened the assessment from 40 to 30 items. The ET has also updated 10 of the items, keeping 20 of the endline items identical to baseline items.

Student survey: The endline student survey will include many items that were administered in the baseline student survey. The ET has adjusted the endline student survey to address issues that arose during baseline and has added some measures of factors that may moderate the intervention according to the ToC. The moderating factors include student characteristics that the ToC predicts may moderate the impact of the civic education intervention on primary outcomes. To measure student characteristics, the endline survey will ask the students whether they received the civic education textbook and classroom instruction and how often they take the textbook home. The ET has drafted the additional endline survey items after analyzing the baseline data. The endline survey will measure the outcomes listed in Table 3 below.

Table 3: Endline Student Survey Outcome Measures

OUTCOME NAME	OUTCOME MEASURES
Student civic attitudes: Civic attitudes that are promoted by the new civic education curriculum	• Sense of national identity • Support for gender equality • Tolerance of disability • Tolerance of other ethnic groups • Political tolerance of other ethnic groups

OUTCOME NAME	OUTCOME MEASURES
Student civic behaviors: Civic behaviors that are promoted by the new civic education curriculum	• Civic engagement
Student moderating factors: Implementation factors that may moderate the impact of the intervention on primary outcomes	• Student is receiving civic education instruction • Student has received the textbook • Student is taking the textbook home every day

Classroom observations: The ET developed an instrument to conduct classroom observations based on the Stallings (World Bank Group, 2015) and Teach Primary (Molina et al., 2022) classroom observation tools. The ET will undertake classroom observations in a subset of both treatment and control schools, selecting 60 schools randomly from the 141 schools sampled at baseline and stratifying these equally by county.

The portion of the instrument that was adapted based on the Stallings tool captures the activities and materials being used by the teacher and students during a single class. Enumerators make a 15-second observation or "snapshot" every five minutes (since primary lessons in Liberian schools are typically 45 minutes long, enumerators will take a snapshot nine times). During the snapshot, enumerators scan the room and record a) the teacher's use of instructional time (distinguishing between instructional and non-instructional activities), b) the pedagogical practices the teacher is using, c) the materials the teacher is using, d) the materials the students are using, and e) the level of student engagement with the activity.

The portion of the instrument that was adapted based on the Teach Primary tool captures additional measures of the teacher's pedagogical practices and encouragement of student pro-social skills. The enumerators answer a few questions once the lesson is complete that measure whether at any point during the lesson, the teacher a) employed instructional methods that help ensure the lesson is delivered clearly, b) checked for student understanding, c) gave feedback to students, and d) encouraged discussion through the use of open-ended questions. Enumerators also answer a few questions that measure whether the teacher a) encourages students' classroom engagement, b) encourages students' social and collaborative skills, and c) whether students display civic engagement behaviors in the classroom and collaborate with other students.

Qualitative instruments: The ET will also collect the following additional qualitative data during the endline to enrich the IE's findings on implementation barriers and facilitators.

a. Key informant interviews with teachers (in the treatment schools in which observations are taking place), school principals (in the treatment schools in which observations are taking place), county education officers (in the three sampled counties), and district education officers (in the nine sampled districts).

b. Focus group discussions with parents (with five to six parent-teacher associations [PTAs]).

The teacher and principal key informant interviews will measure teachers' and principals' own views about civic education and their opinions on what went well and what could have gone better during the delivery of the civic education program this year. Due to the ET's intent to gather feedback on the implementation of the program from teachers and principals, these interviews will only take place in the treatment schools where classroom observations are taking place. The county education officer and district education officer interviews intend to gather additional feedback about the implementation of the program this past school year. The parent focus group discussions, which will take place with the PTAs of five to six of the treatment schools selected for qualitative data collection, will measure parents' own views about civic education and their feedback on the program so far.

IP MONITORING INSTRUMENT

To answer RQ4, the ET will also collect data on the moderating factors listed in Table 4 to understand which parts of the ToC worked the most and least as expected. The IP has conducted ongoing monitoring of program implementation at treatment schools throughout the 2023–2024 school year and will use a monitoring instrument to collect these measures from teachers. The IP's monitoring instrument will measure teacher and student characteristics that may moderate the impact of the intervention on student outcomes. The instrument also measures each teacher's impression of the level of student civic engagement in the school and classroom. The ET will work with partners to understand and make the best use of any additional monitoring data they collect.

Table 4: IP Monitoring Instrument Moderating Factors and Measures

MODERATING FACTOR CATEGORY	MODERATING FACTOR MEASURES
Teacher moderating factors: Implementation factors that may moderate the impact of the intervention on primary outcomes.	• Teacher training session attendance • Teacher receipt of textbook • Teacher receipt of teacher guides • Civic education lessons length and frequency • Teacher use of participatory approaches • Teacher engagement with the principal • Teacher engagement with PTA
Student moderating factors: Implementation factors that may moderate the impact of the intervention on primary outcomes.	• Student receipt of textbook • Rate at which students take textbooks home

DATA COLLECTION

The IE will have two rounds of data collection: a baseline prior to the deployment of the intervention and an endline after one full school year of the intervention. The ET conducted baseline data collection from September 2023 to December 2023. Due to the general election in Liberia, school enrollment and attendance were very low at the beginning of the school year, and therefore program delivery was delayed in treatment schools. While teachers were trained in August 2023, textbooks were not delivered until

December 2023 and many students were not attending school and therefore not receiving instruction. The endline will take place at the end of the current 2023–2024 school year, from April–May 2024.

All rounds of data collection and associated instruments are listed below in Table 5.

Table 5: Liberia Civic Education IE Data Collection Summary

DATA COLLECTION ROUND	TIMING	INSTRUMENT
Baseline	September–December 2023 (Complete)	Student assessment Student survey
Endline	April–May 2024	Student assessment Student survey Classroom observations (40–60 schools) Key informant interviews with teachers (30), school principals (30), county education officers (3), and district education officers (9) Focus group discussions with parents (5–6).
Monitoring	September–June 2024	IP monitoring

ANALYSIS

VARIABLES

More details on the primary outcomes of interest are given below: student civic knowledge, student civic attitudes, and student civic behaviors. The classroom observation tool also captures a range of intermediate outcomes under teacher pedagogical practices (listed below). The ET will test the intervention's impact on these intermediate outcomes and also test for heterogeneity in treatment effects for each primary outcome by teacher pedagogical practices. The ET will also test for heterogeneity in treatment effects for each primary outcome by moderating factor (listed below).

STUDENT CIVIC KNOWLEDGE

Student civic knowledge: Civic knowledge is measured as a student's total standardized score on the student assessment. The total score will be calculated as the total proportion of items answered correctly. The assessment also measures student knowledge by content domain (i.e., civic society and systems, civic principles, civic identities, and civic participation) and cognitive domain (i.e., knowing, reasoning, and applying) as detailed in Table 1, as the total proportion of items answered correctly per domain.

STUDENT CIVIC ATTITUDES

Sense of national identity: The student survey asks students if they identify more strongly as Liberian or as a member of their tribe ("I think that I am only Liberian.", "I think that I am more Liberian than [R's ethnic group].", "I think that I am both Liberian and [R's ethnic group].", "I think that I am more [R's ethnic group] (my tribe) than Liberian.", "I think that I am only [R's ethnic group]."). On a scale of 1 to 5 (1 being "I think that I am only Liberian."), lower values indicate stronger national identification, and higher values indicate stronger ethnic identification).

Support for gender equality: The student survey uses a hypothetical scenario to ask students if money donated by a charity to their community to help with school fees should be given to boys or to girls ("All of the money should be given to the boys.", "Most of the money should be given to the boys.", "Half of the money should be given to boys and half of the money should be given to girls.", "Most of the money should be given to the girls.", "All of the money should be given to the girls."). On a scale of 1 to 5 (1 being "All of the money should be given to the boys."), higher values indicate stronger support for gender equality.

Tolerance of disability: The student survey uses a hypothetical scenario to ask students if they think a student should ignore another student with disabilities or if they should instead try to include them. The students can respond "Peter should also ignore Charles and play with the other kids.", which will indicate intolerance, or they can respond "Peter should try to find a game that Charles can also play.", which will indicate tolerance.

Tolerance of other ethnic groups: The student survey asks students which students they would least like to have on their team in a game, with each student belonging to one of six different tribes. The students can respond "I don't want the kid that is [tribal affiliation] on my team.", which will indicate intolerance, or they can respond "I want everyone on my team", which will indicate tolerance.

Political tolerance of other ethnic groups: The student survey includes two items that ask students if they believe members of the tribe that they do not want on their team (in the tolerance of other ethnic groups item) should have certain political rights. Alternatively, if students responded they wanted everyone on their team, they are asked if they believe members of the Mandingo tribe should have certain political rights (as this is one of the most marginalized groups in Liberia). If the student themselves identify as Mandingo, they are asked if they believe members of the Mano tribe should have certain political rights (as there are historical and ongoing ethnic tensions between the Mandingo and Mano in Liberia). The ET will average students' responses on these two items to derive a *political tolerance of other ethnic groups* scale, where higher scores indicate greater political tolerance of other ethnic groups.

STUDENT CIVIC BEHAVIORS

Civic engagement (student self-report): The student survey asks students how often they engage in four different civic activities both in school and in their community ("Never", "Rarely", "Sometimes", "Often", correspondingly in Liberian English, "No, I never do this.", "I do this small.", "I do this plenty small.", "I do this plenty."). The ET will use these four items to derive a scale reflecting students' *civic engagement*, where higher values indicate greater levels of civic engagement.

Civic engagement (as reported by a teacher): The IP monitoring instrument asks teachers how often their grade three or grade four students (to which they are teaching civic education) engage in six different behaviors that indicate the students are civically engaged in their schools ("Never", "Rarely", "Sometimes", "Often", "Always"). The ET will use these six items to derive a *teacher report of student civic engagement* scale, where higher values indicate greater levels of civic engagement.

Civic engagement (as observed during classroom observations): Using the classroom observation instrument, enumerators will record whether, at any point during the lesson, students "volunteered to participate in the classroom" or "collaborated with one another through peer interaction."[4]

TEACHER PEDAGOGICAL PRACTICES

Teacher use of instructional time: Using the classroom observation instrument, during each "snapshot," enumerators will indicate which activity the teacher is engaged in, categorized by a) instructional activities, b) classroom management activities, and c) social interaction. Based on the nine snapshots, the final proportion of time spent on instructional activities is calculated and expressed as a percentage of total class time.

Teacher use of participatory approaches: Using the classroom observation instrument, during each "snapshot," if the teacher is engaged in an instructional activity, enumerators will indicate which activity the teacher is engaged in ("Reading out loud," "Explanation/lecture," "Question and answer/discussion," "Practice and drill," "Copying," "Individual assignment/class work," "Group activity").[5] The ET will calculate the proportion of snapshots in which the teacher uses participatory approaches ("Question and answer/discussion" and "Group activity"), which will be expressed as a percentage of total class time.

The materials the teacher is using: Using the classroom observation instrument, during each "snapshot," if the teacher is engaged in an instructional activity, enumerators will indicate the material that the teacher is using for the activity ("No material," "Textbooks," "Notebooks/writing material," "Blackboard").

Student engagement: Using the classroom observation instrument, during each "snapshot," once enumerators have indicated which activity the teacher is engaged in, they must also indicate how many students are engaged in the activity with the teacher ("No students," "One student," "2 to 10 students," "10 or more students," "All students").

The materials the students are using: Using the classroom observation instrument, during each "snapshot," for students engaged in the activity, enumerators will indicate the material that the students are using for the activity ("No material," "Textbooks," "Notebooks/writing material," "Blackboard").

Teacher use of positive pedagogical practices: Using the classroom observation instrument, at the end of the lesson, enumerators record whether teachers used positive pedagogical practices during the lesson. The ET will derive a composite index of all positive practices. Positive practices include:
- Teacher ensures the lesson is clearly facilitated ("The teacher explicitly articulated the objectives of the lesson and related classroom activities to the objectives.", "The teacher explained content using multiple forms of representation.", "The teacher made connections in the lesson that relate to other content knowledge or students' daily lives.", "The teacher modeled by enacting or thinking aloud.").
- Teacher checks for student understanding ("The teacher used questions, prompts or other strategies to determine students' level of understanding.", "The teacher monitored most students during independent/group work.", "The teacher adjusted teaching to the level of students.").

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[4] Enumerators will be trained on the meaning of all items, such as this one, that is based on the Teach Primary classroom observation tool according to the definition in the Teach Primary User Guide (Molina et al., 2022).

[5] Enumerators will be trained on the meaning of all items, such as this one, that is based on the Stallings classroom observation tool according to the World Bank's User Guide (World Bank Group, 2015).

- Teacher gives feedback to students ("The teacher provided specific comments or prompts that help clarify students' misunderstandings.", "The teacher provided specific comments or prompts that help identify students' successes.").
- Teacher encourages discussion through open-ended questions. Enumerators record whether the teacher asked mostly open-ended or mostly closed-ended questions ("Mostly closed question," "Mostly open questions," "Equal mix of closed and open questions," "Teacher did not ask questions"); whether the teacher asked students to justify their answers ("Yes," "No," "N/A"); whether the teacher praised students and offered encouragement when they answered questions ("Yes," "No," "N/A"); whether the teacher corrected the students' answers ("Yes," "No," "N/A"); whether the teacher was noticeably upset when a student provided an incorrect answer ("Yes," "No," "N/A"); whether the teacher gave students an opportunity to ask questions about the lesson ("Yes," "No," "N/A"); and how many students asked questions ("None or almost none," "Less than half," "About half," "More than half," "All or almost all").
- Teacher encourages student's classroom engagement ("The teacher provided students with choices.", "The teacher provided students with opportunities to take on roles in the classroom.").
- Teacher encourages students' social and collaborative skills ("The teacher promoted students' collaboration through peer interaction.", "The teacher promoted students' interpersonal skills.").

MODERATING FACTORS

Student is receiving civic education instruction: The student survey asks students if they are receiving civic education lessons this school year (yes/no response).

Student has received the textbook: The survey asks students if they have received their own copy of the civic education textbook (yes/no response).

Frequency at which students take textbooks home: The survey asks students how often they take the civic education textbooks home ("Every day," "Sometimes," "Never").

Teacher training session attendance: The IP monitoring tool asks teachers whether they attended the full training session, they attended part of the training session, or they did not attend the session at all.

Teacher receipt of textbook: The IP monitoring tool asks teachers if they have received a copy of the civic education textbook and, if so, during which period of the Liberian school year they received it.

Civic education lessons length and frequency: The IP monitoring tool asks teachers how many times a week they teach a civic education lesson to grade three, grade four, or grades three and four combined (depending on which grade they indicated that they teach).

Teacher use of participatory approaches: The IP monitoring tool asks teachers what proportion of the civic education lesson time ("No time or almost no lesson time," "Less than half of the lesson time," "About half of the lesson time," "More than half of the lesson time," "All of the lesson time") they typically spend using different pedagogical approaches (lecturing, individual classwork, group work, class discussions, student presentations). Reverse scoring the "lecturing" and "individual classwork" items, the ET will use these five items to derive a scale reflecting teacher use of participatory approaches, in which higher values indicate greater use of participatory approaches.

Teacher engagement with principal: The IP monitoring tool asks teachers how often they have discussed the new civic education curriculum with their principal in the past month ("Never," "1 time," "2–3 times," "At least 4–5 times").

Teacher engagement with PTA: The IP monitoring tool asks teachers how often they have discussed the new civic education curriculum with their school's PTA in the past month ("Never," "1 time," "2–3 times," "At least 4–5 times").

Student receipt of textbook: The IP monitoring tool asks teachers how many of the students in their grade three, grade four, or combined grades three and four civic education class have received the civic education textbooks, and during which period of the Liberian school year most students received the textbooks.

Rate at which students take textbooks home: The IP monitoring tool asks teachers if and how often students take their textbooks home ("Yes, every day," "Yes, on some days," "No, never").

Teacher attendance: During the principal interview, enumerators will ask the teacher to provide information on civic education teacher attendance (if available) by asking how many days the teacher was absent in the last month. The ET will also coordinate with IPs to receive any additional data that may have been collected by IPs on teacher attendance throughout the year.

COVARIATES

The student survey asks students to report their gender, age, tribal affiliation, and language spoken at home. The ET also asks students to report which assets they own from a list of items. This household asset index will serve as a proxy for SES. The ET will calculate this index by applying principal component analyses to assess the weight of each asset and group respondents accordingly into quartiles to reflect different SES levels. If the ET finds imbalances among the experimental groups, the ET will control for the relevant covariates in the regressions.

QUALITATIVE ANALYSIS

The ET will translate into English and de-identify to the fullest extent possible all key informant interviews and focus group discussions. The analysis will involve reading and re-reading the transcripts of the exercises and carefully coding and grouping responses consistently according to similar or related pieces of information presented, allowing comparison of responses and identification of common themes and trends.

Two ET members will be trained to code the qualitative data. To ensure reliability, both team members will code three initial transcripts and compare codes to identify and resolve discrepancies. In addition, one ET member will review a subsample of coded data to check reliability as coding proceeds. If inter-coder reliability is low after this first check, the ET will move to a strategy where each of the two ET members code all transcripts and then they reconcile discrepancies. The ET will perform thematic coding manually in Microsoft Excel in a single master coding repository to ensure consistency and ease of reference. The ET will select quotations from the transcripts to illustrate the findings with simple, focused pieces of information representing key themes.

This qualitative data analysis process will allow the ET to organize and compare similar and related pieces of information in the qualitative data and identify key themes and trends across the project area. The analysis will therefore evaluate progress made on qualitative-only indicators, add depth and social context

to inform the interpretation of the results of the quantitative analysis, and shed light on the multiplicity of perspectives and potential mechanisms surrounding outcomes of interest to the evaluation.

EMPIRICAL STRATEGY

INTENT-TO-TREAT EFFECT

The ET will estimate the intent-to-treat effect of the offer of the intervention by fitting the model:

$$Y_{ij}^t = \alpha_{r(k)} + Y_{ij}^{t=0}\gamma + T_j'\beta + \varepsilon_{ijk} \tag{1}$$

where Y_{ij}^t is the outcome of interest for student i in school k at endline ($t = 1$); $Y_{ij}^{t=0}$ is a measure of that outcome at baseline (when available); $r(k)$ is the randomization stratum of district k and $\alpha_{r(k)}$ is the corresponding stratum fixed effect; T_j is an indicator variable for random assignment to the intervention; and ε_{ijk} is the idiosyncratic error term. The parameter of interest is β, which captures the causal effect of the offer of the intervention. The ET will estimate equation (1) by ordinary least-squares regression. It will use cluster-robust standard errors to account for within-school correlations across students in outcomes.

BALANCE AND ATTRITION CHECKS

The ET will validate random assignment by estimating versions of (1) with baseline covariates on the left-hand side, excluding the baseline covariates on the right. This specification will be used to test the null hypothesis that treatment assignment is unrelated to pre-treatment characteristics.

Even with random assignment, differential attrition has the potential to introduce selection bias into treatment/control comparisons. Therefore, the ET will investigate the extent of differential attrition by estimating versions of equation (1) using an indicator for observed endline data as the dependent variable. To characterize the nature of attrition, the ET will calculate attrition rates and estimates of differential attrition separately by quartile of baseline civic knowledge.

EFFECT HETEROGENEITY

To investigate heterogeneity in treatment effects for each primary outcome, the ET will split the sample into groups above and below the median of a baseline measure of the dependent variable and conduct the main analyses separately in these groups. The ET will test the null hypothesis that the intervention has no effect in any category and that effects on all categories are equal. Similarly, the ET will split the sample by sex and report results separately for boys and girls, and test the null hypothesis that the effects are equal.

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