TRAINING TEACHERS ON EMOTIONAL SELF-REGULATION AND POSITIVE DISCIPLINE FOR SAFER SCHOOLS

Findings from a pilot to prevent and reduce corporal punishment in Tanzania

EXECUTIVE SUMMARY

Sustained in part by harmful social norms, beliefs, and attitudes, teachers in many schools worldwide continue to use physical punishment with potentially long-lasting consequences for students. Based on our formative research conducted in the Nyarugusu and Mtendeli refugee camps in Tanzania, home to thousands of refugees from the Democratic Republic of the Congo and Burundi, violent punishments – such as hitting children with a stick, making them kneel, or slapping them – are common and acceptable discipline techniques in the camps.

Given the lack of evidence on what light-touch strategies work to reduce corporal punishment, the IRC partnered with the Behavioral Insights Team (BIT) to examine how strategies informed by behavioral insights – the study of how people make decisions and why — could shift the attitudes sustaining this violent practice and improve teacher behavior. Following an iterative approach, we have designed and sequentially tested different strategies to accomplish these goals.

During Phase I of the EmpaTeach: Preventing Violence Against Children in and around Schools Project (formerly known as PVAC), we focused on improving understanding of what messages would be most effective at persuading teachers of the need to change their disciplinary behavior. Through a rigorous evaluation, **we learned that building empathy for children is the most effective method for shifting teachers' attitudes and beliefs about corporal punishment** when compared with a rights and rules-based approach and sharing clinical evidence of the effect of violence on children.

In this second phase, we focused on establishing how best to help teachers follow through on their intention to shift their behavior away from corporal punishment. Leveraging the findings from Phase I, **we designed a program to equip teachers with appropriate techniques to maintain discipline in their classrooms and to address some of the drivers of violence against children**, including the normalized nature of physical punishments and stressful classroom environments. This program thus focuses on improving teachers' classroom management skills — specifically, the use of positive discipline strategies to replace physical punishments — as well as their emotional self-regulation and wellbeing. Using tools inspired by cognitive-behavioral therapy and behavioral science, teachers learn to identify their triggers, change destructive thought patterns, and plan for positive reactions. As part of this highly-scalable pro-gram, teachers self-organize and attend 12 group sessions with lessons and activities led by their peers.

This social element has the added benefit of providing teachers with a source of support and role models as they develop new social norms.

We ran a small-scale pilot in two schools in Mtendeli Refugee Camp to assess the acceptability and feasibility of the intervention, and to generate insights we could use to improve the program. During this pilot, we also tested the feasibility of evaluating this program on a larger scale. To accomplish these learning goals, we collected quantitative data from students and teachers in the two program schools and compared them with data from two schools that did not receive the program. We also collected qualitative data from teacher program participants. These data gave us insights into the following programmatic and outcome-related questions:

> How do teachers experience the program and the techniques they learn?
> Where are there opportunities for improving the program?
> Do our outcome measures work correctly?
> Do we see any differences in primary and secondary outcomes between program and non-program schools?

Primary outcome question:
• Are there differences in the incidence of physical and emotional violence as experienced by students in the classroom in program and non-program schools?

Secondary outcome questions:
• Does this program make students and teachers feel less depressed, more engaged in the classroom, and connected to their peers, teacher, and school?
• Does this program improve teacher wellbeing and sense of self efficacy?

WHAT WE FOUND

Before summarizing our findings, it is important to note that given the size and structure of the pilot, we cannot derive conclusive evidence on the impact of the program. It was not a proper cluster-randomized controlled trial — as the schools were not randomly assigned — and the sample of both teachers and students was too small for statistical rigor.

That being said, the **pilot findings show a lower incidence of physical and emotional violence in the classroom in program schools compared to non-program schools**. Students whose teachers participated in the program were less likely to report experiencing violence in the past week compared to students in non-program schools. We hypothesize that our program was successful in encouraging teachers to substitute positive discipline techniques and non-violent chores for corporal punishment and to maintain better control over their emotions while teaching. We also found that **students in schools that experienced the program felt more connected, less depressed, and more engaged in school than students in non-program schools**. These encouraging findings suggest that implementing the program more broadly would lead to positive outcomes.

However, the pilot results do not provide evidence that the program decreases the incidence of

depression among teachers or leads to an improvement in teachers' self-efficacy or growth mindsets. Teachers in program schools show slightly less favorable attitudes towards the use of corporal punishment when asked whether it was appropriate to use in a variety of classroom situations, but we did not observe a difference regarding teachers' general opinions about physical punishment, such as whether it is "wrong" for teachers to hit their students.

All in all, **the pilot shows the potential of this program to reduce violence against children in the classroom as well as to improve student wellbeing and their relationship with school**. Such a reduction could have lasting positive impacts on the students whose teachers participate in the program. Our plan of rolling this program out as an impact evaluation in the next phase would investigate whether the results hold at scale.

With regard to program acceptability among teachers, we find positive results from our endline survey and via interviewing teacher participants. First, the vast majority of teacher participants would recommend the program to other teachers. Second, teachers found the techniques useful and reported using them in the classroom. During prototyping sessions, **teachers and headmasters mentioned the stories and techniques were a sort of 'mirror into their lives' because they captured the essence of being a teacher and the challenges they face, increasing the program's appeal**. Finally, teachers reported enjoying the social support component of the program and regularly came to their group for help when facing challenges in the classroom or with the program material.

WHAT'S NEXT

The IRC and BIT are expanding the pool of partners working on this project to include Innovations for Poverty Action and Dr. Karen Devries of the London School of Hygiene and Tropical Medicine. With generous support from Wellspring, IRC and BIT will scale this program to approximately 1,400 teachers in Nyarugusu camp, and, led by Dr. Devries, IPA will conduct an independent evaluation of this program (where half of the 1,400 teachers will receive the program and half will not). **Findings from this evaluation will be a critical contribution to the sparse evidence base around how to reduce violence against children in schools, particularly in humanitarian settings**.

Before launching the program at a larger scale, IRC and BIT will use the findings from this pilot, including feedback from the teacher participants, to make improvements to program content and processes. These improvements are discussed in this report.

INTRODUCTION

WHY WE CHOSE THIS AREA OF STUDY AND WHERE WE WORKED

Violence is still commonly used to discipline children around the world. Nearly a billion children worldwide endure regular physical punishment by their caregivers.[1] Yet corporal punishment is associated with a host of negative outcomes for children, such as lowering their self-esteem, interfering with the learning process, and teaching that violence is an acceptable way of solving problems.[2] Violence against

[1] UNICEF 2014 Violent Discipline: Current Status & Progress. (n.d.). Retrieved June 21, 2016, from http://data.unicef.org/child-protection/violent-discipline.html
[2] Gershoff, E. T. (2002). Corporal punishment by parents and associated child behaviors and experiences: a meta-analytic and theoretical review. Psychological bulletin, 128(4), 539.

children is also associated with a greater likelihood of depression, anxiety, and substance abuse in later years.[3]

As discussed in the report describing our Phase I findings, there is a dearth of evidence on how to reduce the use of physical punishment in humanitarian contexts. Indeed, there has only been one randomized controlled trial that we are aware of which measured the effectiveness of a program intended to stop the use of corporal punishment in schools in Sub-Saharan Africa.[4] While this program – the Good Schools Toolkit, created by the organization Raising Voices – reduced the risk of physical violence by teachers and school staff against children by 42%, it features a comprehensive curriculum that takes 18 months to be implemented, multiple different types of content, and large time commitments by teachers and staff. There is currently no evidence on comparably lighter-touch approaches that can be easily added to existing teacher training programs.

To contribute to the limited evidence base, the International Rescue Committee (IRC) and the Behavioral Insights Team (BIT) partnered to use behavioral science – insights into the predictable, yet sometimes surprising, ways that humans behave in response to their environment – to design a program to reduce corporal punishment by teachers in Mtendeli and Nyarugusu Refugee Camps. In Phase I of this project and partnership, we focused on testing which types of messages most effectively shift teacher attitudes towards corporal punishment. The goal of Phase II was to test a light-touch approach — self-guided learning experiences — to determine whether it could meaningfully reduce violence in the classroom.

Nyarugusu, located in Tanzania, is the third largest refugee camp in the world and hosts nearly 140,000 refugees from neighboring Burundi and the Democratic Republic of the Congo.[5] Located nearby, Mtendeli was founded much more recently in 2016 and hosts over 50,000 Burundian refugees.[6]

During our intensive field research in Tanzania in 2016 and Phase I of this project in 2017 we learned that, despite widespread awareness of rules against corporal punishment, teachers and school personnel continue the rely on it. From Phase I, we know that 66% of teachers in Nyarugusu believe they have a duty to hit their students, with nearly half (47%) of all teachers reporting that students need to be hit so they will learn good behavior.

Offering teachers a reason to justify changing their disciplinary methods, new classroom management techniques, and CBT-inspired emotional regulation tools may give them both a reason to change and the right tools to manage their classrooms. Combining these new tools with behavior adoption and habit-formation strategies from behavioral science may cause teachers to substitute new positive disciplinary practices in place of physical punishment, therefore reducing the prevalence of violence in the classroom. In this light, last year we launched a two-phased program aimed at:

- Learning what works to generate the intention to change among teachers, and
- Converting that willingness into actual behavioral change.

Phase II focuses on the second of two goals.

[3] Tomoda, A., Suzuki, H., Rabi, K., Sheu, Y. S., Polcari, A., & Teicher, M. H. (2009). Reduced prefrontal cortical gray matter volume in young adults exposed to harsh corporal punishment. Neuroimage, 47, T66-T71.
[4] Gershoff, Elizabeth T. "School corporal punishment in global perspective: prevalence, outcomes, and efforts at intervention." Psychology, health & medicine 22.sup1 (2017): 224-239.
[5] Increasing perils at Tanzania's Nyarugusu refugee camp. (n.d.). Retrieved from http://www.aljazeera.com/indepth/inpictures/2016/05/increasing-perils-tanzania-nyarugusu-refugee-camp-160520115153710.html
[6] Mtendeli Camp Profile. UNHCR. Retrieved from: https://reliefweb.int/sites/reliefweb.int/files/resources/3_5.pdf

This note shares the results of Phase II of this program, which sought to lay the groundwork for understanding whether a self-guided teacher training program which draws on cognitive behavioral therapy (CBT) techniques, self-regulation skills, positive classroom management, and could change disciplinary behavior from corporal punishment to positive discipline among teachers in Mtendeli and Nyarugusu.

WHAT WE DID

We designed a behaviorally-informed self-guided teacher training program and implemented a pilot to lay the foundation for a randomized controlled trial.

Given the negative consequences of corporal punishment on children and the high prevalence of this practice in schools in Nyarugusu and Mtendeli refugee camps, the IRC and the BIT partnered to explore ways to reduce this harmful behavior. During our collaboration, we co-designed a multi-faceted program to improve student and teacher well-being, self-regulation, classroom management, and teachers' use of positive discipline strategies.

The project targets teachers' attitudes, beliefs, and behaviors. Over the course of the 10-week program, teachers attend 12 self-guided group sessions once per week lasting about one and a half hours. These sessions are led by "Group Coordinators" who work through a tailored booklet featuring stories, lessons,

and activities. For the pilot, these coordinators were either teachers nominated by their peers or lay community members paid a small stipend.

The content of these sessions includes exercises inspired by cognitive behavioral therapy — an approach that has been effectively applied to many problems, from reducing destructive behaviors to improving wellbeing — to help teachers challenge destructive thinking and patterns of behavior related to using violence as a form of punishment.[7] As part of these sessions, we provide teachers with alternatives to corporal punishment, tools (such as planning exercises and classroom management strategies), and the social support they need to form new habits. Based on our findings from Phase I, this program also features empathy-building exercises to increase teacher's willingness to change their disciplinary methods. To make the content enjoyable and more understandable for teachers, the program also features stories with relatable, recurring characters illustrating new concepts or role modeling positive norms.

EVIDENCE REVIEW

EmpaTeach is inspired by evidence from the behavioral literature on what works to change attitudes, beliefs, and behaviors, and builds on insights from our previous research in Nyarugusu and that of other contexts. Specifically, the program aims to accomplish the following:

1. **Help teachers focus on their values**: Give teachers the time and tools to identify and focus on their strengths and motivations. Research shows people can be more open to change their ways after considering their values, so the first session of the program features a 'values affirmation' exercise that may make teachers more receptive to new information. The values affirmation literature shows that it is possible to build self-efficacy and to shift hard-to-change behaviors and attitudes — for example, reaching out to someone different to you or going against a socially-established norm or stereotype — by asking people to reflect on their values.[8] This can be powerful even in relation to the toughest challenges. For example, promising laboratory experiments found that, after affirming at least one positive value about themselves, people in conflict environments (specifically, Israel/Palestine and Bosnia/Herzegovina) were more likely to express group-based guilt and to accept collective wrongdoing against another group; a necessary precursor to increased social cohesion. In contrast, thinking about the group as a whole boosted patriotism and decreased willingness to accept collective flaws.[9] Another trial showed that after claiming self-integrity as a value, voters were less likely to be swayed by polls and more likely to incorporate factual information into their voting decisions.[10] Teachers could also consider their resilience in adapting to changing circumstances (which may or may not emerge as a self-identified strength).

2. **Show the effect of corporal punishment**: Present information and evidence shows that corporal punishment is in fact harsh, harmful to children's ability to learn, and an ineffective way to prepare children for a safe or prosperous future. Determining the best way of conveying this message and reducing favorable attitudes towards the use of corporal punishment was the focus of the first phase of this program, showing that building empathy is the most effective technique. As such, two EmpaTeach sessions

[7] Hofmann, S. G., Asnaani, A., Vonk, I. J. J., Sawyer, A. T., Fang, A. (2012). The Efficacy of Cognitive Behavioral Therapy: A Review of Meta-analyses. Cognitive Therapy and Research, 36(5), 427–440 Accessible at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584580/

[8] Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: self-affirmation and social psychological intervention. Annual Review of Psychology, 65, 333-371.

[9] Čehajić-Clancy, S., Effron, D. A., Halperin, E., Liberman, V., & Ross, L. D. (2011). Affirmation, acknowledgment of in-group responsibility, group-based guilt, and support for reparative measures. Journal of personality and social psychology, 101(2), 256.

[10] Binning, K. R., Brick, C., Cohen, G. L., & Sherman, D. K. (2015). Going along versus getting it right: The role of self-integrity in political conformity. Journal of Experimental Social Psychology, 56, 73-88.

feature empathy-building exercises that ask teachers to reflect on negative and positive experiences they had with teachers when they were children, and to consider the experience of their students.
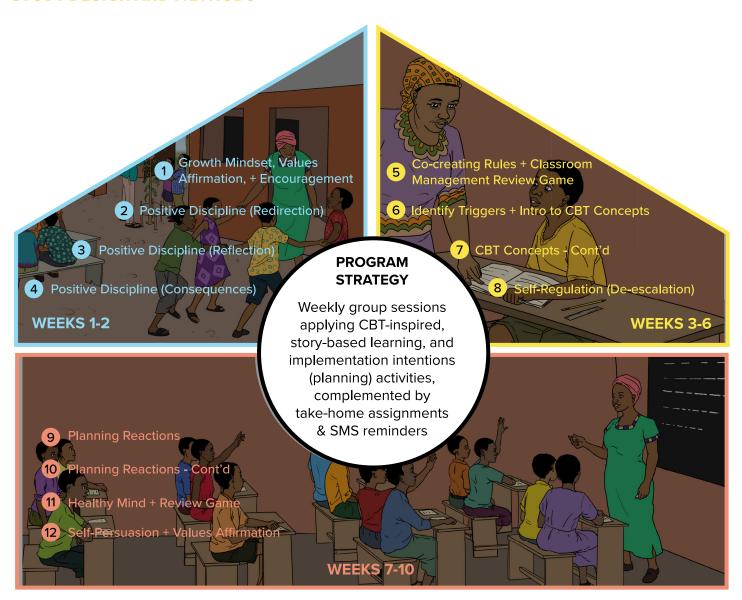
3. **Provide teachers with an alternative method to discipline children**: Given that teachers will still face the challenge of disciplining children in their classrooms, several sessions propose positive discipline techniques as another option to de-escalate conflict or maintain order in the typically overcrowded classroom. This gives teachers a concrete methodology to respond to misbehaviors without losing respect or credibility. The sessions heavily emphasize positive behaviors and propose rewards or recognitions that students can earn for these actions, either individually or in groups. Whenever necessary, EmpaTeach prescribes reflection exercises or consequences for misbehaving students, following the principles of positive discipline (e.g. asking students to consider why their misbehavior was wrong and what they can do to improve their behavior moving forward).

4. **Provide teachers with emotional regulation tools and tips inspired in cognitive behavioral therapy**: Our field research revealed that teachers were under a lot of stress with overcrowded classrooms and the day-to-day difficulties of living in a refugee camp. These circumstances sometimes prompted them to react impulsively and use corporal punishment. Based on these insights, the training includes re-framing, de-escalation, and emotional self-regulation techniques. It also guides teachers through an exercise (inspired by cognitive behavioral therapy) to identify their personal triggers and explore how their thoughts and feelings lead them to different reactions. This becomes the basis for a planning exercise, where teachers are encouraged to commit to react in new ways to their triggers (based on positive discipline principles) and to rely on self-regulation techniques to avoid escalation of negative thoughts or feelings.

5. **Help teachers plan for change**: While the previous components seek to persuade teachers of the need to change, this part of the program helps teachers follow through with their intention to stop using corporal punishment. There is a strong body of literature on implementation intentions, or simply put, a planning technique to turn intentions into action.[11] For this, two EmpaTeach sessions help teachers make concrete plans of how they can change their reactions to different student behaviors in the classroom. These exercises are based on a planning form listing various scenarios of children behaving (e.g. when a student does X, then I will Y), including both students' positive and negative conduct. Teachers are encouraged to make these behaviors as specific and personal as possible, identifying people, cues in their own environment, or times when they use different discipline methods. Moreover, these scenarios should help illustrate the complexity of disciplining different behaviors (e.g. falling asleep because of hunger or illness, or refusing to stand up during menstruation).

6. **Highlight people's potential to change and adapt**: Drawing on the growth mindset literature, the booklet tells teachers that people can change and teachers all over the world have been able to adapt their behavior. Importantly, messages also mention that changing behavior is hard and teachers should expect difficulties (e.g. misbehavior in the classroom may get worse before it gets better as children adjust and test boundaries). It asks teachers to plan what they will do when they encounter difficulties and to choose a supporter they can turn to for advice. By emphasizing teachers' ability to overcome difficulties and develop better classrooms dynamics with time, we hope to boost their resilience. Moreover, we train teachers to reprimand or reward behaviors in children – rather than character traits – and to emphasize their capacity to improve with practice. Similarly, this approach can have a positive impact

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[11] Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. Advances in Experimental Social Psychology, 38, 69-119.

on children's behavior and even on their performance in school.[12]

7. **Facilitate a group support system**: Teachers are grouped with peers from their school, on whom they can rely for support to apply the new discipline techniques. The goal is to offer a consistent reminder, personalized support, and a new reference point in the community — other teachers who are trying to stop using corporal punishment. This last point hopefully helps to start changing the perception that corporal punishment is common or accepted, or that hitting children is a key aspect of being a good teacher.

STUDY DESIGN AND METHODS

WEEKS 1-2
1. Growth Mindset, Values Affirmation, + Encouragement
2. Positive Discipline (Redirection)
3. Positive Discipline (Reflection)
4. Positive Discipline (Consequences)

WEEKS 3-6
5. Co-creating Rules + Classroom Management Review Game
6. Identify Triggers + Intro to CBT Concepts
7. CBT Concepts - Cont'd
8. Self-Regulation (De-escalation)

WEEKS 7-10
9. Planning Reactions
10. Planning Reactions - Cont'd
11. Healthy Mind + Review Game
12. Self-Persuasion + Values Affirmation

PROGRAM STRATEGY

Weekly group sessions applying CBT-inspired, story-based learning, and implementation intentions (planning) activities, complemented by take-home assignments & SMS reminders

In order to prepare for a larger implementation and evaluation of this program in Nyarugusu, we ran a pilot in Mtendeli that mimicked the design of a cluster-randomized controlled trial (RCT) — though it was

[12] Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. Review of Educational Research, 79(1), 491-525.

not a true RCT, as noted. The primary goals of this pilot were to generate insights into the feasibility of testing a larger-scale version of this intervention in Nyarugusu refugee camp and to learn from teachers' experience of the program to improve it. We also sought to determine whether our outcome measures worked correctly, and if so, whether we could measure trends in outcomes.

We selected two schools in Mtendeli camp to participate in the pilot program, which helped us test the program delivery process and identify improvements needed. Two other schools in Mtendeli did not receive the program.

Throughout the pilot, we conducted a number of different quantitative and qualitative research activities, described below, to allows us to assess teacher's experience of the program, comprehension and memorability of the material, and preliminary evidence of impact on our primary research questions.

It's important to note that given the size and structure of the pilot, we cannot derive conclusive evidence on the impact of the program. The pilot was not structured as a proper cluster-randomized controlled trial — as the schools weren't randomly assigned — and the number of both teachers and students surveyed was very small. Therefore, the pilot design and sample sizes preclude us from making strong claims that the program caused the differences we observe in outcomes between the schools that experienced the program and those that didn't. However, our findings suggest that implementing the program more broadly could lead to positive outcomes, as we will discuss below, and help us identify ways in which we can improve the program or clarify our curriculum before scaling it up. The findings we present in this report guided us to improve the program content before scaling it up.

WHAT DID WE LEARN ABOUT THE POTENTIAL IMPACT OF EMPATEACH ON KEY OUTCOMES?

SUMMARY OF OUR QUANTITATIVE RESEARCH

To see whether there were any trends in our key outcomes, we interviewed 82 students: 34 students from one primary school that participated in the program and 36 students from two primary schools whose teachers did not participate. Additionally, we interviewed 12 students from one secondary school whose teachers did participate. Similarly, we asked 108 teachers to fill out a survey at the end of the program: 92 primary school teachers and 16 secondary school teachers. Half of the primary school teachers and all of the secondary school teachers in Mtendeli participated in the program. We summarize what we learned about the experience of students and teachers below.

STUDENTS' EXPERIENCE

EmpaTeach's primary goal is to reduce the level of violence students experience in the classroom. The program also sought to improve students' wellbeing and to make them feel more connected at school. To those ends, we surveyed a subset of students to measure the following outcomes, which we adapted, translated, and tested:

1. **Incidence of violence in the classroom.** To measure violence in the classroom, we asked students whether they experienced emotional violence or physical violence from their teacher in the past week (e.g. "In the past week, has your teacher hurt you or caused pain to you?"). This measure is represented by "Physical Violence" in Figure 1 in the discussion of our results. This survey was adapted from the ISPCAN Child Abuse Screening Tools (ICAST). See Appendix 2 for the survey questions.

2. **Incidence of emotional violence in the classroom.** To measure emotional violence in the classroom, we asked students whether they experienced different types of emotional violence from their teacher in the past week (e.g. "In the past week, has your teacher insulted you or said something mean about you?"). This measure is represented by "Emotional Violence" in Figure 1 in the discussion of our results. This survey was adapted from the ISPCAN Child Abuse Screening Tools (ICAST). See Appendix 2 for the survey questions.

3. **Student wellbeing (depression).** To measure student wellbeing, we administered an adapted version of the "Moods and Feelings Questionnaire: Child Version," which asks students how they have been feeling recently and is a validated screening tool for depression. This is represented by "Depression" in Figure 1. See Appendix 2 for the survey questions.
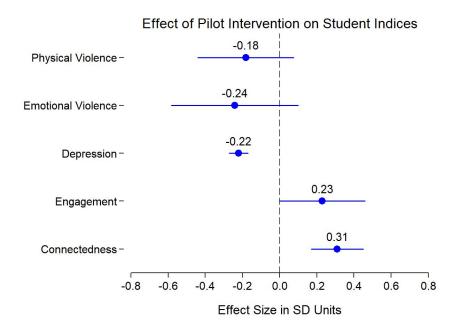
4. **Student engagement.** To measure student engagement, we asked students whether they liked school, expended effort in class, and felt engaged (e.g. "I try hard to do well in school"). These questions were adapted from the Engagement vs Disaffection with Learning questionnaire. This measure is represented by "Engagement" in Figure 1. See Appendix 2 for the survey questions.

5. **Student connectedness.** To measure student connectedness, we asked students about their feelings of belonging and safety in school (e.g. "I feel that my teachers care about me"). These questions were adapted from a questionnaire from the Good Schools Toolkit study in Uganda. This measure is represented by "Connectedness" in Figure 1. See Appendix 2 for the survey questions.

Overall, we found our student outcome instruments worked as we anticipated, though we are planning further testing to ensure that the youngest students can reliably understand the questions about violence.

OUR FINDINGS ABOUT THE EXPERIENCE OF STUDENTS

Since EmpaTeach's aims to improve the experience of children in schools, it is therefore encouraging that the most promising findings from our pilot relate to improvements in the student outcomes described above. Figure 1 summarizes the relative difference between the experience of students attending program and non-program schools. In this section, we describe each of these findings in more detail.

Effect of Pilot Intervention on Student Indices

Figure 1 [13]: *The magnitudes of the effects shown in Figure 1 are expressed in standard deviation ("SD") units that summarize students' responses to questions for each outcome metric.*

[13] A note on interpreting Figures 1 and 2: The dotted vertical line in the middle represents the point at which there is no difference (i.e., the difference is zero) in the experience of students in schools that experienced EmpaTeach and schools that didn't. We call the blue dot the estimate of the difference in the corresponding outcome across students and teachers in schools that experienced EmpaTeach and schools that didn't. For example, when the blue dot is left of this line (a negative estimate of the difference), the students in EmpaTeach schools reported on average a lower score for that outcome than students in other schools, expressed in standard deviations. The line around the blue dot is called the 95% confidence interval, and indicates the degree of uncertainty we have around the estimated difference. We did not design this pilot to generate robust causal evidence for the EmpaTeach's impact, and therefore caution against standard hypothesis testing and interpretations of statistical significance.

OUR PILOT SUGGESTS A DECREASE IN THE INCIDENCE OF VIOLENCE EXPERIENCED BY CHILDREN IN PROGRAM SCHOOLS

Encouragingly, we see trends that indicate reductions in both physical and emotional violence, as reported by students in schools that received the program. The direction of the effects is positive, as predicted. Furthermore, the magnitude of this effect suggests a change that would be cost-effective and meaningful for student outcomes. Therefore, we recommend testing this program at scale. Figure 1 below shows that students attending schools whose teachers participated in EmpaTeach seem to have experienced fewer incidents of physical and emotional violence in the classroom, relative to children in schools that didn't receive the program. The blue dot plots the estimated difference between program and non-program schools, while the line shows the potential range of that estimate. Judging from the pilot, the results do trend in the right direction: a potential reduction in violence.

UNDERSTANDING THESE FINDINGS

Why does it appear that the incidence of physical and emotional violence is lower in the schools that participated in the program?

Though the pilot was not designed such that we can confidently claim our program caused a decrease in violence, the survey results are encouraging. We may observe a difference for two primary reasons. First, when we asked teachers about their use of the techniques they learned from the program, a large majority reported using most positive discipline techniques in their classrooms more than once per week. We hypothesize that teachers who participated in the program may be substituting positive discipline techniques when they would have ordinarily used corporal punishment.

Second, large majorities of teachers also report that they found the CBT-inspired techniques and emotional regulation techniques aimed at helping teachers stay calm in stressful classroom situations to be useful. We hypothesize that teachers who used these techniques were less likely to become frustrated by difficult classroom management situations and thus less likely to use physical punishment to maintain control of their students.

OUR PILOT SHOWED IMPROVEMENTS IN STUDENT WELLBEING, ENGAGEMENT, AND CONNECTEDNESS

As shown in Figure 1, we found that students in the program schools were less likely to report feeling depressed, relative to students in the non-program schools. Students in the program schools also reported feeling more engaged with their day-to-day activities in the classroom and more connected with the school, their peers, and their teacher. Shown visually in Figure 1, the blue dots representing levels of student engagement and connectedness at program schools relative to non-program schools fall to the right of the dotted line, denoting a positive difference in these measures. While this pilot can only provide suggestive findings, we are also encouraged by the student wellbeing, engagement, and connectedness results.

UNDERSTANDING THESE FINDINGS

Why do students attending program schools appear to be less depressed, more connected and engaged?

We may see lower rates of student depression in program schools versus non-program schools for two primary reasons. First, students in program schools may feel safer in class and less anxious about being physically harmed. The literature shows that being subjected to corporal punishment can interfere with learning and lead to depression and lower self-esteem.

Second, students in program schools may feel that their teachers care about them when they use less physical punishment and display less anger. Our program also conveyed "encouragement" techniques that teachers can use to highlight and encourage students when they demonstrate good behavior. Moments of encouragement may serve to improve moods or feelings, as well as strengthening the bond between teachers and students.

OUR FINDINGS ABOUT THE EXPERIENCE OF TEACHERS

Though EmpaTeach's primary goal is to reduce violence in the classroom, improving teachers' wellbeing and self-efficacy is another important goal. During a survey after the conclusion of the program, we measured the following:
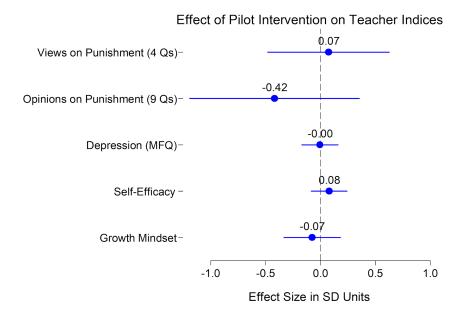
1. **Teacher big-picture attitudes about corporal punishment.** To be consistent with the measures we used in Phase I, we employed two surveys to measure attitudes. First, a values-based survey measuring big-picture agreement with corporal punishment ("Views on Punishment (4 Qs)" in Figure 2), which is an adapted version of the validated "Attitudes Towards Spanking Scale." This survey asks about teachers' general attitudes towards corporal punishment. E.g. "it's wrong for teachers to hit their students." These questions were adapted to fit the context in Nyarugusu. For more detailed information, please see Appendix 2 for the survey questions.

2. **Teacher scenario-based opinions about corporal punishment.** The second outcome we used to measure teacher attitudes towards corporal punishment took a scenario-based approach showing agreement with whether it is appropriate to use physical punishment in different classroom situations ("Opinions on Punishment (9 Qs)" in Figure 2), which is an adapted version of the Attitudes on "Child Beating" section of Save the Children's "Child Protection: Knowledge, Attitudes, and Practices in Central and Western Liberia" study.[14]

3. **Teacher wellbeing (depression).** To measure teacher wellbeing, we administered an adapted version of the "Moods and Feelings Questionnaire" for adults, which asks teachers how they have been feeling recently; this survey is typically used as a screening tool for depression. This measure is represented by "Depression" in Figure 2. See Appendix 2 for the survey questions.

4. **Teacher sense of self-efficacy.** To measure teacher sense of self-efficacy — i.e. their confidence in their ability to accomplish teaching-related tasks — we asked them questions assessing whether they felt capable in three domains: eliciting student engagement, using different instructional practices, and managing their classroom. This instrument is an adapted version of the Teacher Sense of Self Efficacy scale. See Appendix 2 for the survey questions.

5. **Teacher growth mindset.** We also asked teachers a set of questions designed to measure whether they had a "growth mindset," i.e., whether they believe that their most basic abilities, such as intelligence, can be developed through dedication and hard work and whether they enjoy hard work. The survey questions are found in Appendix 2.

In general, our teacher outcome instruments performed as expected, and the experience allowed us to identify areas for improvement. In particular, we plan to conduct further testing of the survey used to measure teacher wellbeing to make sure teachers are interpreting the questions consistently. Additionally, we were not able to test teachers' comprehension of the growth mindset questions before using them in the survey. Therefore, we will be cautious when interpreting the pilot's findings around growth mindsets and plan to run further tests to ensure the survey is well understood and interpreted before using it in the next phase of work.

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[14] Ruis-Caseres, M. "Child Protection Knowledge, Attitudes and Practices in Central and Western Liberia." Save the Children (2011).

Contrary to outcomes measuring the experience of children, the data show no meaningful difference between teachers in program and non-program schools on all but one measure. This allows us to identify opportunities for program improvement. Figure 2 shown below summarizes the relative difference, if any, between teachers in program and non-program schools on the measures described above.

Effect of Pilot Intervention on Teacher Indices

Figure 2: *The magnitudes of the effects shown in Figure 2 are expressed in standard deviation ("SD") units that summarize teachers' responses to questions in each measure.*

ADDRESSING TEACHERS' ATTITUDES TOWARDS CORPORAL PUNISHMENT

As we described in our learnings from Phase I, attitudes towards corporal punishment have been shown to correlate with its use. Therefore, specific parts of our program built on our learnings from Phase I about how to effectively shift teacher attitudes towards corporal punishment. Overall, we see relatively less support for the use of corporal punishment in various classroom scenarios by teachers in schools that experience EmpaTeach, as shown by the blue dot for "Teacher Scenario-based Opinions about Corporal Punishment". We observe no meaningful difference on teacher general attitudes towards corporal punishment, such as whether teachers have a "duty" to physically discipline children (questions in the appendix).

UNDERSTANDING THESE FINDINGS

Why do teachers in program schools appear to have less favorable attitudes towards using corporal punishment in various classroom scenarios?

The magnitude of the difference between teacher attitudes about whether physical punishment is appropriate in specific classroom scenarios in program and non-program schools is meaningful, but highly variable. Based on findings from Phase I, the program content during the pilot featured an empathy-building exercise helping teachers understand how their students might feel when they experience physical punishment. We hypothesize that this helped reduce favorable teacher attitudes towards corporal punishment in various scenarios for program teachers. To strengthen this effect, after the pilot we developed additional empathy building exercises to be included and plan to add some elements of the module sharing clinical evidence, which led to important shifts in attitudes among women in Phase I.

Furthermore, the student characters featured in the stories which appeared in several lessons cast students in a sympathetic light. We know that the teachers felt connected to the stories, and they may have helped teachers further empathize with the difficult nature of student life in the camp.

The shift in attitudes was reflected in teachers' disagreement that corporal punishment was acceptable for a number of misbehaviors. It is likely that this difference is due to the fact that the EmpaTeach content highlights concrete classroom scenarios and encourages the use of non-violent techniques in those situations.

Why do teachers in program and non-program schools show no difference in general attitudes toward physical punishment?

While we observe a difference between program and non-program teachers' attitudes towards whether physical punishment is appropriate in specific classroom scenarios, there is no difference between their big-picture attitudes towards physical punishment. In Phase I, teachers' scores on these instruments were correlated. We are surprised they did not correlate in this setting. We have two hypotheses as to why. First, as described above, our program specifically addressed the use of corporal punishment in the classroom, often by focusing on specific misbehaviors and classroom situations. It did not, however, address corporal punishment in general, which was the focus of the "Opinions on Punishment (4 Qs)" instrument. For example, one of the questions asks whether teachers think there should be "a law forbidding teachers to hit their students." Secondly, it is also possible that we don't observe a difference by chance, given our small sample and the high variation in the responses.

IMPROVING TEACHER WELLBEING, SELF EFFICACY, AND GROWTH MINDSET

The outcome data showed no difference between program and non-program teachers' well-being (i.e. the incidence of depression). In other words, there was no difference between program and non-program teachers' responses to the MFQ survey used to diagnose depression. Furthermore, the pilot shows slight differences between program and non-program teachers' sense of self-efficacy and growth mindset, but the magnitude of the difference isn't large enough to indicate a real difference exists.

UNDERSTANDING THESE FINDINGS

Why do teachers in program schools show no difference in wellbeing?

Why do teachers in program schools show no difference in wellbeing?
First, our program did not directly target teacher depression. However, our hypothesis was that, if teachers gained better control of their classrooms and used CBT-inspired tools and other healthy mind techniques regularly, they may experience an increase in wellbeing. There are a couple of potential reasons why we did not find this effect. First, the CBT tools were focused on helping teachers reframe how they experienced classroom situations — teachers may not have realized their relevance for everyday life situations. For Phase III, we will make additions to the content to explain that teachers can use the CBT techniques to process their thoughts, feelings, and actions in non-classroom situations. Second, we saw a very low score for this index among all teachers, which may indicate either lack of understanding or bias in the way teachers responded to questions, or that teachers are generally not experiencing depression in this context. We plan to test this survey again to ensure it's accurate and reliable.

Why do teachers in program schools show no difference in self-efficacy?

Teachers scored highly on this measure in both program and non-program schools. As such, there wasn't much room for improvement in self-efficacy as measured by this instrument. That said, based on our findings in Phase I, we know that a values affirmation exercise — an activity that asks teachers to affirm their values — can at least temporarily increase teachers' sense of self-efficacy. We hypothesize that the values affirmation exercise in the early part of the program may have caused a temporary increase in self-efficacy, but not one that was observed in the outcome data. Other rigorously evaluated values affirmation interventions found to increase teacher self-efficacy include more than one values affirmation exercise over the course of several months. To reflect this, we will add a values affirmation exercise towards the end of our program as well.

Why do teachers in program schools show no difference in growth mindset?

Since some program content focused on cultivating teacher growth mindset, specifically with regard to persisting when faced with challenges, we hoped to observe a difference between program and non-program teachers' growth mindset scores. However, it's important to note, as mentioned earlier, that we were not able to test teachers' understanding of the growth mindsets survey before the pilot and will need to test it before the next phase. Based observing no difference, we are making changes to our content to ensure it promotes a positive growth mindset. Specifically, we are including more growth mindset-related messages centered on the value of exerting effort in pursuit of learning.

WHAT DID WE LEARN ABOUT THE WAYS TO IMPROVE OUR PROGRAM DESIGN?

In addition to the outcomes described above, we also conducted qualitative research with teachers to assess their experience of the program, their level of comprehension of the material and ability to recall key concepts, and their likelihood of using the new techniques. Specifically, we sought to answer the following questions:

- How do teachers experience the program and where are there opportunities for improvement?
- Do teachers retain and apply the information and techniques they learn?
- What other types of learning tools may improve learning outcomes?

In order to answer these questions we leveraged a set of qualitative research activities, including:

1. **In-Depth Interviews:** We interviewed participating teachers to understand whether they were comprehending, retaining, and applying the techniques they learned in a given session. Each interview was approximately two hours long and took place the week after the session occurred. We asked open-ended questions so that teachers expressed their understanding of and opinions about the material in their own words. This enabled us to identify gaps in the material where we could implement content changes, and prototype new designs to fulfill those unmet needs.

2. **Mock Sessions:** We conducted mock sessions with groups in order to understand how the sessions were working in practice. We chose the sessions where we anticipated teachers were having the most difficulties and paused the sessions to ask questions at key points. We also used trained enumerators to observe live sessions, to take notes of group dynamics, and to assess whether the sessions were working as intended.

3. **Card Sorting:** In general, we ascertained that teachers felt uncomfortable disclosing if they disliked anything about the program during interviews. To address this, we followed up our observation of mock sessions with a "card sorting" activity with the same participants. This technique asks a participant to rank a set of options and served to gain insight into teachers' preferences without forcing them to critique the program. We also used card sorting activities to introduce supplementary tools and understand their potential.

4. **Co-creation:** We held one co-creation session with two of the program coordinators in Mtendeli. We gathered feedback from the coordinators on how the sessions were going by walking through the sessions and asking for their feedback on key activities. Additionally, we created an ideal session user journey, showing how the coordinators thought the session should flow and what activities should be included.

5. **Prototyping:** Based on the learnings from the qualitative research, we built and tested a set of prototypes to consider possible additions to the session content. Each prototype was tested with a group of four teachers. Prototypes were then refined and then re-tested with additional groups. We tested and integrated several prototypes described in the "What We Improved" section starting on page 21.

6. **Endline Survey:** After the program concluded, we gave teachers a battery of multiple-choice questions that assessed their recall and comprehension of specific parts of the material, including the classroom management and emotional regulation techniques. We also measured teachers' experience of the program to gather their feedback on what parts of the program did and did not work, what they found useful, and what they applied in their classrooms. We used this data in combination with the other qualitative research to make changes to EmpaTeach's overall design and content.

7. **Random Drop-ins:** During the course of the program, we had our enumerators randomly visit and observe ongoing small-group sessions. They made note of group dynamics, attendance, facilitators' skills, and whether or not groups discussed corporal punishment.

8. **Classroom Observation:** Before the program, we trained pre-existing classroom inspectors on the use of a new Teacher Classroom Observation Form. This form asked inspectors to focus on program-relevant teacher competencies, such as classroom management and classroom environment. This method attempted to observe whether teachers were using the program's techniques in class.

In this section, we describe six overarching findings from our research aimed at program improvement and the changes we made to the program based on those findings. Before describing those six findings, we will briefly describe our high-level takeaways regarding how teachers experienced the program.

Through our endline survey and qualitative research, we found that teachers generally enjoyed the program and found the critical learnings to be useful. 93% of teachers would recommend the program to another teacher. They thought the new classroom management techniques were useful and, with a few exceptions, put them into practice in their classrooms. Large majorities of program teachers used the classroom management techniques more than once per week (with the exception of those more severe consequences that, per the program's recommendation, should not be used very often).

As previously mentioned, EmpaTeach's design includes a strong social component to provide with a source of social support. Teachers reported enjoying the social support aspect of the program. For example, 100% of teachers who said they faced challenges using the new techniques reported talking to their supporter to get help with those difficulties. Over 95% of teachers looked forward to meeting with their group each week, and over 90% felt comfortable with their group members.

Though our findings indicate the program was well received by teachers, we were also able to identify areas for improvement. Identifying these areas allowed us to make content changes across the booklet to improve understanding and learning outcomes. We describe these learnings and the subsequent changes in the findings that follow.

FINDING #1: THE GROUP COORDINATOR IS ESSENTIAL TO TEACHER UNDERSTANDING BUT THERE IS NO DIFFERENCE BETWEEN TEACHER AND COMMUNITY MEMBER COORDINATORS

In general, participants had a good experience with their group coordinator: 82% rated their coordinator "good" or "very good" and 96% would strongly recommend their coordinator to another group. One goal of the pilot was to determine whether teachers nominated to become coordinators by their peers were as effective as lay person community members who received a small stipend in the role of group coordinators. No data from the endline survey or qualitative research pointed strongly in the direction of either coordinator type.

Based on classroom observations, however, we can conclude that coordinators had differing levels of understanding of the material. On the one hand, when coordinators did not fully understand, they sometimes delivered false or misleading information to their group members. On the other hand, a group with a competent coordinator usually flowed smoothly through the material, as the coordinator was able to clarify areas of difficulty and help their group members learn.

WHAT WE IMPROVED #1:
BOLSTERED THE GROUP COORDINATOR TRAINING AND CONTENT

In order to mitigate the risk that group coordinators may lack sufficient knowledge to deliver the sessions, we made two major changes. First, we lengthened the teacher coordinator training by two days in order to provide more time for teachers to practice group facilitation skills. Second, we incorporated a more scripted format throughout the coordinator-specific booklet that relies less on the coordinators' recall of the training they receive and highlights frequently asked questions (FAQs) sections along with each activity for facilitators to rely on.

FINDING #2: TEACHERS RECALL AND UNDERSTAND THE NEW TECHNIQUES, BUT COULD NOT ALWAYS APPLY THEM IN THE CORRECT SITUATION OR SEQUENCE

When teachers were asked to explain techniques or recall learnings in qualitative interviews, they could often repeat parts of a given session, such as the story, from memory. Teachers also performed well on the endline survey questions checking their basic comprehension of the program learnings. However, when teachers were probed on how to apply those learnings in their classrooms, gaps would appear.

Teachers demonstrated an understanding of how to use individual techniques. However, they often showed a lack of nuanced understanding of what to do when a misbehavior was repeated. We therefore developed and prototyped an Escalation Video to address this lack of understanding and show how to address repeated misbehaviors with progressively more severe responses from the teacher, without ever using physical or emotional violence.

WHAT WE IMPROVED #2:
ENCOURAGED NUANCED UNDERSTANDING & APPLICATION OF PROGRAM TOOLS

Our qualitative research revealed a need for more activities to help teachers analyze the new techniques and practice applying them in different situations. As a result, we made several changes to the content. First, we added more discussion questions following each activity and more difficult multiple-choice questions, requiring teachers to think more deeply about new techniques.

Second, we created and tested a game to help teachers recognize when to apply each new technique by taking them through a variety of classroom scenarios. As part of this game, each teacher takes a turn being 'Ambrose,' the main character of the program's stories, and they draw a scenario that Ambrose

Figure 3: *The "Ambrose and Sifa" teacher card game, which reviews behavioral techniques for classroom management and emotional regulation from previous sessions.*

might face in his classroom. The rest of the teachers act as 'Sifa,' Ambrose's wise supporter, and suggest techniques Ambrose could use to address this scenario. 'Ambrose' then chooses the one she or he thinks is best and explains why. The teachers then discuss this choice and the coordinator reads the correct answer and explanation. This game facilitates discussion and analysis of the different types of techniques included in the program and allows coordinators to course correct for teachers' misinterpretations.

FINDING #3: VIDEOS AND ROLE PLAY EXERCISES HELP TEACHERS APPLY WHAT THEY LEARN

The videos and role play activities were consistently cited as a good tool to see how the new techniques included in the program were actually performed. They also increased teacher confidence: when teachers watched the videos, they saw that other teachers 'like them' were able to do these techniques, which encouraged them to try.

➡️ **WHAT WE IMPROVED #3:
ADDED ADDITIONAL VIDEO AND ROLEPLAY CONTENT**

Because teachers found the video content so useful, we added two new explanatory videos to the program. The Reaction Cycle Video explains how to use the "reaction cycle tool." The Reaction cycle is the key CBT-based tool in the program content. The Reaction Cycle video was meant to demonstrate how anger originates and can escalate and take control of one's actions. The video features Ambrose, who is confronted with a misbehaving student, Esperance. Her misbehavior triggers his anger cycle and causes him to react in an aggressive way that wouldn't have occurred if he was able to control himself. The video also features a 'Coach' character who intervenes at a key point to explain the progression of anger in Ambrose.

The Escalation Video also mitigates the teachers' difficulty understanding how to link positive discipline techniques in the face of repeated misbehaviors. The video's story shows a student that continually disturbs the classroom and the teacher's reaction. The teacher starts by using a relaxation technique to stay calm, then a redirection technique to try and get the student back on task, then a reflection technique to help the student learn from their mistake, and finally a consequence technique to address the student's severe misbehavior. Teachers learned these positive discipline techniques across several sessions in order to address a student whose bad behavior is escalating from minor to severe.

Figure 4: *The "Reaction Cycle Video" demonstrating how a teacher can control their anger in a classroom situation. These videos are displayed for viewing on a digital tablet during sessions.*

In addition to new videos, we added more role play activities at the beginning of each session to help teachers review techniques learned in the previous session and give each other feedback. During testing, teachers were better able to recall the techniques and practice applying them.

FINDING #4: EMPATHY, STORIES, AND CHARACTERS HELP TEACHERS UNDERSTAND WHY THEY SHOULD DO ACTIVITIES

Throughout this program, we have found that empathy helps teachers understand the 'why' of the training and the need to adopt new classroom management techniques en lieu of harsh punishment. When interviewed, most teachers reported experiencing violence by their teachers when they were kids. Building empathy between those experiences and the positive classroom management techniques makes it more likely they will apply them.

In addition to the power of empathy building, we also learned that teachers strongly identified with the characters presented in the short stories that precede the main content of each session. Throughout the sessions, teachers read stories about two teachers: Ambrose and Sifa. We found that teachers identify heavily with Ambrose and have taken these personas outside the training sessions. Many recounted supporting each other and saying things like 'You're being an Ambrose.'

➡️ ## WHAT WE IMPROVED #4:
NEW EMPATHY-BUILDING ACTIVITIES AND STRONGER CHARACTER PERSONAS

First, we created "Empathy Maps." These empathy maps are "User Journeys" that prompt teachers to imagine the lives of their students outside the classroom and create a journey of how the lives of these students may influence their behaviors in the classrooms. They also reflected on how the teacher's reaction to their students' behavior may influence their thoughts or actions.

The goal of the maps is to help teachers identify with their students in order to understand how harsh punishment, or positive discipline, might affect them. Teachers were forced to consider how their negative reactions may make their students feel bad. We also discovered there was room for a positive reaction empathy map to demonstrate how positive reactions make students feel good and served to reinforce positive behaviors.

In addition to the empathy maps, we decided to leverage the characters from our stories, Ambrose and Sifa, given their incredible appeal. We incorporated the Ambrose character into the additional training videos and the new card game to learn how to apply techniques.

FINDING #5: TEACHERS WANT LINKS WITH THE OUTSIDE WORLD

When we hosted card sorting sessions, teachers prioritized session learnings that created links with the outside world. Validation from the outside world also increases trust in the program.

WHAT WE IMPROVED #5:
INCREASED LINKS TO THE OUTSIDE WORLD

During our qualitative research, we found that teachers sought validation and learning from the outside world. As such, we prototyped an External Expert video which featured an East African teacher describing a classroom management technique. The teachers liked the content of the video because it was similar to techniques they already used and they felt validated that a technique coming from 'the outside' was similar to the ones they used. Based on this insight, we sought opportunities to reference outside

FINDING #6: TEACHERS PREFERRED CLEARER SIGN-POSTING

Our interviews with teachers showed some level of confusion among related sessions and concepts. Teachers had difficulty understanding how to link techniques together and move progressively through them. Making the connections between sessions clearer could therefore improve engagement with the content and motivation.

Figure 5: *The "Program Journey Map" serves as a visual timeline to summarize how teachers can connect techniques and learnings from previous sessions.*

→ WHAT WE IMPROVED #6:
BETTER CONNECTIONS BETWEEN SESSIONS

To improve the program's flow and manage teachers' expectations and motivations, we made various general and session-specific changes to improve the flow and experience of progressing through the booklet. In the beginning, we added a visual timeline that shows teachers what they will learn throughout the entire program and where they will end up at the end. We created a map featuring each session's slogan with a short description of the main takeaways for that session. These additions helped teachers understand the overarching learning goals.

WHAT THIS MEANS FOR FUTURE PROGRAMMING

Learnings from this pilot have been critical for improving EmpaTeach as we prepare to scale and test it in Nyarugusu. Three lessons stand out:

1. This program show promise for its effects on students. First, it may reduce physical and emotional violence experienced by students in the classroom and shows potential to be tested at a larger scale. There is stronger but still suggestive evidence that it also decreases student depression and increases student engagement and connectedness in school.

2. Though we have reason to be encouraged about our program's impact on students, this program has shown less conclusive impact on teachers. We find no statistically meaningful difference between non-program and program schools with regard to depression, sense of self-efficacy, or growth mindset.

3. Teachers enjoyed the program and found it useful, but there is still room for improvement. We have made changes to both the structure and content of the program intended to improve its effectiveness and the participant experience.

LOOKING AHEAD

We gained valuable insights for the design of program and future evaluation that will help us scale and properly test this program. Over the next few months, IRC and BIT will make changes to the content and program design as described above. Simultaneously, IPA and Dr. Karen Devries will work with the IRC to design a randomized experiment to test this program with a larger sample of teachers.

We believe a larger, rigorous evaluation will make a critical contribution to the sparse evidence base around what works to reduce violence in the classroom, especially in crisis-affected contexts, and prove useful to both practitioners and policymakers. Furthermore, if this program is proved effective, it will provide practitioners concerned with reducing violence in schools with a light-touch, lower cost alternative to the only other existing rigorously evaluated intervention aimed at decreasing violence in schools in Sub-Saharan Africa. Ultimately, if this program reduces violence in the classroom, it could be used to improve the learning outcomes and lives of children in Nyarugusu and elsewhere.

APPENDIX 1: THEORY OF CHANGE MODEL

Children are safe in their schools

Teachers do not perpetrate physical or psychological violence against students, and use positive behavior management practices

Teachers are motivated to positively manage behavior, use self-regulation strategies, and to avoid violence	Teachers have the skills and knowledge to positively manage their emotions and effectively control impulsive behavior	Teachers have the skills and knowledge to use positive behavior management techniques	Teachers have the cognitive bandwidth to use positive behavior management practices and self-regulation techniques	Using positive behavior management and self-regulation techniques is top-of-mind and becomes automatic for teachers
Teachers feel greater sense of self-efficacy and openness to change via "values affirmation exercise"	Teachers can identify their own emotional triggers via CBT-inspired tools	Teachers can identify different misbehaviors by severity via curricula and completion of homework activities	Teachers' wellbeing is improved and stress reduced via their practice of wellbeing strategies	Teachers concretely plan to use techniques via implementation intentions activities
Teachers feel supported and held accountable by their peers via weekly peer group meetings and nominated supporters	Teachers can reframe destructive thinking via CBT-inspired tools	Teachers understand positive discipline techniques and when to use them to appropriately address different tiers of misbehaviors via curricula		Teachers are reminded to use techniques via timely text message reminders
Teachers adopt a growth mindset (teachers believe in their abilities to improve with effort) via exposure to related content	Teachers understand how to use self-regulation and de-escalation techniques via the curricula	Teachers understand encouragement techniques for reinforcing positive student behaviors via curricula		
Teachers understand the negative impact of emotional and physical violence on students via empathy-building and perspective-taking exercises	Teachers practice new CBT tools, de-escalation and self-regulation techniques, via group and home-work activities	Teachers practice new classroom management techniques via group and homework activities		
Teachers have role models who demonstrate the use of positive practices via role playing and experience sharing				

27

APPENDIX 2: DEMOGRAPHIC INFORMATION OF STUDY PARTICIPANTS

Students

	(1) Control (N=36)	(2) Treatment (N=46)	(3) Diff T-C
Girl	0.44	0.52	0.08
Age	13.53	16.65	3.12
Family Size	6.86	5.72	-1.14
Living with Parents	0.86	0.78	-0.08
Secondary School	0.00	0.26	0.26

Teachers

	(1) Control (N=41)	(2) Treatment (N=67)	(3) Diff T-C
Female	0.12	0.21	0.09
Secondary School	0.00	0.23	0.23
Most Common Age Group	26-30	26-30	0.00

APPENDIX 3: OUTCOME INSTRUMENTS

STUDENT OUTCOMES

Student self-reports of physical violence from a school staff member (adapted from ISPCAN Child Abuse Screening Tools (ICAST))

Emotional Violence

1. In the past week, has your teacher cursed at you or called you bad names?	**Yes**	**No**
2. In the past week, has your teacher shouted/yelled at you?	**Yes**	**No**
3. In the past week, has your teacher insulted you or said something mean about you?	**Yes**	**No**
4. In the past week, has your teacher humiliated you?	**Yes**	**No**
5. In the past week, has your teacher talked about your skin color/gender/religion/tribe/health in a hurtful way?	**Yes**	**No**
6. In the past week, has your teacher kept you away from other children to make you feel bad or lonely?	**Yes**	**No**
7. In the past week, has your teacher embarrassed you because you were an orphan or without a parent?	**Yes**	**No**
8. In the past week, has your teacher embarrassed you because you were not able to buy things?	**Yes**	**No**
9. In the past week, has your teacher stole, broke or ruined your belongings/things?	**Yes**	**No**
10. In the past week, has your teacher threatened you with bad grades (marks) you did not deserve?	**Yes**	**No**
11. In the past week, has your teacher said you or your family members practice witchcraft?	**Yes**	**No**

Physical Violence

1. In the past week, has your teacher hurt you or caused you pain?	**Yes**	**No**
2.In the past week, has your teacher slapped you with a hand on your face or head as punishment?	**Yes**	**No**
3. In the past week, has your teacher slapped you with a hand on your arm or hand?	**Yes**	**No**
4. In the past week, has your teacher twisted or pulled your ear as punishment?	**Yes**	**No**
5. In the past week, has your teacher twisted your arm as punishment?	**Yes**	**No**
6. In the past week, has your teacher pulled your hair as punishment?	**Yes**	**No**
7. In the past week, has your teacher thrown an object at you?	**Yes**	**No**
8. In the past week, has your teacher hit you with a closed fist?	**Yes**	**No**
9. In the past week, has your teacher hit you with a stick?	**Yes**	**No**
10. In the past week, has your teacher hit you with a cane?	**Yes**	**No**
11. In the past week, has your teacher kicked you?	**Yes**	**No**
12. In the past week, has your teacher knocked you on the head as punishment?	**Yes**	**No**
13. In the past week, has your teacher made you clean toilets, pick up trash, fetch water, or do other labor as punishment?	**Yes**	**No**
14. In the past week, has your teacher hit your fingers or hands with an object as punishment?	**Yes**	**No**
15. In the past week, has your teacher crushed your fingers or hands as punishment?	**Yes**	**No**
16. In the past week, has your teacher made you stand or kneel to punish you?	**Yes**	**No**
17. In the past week, has your teacher made you stay outside in the heat or rain to punish you?	**Yes**	**No**
18. In the past week, has your teacher burnt you as punishment?	**Yes**	**No**
19. In the past week, has your teacher taken your food away from you as punishment?	**Yes**	**No**
20. In the past week, has your teacher forced you to do something that was not safe?	**Yes**	**No**
21. In the past week, has your teacher choked you?	**Yes**	**No**

Engagement vs. Disaffection with Learning (Student Self-Report)

1. I try hard to do well in school.	**Never**	**Sometimes**	**Most of the time**	**Always**
2. I enjoy learning new things in class.	**Never**	**Sometimes**	**Most of the time**	**Always**
3. When we work on something in class, I feel discouraged.	**Never**	**Sometimes**	**Most of the time**	**Always**
4. In class, I do just enough to get by.	**Never**	**Sometimes**	**Most of the time**	**Always**
5. Class is fun.	**Never**	**Sometimes**	**Most of the time**	**Always**
6. In class, I work as hard as I can.	**Never**	**Sometimes**	**Most of the time**	**Always**
7. When I'm in class, I feel bad.	**Never**	**Sometimes**	**Most of the time**	**Always**
8. When I'm in class, I listen very carefully.	**Never**	**Sometimes**	**Most of the time**	**Always**
9. When I'm in class, I feel worried.	**Never**	**Sometimes**	**Most of the time**	**Always**
10. When we work on something in class, I get involved [Swahili: I participate].	**Never**	**Sometimes**	**Most of the time**	**Always**
11. When I'm in class, I think about other things.	**Never**	**Sometimes**	**Most of the time**	**Always**
12. When we work on something in class, I feel interested.	**Never**	**Sometimes**	**Most of the time**	**Always**
13. Class is not all that fun for me.	**Never**	**Sometimes**	**Most of the time**	**Always**
14. When I'm in class, I just act like I'm working.	**Never**	**Sometimes**	**Most of the time**	**Always**
15. When I'm in class, I feel good.	**Never**	**Sometimes**	**Most of the time**	**Always**
16. When I'm in class, my mind wanders.	**Never**	**Sometimes**	**Most of the time**	**Always**
17. When I'm in class, I participate in class discussions.	**Never**	**Sometimes**	**Most of the time**	**Always**
18. When we work on something in class, I feel bored.	**Never**	**Sometimes**	**Most of the time**	**Always**
19. I don't try very hard at school.	**Never**	**Sometimes**	**Most of the time**	**Always**
20. I pay attention in class.	**Never**	**Sometimes**	**Most of the time**	**Always**

Student Connectedness (Adapted from Good Schools study in Uganda)

1. Have you ever helped make up rules for how students should behave at your school?	**Yes**	**No**
2. Do adults who work at your school listen to students' ideas about how to make the school better?	**Yes**	**No**
3. I feel close to students at my school	**Yes**	**No**
4. I feel that my teachers care about or love me	**Yes**	**No**
5. I feel safe or protected in school	**Yes**	**No**
6. I feel like I belong at school [Swahili: I feel like I'm part of the school	**Yes**	**No**
7. I like to spend time at school	**Yes**	**No**

Mood and Feelings Questionnaire

This form is about how you might have been feeling or acting recently. For each question, please circle how you have been feeling or acting in the past two weeks. If a sentence was not true about you, circle NOT TRUE. If a sentence was only sometimes true, circle **SOMETIMES TRUE**. If a sentence was true about you most of the time, circle **TRUE**.

1. In the past two weeks, I felt very sad.	**Not True**	**Sometimes True**	**True**
2. In the past two weeks, I didn't enjoy anything at all.	**Not True**	**Sometimes True**	**True**
3. In the past two weeks, I could not do my normal activities because I felt so sad.	**Not True**	**Sometimes True**	**True**
4. In the past two weeks, I could not relax my mind.	**Not True**	**Sometimes True**	**True**
5. In the past two weeks, I felt worthless.	**Not True**	**Sometimes True**	**True**
6. In the past two weeks, I cried a lot.	**Not True**	**Sometimes True**	**True**
7. In the past two weeks, I found it hard to pay attention.	**Not True**	**Sometimes True**	**True**
8. In the past two weeks, I hated myself.	**Not True**	**Sometimes True**	**True**
9. In the past two weeks, I was a bad person.	**Not True**	**Sometimes True**	**True**
10. In the past two weeks, I felt sad because I was alone with my thoughts.	**Not True**	**Sometimes True**	**True**
11. In the past two weeks, I thought nobody really loved me.	**Not True**	**Sometimes True**	**True**
12. In the past two weeks, I thought I could never be as good as other kids.	**Not True**	**Sometimes True**	**True**
13. In the past two weeks, I did everything wrong.	**Not True**	**Sometimes True**	**True**

TEACHER OUTCOMES

Teacher Big-Picture Attitudes about Corporal Punishment

1. There should be a law forbidding teachers to hit their students.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
2. It's not really pleasant, but teachers have a duty to hit their students if it's necessary.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3. It's wrong for teachers to hit their students (i.e., it's not right to do it).	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
4. Some students need to be hit so they will learn to behave themselves (i.e., learn good behavior).	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**

Teacher Scenario-based Opinions about Corporal Punishment

Do you think that hitting a student would be acceptable in the following cases?

1. If the student is interrupting class	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
2. If the student talks back to the teacher	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3. If the student runs away from school	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
4. If the student is late from school	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
5. If the student is mean to other students	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
6. If the student insults the teacher	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
7. If the student is not taking notes	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
8. If the student steals	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
9. If the student fights with other students	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**

Mood and Feelings Questionnaire (Adult Self-Report)

This form is about how you might have been feeling or acting recently. For each question, please circle how you have been feeling or acting in the past two weeks. If a sentence was not true about you, circle NOT TRUE. If a sentence was only sometimes true, circle **SOMETIMES TRUE**. If a sentence was true about you most of the time, circle **TRUE**.

1. In the past two weeks, I felt miserable or unhappy.	**Not True**	**Sometimes True**	**True**
2. In the past two weeks, I didn't enjoy anything at all.	**Not True**	**Sometimes True**	**True**
3. In the past two weeks, I felt so sad I just could not do anything.	**Not True**	**Sometimes True**	**True**
4. In the past two weeks, I could not relax my mind.	**Not True**	**Sometimes True**	**True**
5. In the past two weeks, I felt worthless.	**Not True**	**Sometimes True**	**True**
6. In the past two weeks, I cried a lot.	**Not True**	**Sometimes True**	**True**
7. In the past two weeks, I found it hard to think or focus.	**Not True**	**Sometimes True**	**True**
8. In the past two weeks, I hated myself.	**Not True**	**Sometimes True**	**True**
9. In the past two weeks, I was a bad person.	**Not True**	**Sometimes True**	**True**
10. In the past two weeks, I felt sad because I was alone.	**Not True**	**Sometimes True**	**True**
11. In the past two weeks, I thought nobody really loved me.	**Not True**	**Sometimes True**	**True**
12. In the past two weeks, I thought I could never be as good as other people.	**Not True**	**Sometimes True**	**True**
13. In the past two weeks, I did everything wrong.	**Not True**	**Sometimes True**	**True**

Teacher Sense of Self-Efficacy

Please tell us more about your experience in the classroom. This will help us understand how to better support you. Your answers will be confidential.

1. Do you feel capable and ready to help students believe they can do well in school work?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
2. Do you feel capable and ready to help your students value learning?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
3. Do you feel capable and ready to write good questions for your students?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
4. Do you feel capable and ready to control disruptive behavior in the classroom?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
5. Do you feel capable and ready to motivate students who show low interest in school work?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
6. Do you feel capable and ready to make your expectations about how students should behave clear?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
7. Do you feel capable and ready to help your students think critically?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
8. Do you feel capable and ready to get your students to follow classroom rules?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
9. Do you feel capable and ready to calm a student who is disruptive or noisy?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
10. Do you feel capable and ready to use a variety of strategies to evaluate your students?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
11. Do you feel capable and ready to provide an alternative explanation or example when students are confused?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**
12. Do you feel ready and capable to use different teaching methodologies?	**I don't feel capable**	**I feel a little capable**	**I feel capable**	**I feel very capable**

Growth Mindset

1. No matter how much intelligence you have, you can always change it a good deal.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
2. You can learn new things, but you cannot really change your basic level of intelligence.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3. I like my work best when it makes me think hard.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
4. I like my work best when I can do it really well without too much effort.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
5. I like work that I'll learn from even if I make a lot of mistakes.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
6. I like my work best when I can do it perfectly without any mistakes.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
7. When something is hard, it just makes me want to work more on it, not less.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
8. To tell the truth, when I work hard, it makes me feel as though I'm not very smart.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**

APPENDIX 4: SESSION-SPECIFIC TABLE OF CHANGES MADE TO THE BOOKLET

Session specific changes are detailed in the table below:

Session #	Changes
1	Added in full slogan map visual demonstrating program journey
2	Provided more explanation around motivational quote
3	Added in Sifa Support description to identifying your supporter
4	Added in additional FAQ responses based on questions heard in research Renamed 'Change Voice' to 'Lower Voice' so that teachers are clear it does not mean to raise your voice
5	Added in role play activities for techniques to encourage deeper analysis and understanding
6	Added in content focused on how these techniques link to others and can be used together
7	Added in additional FAQ responses based on questions heard in research
8	Updated Withdraw Privileges to ensure students are able to properly eat and refresh
9	Updated Stay After to reflect the upcoming institutionalization of detention
10	Updated text to reflect how to address repeated misbehaviors and how to escalate techniques
11	Updated to give alternatives for large classrooms or when teachers don't have materials

APPENDIX 5: SESSION-SPECIFIC TABLE OF INSIGHTS AND ACTIONS FROM TESTING

Session #	Insights	Actions
1	Teachers believed clapping technique wouldn't work with older kids, as they would feel foolish.	Incorporated content changes to make clapping more applicable to older children
2	Teachers saw the main advantages of these techniques as: 1) reducing disturbance to other children 2) getting the class done on time 3) getting the whole class to pay attention	N/A
3	Teachers cited examples from their youth when talking about why empathy building curriculum is good.	Created empathy maps to further leverage building empathy with students
4	A) The current form of staying after school doesn't work well because: • Teachers are not allowed to stay alone with students • It is extra work for the teachers • It is dangerous for students to walk home alone • Some students are interpreting staying after as a privilege instead of a punishment B) Teachers did not like withdrawing privileges, as the privilege that was cited was students missing their break, which is when students eat or 'refresh'.	A) IRC will work with headmasters to institutionalize detention and address teacher concerns. B) Content was changed around withdrawing privileges to ensure it is properly executed. IRC will research alternative privileges than taking away students' break.
5	Teachers had trouble identifying positive behaviors they want to encourage - many positive behaviors that they cited were just the opposite of negative rules. Many have given the rules they co-created to the office or headmaster, which demonstrates how this could go upstream.	Included more discussion questions around brainstorming positive behaviors.
6	Almost all teachers had trouble explaining what the reaction cycle was and what it was for.	Content changes included a reasoning for the cycle and provided coordinators with an answer key.

7	A) Reflection techniques must be done 'intelligently' i.e. silently or in a way the students don't notice. The more advanced teachers caught onto this, but the less advanced were confused. The videos and images show the teacher physically changing their face/position to do the techniques. Teachers thought this would make them look foolish in front of the students. B) Serenity mantra was universally being interpreted as a prayer to God. Several teachers brought up 'not feeling alone' as a reason they liked the prayer, which was different than the rest of the techniques.	A) Removed the images from booklet and will either rework or remove the videos for this session. B) Changed wording of serenity mantra to serenity prayer, and emphasized the feeling of not being alone.
8	A) Teachers reported physical proximity/access as the most important factor in choosing a supporter. Other factors include other teachers working in similar situations. B) Teachers had trouble differentiating what they were learning in Session 8 with what had been learned in the previous two sessions. Additionally, Session 8 addresses the controlling thoughts part of the anger cycle which should come before Session 7, which addressed the controlling emotions.	A) Reformatted the supporter activity to include these priority areas, focusing on choosing another teacher as a supporter B) Redesigned the reaction cycle graphic to visually place emotional regulation and reframing for teachers
9	A) Teachers had difficulty articulating how they would plan a reaction versus just executing it. B) Teachers expressed that there was not a final deliverable from the book that could be easily referenced.	A) Included more in-session review of plans B & C) Reformatted reaction plans to be cut out as final deliverables. Teachers can keep these plans in their classrooms for reference. Additionally, redesigned reaction cycle to visually situate relaxation techniques for teachers
10	C) Teachers expressed difficulty describing how to write a plan and including relaxation techniques in the plan.	