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THE FORD PROGRAM
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Collaborative Research Design and Evaluation of a Human-Centered Ugandan Education Intervention

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INTRODUCTION

The Luigi Giussani Institute of Higher Education (hereafter, LGI), an educational institute based in Kampala, Uganda, conducted a three-year school-based training program for teachers, head teachers, students, and parents to improve school culture and unite the school community around the task of educating youth. The pilot project was conducted in seven Roman Catholic private schools in Uganda, two of which are maintained by the Congregation of Holy Cross, with the respective dioceses supporting the other five. LGIHE implemented the trainings in these schools from January 2015 through May 2017.

The aim of the pilot project was to improve teachers' and head teachers' (i.e. school leadership) appreciation of their role as educators and to increase their understanding of the importance of developing and maintaining relationships in both teaching and learning. The LGI program's stated goals are to: (1) increase the professionalism of teachers and head teachers, (2) improve the culture of the school, (3) place students and their individual needs and aspirations at the center of the educational process, and (4) improve student academic, social, and emotional outcomes and greater commitment of teachers to their profession.

Therefore, in its evaluation of the three modules (described below), the Ford Team employed a concurrent mixed methodology involving quantitative surveys, observations, and qualitative interviews, which allowed for a comprehensive understanding of the intervention for (1) impact and (2) academic research.

> Impact: The Ford Team adds insight to the intervention's impact on school leadership, teacher, student, and community attitudes and beliefs about education and the dignity of all persons, student socio-emotional and academic outcomes, and teaching strategies as they affect student-teacher relationships.
>
> Academic research: Alongside the evaluation of impact of the program, the Ford team conducted extensive literature reviews and rigorous testing of tools and methods designed to measure organizational culture, leadership and teaching strategies, parental and community beliefs and attitudes, and social, emotional, and cognitive outcomes related to students. This aspect of the intervention will add to existing literature on international education.

Educational Context for Uganda

For many years, Uganda was a leader in quality education in East Africa. However, the introduction of free education in 1997 was not accompanied by the necessary staffing and resources. Since that time, a conversation surrounding a 'crisis of learning' has emerged between experts, politicians, families, and communities in Uganda. As a result, families across the socioeconomic spectrum flocked to private schools in the hope that their children received a quality education. Within these private schools, a general teaching deficit exists in terms of academic learning as well as in the social-emotional dimensions of character development. Evaluation of Ugandan teacher training has revealed inconsistencies between their college curriculum and available resources, and Ugandan head teachers may struggle to find any leadership or managerial training at all (Kyeyune, 2011; TISSA, 2013).[1] Teachers are not given the support they need to engage in positive discipline strategies,

[1] Kyeyune, R. et al. (2011). *Learning to Teach Reading and Mathematics and its Influence on Practice in Uganda: Uganda's Country Report*. Teacher Preparation and Continuing Professional Development in Africa (TPA), Falmer: University of Sussex

which are supported by Ugandan families and proven more effective than corporal punishment. Likewise, head teachers have not received adequate training to fill the responsibilities of their leadership position. Furthermore, the push towards standardized tests to determine admissions into secondary and higher education has created a culture of high stakes testing, characterized by "teaching to the test" and focusing resources on the highest achieving students. This has diverted attention away from learning and personal growth, such that both private and public schools are not reaching their full potential. A better-quality education in Uganda and throughout much of Africa is needed, and possible.

LGI Intervention

LGI implemented a program designed to increase the professionalism of teachers and improve students' learning outcomes by situating students and their individual needs at the center of the educational process. The intervention is comprised of three training modules: The Risk of Education, Educate While Teaching, and Enhancing School Leaders, which are facilitated by five of LGI's trained educators.[2]

- Emerging from Luigi Giussani's book[3], *The Risk of Education*, the "Risk of Education" module for teachers and school staff stresses the importance of the relationship between the learner and the educator, who facilitates the educational process through which learners engage in critical thinking and become aware of their value and dignity in light of their lived realities.
- The "Educate While Teaching" module for teachers incorporates strategies for lesson preparation, classroom management, organization, and innovative teaching methods to reinforce the comprehensive nature of their daily work. Educators encourage students' identity formation, encouraging them to face reality in a positive way while equipping them with viable skills for home, community, and work environments.
- The "School Culture" module educates head teachers and deputy head teachers ("school leadership") in the mobilization of school personnel, parents and resources to implement and sustain a positive school culture. By integrating the school values into the culture, school leadership can improve the professional development of teachers and holistic student outcomes through the realization of a shared purpose.

Collaboration

From 2012 to 2014, in partnership with AVSI-USA, the Initiative for Global Development, and the Ford Program of the Kellogg Institute for International Studies at the University of Notre Dame, LGI carried out an evaluation of the first two modules described above in 36 primary schools in Uganda over one academic year. A mixed-methods analysis found positive indications of teacher attitude and behavioral change, particularly given the short time horizon of the one-year intervention. Recommendations for program improvements included greater attention to training follow-up, student learning outcomes, and the involvement of parents and school leadership,

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entre for International Education. Teachers Initiative in sub-Saharan Africa (TISSA). (2013). *Teacher Issues in Uganda: A Shared Vision for an Effective Teachers Policy.*

[2] In Ugandan boarding schools, parental presence at school is often limited to select visitation days. However, LGI educators were able to conduct one-time meetings with parents and students, although they were not the main focus of the program.

[3] Giussani, L. (2010). *The Risk of Education. Discovering our ultimate destiny.* New York, NY: The Crossroad Publishing Company.

instigating the addition of a third module specifically for school leadership. At this point, the Alliance for Catholic Education served as consultants for the improvement of modules related to professional development. The 2014 analysis prompted a call for further research on the amended program. The current research is a result of that call.

METHODOLOGY

This mixed methods research employed concurrent quantitative and qualitative data collection, allowing for a triangulation of data to better understand the effectiveness of the intervention. An important methodological consideration involved developing tools that assessed indicators such as organizational culture, dignity, and self-concept. Working with experts in international education and our implementing partner, the Ford Team researched and selected tools that had been validated in other countries. The Team embraced the opportunity to explore their relevance in the Ugandan context, keeping in mind the primary aim of validating tools for future impact evaluations by LGI or programs with similar goals.

Because the study design did not provide sufficient power to detect impact, the main goal of the quantitative portion was to refine a student and teacher questionnaire which could adequately measure certain latent variables which the program hoped to impact. This report presents average scores on these modules for intervention and comparison schools. A separate memo will present the final tool for future use in measuring impact of LGI or similar education programs in the context of Ugandan education.

Participating Schools

The intervention was conducted in seven rural Catholic-based private schools, two of which belong to the Congregation of Holy Cross and five belonging to various Catholic dioceses selected by the Archdiocese of Kampala. The schools were selected from a wide geographic range, spanning Central, Eastern, Northern, and Western regions of Uganda. The student populations of the schools range from 51 to 805 students, and the teacher population varies as well, from 10 to 50, depending on the size of the school (see Table 1). All the schools were day and boarding schools apart from one exclusively boarding school. The five comparison schools are also Catholic-based private schools, selected by the Archdiocese of Kampala. Student population at the comparison schools ranges from 6 to 273 students and teacher population varies from 7 to 27. The endline study suggests that the majority of teachers and head teachers attended all or part of the trainings. Six of the intervention schools participated to the endline study, as one school withdrew from the intervention when school leadership decided that the trainings were not helping their school. There was also one school which started the intervention prior to the baseline study. This school was included in the qualitative endline but not in the quantitative study.

Qualitative Participants

The intent of the endline recruitment was to interview the same teachers, students and parents interviewed for the baseline in 2015 in order to see variations in participants over time. A list of baseline participants' names was sent to all the schools one month prior to the endline data collection. A total of 27 teachers (3 women and 24 men), 4 head teachers, one deputy head teacher, one rector, 35 students (13 girls and 22 boys) and 19 parents (8 women and 11 men) participated in the endline qualitative assessment.

Of the 27 teachers, 19 were also interviewed in the baseline, and of 19 parents, 11 had participated in the baseline focus group. In three of the six schools, we interviewed the same leader we had interviewed before. However, it was often not possible to interview the same students, because they had already completed their studies. Therefore, school leadership was asked to randomly select

students based upon their participation in LGI training or by their class (Senior 4, 5 or 6)[4] in order to interview students who had a longer presence in the schools and possibly had experiences of changes among teachers and leaders. In one of the seven schools, it was revealed that the Director of Studies was selecting teachers and students because of their academic responsibilities or administrative roles.

Quantitative Participants

Enumerators were instructed to interview all teachers who had participated in the baseline or LGI trainings, and any teachers whose students were being interviewed. In total, 156 teachers were interviewed at baseline, and 92 were interviewed at endline. Of those, 60 (65%) were follow-up interviews with the same teachers that were interviewed at baseline.

At endline, there is no difference between the composition of teachers in intervention schools and those in comparison schools in terms of level of education, gender, age, marital status, number of children, years of experience, and whether or not they are working part-time or have more than one job. On average, teachers are 35 years old, with 2 children. Most of them are male, married, have between 6-10 years of experience teaching and also have taught at their current school for 6-10 years. About 20% of the respondents are part time, about 13% have more than one job. They teach multiple grades. In all of these characteristics, no difference was detected between intervention and comparison groups. However, differences were detected in regards to payment—teachers in intervention schools are more likely to report that their pay is sufficient, and that they are paid predictably. These differences are large and statistically significant, and they were detected at endline only. Table 2.a, showing teacher sample by school, intervention group and time, can be found in the Appendix.

Students were randomly selected from each classroom of Senior 1-Senior 4. Random selection was performed from student rosters, using STATA. The aim was to have 15 students per teacher who is interviewed. At baseline, the teachers interviewed had taught levels S1-S3, but some had moved to teaching S4 at endline. Therefore, at endline, some students of S4 were included in the study. In total, 532 students were interviewed at baseline and 405 at endline.

The only statistically significant difference detected is in the gender of the sampled population. Over 80% of the respondents from the comparison schools are female, but in the intervention schools over 50% are male. The difference persists from baseline to endline. This difference is observed because there are two all-girls' schools in the comparison group, and the intervention group contains one all-boys' school. Table 2.b (located in Appendix) shows students sampled by school, intervention group and time.

[4] After seven years of primary school and successful completion of their primary leaving examination (PLE), Ugandan students may enter secondary school, which lasts six years. Secondary school is divided into two phases, with lower secondary beginning with Senior 1 (S1) and ending with Senior 4 (S4) and upper secondary consisting of grades S5 and S6.

Data Collection & Analysis

Qualitative Data Collection & Analysis
Qualitative methodology included Focus Group Discussions (FGDs) with teachers, students, and parents, and in-depth interviews with head teachers[5] and/or deputy head teachers (school leadership). The interviews were held simultaneously with students, teachers, head teachers, and parents on school property. All FGDs and interviews were conducted in English and transcribed verbatim by local transcribers. A translator was present for the FGD with parents. Nvivo software was utilized to organize the qualitative data. It was then analyzed using thematic analysis methodology.[6]

Quantitative Data Collection
Quantitative data was collected from students and teachers in intervention and comparison schools. Random assignment of schools to intervention and comparison groups was not possible, and thus this should be considered quasi-experimental. Quantitative methods included surveys and school observation:

Student Survey (81 Questions): This tool measures student-teacher relationships, academic engagement, observed teacher behavior, beliefs on corporal punishment, life satisfaction, socio-emotional characteristics, and a few demographic indicators. The majority of the questions were scored from 1 = Strongly Disagree to 5 = Strongly Agree.

Teacher Survey (113 Questions): This tool measures teacher beliefs and motivation about his or her profession, trust in school leaders, perceived relationship with students, behaviors and practices in the classroom, perceptions about both the school and parents, and a few demographic indicators. Questions were scored from 1 = Strongly Disagree to 5 = Strongly Agree.

School Observation (18 Questions): This tool monitors school and teacher behaviors in the categories of planning, preparation, classroom management, delivery and presentation of instructions, knowledge and mastery of the content, and school culture. These tools were scored from 1 = Poor to 4 = Very Good with room for qualitative notes following each section.

Quantitative Data Analysis
All analysis was performed robust standard errors clustered at the individual school level. Analysis included random effects, which assume that some covariates will change over time. Hausman and Breusch-Pagan Lagrange multiplier tests were performed to confirm that random effects were the correct choice for this dataset. Because teachers could be followed over time, analysis of teacher data was conducted using a panel data approach, isolating data only to the teachers who were interviewed at both the baseline and endline Multivariate regressions were run on each of the *Teacher* modules listed below. A Heckman analysis confirmed that teacher attrition did not introduce selection bias. Covariates included gender, teaching experience (more than 10 years), part-time employment or having more than one job, and if respondent reported being paid both sufficiently and predictably. Because students were not followed over time, a difference-in-difference analysis was performed, using all available data. Multivariate regressions were also run on each of the *Student* modules listed

[5] "Head teachers" serve as leaders at the school level in Uganda, akin to a principal in American secondary schools. Head teachers may be used interchangeably with "school leadership" in the report.
[6] Boyatzis R. (1998). *Transforming Qualitative Information*. Thousand Oaks, CA: Sage Publications, Inc.

below. Covariates included gender, age, class, and family size of student. An analysis of the modules is integrated into the discussion of the impact.

Outcomes of Interest

The study considers the social, emotional, and cognitive experiences of students and the strategies used by teachers and head teachers influencing organizational culture, student-teacher relationships, and student identity formation. The main teacher and student outcomes are listed below, organized by the following emerging themes: relationships, competency, and context and culture.

	Teachers	*Students*
Theme 1: Relationships	Collective Self-Esteem Membership Flourishing Job Satisfaction Positive Discipline	Trust in Teachers Positive Student-Teacher Relationship Positive Discipline Corporal Punishment
Theme 2: Competency	Core Self-Evaluation Attitudes towards Classroom Management Efficacy for Engagement & Instruction Lesson Planning for Differentiated Instruction Use of Registers[7]	Academic Engagement Academic Press[8] Liking for School
Theme 3: Context and Culture	Head Teacher-Teacher Trust Head Teacher Supports Professional Development	Satisfaction with Life Self-Determination Use of Culture in Teaching Education as a Way of Facing Reality

[7] The Class Register is a tool that is used to capture the general class characteristics/behaviours/activities and it is managed by the teacher. The Personal Register is a tool used by a subject teacher to capture his/her schemes of work, timetable, observations during the lesson, record of students' work, record of marks etc. Other teaching materials mentioned in the report include "lesson plan" and "scheme of work." The scheme of work provides a course overview, linking class activities and assessments to course objectives, serving a similar function to the syllabus in American courses. The lesson plan differs from the scheme of work in its more detailed articulation of time allocation, assignment type, and class notes for a given course day.

[8] Academic press is defined as the extent to which students experience a normative focus on academic success, and are motivated to work towards higher goals of achievement (Lee, V. et al. 1999. "Social Support, Academic Press, and Student Achievement: A View from the Middle Grades in Chicago." Chicago, IL: Consortium on Chicago School Research.)

RESULTS

Theme 1: Relationships

Collective Self-Esteem Membership & Flourishing

"Because of the trainings you find that as a person you can't be perfect and you cannot know everything. In an area where you are not well conversant, we have been consulting our colleagues the same department or it has even gone beyond the department." (Teacher, School D)

The quantitative data did not indicate that the intervention had an impact on collective self-esteem membership or sense of flourishing among the teachers. Ultimately, the Collective Self-Esteem Membership module did not prove useful in measuring collective self-esteem or sense of membership among the community of Ugandan schools. The Flourishing module, on the other hand, performed reliably and demonstrated moderate goodness-of-fit, with potential for use in future research in the Ugandan context. However, teachers who report that they have two jobs or work part-time at the school score lower in terms of collective self-membership. "Part-timing" arises due to the low level of teacher's salaries and their inconsistent disbursement, a common source of tension among teachers and school leadership. As stated by one head teacher from School B, part-time teaching becomes problematic when teachers are less likely to be present in off periods, during which relationships may be strengthened with students, peer teachers, and head teachers.

On the other hand, the qualitative data indicated that a few teachers, like the one above from School D, expressed greater comfort in sharing knowledge with each other in light of the trainings' encouragement of teamwork and co-teaching. Open collaboration, solidified through regular meetings among teachers, could mitigate some of the relational issues of part-timing and improve organizational culture.

Job Satisfaction

"I can add that I am very happy to work in this school, why? It links to the church, so it is an appreciation that the church is doing, the church is causing development, seeing development in the area." (Teacher, School F)

Interviews with teachers revealed a range of factors guiding their sense of satisfaction in their profession. They described feeling happy, "*respected*," and proud that their work was visible and admired by parents and the community. Some, as described above, affirmed their relationship with God and the opportunity to transmit this faith in the Catholic schools. Job satisfaction was not impacted overall by the intervention, but teachers who have been teaching for more than ten years did score higher in this indicator. This difference is large in magnitude (over 1 point on a 5 point scale), but significant only to the 10% level. Though not strong, the measure of *core self-evaluation* (indicated by self-esteem, self-efficacy, neuroticism, and locus of control) performed well as a predictor of job satisfaction. The statistics are as follows: Root Mean Squared Error of Approximation (RMSEA): .133; Comparative Fit Index (CFI): .835; Tucker Lewis Index (TLI): .724;

Standardized Root Mean Squared Residual (SRMR): .086.[9] Meanwhile, the module for Job Satisfaction performed poorly but with consistency. Both *Teacher* modules (Core Self-Evaluation and Job Satisfaction) have the potential to be refined and maintained for future use in the Ugandan context.

Positive Discipline & Corporal Punishment

"What is the cause of that mistake? Has he done it willingly or unwillingly? Or it is accidental mistakes or it is an imitated mistakes. These are questions that should come in your mind and at the back of your mind before the punishment is taken up." (Teacher, School C)

In response to the question, "*what is the most important factor in education*?", the majority of the teachers interviewed answered "*discipline*." Discipline is heralded as indicative of morality, student academic performance and teacher quality, justifying negative punishment in the minds of students, parents, teachers, and head teachers as a necessary complement to school achievement. Despite a government ban on corporal punishment (beating or caning), it is clear from both qualitative and survey data that corporal punishment has not been fully eradicated in the intervention schools.

However, after LGI intervention, several head teachers and teachers detailed new approaches to student discipline and praised their impact on student performance. Students previously suspended from School C have been *"invited back"* and into a discussion on how to *"improve their studies."* Teachers from School F expressed that *"corporal punishment and all was removed...now we go into a dialogue."* This "dialogue" has resulted in greater understanding of the root causes of student misbehavior, beginning with *"psychological problems from home"* (School C). One teacher shared his personal transformation, a "*rough teacher [who formerly] would handle students manually*" who realized that "*the people I am handling are also human being like me.*" Overall, the intervention did not have an impact on teachers' use of positive discipline techniques, but it is possible that no impact was found because the study was underpowered. Still, this module performed well in the context of Ugandan schools. Factor loadings were above .5, and goodness of fit statistics were strong. Interestingly, teachers with over ten years of experience or teachers who were paid regularly scored lower on the positive discipline module of the teacher questionnaire. However, in the school observation tool, intervention schools were shown to increase their discouragement of corporal punishment techniques as compared with comparison schools. At endline, 100% of intervention schools received the highest ranking in terms of "rules and regulations," meaning that the schools were observed to discourage the use of corporal punishment and that none of the teachers use it. In addition, there is considerable anecdotal evidence demonstrating a change in mentality toward student discipline.

Trust in Teachers & Positive Student-Teacher Relationship

Teachers and head teachers are well-aware of the gravity of their role, taking seriously the responsibility to be open, trustworthy, and "*present to the child.*" However, the frequency of part-timing limits teachers' capability to be present and "*bridge that gap between the student and teacher*" (School B). Only a few teachers mentioned the importance of "*knowing students by name*," indicating

[9] The definitions and cut-offs of the measures cited as: Root Mean Squared Error of Approximation (RMSEA) <.05, Comparative Fit Index (CFI) >.95, Tucker Lewis Index (TLI) >.95, Standardized Root Mean Squared Residual (SRMR) <.05

perhaps an inability to recognize students as individuals. The quantitative data did not suggest that the intervention influenced students' trust in teachers, and there was a negative and significant effect of the intervention on students' relationships with teachers, albeit only at 10%. However, in the focus groups discussions, more teachers stressed the need to have a positive relationship with students at endline than at baseline, suggesting the intervention could have impacted this teaching practice. The Positive Student-Teacher Relationship module did not perform well in Ugandan context. However, the Trust in Teachers module performed reliably and can be recommended for future use.

Spotlight: Parent-Teacher Connection

Although facilitating relationships between parents and teachers was not the aim of LGI trainings, interviews with parents and teachers suggested positive changes in levels of parental interest in their children's schooling. The LGI trainings posed an opportunity for parents to come to the school for reasons unrelated to students' misbehavior, sickness, or academic performance. One teacher from School D describes how, "*when parents were brought on board, now you find that even a parent looks for a teacher, a class teacher...I would get so many parents looking for me.*" Parents from the same school reported that the trainings helped them to recognize the importance of children and displace their fear of the administration, initiating a dialogue with school leadership for school improvements. At School F, LGI trainings helped to start a PTA, reinforcing parental participation as stakeholders in children's education and school operation.

Theme 2: Competency

From the quantitative data, we learn that there was no impact on teachers' competency in the categories of core self-evaluation, attitudes toward classroom management, efficacy for engagement and instruction, or lesson planning. This may be due in part to the fact that the study was underpowered. Additionally, teachers mentioned that they were previously exposed to the philosophy of the student-centered approach in their teacher education schooling. Despite the lack of novelty, interviews revealed that LGI trainings provoked self-reflection, turning attention back towards the learner.

<u>Core Self-Evaluation & Attitudes towards Classroom Management</u>
Many teachers revealed that the demand to complete the national syllabus and prepare students for high-stakes testing had pressured them to abandon the student-centered approach. Consequently, many students were getting left behind. One teacher from School G confessed that, "*teachers used to dominate lessons*," at the expense of learner comprehension. Teachers cite the LGI trainings as a reminder of what they had been taught to do but had since forgotten amidst the stress to prioritize academic performance at all costs. Now, some teachers are finding ways to approach greater inclusivity by modifying instruction pace and delivery and investing in students outside formal instructional time. One School D teacher has already seen the payoff, realizing that, "*given some extra time outside classes...the child will be able to discover his or her potentials.*" The module of Core Self-Evaluation is discussed above in relation to its helpfulness to evaluation of Job Satisfaction. The module on Attitudes towards Classroom Management is not recommended, as it did not perform in a predictable fashion in the Ugandan context.

<u>Efficacy for Engagement & Instruction, and Lesson Planning for Differentiated Instruction</u>

While diverse teaching methodologies were present at the baseline, these were observed with greater frequency by students and teachers in 2015. A teacher from School G conveyed that "*the first important thing is for me to find out what they have understood from the previous lesson...to discover how much they already have at their fingertips...and to add up on what they already have."* Meanwhile, another teacher from the same school communicated a modified approach to grading, asking "*each student to bring his book personally because I correct the student, I don't correct the book*." Testimonies such as these express hope in the possibility that students may be divorced from their academic achievement and recognized as growing individuals capable of becoming lifelong learners.

During the intervention, teachers and school leadership from School B toured Luigi Giussani High School (LGHS).[10] Far from the direct, "chalk and talk" model where knowledge is imposed, a deputy head teacher expressed [his] amazement at how the lessons at LGHS were initiated by the students, whose natural interest guided instruction. While only one intervention school had the opportunity to visit, this is promising for the teachers of School B, whose leadership may be more committed to the cultivation of the interest in learning inherent in every child. The module for Efficacy for Engagement & Instruction performed reasonably well. Question rephrasing from "I can do a lot to get my students to…" to "I can get all my students to…" increased the variation of the responses, yet the overwhelming majority of respondents answered positively to all questions. Future iterations should encourage this variation by altering the questions and including all three subscales of Efficacy & Instruction together. Meanwhile, the Lesson Planning for Differentiated Instruction module performed poorly but reliably. Differentiated instruction is likely a new concept to the Ugandan education system. While the student-centered approach may be a focus for LGI trainings, the inclusion of student choice in lesson design is certainly not common, and teachers' responses about students' roles varied significantly. Thus, the relevancy of this module should be considered before future use.

Use of Registers

"We take a roll call to know who is there who is not there…[before] we didn't bother whether you're there or not...now we need to know who is not there...and why he is not there and then...after the class we still follow those ones who are not there, and try to cater [to] them as well…" (Teacher, School G)

The quantitative data clearly indicates that the intervention was able to improve teacher behavior in terms of using attendance registers. However, the provision of organizational materials only benefitted the teachers who actually attended the trainings, and in some intervention schools, less than 50% of teachers are using the registers to record student attendance. For many head teachers, changing the behavior of teachers and pushing them to be prepared is still a challenge (Schools A, B, C and D). School leadership reported that teachers take their experience for granted or refuse to plan their lessons out of laziness. Still, this growth in register usage is promising for the potential of other organizational materials, such as lesson plans and schemes of work, when coupled with leadership support and oversight.

[10] Luigi Giussani High School in Kampala serves as a model secondary school for the Luigi Giussani Institute. It aims to help students grow in their awareness of their value and dignity, realize innate talents and desires, and become learners who are capable of facing reality and contributing to society.

Student Academic Engagement, Academic Press & Liking for School

The data does not indicate that the LGI trainings impacted student academic engagement or liking for school. This could be attributed to the fact that the study was underpowered or because the Academic Engagement and Academic Press modules did not perform well in the Ugandan context, scoring poorly on goodness-of-fit measures. In contrast, the Liking for School module performed decently and reliably. The goodness-of-fit statistics could be improved, as exemplified by the irrelevancy of Q.47: "I have fun in school." Ugandan students have a strong sense of discipline and likely link the concept of "fun" with misbehavior. Still, student levels of academic press—the extent to which they are motivated to succeed in school—were measurably increased in the intervention schools. Further analysis demonstrates that scores in academic press are correlated with scores on the following indicators: trust in teachers, academic engagement, liking for school, use of culture in teaching, use of registers, and teachers' use of positive discipline. Informed by the measurable, heightened desire for success, teachers and head teachers should be encouraged to continue engaging students, modeling positive attitudes towards education, and reinforcing the importance of holistic student success.

Theme 3: Context and Culture

"We want [to make sure] that each student is loved, is respected and is honored as a human being." (Teacher, School G)

School leadership and implementers affirmed that the execution of LGI trainings was frustrated by both economic and material poverty, persisting in all six schools throughout the course of the study. The inability to pay school tuition and fees, coupled with precarious and often violent home situations, could affect student absenteeism. Even if student are present, their "*minds may not necessarily be in class,"* preoccupied with thoughts of where they will get their next meal or how they will survive (School D). Schools stay afloat amidst these challenges because of the strong belief that success in life is linked to academic performance. Education is perceived as the vehicle to get a job and sustain oneself and one's family. However, if schools lack a strong reputation for academic performance, parents and community members may begin to lose trust in the schools, opting to remove their children in search of more secure investments.

Head Teacher-Teacher Trust & Head Teacher Support of Professional Development

"The trainings have created change in the school administrative structure. There is positive communication in case of anything that affects the school...there is democracy at table." (Teacher, School D)

Teachers reported that hierarchical relationships were stifling interactions between teachers and head teachers. As a result, head teachers were keeping teachers at a distance, reluctant to entrust them with responsibilities. The LGI trainings, identifiably the "School Culture" module with leadership education, had a clear impact on changing the way school leadership and teachers interacted. Quantitative data analysis demonstrates that the intervention impacted indicators related to relationships between head teachers and teachers. Difference-in-difference analysis further revealed an improvement in trust between teachers and head teachers. The Head Teacher-Teacher Trust module performed reliably and could be useful in future evaluations of Ugandan school cultures, but the goodness-of-fit statistics were mediocre. The increase in trust has facilitated a sense of belonging and commitment, as one teacher from School D has learned, "*I must give my best in order to get the best out of what I give."* The quantitative data also revealed that the intervention impacted the extent to

which the head teacher supports the professional development of their teachers, a positive effect confirmed by the interviews. Interestingly, the head teacher from School A affirmed the importance of delegating power to other teachers, a method that he has reportedly transferred to his family life, delegating more power to his wife. A teacher from School G describes the school's shift towards teamwork, where teachers can take responsibility when other members of the faculty are absent. Even so, the constant turnover of school leadership challenged the delivery of trainings in some schools, according to implementers. This turnover, coupled with part timing, poses a threat to the sustainability of the teachers' trust and professional development for a positive organizational culture long-term.

Satisfaction with Life & Self-Determination

The intervention was not found to affect students' satisfaction with life or their self-determination. It was found that overall, students are less satisfied with life during Senior 3 and 4, although the magnitude of this coefficient is small. These results are not surprising, given the pressure that students experience in the last years of school to pass their exams. Also, it was found that female students have lower levels of self-determination, pointing to the gendered disparity in empowerment and the threat of physical security at school (School A). The consistency of the Student Satisfaction with Life module recommends it for future use in Ugandan contexts, if it was to follow the standard of a 7-point scale. The Student Self-Determination module performed well in the Ugandan context, suggesting that it could be used again in contexts with Ugandan students. Perceived Choice statements (e.g. "I always feel like I choose the things I do" (Q.37); "I choose to do what I have to do" (Q.39)) experienced particularly strong goodness-of-fit statistics.

Use of Culture in Teaching & Education as a Way of Facing Reality

"The mission [of] the school is to educate quality citizens, when we send out the students they should be… people of quality who able to give back to the society, yes and the vision is to be among the best schools in the country." (Head Teacher, School C)

The intervention did not have an effect on teachers' use of Culture in Teaching, and it had a negative impact on the measure of Education as a Way of Facing Reality, according to the students in our sample. However, scores on both of these indicators are higher among students in higher grades or older students (although the magnitude of this increase is small). It is possible that younger students are not able to recognize that their teachers are incorporating these methods. In terms of school culture, head teachers reinforced the core values of preparing "citizens" for work and community involvement. LGI trainings sought to reinforce the Holy Cross mission of educating both "mind and body" as part of the development of an "integral human being," supporting school leadership in their articulation and normalization of core values, but endline interviews indicated that parents and students were still largely unaware of the mission and values of their schools.

Spotlight: Financial Management

At endline, a statistically significant difference was observed between intervention and comparison schools in terms of payment. Teachers in intervention schools reported that their payment is both sufficient to meet their needs and that they are paid on time at a higher frequency than teachers in comparison schools. The head teachers of Schools A and C credit LGI trainings with *"equipping [them] with the skills"* in finance and human resources and reasserting their accountability to their workers and the PTA. The difference is not statistically significant when analysis is performed over time, but that may be because the study is underpowered. LGI trainings' potential to reinforce financial management skills may impact pay disbursement, which has been proven to influence teachers' part-timing and job satisfaction.

CONCLUSIONS

Relationships
The quantitative data does not suggest that the intervention impacted teachers' job satisfaction or student-teacher relationships. This could be due to limitations in evaluation design, insufficient time in which to observe these effects, or because the program truly did not have an impact in these areas. Still, in the endline, more teachers stressed the importance of having a positive relationship with their students. It also appears that the relationship between the parents and the school was strengthened by LGI trainings. While an overall lack of interest still deters parental involvement in schools, the study suggested heightened parent activation, with trainings helping one school start a parent-teacher association (PTA) where there had not been a formal parental organization before.

Competency
In regards to teacher efficacy for engagement and instruction, classroom management, self-evaluation, and lesson planning, the intervention did not have a measurable impact, yet qualitative data suggests that the LGI trainings positively reinforced the student-centered approach. Many teachers remembered learning this approach at university, but the demands of the national syllabus, which prioritize academic performance, and the contextual challenges, such as poverty and student absenteeism, relegate the student-centered approach.

The intervention had a positive impact on teacher usage of attendance registers. The teachers affirmed the helpfulness of the materials provided by LGI, which encouraged collaborative lesson planning and co-teaching. In turn, teachers reported greater openness to ask and learn from their peer teachers. School leadership viewed register usage as the tip of an iceberg, expressing the need to reiterate to their teachers the importance of organization and lesson planning. The intervention did not have a statistically significant impact on students' liking for school or academic engagement, yet positive impacts were measured in the area of academic press.

Context and Culture
The intervention impacted school culture at the organizational level, as teachers at the endline were more likely to respond positively to questions regarding trust in head teachers and perceived support for the teachers' professional development. Several head teachers reported that, after attending LGI trainings on leadership, they began to delegate power, mentor teachers, provide feedback, and create opportunities for teachers to share in school responsibilities. This in turn reinforced teachers' sense of belonging.

The trainings did not support student self-determination, with female students experiencing lower levels of self-determination, nor the use of culture in teaching. Teachers and parents maintain the strong linkage between education and preparation for society, but quantitative data indicated a negative impact on perceptions of education as a way of facing reality. However, it seems that reducing student absenteeism, and the contextual challenges that lead to it, would need to precede the implementation of this approach.

RECOMMENDATIONS

While it is clear that the intervention caused teachers to change their behavior in terms of teaching methods, there was no demonstrated difference in Relationship indicators, such as use of positive discipline techniques or student-teacher relationships, or in Competency indicators, such as teacher self-evaluation, instructional efficacy, or student academic engagement. This lack of ability to detect a difference could be due to the fact that the study is underpowered, or due to the true lack of an impact of the intervention. In order to better assess the impact of LGI trainings, we offer the following recommendations.

- **Increase the power of the study by increasing the number of schools involved in the intervention.** Alternatively, increasing the depth of the intervention (number of coaching visits or training sessions, length of training) could also improve results in secondary indicators such as student-teacher relationships, academic engagement, and others.

- **Continue to explore and test measures of relevant indicators for measuring impact.** Some student and teacher measures were reliable in the Ugandan context, notably: Efficacy for Engagement & Instruction, Trust in Teachers, Positive Discipline, Satisfaction with Life, Self-Determination, and Liking for School. These can be used in the future for other evaluations of education interventions. However, some measures did not demonstrate the same validity as was found in previous research. Further research can define tools that can replace these tools in order to fully measure the impact of the LGI and other education interventions.

- **Focus on schools in one region or in areas where the implementers can feasibly access and contact the schools on a regular basis.** Although it would be interesting to include schools from different regions, concentrating the geographic area would improve the depth and power of the study without overextending LGI efforts. One way to accomplish this would be to set some criteria for schools to be considered eligible for the intervention. These can include, but should not be limited to, the following:
    - Demonstrated interest from the school (through the signing of an MOU with the head teacher)
    - Geographic proximity or Access: LGI can determine the area in which all schools should be located so that coaches can visit the schools on a regular basis.
    - Need and Functionality: LGI can set certain criteria related to infrastructure or staffing, which demonstrates need and the ability to receive the training. If, for example, a school is in severe need of classrooms or latrines, the teachers and students in that school may not be prepared to receive trainings on teaching methodology, and should instead focus on resolving these infrastructural needs.

- **Enhance preliminary discussions with partners for more appropriate site selection.** Some of the school leadership selected, for instance, by the Diocese of Kampala, was unwilling to receive the trainings or viewed them as inconvenient. Allowing for some initial doubt, a more accurate assessment of head teachers' and deputy head teachers' attitudes towards the intervention will help to ensure school leadership support. Their participation is critical for long-term sustainability, as LGI efforts can then be complemented by, for example, taking over class observations after follow-up has ended.

- **Work with the government to better design the curriculum and evaluation system.** It was clear from the qualitative data that due to pressure to focus on the national exam, teachers are not able to devote sufficient time to the holistic education methods which are presented by the LGI intervention. One way to ease this restriction is to add components of the curriculum and national exam which focus on the development of soft skills. These are more in line with the LGI model of education and would provide the necessary incentive structure to encourage teachers to focus on the holistic education of the students.

- **Collaborate with a faculty of education or create a program in an established university.** Positive change in school culture requires buy-in from the entire school staff. LGI can achieve this buy-in through a deeper intervention in individual schools, or through integration of their techniques into the national teacher training programs. This can help all new teachers accept the LGI methodology as standard practices in Ugandan education.

APPENDIX

Table 1. Participating Schools

Type of School	School ID	Student population	Teacher population
Congregation of the Holy Cross	B	237	25
	D	NA	NA
Diocesan Schools	A	236	18
	C	437	42
	E	NA	NA
	F	805	50
Seminary	G	300	17

Type of School	School ID	Student population	Teacher population
Diocesan Schools	1	283	20
	2	241	16
	3	72	11
	4	312	21
	5	51	10

Table 2.a. Teacher Sample, by intervention type and time

	ID	Baseline	Endline	Follow-up	Total
Comparison Schools	School 1	13	7	7	20
	School 2	12	7	6	19
	School 3	9	8	5	17
	School 4	20	10	10	30
	School 5	6	7	2	13
Intervention Schools	A	9	2	1	11
	B	27	19	13	46
	C	17	16	7	33
	E	22	0	0	22
	F	15	7	6	22
	G	6	9	3	15
	Total	**156**	**92**	**60**	**248**

**School D was not included in endline sample.*

Table 2.b. Student Sample, by intervention type and time

	ID	Baseline	Endline	Total
Comparison Schools	School 1	59	60	119
	School 2	74	75	149
	School 3	75	75	150
	School 4	135	90	225
Intervention Schools	A	30	30	60
	B	132	120	252
	C	90	120	210
	E	130	0	130
	F	75	75	150
	G	75	60	135
	Total	**532**	**405**	**937**

Table 3. Teacher Balance Test — Endline

	Mean	Comparison Schools	Intervention Schools	Difference
Female Respondent (%)	20.65	25.64	16.98	-8.66
Age	35.39	36.19	34.74	-1.45
Marital Status				
Single	20.65	25.64	16.98	-8.66
Married	69.57	66.67	71.70	5.03
Divorced	1.09	2.56	0.00	-2.56
Religious Celibate	3.26	2.56	3.77	1.21
Number of Children	2.33	2.31	2.36	0.05
Educational Attainment				
Diploma	33.70	33.33	33.96	0.63
Degree	48.91	41.03	54.72	13.69
Masters or Higher	5.43	7.69	3.77	-3.92
Years Teaching				
0 - 1	6.52	10.26	3.77	-6.48
2 – 5	15.22	10.26	18.87	8.61
6 – 10	35.87	33.33	37.74	4.40
11 – 15	20.65	17.95	22.64	4.69
16 – 20	8.70	10.26	7.55	-2.71
> 20	5.43	10.26	1.89	-8.37
Years at the School				
0 - 1	6.52	10.26	3.77	-6.48
2 – 5	19.57	12.82	24.53	11.71
6 – 10	33.70	35.90	32.08	-3.82
11 – 15	4.35	0.00	7.55	7.55
16 - 20	3.26	5.13	1.89	-3.24
> 20	7.61	10.26	5.66	-4.60

	Mean	Comparison Schools	Intervention Schools	Difference
Paid Enough to Meet Needs	20.24	8.11	29.79	21.68*
Paid Predictably	70.24	47.22	87.50	40.28*
More than 1 job	13.25	22.86	6.25	-16.61
Part-Time	20.65	28.21	15.09	-13.11
Grade Teaching				
S1	60.23	58.97	61.22	2.25
S2	48.86	51.28	46.94	-4.34
S3	62.50	56.41	67.35	10.94
S4	68.18	74.36	63.27	-11.09
S5	43.18	35.90	48.98	13.08
S6	34.09	35.90	32.65	-3.24

* $p<0.05$

Table 4. Student Balance Test — Endline

	Mean	Comparison Schools	Intervention Schools	Difference
Female	62.98	84.33	47.16	-37.17*
SENIOR 1-2	50.92	65.33	40.25	-25.09
SENIOR 3 - 4	49.08	34.67	59.75	25.09
Age	15.82	15.36	16.14	0.78*
Number of Siblings at Home	4.74	4.82	4.68	-0.15

* $p<0.05$

Table 5.a. Teacher Results, Difference-in-Difference Analysis

	Mean values				
	Comparison Schools	*Intervention Schools*	*Difference*	*Difference-in-Difference*	*Standard Error*
Collective Self-Membership					
Baseline	3.94	3.99	0.05		
Endline	4.10	4.11	0.00	-0.05	-0.14
Flourishing					
Baseline	28.01	28.76	0.75		
Endline	27.29	29.05	1.76	1.01	-1.36
Job Satisfaction					
Baseline	19.17	17.94	-1.23		
Endline	19.55	18.77	-0.78	0.44	-0.68
Positive Discipline					
Baseline	3.84	3.58	-0.27		
Endline	3.80	3.77	-0.03	0.24	-0.23
Core Self-Evaluation					
Baseline	3.43	3.53	0.10		
Endline	3.48	3.50	0.02	-0.08	-0.13
Attitudes towards Classroom Management					
Baseline	50.17	52.19	2.02		
Endline	50.33	51.68	1.35	-0.67	-2.30
Efficacy for Engagement					
Baseline	0.09	4.34	4.60	0.26	
Endline	4.34	4.75	0.41	0.14	-0.17
Lesson Planning for Differentiated Instruction					
Baseline	3.90	3.75	-0.15		
Endline	3.97	3.89	-0.08	0.07	-0.17
Use of Registers					
Baseline	3.37	3.06	-0.31		
Endline	3.34	3.32	-0.02	0.29**	-0.12
Head Teacher-Teacher Trust					
Baseline	0.17	3.99	3.88	-0.11	
Endline	3.85	4.10	0.25	0.36*	-0.17
Head Teacher Supports Professional Development					
Baseline	0.17	3.91	3.37	-0.54	
Endline	3.60	3.32	-0.28	0.26*	-0.12

**** p<0.01, ** p<0.05, * p<0.1*

Table 5.b. Student Results, Difference-in-Difference Analysis

Mean values

	Comparison Schools	*Intervention Schools*	*Difference*	*Difference-in-Difference*	*Standard Error*
Trust in Teachers					
Baseline	3.78	3.90	0.12		
Endline	4.01	4.01	0.00	-0.13	-0.08
Positive Relationship with Teachers					
Baseline	3.55	3.55	0.00		
Endline	3.73	3.50	-0.23	-0.23*	-0.12
Academic Engagement					
Baseline	4.14	4.24	0.10		
Endline	4.22	4.30	0.09	-0.01	-0.04
Academic Press					
Baseline	3.68	3.75	0.07		
Endline	3.46	3.73	0.27	0.20*	-0.09
Positive Discipline					
Baseline	2.90	2.93	0.03		
Endline	3.62	3.60	-0.03	-0.05	-0.08
Satisfaction with Life					
Baseline	11.82	10.46	-1.36		
Endline	12.08	10.74	-1.34	0.02	-0.98
Self-Determination					
Baseline	3.40	3.46	0.06		
Endline	3.44	3.53	0.09	0.03	-0.11
Liking for School					
Baseline	3.40	3.27	-0.13		
Endline	3.64	3.59	-0.04	0.09	-0.11
Corporal Punishment					
Baseline	1.77	1.74	-0.03		
Endline	1.58	1.47	-0.11	-0.08	-0.05
Education as a Way of Facing Reality					
Baseline	4.12	4.27	0.16		
Endline	4.29	4.28	-0.01	-0.17**	-0.07
Use of Culture in Teaching					
Baseline	2.36	2.34	-0.02		
Endline	2.48	2.36	-0.12	-0.10	-0.15

**** p<0.01, ** p<0.05, * p<0.1*