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**EVALUATION OF THE
Transformative Potential of
Positive Gender Socialization in
Education for Peacebuilding**



This report is part of the knowledge generation component of the Peacebuilding, Education and Advocacy in Conflict-Affected Contexts (PBEA) programme, a partnership between UNICEF and the Government of the Netherlands. The content of this report does not necessarily reflect the official position of UNICEF.

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May 2016

Contributors

The evaluation of the Gender Socialization in Schools: Enhancing the transformative power of education for peacebuilding programme pilot in Karamoja, Uganda, was conducted by American Institutes for Research (AIR), with funding from the United Nations Children's Fund (UNICEF).

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Abbreviations

AIR	American Institutes for Research
ANCOVA	Analysis of covariance
CCT	Coordinating centre tutor
DRT	Development Research and Training
FAWE	Forum for African Women Educationalists
FGD	Focus group discussion
MoESTS	Ministry of Education, Science, Technology and Sports
SMS	Short Message Service
UNICEF	United Nations Children's Fund

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Executive Summary

The United Nations Children's Fund (UNICEF) commissioned American Institutes for Research (AIR) to conduct an evaluation of the Karamoja, Uganda, pilot of the programme Gender Socialization in Schools: Enhancing the transformative power of education for peacebuilding. Supported by UNICEF and the Ugandan Ministry of Education, Science, Technology and Sports (MoESTS), the programme aimed to trial a practical, school-based intervention to demonstrate the peacebuilding potential of positive gender socialization in the conflict-affected Karamoja region of north-eastern Uganda.

To evaluate the programme, AIR used a mixed-methods cluster randomized controlled trial to examine the short-term impact of teacher training and the complementary effects of Short Message Service (SMS) text messages on teachers' knowledge, attitudes and practices around gender equality and gender socialization.¹ Qualitative inquiry methods were also used to explore how the programme worked.

The evaluation yielded three main findings:

- Positive evidence showed that the programme succeeded in increasing teachers' knowledge of and attitudes towards gender equality issues in the short term.
- Limited evidence was found to demonstrate that the programme influenced overall teacher practices (at least in the short term).
- Limited evidence was found for positive complementary effects of the SMS component on teachers' knowledge, attitudes and practices.
- Detailed findings and recommendations follow the brief discussions below of the programme's Ugandan context and its objectives and content, and the methods and limitations of the present study.

Detailed findings and recommendations follow the brief discussions below of the programme's Ugandan context and its objectives and content, and the methods and limitations of the present study.

Background

Uganda faces potential conflict in different areas – in security and justice, politics and governance, economic development, social policy and natural resources. President Yoweri Museveni's National Resistance Movement gained power in 1986 following a seven-year civil war and has since largely succeeded in unifying and stabilizing the country, with the exception of the continued structural tensions in peripheral regions in the east, west and north.

Uganda's Karamoja region has the highest levels of poverty and lowest development indicators in the country, particularly in education, and is one of the most disadvantaged and conflict-affected regions of Uganda. Nevertheless, while inequality in Karamoja is higher than in other regions, service provision has improved significantly in recent decades (Pham, Vinck and Gibbons, 2015).

Although Karamoja has not experienced the type of armed rebellions witnessed in other parts of the country, several forms of violence, including armed violence, beset the region. Cattle raiding between different Karamojong clans has been largely eradicated, but small arms are still widely available and pockets of violence remain. Violent conflict has been recorded between the Karamojong and neighbouring groups, between different Karamojong clans, and between the Karamojong and the Ugandan state. Tensions and violence at the interpersonal level, including between men and women and between older and younger men, have also been reported. Karamoja records the highest levels of sexual and gender-based violence of all regions in northern Uganda, and this violence includes female genital mutilation/cutting, child marriage and child labour.

Although the Ugandan state has generally championed the rights of women, including their political participation, and has largely supportive relations with women's rights advocates, inequality between women and men persists in a number of key areas such as literacy, economic empowerment and political participation. Intimate partner violence and other forms of gender-based violence are widespread. In 2014, Uganda was ranked 122nd of 155 countries on the United Nations Development Programme Gender Inequality Index (UNDP, 2014).² Uganda has also been reported to have an especially high rate of violence against children, both in schools and at home: In a 2005 study, 98.3 per cent of child participants had experienced physical violence (Naker, 2005).

Uganda's education indicators have improved in the last few years, with primary school enrolment rising to 96 per cent and average years of schooling increasing significantly across the country to approximately 6.5 years. Yet the country still faces great challenges in regard to education. Primary school completion is 64 per cent, enrolment in lower secondary school is just 34.9 per cent and enrolment in upper secondary school is as low as 15.1 per cent, with girls more likely to drop out of school at the higher levels (Pham, Vinck and Gibbons, 2015). Also, large inequalities persist within the country: In Karamoja, average years of schooling is as low as three years, the pupil–teacher ratio is 37 to 1 (compared with 22:1 nationally) and the pupil–classroom ratio is as high as 108 to 1 (compared with 55:1 nationally). Nevertheless, although inequality in Karamoja is still higher than in other regions, service provision has improved significantly in recent decades (Pham, Vinck and Gibbons, 2015).

UNICEF's Learning for Peace programme³ is founded on the theory of change that education and other social services have a strong potential to foster social cohesion and enhance human security in countries affected by and emerging from violent conflict. Thus, education is considered as more than a social service – it can serve to develop identities and influence deeply seated cultural norms, and it plays a vital

role in shaping the understanding of gender roles and responsibilities and in internalizing positive gender norms during childhood and adolescence. Conversely, education that legitimizes potentially harmful gender stereotypes at an early age can pose a challenge to education access and quality – and can undermine girls' and boys' ability to contribute to peacebuilding, possibly even fuelling violence.¹⁵ The education system and teachers thus play a critical role in the process of promoting gender equality and providing opportunities for girls and boys to contribute equally and positively to peacebuilding processes for future generations.

Learning for Peace thus presents the potential to contribute to the existing body of evidence that indicates that improving gender equality in peacebuilding initiatives has a positive effect on both their durability and outcome,⁴ and in particular to ascertain the specific role of education in this relationship.

The Programme

The Gender Socialization in Schools programme pilot was developed by UNICEF and MoESTS under the umbrella of the Learning for Peace programme and implemented in partnership with the non-governmental organizations Development Research and Training (DRT) and the Forum for African Women Educationalists (FAWE).

The Karamoja pilot included three training sessions between March and November 2015 to build teachers' capacity as important agents of change and to foster a transformation of the negative gender norms and social norms that can contribute to the perpetuation of conflict in primary schools.

The training specifically aimed to:

- empower primary school teachers to promote positive models of masculinity and femininity
- question social norms and redress teachers' gender biases
- create awareness of alternative norms and practices related to gender equality
- build teachers' skills to engage pupils in constructive dialogue
- provide teachers with materials to foster a shift in gender- and conflict-related attitudes and beliefs.

A teacher training manual and handbook on gender, conflict and peacebuilding were developed for the training. In addition, a subset of trained teachers received biweekly reinforcing SMS text messages from May to November 2015, to remind them about certain content covered in the training and to provide examples of good practices.



Study methods and limitations

To evaluate the short-term impact of the teacher training and the complementary effects of the SMS messages, AIR conducted a mixed-methods cluster randomized controlled trial. Schools within the catchment area of a coordinating centre tutor (CCT)⁵ were randomly assigned to receive one of the following:

- teacher training plus reinforcing text messages (complete intervention group)
- teacher training only (limited intervention group)
- no intervention at all (control, or business-as-usual, group).

The quantitative component of the evaluation used a culturally validated teacher survey to determine the impact of the two programme components (teacher training and text messages) on teachers' knowledge, attitudes and practices. The evaluation compared teacher outcomes for the same individuals at the baseline and endline point, among teachers whose schools were randomly assigned to the complete intervention, limited intervention or control group.

The qualitative component of the evaluation used interviews with key stakeholders, focus group discussions (FGDs) with teachers and students, and case studies of three schools to elaborate the quantitative impact findings. The qualitative data highlighted teachers' construction of lessons learned from the intervention, teachers' approaches to gender equality and social cohesion in their schools and the community, and the support and challenges that teachers encountered when applying what they had learned.

The sample for the quantitative component included 105 schools (35 schools in each group) from eight CCT catchment areas in the districts of Abim, Kaabong and Napak. All teachers working in the selected schools were invited to participate in the study. Baseline data were collected in March 2015 and endline data in November 2015 from the same schools, with 650 teachers responding to both surveys. The sample for the qualitative component included data gathered from 15 CCTs, 8 randomly selected schools via interviews with their head teachers ($n = 8$), and FGDs with teachers ($n = 40$) and with Primary 4 students ($n = 122$). The qualitative data also included case studies from three schools perceived as high implementers by implementing partners. Data were gathered in these three schools via interviews with head teachers ($n = 3$), FGDs with teachers ($n = 28$) and with Primary 4 students ($n = 46$), and classroom observations ($n = 3$). Qualitative data were collected in September and November 2015.

The design described above was the best possible for this study, given the following five limitations:

- The programme was evaluated (as requested) during its first year of implementation. Evidence suggests that new programmes may experience unexpected challenges or may not be implemented as intended, which may weaken the programme effects in the first few years.
- All data were collected (as requested) before the end of 2015, and so the programme's short-term impacts were evaluated after only eight months of implementation. Such an evaluation cannot capture any potential long-term effects.
- The small budget and short time frame confined our focus to teachers – the programme's direct beneficiaries. Student data were from small samples and exclusively qualitative.
- Budget restrictions precluded visiting all randomized schools to collect data from beneficiaries. We addressed this constraint by administering the survey on the morning that teachers arrived for the training session, which brought together 1,000 teacher trainees. This strategy reduced data collection costs, but prevented the use of identical data gathering methods across the three study groups

(although the research team did as much as possible to use the same conditions and procedures across the groups).

- Quantitative data on teachers were limited to self-reported surveys. Interviews and other, more comprehensive data collection methods were exclusively qualitative. To overcome the limitations of self-reported data, which may suffer from courtesy and social desirability bias, we used vignettes, minimized leading questions and included various types of questions. We also piloted the instrument three times in Karamoja and revised items after considering comprehensive feedback from local experts.

Evaluation Results

This section presents first the results for effects on knowledge and attitudes around gender and gender roles; second, the results for effects on attitudes; and, third, the results for effects on teacher practices.

Teacher knowledge

Quantitative results showed positive, statistically significant effects of the training on teachers' knowledge of the information provided in the training. Specifically, we found positive effects of the teacher training on teachers' knowledge about the difference between gender and sex.

The qualitative findings also suggested that teachers increased their knowledge of information provided in the training between the second and third training sessions. Teachers used the concepts of gender and sex consistently with the programme's definitions.

Teacher attitudes

The evaluation found positive quantitative effects on teachers' attitudes towards gender roles – in all three indicators. Gender roles refer to shared expectations of behaviour according to one's gender. Intervention teachers (i.e., those who participated in the teacher training) were more likely to agree with statements that implied relatively progressive attitudes towards gender roles. For example, intervention teachers were more likely to agree with statements suggesting that women and men were equally capable of performing jobs traditionally associated with one gender (e.g., engineer, mechanic, nurse and politician). Intervention teachers were also more likely to show more liberal attitudes towards hypothetical situations depicted by vignettes or towards gender norms in their community.

Moreover, the evaluation found positive quantitative effects on teachers' attitudes towards gender identity. Gender identity refers to how teachers see themselves as female or male, considering what it means to be a woman or a man in their society. Intervention teachers were more likely to disagree with very traditional masculine stereotypes. For example, intervention teachers were more likely to disagree with statements such as, "Some women need to be beaten", "Educated women make unruly wives", "When you beat boys, you raise disciplined men" or "When men are speaking, serious women are not supposed to talk".

Qualitative data yielded mixed results on attitudes. Teachers changed their basic attitudes towards gender equality after the first training session. Teachers reported that girls and boys should have equality in their responsibilities, work and futures. Further, most teachers said that children should be encouraged to participate not in 'only-girl' or 'only-boy' activities but in the same activities and to share responsibilities. Several teachers reported that the training expanded their ideas about what girls could do in the classroom, and a number noted that after encouraging girls in mathematics, they saw the girls' performance improving – sometimes beyond that of the boys. Teachers did not, however, appear to change their traditional concepts of gender roles, which may shape their approaches in the classroom. In sum, the programme meaningfully changed teachers' attitudes towards gender roles – but these changes also created challenges for teachers, given the very traditional environment in which gender norms heavily dictate children's roles and responsibilities.

Teacher practices

The programme does not appear to influence teacher practices in the short term; the results showed no evidence for positive effects on the two overall quantitative indexes for practices. Specifically, the teacher survey collected data on teachers' gender responsiveness when planning, implementing activities and exercising discipline in the school as well as data on their practices associated with gender equality. In the survey responses, intervention and control teachers gave similar answers to most of the questions about how often they used different methods to manage girl and boy students' behaviour. Likewise, both groups of teachers responded similarly when asked how often they led different activities for girls and boys in the classroom. These neutral results aligned with research suggesting that teacher practices are difficult to change in the short term (Sullivan, 2013; World Bank, 2009; Mukhopadhyay and Wong, 2007; Stromquist, 2007; Bonder, 1992). Moreover, an enabling environment is very important for efforts to translate changes in attitudes and knowledge into changes in practice. Since the programme did not target other key community stakeholders such as school management, parents or community leaders, it is to be expected that teacher practices were difficult to change.

Within the qualitative data, posing additional questions to a subset of teachers yielded indications that the intervention teachers were adopting certain practices taught in the training. For example, many interviewed teachers reported having changed the seating arrangement to mix girls and boys – apparently a fairly easy change. Teachers did not, however, adopt more complex practices from the training such as tailoring lessons to female and male needs or connecting gender equitable practices to peacebuilding. The short time frame of the programme may have limited its ability to promote more complex changes in ideas and practices. Future research may be needed to examine whether the programme has longer-term effects on teacher practices.

Teachers demonstrated a more concrete understanding of the purpose and use of school action plans developed during the teacher training, but they reported that they struggled with larger structural issues when implementing these plans. Although many teachers described how certain challenges or subjects were incorporated into their schools' action plans, teachers also expressed difficulties in meeting the action plan goals because of larger issues of poverty in their schools.

Text messages

The evaluation found no clear evidence for positive complementary effects of the SMS text messaging component on the overall index capturing teachers' attitudes or on their practices. Teachers who received reinforcing text messages on top of the training sessions did not score more positively than teachers who received only the training. The lack of complementary effects for the training-plus-texting group is, however, consistent with the finding that less than 33 per cent of the teachers in this group responded to the research-monitoring SMS messages. In addition, about 28 per cent of the teachers in this group reported having received no text message related to the programme.

Uganda has successfully been using SMS text messaging in education to improve communication between education stakeholders, as exemplified by the National Examination Board, which uses SMS messaging to release exam results, increasing access to student performance data (Ndiwalana, 2011). Previous research indicates that SMS messages with reminders can be effective in encouraging saving in developing countries (Karlán et al., 2010). Possibly, however, messages about gender equality are too complex to communicate via SMS messaging. Another possibility is that the value added by text messages is limited in a period of intense training (three training sessions in eight months). It seems important to reconsider the content of these messages, how they are delivered and any limitations on teachers' ability to access them.

Social cohesion

The study also examined whether the ideas learned by teachers through the programme could help to increase social cohesion in Karamoja and which programme elements were most conducive to this aim. The teacher training focused in part on the links between gender equality and social cohesion. The findings indicated that although many intervention teachers had made progress in understanding gender equality and peacebuilding, most of them continued to have difficulty in reconciling these concepts with the traditional ideas of gender held by the wider community. These results suggest the importance of targeting the community to create a more enabling environment in which new ideas can be welcomed, understood and translated into practices.

Recommendations

Taken together, the results provide positive evidence of the potential of the Gender Socialization in Schools programme to promote positive gender roles in primary schools. Our main findings inform the following recommendations for the programme's ongoing implementation, which we offer to the Government of Uganda and its implementing partners.

Materials

The data suggest that providing concrete examples helps teachers to operationalize what they have learned in the training. We recommend that the programme continues these practices and adds additional concrete examples of ways in which teachers can reach parents and community members to sensitize them to the training content, as well as examples of ways in which teachers should respond when they encounter opposition to new ideas.

Community involvement

We suggest that implementers explicitly involve the community and school governance bodies (e.g., school management committees) to ensure their buy-in. The agency of teachers depends on a number of external factors, including engaged parents and communities, functioning school governance bodies, effective relationships between the school and local education authorities, and communication between schools and communities. Explicit involvement could help to create an enabling environment in which individual knowledge and attitudinal change can be translated into broader social change. For example, teachers could lead community meetings as part of a school action plan. We also suggest that communities are involved in addressing social cohesion in the action plan – for example, with direct strategies to promote a peaceful educational environment. Without explicit community involvement, efforts to change teachers' practices within schools can run aground on a lack of understanding about the ways in which education and gender equality may contribute to peacebuilding and social cohesion.

Mentoring and reinforcement (coaching)

The teacher training literature suggests that training programmes involving long-term teacher mentoring or in-school teacher coaching – showing teachers' ways to employ the new methodology – tend to be most successful at improving student learning (McEwan, 2015; Conn, 2014; Showers and Joyce, 1996). In contrast, one-off in-service training sessions at a central location – typical of many teacher training interventions – are found to be not very effective. Similarly, a new programme like Gender Socialization in Schools, which aims to challenge gender norms in a traditional society such as Karamoja, could improve its implementation by providing teachers with regular coaching, monitoring visits or one-to-one reflection sessions (or a combination of these elements). The platform provided by coordinating centres seems suitable for delivering such services. Mobile technology could also be used to deliver more personalized and informal reinforcement to teachers, and to help them access and manage vast reservoirs of information in order to meet their action plans.

Training

Finally, we recommend that the programme ensures clarity of training logistics and provides, whenever possible, incentives for teachers to attend the training, arrive early and stay throughout the entire training session. Lack of clarity about such issues could reduce attendance or affect teachers' motivation and concentration during the training session. Incentives could be as simple as raffling an interesting item among teachers who arrive early, or providing travel expenses or certificates on completion of the training programme to encourage teachers to stay until the end.





Introduction

American Institutes for Research (AIR), in collaboration with various local partners, conducted an impact evaluation of the Karamoja, Uganda, pilot of the programme Gender Socialization in Schools: Enhancing the transformative power of education for peacebuilding. Supported by UNICEF and the Ugandan Ministry of Education, Science, Technology and Sports (MoESTS), the programme aimed to trial a practical, school-based intervention to demonstrate the peacebuilding potential of positive gender socialization in the conflict-affected Karamoja region of north-eastern Uganda. The pilot was part of the larger, multi-intervention and multi-country Learning for Peace programme.

To evaluate the programme, AIR used a mixed-methods cluster randomized controlled trial to examine the short-term impact of the teacher training and the complementary effects of Short Message Service (SMS) text messages on teachers' knowledge, attitudes and practices around gender equality and gender socialization.⁶ To estimate the impact of the programme, we developed a structured teacher survey that we administered to the teachers during baseline (March 2015) and endline (November 2015) data collection. Quantitative data analysis was complemented by qualitative data analysis, to provide greater insight into how the programme works in the classroom, the school and the community, and how it can be improved. For the qualitative analysis, we used semi-structured interviews with key stakeholders, focus group discussions (FGDs) with teachers and Primary 4 students (who ranged in age from 9 to 15 years) and case studies of schools perceived as high performing. We collected qualitative data in September and November 2015. Finally, we collected SMS messaging data on an ongoing basis throughout the programme.

The report is structured as follows. First, we present a background summary of the current situation in Uganda, and particularly in Karamoja, with a specific emphasis on gender norms. Then we describe the theory of change and the programme, followed by the research questions of interest. Next, we present the study methodology, which describes the study design, the participants and the quantitative and qualitative methods and instruments. Following this, we present the results of the impact evaluation. We end the report with a discussion of the findings based upon a triangulation of the quantitative and qualitative data, followed by recommendations made on the basis of our analyses.





2

Background and theory of change

2.1 BACKGROUND

Gender inequality is a pressing issue globally. Although governments and non-governmental organizations spend formidable resources on programmes to stimulate gender equality, women continue to bear an unequal share of the burden of poverty because they have less access to ‘substantive freedoms’ such as education, employment and health care. Gender inequality is an important aspect of almost all fragile contexts (Baranyi and Powell, 2005).

Education and gender equality can contribute to peacebuilding in fragile contexts in several ways. Improving education access and quality is a way for a country to establish that normalcy has returned and to show that the government can deliver essential social services. Teacher training and the curriculum can uphold peace by discouraging hostilities and the exacerbation of inequalities, by promoting positive models of masculinity and femininity, by addressing attitudes towards violence and by developing healthy ways to deal with conflict (Knutzen and Smith, 2012).

Uganda context

Although the Ugandan state has generally championed women’s rights, much remains to be achieved in terms of the promotion of gender equality: In 2014, the country was ranked 122nd of 155 countries on the United Nations Development Programme Gender Inequality Index (UNDP, 2014).⁷ Uganda has also been reported to have an especially high rate of violence against children, both in schools and at home: In a 2005 study, 98.3 per cent of child participants had experienced physical violence (Naker, 2005).

Uganda’s education indicators have improved in the last few years, with primary school enrolment rising to 96 per cent and average years of schooling increasing significantly across the country to approximately 6.5 years. Yet the country still faces great challenges in regard to education. Primary school completion is 64 per cent, enrolment in lower secondary school is just 34.9 per cent and enrolment in upper secondary school is as low as 15.1 per cent, with girls more likely to drop out of school at the higher levels (Pham, Vinck and Gibbons, 2015). Also, large inequalities persist within the country: In Karamoja, average years

of schooling is as low as three years, the average pupil–teacher ratio is 37 to 1 (compared with 22:1 nationally) and the average pupil–classroom ratio is as high as 108 to 1 (compared with 55:1 nationally). Nevertheless, although inequality in Karamoja is still higher than in other regions, service provision has improved significantly in recent decades (Pham, Vinck and Gibbons, 2015).

Karamoja context

Uganda's Karamoja region has the highest levels of poverty and lowest development indicators in the country, particularly in education, and is one of the most disadvantaged and conflict-ridden regions of Uganda. It has the highest proportion of girls who are not in school or have never been to school⁸ and the highest child mortality and poverty rates, with 75 per cent of households living below the official poverty line.⁹

Uganda's arid north-eastern region bordering Kenya and South Sudan is home to a largely pastoralist population, among which cattle raiding has been very common. The region has long been affected by violent conflict, endemic armed violence, small arms proliferation and insecurity. Karamojong communities acquired guns from soldiers during the civil strife that lasted from 1970 to 1980, and by exchanging livestock for guns from the Sudan People's Liberation Army in neighbouring South Sudan. The Government of Uganda and human rights agencies initiated efforts for disarmament in 1986. The government invited the Karamojong to voluntarily hand over their guns to the government in exchange for ox ploughs or iron sheets, the aim being to provide an alternative source of income to livestock rearing. This effort at disarmament yielded little change, however, for various cultural reasons including the perception that ox ploughs were ineffective in the mountain terrain and that the incentive to disarm was outweighed by the travel required to do so (Wadri, 2004). Studies have connected the disarmament effort to negative livelihood changes including "increased insecurity for communities; stripping of essential and productive assets; the erosion of traditional mechanisms to cope with vulnerability and food insecurity; shifts in gender based labor roles, responsibilities and identities" (Stites and Akabwai, 2009, p. 11). Disarmament efforts have also been connected to gender-based violence. Respondents in the Stites and Akabwai study of the livelihood impacts of disarmament in the region "reported increases in incidents of gender based violence against women and girls as part of the overall rise in insecurity" (p. 31).

The Karamoja region includes seven districts inhabited by at least 10 different ethnic groups.¹⁰ The same Ngakarimojong language is spoken in five of these districts; the Luo and Pokot languages are spoken in Abim and Amudat respectively. Conflict results from internal economic and social tensions and often revolves around livestock – particularly cattle. Cattle ownership is a determinant of both social and economic status (Anderson and Broch-Due, 1999) and cattle raiding has long been prominent among Karamojong communities (Mkutu, 2008). Indeed, the practice has long been established as integral to maintaining pastoralism-based livelihoods across the region and has contributed to the cyclical nature of violence between ethnic groups. In addition, communities tend to migrate to neighbouring districts in search of pastures and water for livestock during the dry season. Migration sometimes escalates into border conflicts among different ethnic groups, and such conflicts are generally exacerbated by ethnic groups' proximity to one another. To a lesser extent, land conflicts continue as former residents attempt to claim back the land they abandoned during periods of insecurity. In 2010, a far greater proportion of people in Karamoja (48 per cent) reported school land dispute issues than did respondents in the national sample (13 per cent; Pham, Vinck and Gibbons, 2015). Land wrangles are pronounced among the Jie and Ethur communities, since the Jie have extended their settlement into the more temperate Abim to acquire land for agricultural purposes.

Finally, views on gender roles in Karamojong society can also perpetuate violence. Karamoja is struggling to adjust to rapid social change, under the influence of national-level policies on development and gender, as well as to the impact of displacement and changes to livelihoods options. Government campaigns against cattle raiding, including disarmament, have resulted in men engaging more in agriculture than they did in the past (previously, only women did such work) or being unable to fulfil traditional expectations to provide for the family at all, with additional challenges presented by the cattle required for the bride price (Vaughan and Stewart, 2011). Both women and men feel undermined by this trend. Livestock ownership is still a key indicator of manhood, which is valued by both women and men, and women put pressure on men to provide for the family. When they are unable to do so, men can turn to using crime and violence as an alternate livelihood strategy to cattle raiding (Stites et al., 2014). The associated shift in gender roles can cause tensions in the family and negatively affect gender relations. These issues can, in turn, result in alcoholism, intimate partner violence and increased violence against women in general (Opinia and Bubenzer, 2011; Specht, 2013). The Advisory Consortium on Conflict Sensitivity (2013) noted that the prevalence of gender-based violence in Karamoja is highest in the north, and that survivors are often denied justice and instead have their cases handled according to local and cultural traditions.

Gender identity in conflict

Conflict often forces the redefinition of gender identities and roles out of the necessity to survive (Moser, 2007). For men who actively participate in conflict, this may result in a transition into hypermasculine roles (Zuckerman and Greenberg, 2004). As part of their militarization, men encounter language that is often misogynistic and filled with depictions of sexual imagery (Niarchos, 1995). One example of this is the use of “guns as violent phallic symbols”, a metaphor commonly used throughout militarization efforts in periods of conflict (Myrntinen, 2003, p. 40). Societal expectations of men to fulfil a traditional masculine role with a weapon can lead to a physical “manifestation of certain violent and often militarized enactments of masculinity” that can result in the internalization of sexual violence (Myrntinen, 2003, p. 43). This internalization of sexual violence associated with militarization explains why periods of conflict may result in increased levels of gender discrimination during and after the conflict (Theidon, Phenicie and Murray, 2011). While there is no conclusive evidence as yet of this increase (due to the absence of comparable pre-conflict data) it is clear that levels of sexual violence are often extremely high in conflict settings. Victims and survivors may be women, men or children, and although the perpetrators are mainly men, this is not exclusively the case, nor are the men concerned necessarily military personnel. While armed conflict may play a role in increased levels of gender-based violence and discrimination, it is important to note that in all cases, the incidence of this type of violence in conflict settings is a reflection of underlying structural violence, which almost certainly pre-dates the conflict and which continues regardless of it. This structural violence is not necessarily the direct cause of gender-based violence, but it contributes to such violence by limiting the capacity and willingness of people at the community or society level to stand up against it.

While, on the one hand, conflict may increase levels of discrimination based on gender, on the other hand, it can create opportunities for women to transform their traditional gender roles. Women have reported increases in their self-perceived empowerment in times of conflict because of the need to build new skills to engage in activities typically performed by the men who are away fighting. Such increases in women’s self-perceived empowerment may allow them to “take initiative and push barriers of traditional gender roles” (Moser, 2007 p. 235).

These wartime gender identities are carried over into peacetime (Theidon, Phenicie and Murray, 2011) since “the disarmament of weapons is not the disarmament of minds” (Ní Aoláin, 2009, p. 1067). People are not sensitized to a post-war environment, and this leaves men in an unfamiliar role of “compromised

masculinity” (Rubio-Marin, 2006, p. 18). According to McKay and Mazurana (2004, p. 19), new roles assumed by women and girls may cause tension in times of peace, as “post-war contexts tend to reinforce traditional patterns, rather than new roles that girls and women may have adopted during armed conflict.” Men who have returned from combat roles often feel that they have lost their head of household status, and their inability to reassume their pre-conflict roles creates challenges to gender equality and may also increase the incidence of domestic violence (Theidon, Phenicie and Murray, 2011).

Multiple studies of conflict and peacebuilding theorize that a conflict-sensitive education structure has the potential to minimize ethnic or other group-specific tensions (e.g., Winthrop and Kirk, 2008) and thus possibly increase social cohesion in the wider society. Conflict causes community bonds to dissolve, as communal networks break down and groups become divided (Zuckerman and Greenberg, 2004). The feelings of distrust that can subsequently flourish among community members can be detrimental to the reconciliation process required to transform communities into a new peacetime normalcy. The reconstruction of social capital is essential for creating community stability in times of peace (Colletta and Cullen, 2000) and education spaces are ideal places to start rebuilding social capital.

Social norms and education in Karamoja

The household is a central institution where the Karamojong learn gender roles. It is typically a man’s duty to make familial decisions, while women are in charge of maintaining the household. Men usually decide on purchases such as livestock, family planning and the education of their children. Labour is also divided by gender in Karamoja, with women performing domestic work and some economic activities and men serving as heads of household and leading pastoral activities. There have been some shifts in the Karamojong conceptions of female and male gender roles in recent years. For example, some women are now involved in selling family assets, like cattle and land. Some women have also taken up leadership positions and belong to decision-making bodies within the community.

In this traditional society, girls commonly marry very young. Decisions related to marriage are mostly, if not entirely, made by a bride’s parents and her intended husband. Once a girl turns 13 years old, her parents must choose between education and arranging a marriage (Mubatsi, 2011). Girls are valued in Karamoja partly for their bride prices, which often include cattle (Wright, 2014). There is a popular belief among the Karamojong that a girl who has any formal education will not fetch a high bride price and may not even be marriageable, whereas illiterate girls can fetch a bride price of 50 to 100 cows. Although traditional marriage processes remain commonplace, marriage practices are also changing because of urbanization, an influx of different ethnic groups, economic growth and relative peace. For example, some women in Karamoja now marry into other ethnic groups without a bride price. Furthermore, heightened poverty levels among the community have lowered expectations around bride prices.

The Government of Uganda has addressed obstacles to education through initiatives such as the Alternative Basic Education for Karamoja, Universal Primary Education, Adult Functional Literacy and Universal Secondary Education programmes. For example, Alternative Basic Education for Karamoja aims to increase education access for children and adults by holding school classes on practical skills in the early morning and evening, leaving students to attend to their domestic and grazing work during the day (Focas Licht, 2000). Although enrolment has increased, some Karamojong have rejected formal education because of the disjuncture between this system and their own norms and nomadic lifestyle (Saminsky, 2010). Sending a boy to school is believed to impede his ability to acquire an intimate knowledge of his herd – the eventual source of livelihood for most boys. Similarly, girls are expected to perform housework, which has little perceived correlation with what is taught in the classroom. In circumstances where parents must decide whether to send girls or boys to school, girls often remain at home to learn domestic work, marry and have children.

2.2 THEORY OF CHANGE

The research team developed a theory of change through collaborative meetings with UNICEF to frame the study design and reflect the goals of the Gender Socialization in Schools programme accurately and completely. We describe below the causal chain of the theory of change across activities, intermediate outcomes and impacts. Before this, we discuss the initial conditions, the reason for the programme and the assumptions underlying the theory of change.

Initial conditions

While a professional code of conduct and a Gender Mainstreaming in Education manual have been developed for use by teachers across Uganda, this has yet to be translated into a systematic approach towards implementing in schools – both in Karamoja and elsewhere in Uganda – positive models of masculinity and femininity and open discussion of masculine and feminine roles. The absence of these elements of positive gender socialization can serve to perpetuate inequality, inevitably confining women and men to traditional gender roles. Under these initial conditions, it is important to challenge discriminatory norms at an institutional level to establish the prerequisites for forming a cohesive community. The training programme targets teachers because they have the potential, as agents of change, to influence shifts in gender perceptions not only among their peers but also among their students. Schools are generally protected spaces within communities and as such have the potential to institutionalize a shift in gender norms and contribute to social cohesion.

Schools are often the starting place to begin peacebuilding efforts because they are the first community organization to resume operations following a period of conflict (Kirk, 2004). As Winthrop and Kirk (2008; p. 53) find, “Transformation of classroom processes, and teaching methods in particular, can mean that schools are places for healing processes to take place, encouraging war-affected children to feel part of a community and to play an active role in creating brighter futures.” Research has shown a positive correlation between quality primary and secondary education and a reduction in conflict (Dupuy, 2009).

Schools can play a key role in the “transmission or elimination of discrimination” through their lesson plans and classroom conduct (Duncan, 2004, p. 21). Classroom processes can be used to create a sense of belonging for students and can ultimately lead to greater social cohesion. As previously discussed, however, excluding other critical community stakeholders in conceptual understanding could cause misunderstandings to persist about the purpose and importance of education, thus undermining its potential for peacebuilding and strengthening social cohesion.

The Gender Socialization in Schools programme seeks to change knowledge, attitudes and practices among teachers in regard to gender and conflict, with the intention that this will ultimately contribute to peacebuilding and social cohesion. It is important to note that the programme focuses on both women and men, making it a relational exercise rather than a single-sex exercise. It is hypothesized that this approach will make the programme more sustainable for three reasons: First, the inclusion of gendered attitudes towards men and masculinity can mitigate male alienation and backlash (Barker and Schulte, 2010; De Hoop et al., 2014; Dworkin et al., 2011); second, the programme’s emphasis on positive models of masculinity (as well as femininity) could engage men as partners in women’s empowerment trajectories; and third, men are also disadvantaged by norms of negative masculinity (expectations of cattle raiding, fighting, violence) and a focus on positive models of masculinity may benefit them and make the communities in which they live more peaceful.

Programme description

The Gender Socialization in Schools programme pilot was developed by UNICEF and MoESTS, and was implemented in partnership with the non-governmental organizations Development Research and Training (DRT) and the Forum for African Women Educationalists (FAWE). The pilot was part of the larger Learning for Peace programme, a four-year partnership between UNICEF, the Government of the Netherlands, the national governments of 14 participating countries, and other key supporters. The cross-sectoral initiative leverages the delivery of education and other social services for peacebuilding in fragile and conflict-affected contexts, to “strengthen resilience, social cohesion and human security.”¹¹

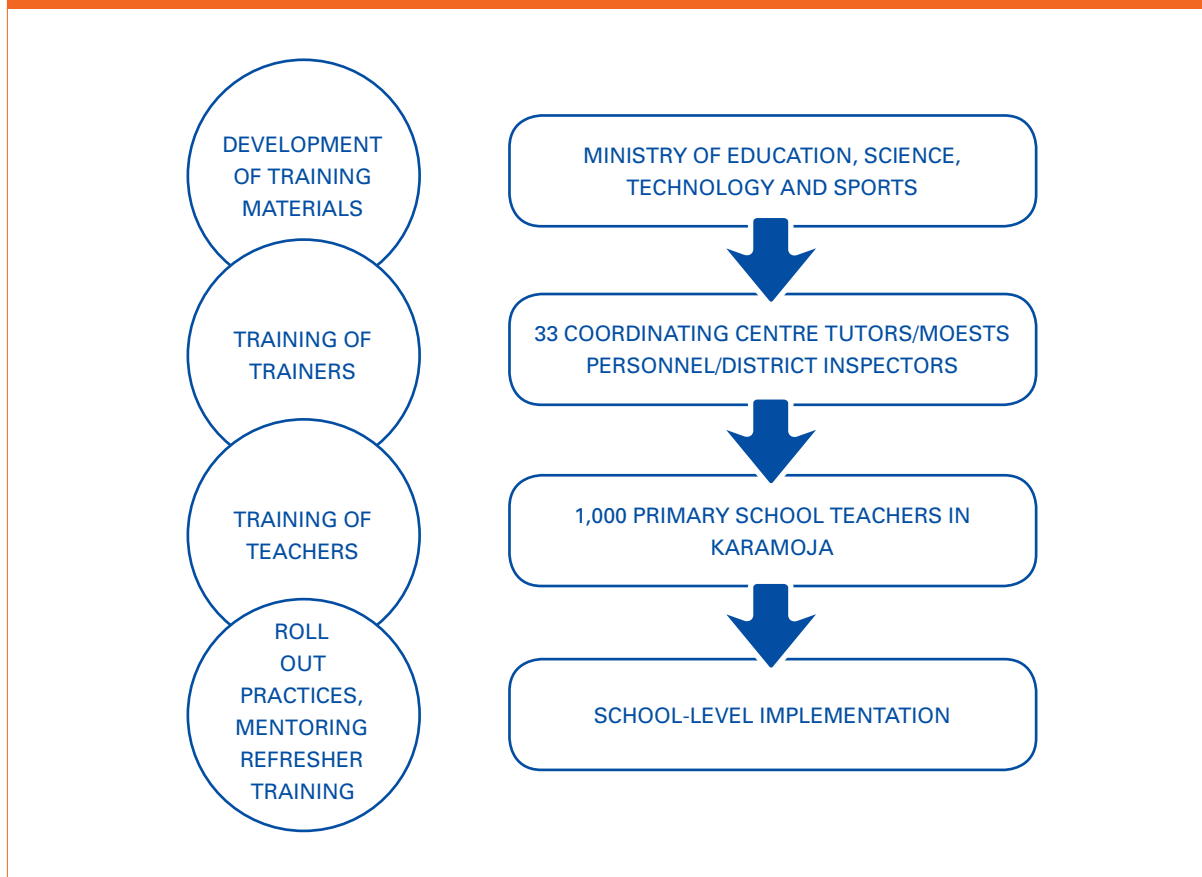
The five key aims of the Learning for Peace programme are to:

- increase inclusion of education into peacebuilding and conflict reduction policies, analyses and implementation
- increase institutional capacities to supply conflict-sensitive education
- increase the capacities of children, parents, teachers and other duty bearers to prevent and reduce conflict, and to cope with it, as well as to promote peace
- increase access to quality and relevant conflict-sensitive education that contributes to peace
- contribute to the generation and use of evidence and knowledge in policies and programming related to education, conflict and peacebuilding.

Pilot training activities

The Karamoja pilot involved first the generation of training materials for trainers and teachers; second, a training of trainers workshop on the areas of gender, conflict and identity; and third, the training of teachers to build each teacher’s individual capacity as an important agent of change in shifting gender norms. The structure of UNICEF and MoESTS training is described below (*see Figure 1*).

FIGURE 1
UNICEF and MoESTS training structure



Implementing partners developed a teacher training manual and handbook on the topics of gender, identity and peacebuilding for trainers and teachers respectively. Then, in March 2015, implementing partners provided a three day training of trainers workshop for CCTs, district inspectors of schools and MoESTS personnel. The aim of this training was to provide trainers with useful skills to foster change in gender norms. The training included explanation of theoretical concepts, and involved participatory approaches such as role playing, discussions and storytelling, and the use of familiar examples from Karamoja and elsewhere in Uganda to make the material accessible and appealing to the audience. The trained CCTs and inspectors returned to their respective districts and delivered a three-day training workshop for teachers and head teachers, to build teachers' individual capacities as important agents of change in relation to the training content. The training aimed to empower primary school teachers to: promote positive models of masculinity and femininity; redress teachers' gender biases and engage in social norm questioning; create awareness of alternative norms and practices related to gender equality; build skills to engage pupils in constructive dialogue; and promote gender-sensitive practices in the classroom through the use of materials designed to foster a shift in gender-related attitudes and beliefs (Development Research and Training, 2015).

A total of 1,000 teachers from five districts in Karamoja received the training. Teachers were trained in centralized locations (coordinating centre schools in the district) selected by implementers. Training started on a Friday, to minimize class interruption, and continued on Saturday and Sunday. FAWE, DRT or government personnel supervised the CCT training sessions. Following the training, teachers were offered a stipend to cover transportation costs.

From August to September 2015 and during November 2015, the same teachers were invited to receive two refresher training sessions that covered the same content but reinforced the messages and dug deeper into the subject of gender and peacebuilding. The training materials were updated and adapted following each training session according to the feedback provided by the research team, trainers and teachers.

Reinforcing Text Messages Sent by the Programme

From May to November 2015, a subset of trained teachers received biweekly reinforcing SMS text messages to remind them about certain training content and to provide examples of good practice. UNICEF created the reinforcing messages, and these were alternated with monitoring messages created by AIR that asked simple questions about the reinforcement activity. Both sets of messages were delivered by the mobile SMS platform GenderTrac.¹² UNICEF sent 13 waves of reinforcing text messages to 276 teachers in Karamoja.¹³ Each wave of messages was based upon an area of the training deemed to require particular attention and contained multiple questions on one of the following training topics:

- Promotion of an equitable school environment
- Conflict resolution mechanisms in school
- Positive discipline
- Gender-responsive leadership and management

Reinforcing text messages were designed using teachers' feedback (analysed via GenderTrac) on the previous wave of messages, to ensure that the most appropriate lessons or good practices were shared.

Section 1 of Appendix C presents the results of the monitoring messages – both the overall response rates and the answers to the monitoring questions. This appendix further explores the answers by the sex of the teacher and by district.

Intermediate outcomes

The theory of change posited that if the various stakeholders responded in the manner anticipated, the training sessions – and potentially the active teacher support and engagement delivered using the mobile SMS platform – should lead to a set of initial effects or intermediate outcomes. The broadest intermediate outcome was expected to be a change in gender-related knowledge and attitudes among teachers. Training teachers in gender socialization increases teachers' knowledge of the difference between sex and gender, gender equality, the legal framework of equal access to education, and gender socialization and peacebuilding. As a result of these changes in teachers' knowledge, their attitudes might change in regard to the roles of women and men, and the importance of education for girls and boys, and a sense of having a shared responsibility to encourage a gender-friendly school environment might emerge.

Impacts

Intermediate changes in knowledge and attitudes should lead to impacts on teachers' practices in the classroom and in the school. After gaining an understanding of the importance of positive gender socialization and of more progressive views about gender roles, the trained teachers are expected to promote positive models of masculinity and femininity in the classroom, foster change in gender norms in schools and promote a gender-responsive school environment.

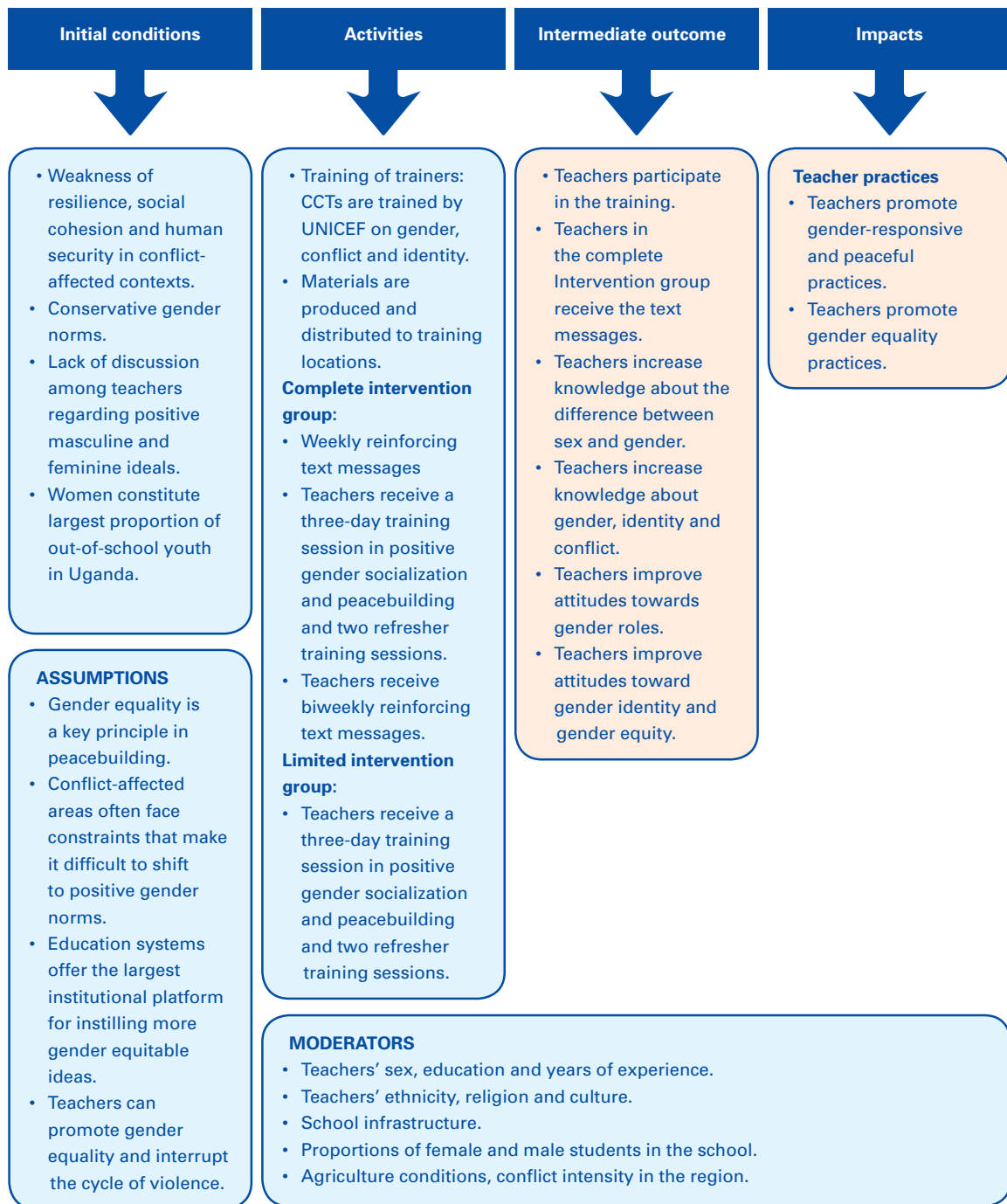
These changes could manifest as simple classroom practices such as ensuring equitable assignments, in-class contributions and disciplinary practices for girls and boys. Such indicators represent the direct, measurable goals of the Gender Socialization in Schools programme in the short term. Ultimately,

we expect that these changes in practices will contribute to the creation of peaceful and safe school environments. The school environment could then affect community social cohesion, as reflected in more equitable roles and mutually respectful relations between girls and boys as well as between women and men. We based our impact evaluation design on the theory of change depicted below (see *Figure 2*).

Assumptions

Several assumptions underlie the theory of change. First, gender equality is a key principle in ending conflict and building sustainable peace. Second, limited socio-economic and political progress constrains positive shifts in gender norms in conflict-affected areas, and conversely, patriarchal gender norms constrain social cohesion and economic and political progress. Third, because conflict disrupts tradition, conflict-affected environments can also create space for positive behaviour change and the transformation of gender norms. Fourth, education systems offer an institutional platform for instilling more gender equitable ideas in children and for exposing them to positive gender norms. Fifth, teachers, who may themselves be affected by or perpetuate gender bias, have the capacity to become agents of change by promoting positive visions of masculinity and femininity.

FIGURE 2
Theory of change for the impact evaluation: Gender Socialization in Schools programme in Karamoja



2.3 RESEARCH QUESTIONS

To test our theory of change, this study addressed both quantitative and qualitative questions.

The quantitative component assessed the programme impact through the following questions:

1. Did exposure to the training alone result in changes in teachers' knowledge of gender equality?
2. Did exposure to the training alone result in changes in teachers' attitudes towards gender equality?
3. Did exposure to the training alone result in changes in teachers' practices related to gender equality?
4. Did exposure to the training and reinforcing text messages result in changes in teachers' knowledge of gender equality?
5. Did exposure to the training and reinforcing text messages result in changes in teachers' attitudes towards gender equality?
6. Did exposure to the training and reinforcing text messages result in changes in teachers' practices related to gender equality?

The qualitative component added to the study by addressing the following research questions, which also enhance our understanding of the programme's implementation:

1. How do teachers promote gender socialization and gender equality in schools?
2. What enabling or inhibiting factors influence the implementation of gender socialization interventions in schools in Karamoja?
3. How is teacher understanding of the training topics reflected in classroom practice?
4. What specific factors enabled particular schools to successfully incorporate the training into their classrooms?
5. How did teacher training influence students' experiences in the classroom regarding gender socialization, both explicitly (teacher instruction with regard to gender) and implicitly (teacher practice with girls and boys)?
6. How does the intervention particularly affect social cohesion within schools – that is, the ability to minimize marginalization, and the work to ensure equitable opportunities for all members of society?
7. How does the intervention particularly affect social cohesion within schools and the community?

Previous reports – specifically the midline point qualitative data collection and case study report – presented initial insights into these questions. We elaborate further on these insights as part of this endline mixed-methods study.

The design described next was the best possible for this study, given the following five limitations:

- The programme was evaluated (as requested) during its first year of implementation. Evidence suggests that new programmes may experience unexpected challenges or may not be implemented as intended, which may weaken the programme effects in the first few years.
- All data were collected (as requested) before the end of 2015, and so the programme's short-term impacts were evaluated after only eight months of implementation. Such an evaluation cannot capture any potential long-term effects.
- The small budget and short time frame confined our focus to teachers – the programme's direct beneficiaries. Student data were from small samples and exclusively qualitative.
- Budget restrictions precluded visiting all randomized schools to collect data from beneficiaries. We addressed this constraint by administering the survey on the morning that teachers arrived for the training sessions, which brought together 1,000 teacher trainees. This strategy reduced data collection costs, but prevented the use of identical data gathering methods across the three study groups (although the research team did as much as possible to use the same conditions and procedures across the groups).

- Quantitative data on teachers were limited to self-reported surveys. Interviews and other, more comprehensive data collection methods were exclusively qualitative. To overcome the limitations of self-reported data, which may suffer from courtesy and social desirability bias, we used vignettes, minimized leading questions and included various types of questions. We also piloted the instrument three times in Karamoja and revised items after considering comprehensive feedback from local experts.



3

Methodology

This section describes the mixed-methods study design, the instruments for the quantitative and qualitative data collections, the data collections and the ethical considerations of the study.

3.1 DESIGN

To assess the impact of the programme after eight months, the research team implemented a cluster randomized controlled trial design in which the primary schools within each coordinating centre catchment area were randomly assigned to one of three groups to receive: teacher training only (Treatment 1 group), teacher training plus reinforcing text messages (Treatment 2 group) or no intervention (the control, or business-as-usual, group). The control group represents the counterfactual: What would have happened in the absence of the intervention? The sample of schools was limited to government schools located in Abim, Kaabong and Napak, three of the seven districts of Karamoja (although the intervention was implemented in five districts, the research was conducted in three). Appendix A provides more details on the sampling and on the randomization of schools. The study groups for the impact evaluation are summarized below (see *Table 1*).

TABLE 1
Study groups for the impact evaluation

Study group	Description
Treatment 1 group	Training-only group: Teachers were invited to participate in three training sessions.
Treatment 2 group	Training-plus-texting group: Teachers were invited to participate in three training sessions and were sent reinforcing text messages.
Control group	Business-as-usual group: Teachers were neither invited to participate in any training nor sent text messages.

A well-designed and well-implemented randomized controlled trial is the most powerful research design for drawing conclusions about the impacts of an intervention on specific outcomes. A randomized controlled trial permits us to directly attribute to the intervention any observed differences between the treatment

and control student groups; otherwise, some other, unobserved factor(s) such as motivation could have influenced the members of a group to select that particular treatment or control group (Duflo, Glennerster and Kremer, 2008). Randomization helps to ensure that observed and unobserved characteristics that may affect outcomes are similar for both the treatment and control conditions of the sample. In a randomized experiment, treatment and control groups are expected to be comparable (with possible chance variation between groups) so that the average outcome differences between the two groups at the end of the study can be attributed to the intervention.

We randomly assigned primary schools to each of the three study groups within each selected district and coordinating centre catchment area to increase comparability across schools and teachers in the three groups. Increasing the geographic proximity of the schools assigned to the groups was important to account for key social norms related to the outcomes of interest and to increase comparability across the groups. Geographic proximity of study groups could, however, also increase the likelihood of teachers from the treatment and control groups getting together and sharing content and ideas from the intervention training, thereby indirectly benefiting (i.e., 'contaminating') the control group. Considering the complexity of the training content, though, it seemed unlikely that control teachers could be easily influenced by casual interactions with intervention teachers (i.e., those who participated in the teacher training). To minimize spillovers and contamination, implementers encouraged local education authorities to minimize the sharing of information about the programme with control schools. We further examine the potential for spillovers in the analysis section of this report.

In total, 105 primary government schools were randomized to each of the three study groups (35 schools in each group). This randomization process led to three groups of 304, 299 and 313 teachers, from whom we collected baseline data. Appendix A contains a summary of the number of schools randomized by district and coordinating centre (see *Table A*).

At the baseline stage, we found that the treatment and control groups were statistically equivalent in observable characteristics. In other words, the randomization process had been successful in terms of creating equivalent groups at the baseline point, as the mean characteristics of the study groups were found to be equivalent across the three groups. We presented all of these descriptive statistics in the baseline report.

3.2 INSTRUMENTS

Quantitative instrument: Teacher survey

The main outcomes of interest are teachers' knowledge, attitudes and practices related to gender equality and positive gender socialization in schools. The theory of change suggests that the interventions (i.e., the teacher training and reinforcing text messages) may change teachers' knowledge and attitudes, which are in turn expected to influence teachers' practices. To measure these changes, we developed a teacher survey that gathered information about teachers' knowledge, attitudes and practices; data directly related to the training content; and details of teachers' background characteristics. Finally, we captured school characteristics by administering to head teachers a survey that included questions about school facilities such as books, desks and latrines; the number of students in the school; and the number of teachers in the school.

We developed the survey on the basis of a comprehensive literature review, a review of good practices in measuring our outcomes of interest, several consultations with UNICEF and MoESTS staff, and an

intensive piloting process. Gender norms in Karamoja reflect largely traditional ideas with regard to marriage, education and the division of household duties. Furthermore, best practice in the measurement of gender norms associated with education indicates that these can be measured using a combination of scales that include several questions to ascertain the knowledge, attitudes and practices of teachers, along with vignettes. Therefore, our indicators included questions that related to gender norms, the division of household and labour duties between women and men, and differences in educational opportunities and experiences for girls and boys. The items included in the survey are consistent with other inventories used to measure gender attitudes.¹⁴

We used vignettes to measure teachers' attitudes towards gender norms across topics such as gender roles in the household, and sexual and physical violence. Vignettes describe fictional scenarios and are typically used to determine how people make judgements and decisions about sensitive topics. Using vignettes can reduce the likelihood of both courtesy bias, where the respondent gives the answer that she or he feels the interviewer wants to hear, and also social desirability bias, where the respondent gives the answer that she or he believes is considered the socially correct one. Self-reported data on attitudes and behaviours may suffer from courtesy and social desirability bias (White and Phillips, 2012). The use of a combination of survey questions and vignettes allowed us to triangulate the findings across the different measurement methods.

The survey was aligned with the content of the initial gender socialization manual: The items included in the survey reflect the baseline attitudes, knowledge and practices that the initial training and refresher sessions aimed to change. It made sense, therefore, to include items that reflect the social construction of gender and patriarchy, to capture the extent to which gender stereotypes are rooted in the way that teachers (female and male) socially construct gender. In other words, the intent of the survey (and this evaluation) was to measure a continuum of change from a gender-blind and highly stereotypical social construction of gender to a gender-responsive social construction. Measuring the extent to which respondents agreed or disagreed with these items helped us to measure the extent to which their views had evolved from the baseline attitudes, knowledge and practices that the training intervention aimed to challenge and change.

Finally, the utmost care was taken to ensure that the way in which the items were worded was consistent with the traditional views of the roles of women and men in Karamoja, as expressed in Ugandan proverbs, folklore and literature on the roles of women and men in the region. Therefore, notwithstanding the challenge of social desirability bias, which we tried to mitigate as previously discussed, we were able to identify effects on knowledge and attitudes that we might not otherwise have witnessed, precisely because the wording of the items in the baseline survey reflected deeply ingrained beliefs about gender roles.

The survey was also piloted and tested three times to ensure that the items converged on the underlying constructs targeted by the evaluation (reliability and factor analysis). The pilots led to the revision of the survey and this exercise also took into consideration the comprehensive feedback given by enumerators familiar with the Karamojong context. We removed items that used egalitarian language because the pilot had suggested that including such questions would result in a ceiling effect.

The baseline study also helped to identify items with ceiling, or low, variability. Although we slightly revised the endline survey on the basis of the baseline and qualitative midline findings, the teacher and head teacher baseline and endline surveys were close to identical (*see Appendix B*). We summarize the main outcomes of interest, and secondary and descriptive indicators below.

1. Teacher knowledge of information provided in the training

Section A of the teacher survey included questions to measure teachers' knowledge about the difference between gender and sex, and questions related to gender equality and peacebuilding. The first group of questions captured whether teachers understood the difference between the concept of gender – a social construction regarding the roles of girls and women, boys and men – and sex, which refers to the biological characteristics of being female or male. The second group of questions focused on knowledge of other topics covered in the training, including what is entailed in producing a gender-sensitive lesson plan, the legal framework for equal access to education and the relationships between gender equality, peacebuilding and social cohesion.

We created two types of index scores for measuring teachers' knowledge about the difference between gender and sex, and teachers' knowledge of the relationship between gender equality and peacebuilding. For the first index, we computed the number of correct answers given by the teacher on the difference between gender and sex, and to questions about gender equality and peacebuilding respectively. We used factor analysis to compute the second index score. For more details about the statistical procedures used to create the two types of index scores, see Appendix C, section 2.

2. Teacher attitudes

Section B of the teacher survey included questions about teachers' attitudes towards gender roles, gender identity, gender equality in schools, sexual harassment directed from boy to girl and violence directed from girl to boy and from boy to girl. Gender roles are shared expectations of behaviour based on gender. Gender identity refers here to how the teachers see themselves as female or male, considering what it means to be a woman or a man in their society. Gender equality refers to the absence of discrimination by the teacher on the basis of a child's sex. The items in this section captured attitudes towards gender equality in the school and whether teachers' expectations for girls and boys were similar.

We created two types of index scores and several dummy variables to measure teachers' attitudes towards gender roles, gender identity, gender equality in schools, sexual harassment of girls by boys, and violence by girls against boys and by boys against girls. We again relied on the computation of summations and factor scores to construct the outcome variables associated with teachers' attitudes towards gender roles, gender identity and gender equality in schools, because these indexes could be constructed on the basis of a reliable scale. Our analysis also suggested, however, that individual items associated with teachers' attitudes towards sexual harassment and violence could not be summarized in one scale since we could not construct a reliable scale for this purpose. Thus, we decided to rely instead on binary dummy variables for the measurement of these constructs. These binary variables measured whether teachers punished boys for sexually harassing girls, whether teachers punished girls and/or boys for behaving violently towards the opposite sex, and whether teachers punished girls and boys equally for behaving violently towards the opposite sex.

3. Teacher practices

Section C of the teacher survey included questions about teachers' gender responsiveness when planning, implementing activities and exercising discipline in the school, as well as about teachers' practices associated with gender equality. These items aimed to estimate teachers' practices through a proxy measure. We created from the items two indexes that measured two different aspects of teachers' practices. The first index measured teachers' gender responsiveness when planning, implementing activities and exercising discipline in the school. The second index measured teachers' practices associated with gender equality.

We also computed two types of indexes for teacher practices associated with gender equality, just as we had done to measure teachers' knowledge and attitudes. The first index comprised the sum of the individual items associated with teachers' gender responsiveness and teachers' practices associated with gender equality. We constructed the second index on the basis of a factor analysis for teachers' gender responsiveness and teachers' practices associated with gender equality.

4. School environment

The teacher survey also included items to investigate the school environment, including questions around the structural problems that schools faced (e.g., lack of basic necessities to educate pupils, students who were hungry for most of the time, child marriages of girls and boys, neglect by families of their role in girls' and boys' education), absenteeism problems faced by schools (involving girls and boys), discrimination on the basis of ethnicity, and student participation in the classroom. These questions were used to create an index titled Problems in the school environment. The extent of these problems was unlikely to change in a short period of time. These problems were equally common across the three groups at the baseline point of the study. We therefore did not expect to find statistically significant differences in this area across the intervention and control groups during the endline analysis.

The teacher survey also gathered data on teachers' sense of self-efficacy in regard to solving the most pressing problems of the school. This index is titled Teachers' sense of self-efficacy. Teachers' sense of self-efficacy was equivalent across the three groups at the baseline point of the study. The training sessions did not emphasize the resolution of schools' structural problems, and therefore we did not expect to find statistically significant differences on such matters between the intervention and control groups during the endline analysis. Nevertheless, since the training did assume that teachers had the capacity to become agents of change in terms of positively influencing the social dynamics within schools, it was plausible that some intervention teachers might have inferred that they needed to solve more problems in their schools following the training.

Including questions associated with the school environment and self-efficacy allowed us to examine social desirability bias through a falsification test that explored patterns of responses to questions about the school environment and self-efficacy. In the presence of strong and systematic social desirability bias, we would expect to find statistically significant differences between intervention and control teachers for problems associated with the school environment and for self-efficacy.

5. Gender and culture in schools

The survey also collected information regarding gender and culture in the schools, which is summarized in an index titled Gender and culture in schools. This section included questions related to practices in a school such as those that relate to relationships between teachers and students, relationships between girls and boys, and the presence of school clubs. For all these measures, we constructed two types of index scores: a sum of the individual items and an index score created on the basis of a factor analysis.

6. Teacher background

Section D of the survey captured background information on teachers, which in turn included questions about ethnicity, religion, native language, education and years of teaching experience. Moreover, this section captured details such as the number of years that the teacher had lived in the district, the number of years that the teacher had lived in Karamoja, her/his marital status, the number of children the teacher had and her/his main source of income. The survey also collected detailed information about teachers' ability to receive, write and send text messages; whether they had participated in the

gender, conflict and peacebuilding training, and, if so, how many times; and whether they had received any text messages about the gender, conflict and peacebuilding training, and, if so, how many.

7. School characteristics

Head teachers responded to a supplemental survey that collected data on the characteristics of the primary schools. This survey collected information about the number of students in the school, the number of teachers in the school, the number of available education levels, information about the school's infrastructure and services (e.g., water source, type of water source, hand-washing facilities, latrines), the availability of teaching materials and the frequency of visits to the school by its CCT.

Key outcome indexes, secondary indicators and descriptive indexes are summarized below (see Table 2).

TABLE 2
Outcome indexes, secondary indicators and descriptive indexes generated from the teacher survey

Outcome Indexes		Description
1	Knowledge about the difference between gender and sex	Teacher understands the difference between gender and sex (question 1).
2	Knowledge about gender, identity and conflict	Teacher understands issues of gender, identity and conflict (questions 2-11).
3	Attitudes toward gender roles – Index 1	Teacher believes women and men are equally capable of doing jobs that are traditionally associated with one of the genders (question 12).
4	Attitudes toward gender roles – Index 2	Teacher supports textbook image that shows a father in a caretaker role (question 20).
5	Attitudes toward gender roles – Index 3	Teacher does not oppose being seen conducting activities traditionally associated with women (question 26e).
6	Attitudes toward gender identity	Teacher disagrees with statements describing very traditional masculine stereotypes (question 13).
7	Attitudes toward gender equality	Teacher agrees with statements associated with gender equality (Question 16).
8	Gender-responsive and peaceful practices	Teacher conducts gender-responsive and peaceful practices in the classroom (question 27).
9	Gender equality practices	Teacher conducts activities to promote gender equality in the classroom (question 28).
Secondary Indicators		
10	Attitudes: reactions to sexual harassment (<i>vignettes</i>)	Teacher intervenes in scenarios of sexual harassment (question 17a).
		Teacher blames harasser for harassment (question 17b).
		Teacher punishes harasser (question 17d).
		Teacher opposes violent retaliation to sexual harassment (question 17e).
11	Attitudes: fair punishment for sexual harassment (<i>vignettes</i>)	Teacher punishes females and males correctly and equally (questions 18, 21).
12	Attitudes toward violence (<i>vignettes</i>)	Teacher intervenes in scenarios of classroom violence (question 18, 21).
Descriptive indexes		

13	Gender and culture in schools	Teacher identifies positive gender culture in the school (question 25).
14	Problems in the school environment	Teacher identifies many gender-based problems in the school environment (question 14).
15	Teachers' sense of self-efficacy	Teacher feels capable of solving gender-based problems in the school environment (question 15).

Qualitative instruments

The qualitative research was used to strengthen the quantitative evaluation, providing a basis for in-depth analysis and insights into the impact of the teacher training element of the programme. The qualitative data served as a means to triangulate the quantitative data and allowed for the generation of new insights into the evaluation findings. We collected qualitative data from three different samples. First, we collected qualitative data from CCTs present during the training and from head teachers whom the implementing partners had identified as 'teacher leaders' on the basis of their participation in the training and their interactions with other teacher participants. Second, we collected qualitative data in a random selection of six intervention and two control schools across the three districts and three study groups. Third, we collected qualitative data in three purposively selected intervention schools identified as high-implementer schools. We summarize the qualitative instruments and the data collection samples below (see Table 3). The detailed findings of each of these three case studies are presented in our report titled Emerging Qualitative Findings and Case Study.

TABLE 3
Qualitative instruments used in the three samples

Qualitative instruments for different participants	Sample 1: Purposively selected key stakeholders	Sample 2: Random sample of schools		Sample 3: Purposively selected schools –case studies
	Midline	Midline	Endline	Endline
Semi-structured interviews with head teachers, CCTs and implementing partners	X	X	---	X
Focus group discussions with intervention and control teachers	---	X	X	X
Participatory assessments with students	---	---	X	X
Classroom observation	---	---	---	X

1. Semi-structured interviews with CCTs, head teachers and implementers

We conducted one-hour semi-structured interviews at the midline point with 15 intervention CCTs and 8 head teachers. The purpose of these interviews was to understand leaders' experiences of (a) training implementation in terms of leading and advocating training, (b) school-level monitoring on the implementation of knowledge gained from the training, and (c) higher-level understanding of training concepts. We also used the information that came out of these interviews to inform the design of the endline FGD protocols to ensure that questions were relevant to teacher experiences.¹⁵

Tools. The interviews for CCTs and head teachers were semi-structured, using protocols that included fundamental topics but which allowed for additional probing questions to capture information that might otherwise be missed, and resulting in a more free flowing conversation. The interviews with FAWE and DRT representatives were unstructured but centred around the challenges of programme implementation. All of these qualitative tools aligned closely with the teacher training manual (Development Research and Training, 2015). The research team also aligned the qualitative tools closely with the framework of the quantitative tool to facilitate triangulation during the endline analysis.

Sampling. The research team used purposive sampling to select key informants. AIR personnel were present at the refresher training in September, for data collection purposes, and spoke to FAWE and DRT staff who were also in attendance. The research team also spoke to CCTs from the study areas represented during the training. To select head teachers, we used a sample of teacher leaders, whom the implementing partners had identified as such on the basis of their participation in the training and their interactions with other teacher participants.¹⁶ Since we primarily asked head teachers process-level questions, we anticipated that those head teachers who actively participated in the training, and who regularly interacted with their colleagues during training and on other occasions, would provide the most valuable feedback on the programme and implementation. Nevertheless, it is important to note that this selection method could contribute to a more positive bias about the training, as well as more liberal views towards gender.

2. Focus group discussions

We administered FGDs separately with intervention and control teachers. The goal of the FGDs with intervention teachers was to facilitate a deeper understanding of the factors that enabled gender equitable practices and peaceful conflict resolution as a result of the programme. Endline FGDs with intervention teachers built on the midline discussions, which primarily included questions about the training itself and also about the specific challenges that teachers had experienced in applying the practices they had learned. As well as acquire insights into the training, its implementation and teachers' understanding of it, endline FGDs aimed to specifically target knowledge, attitudes and practices that might have changed as a result of the programme. The FGDs with two control schools allowed for the comparison of intervention teachers and business-as-usual teachers. We asked teachers from control schools the same questions we asked the intervention teachers, minus those that dealt directly with the training.

Protocols. Interviewers facilitated the approximately two-hour FGDs using a guide that included a flexible set of questions, plus additional probing questions. The questions were intended to invite participants to steer the discussion towards the issues that interested them, while ensuring that they remained focused on relevant topics. We followed the same FGD protocols for the two intervention groups, but also asked the Treatment 2 group questions about the text messages. The FGD guides expanded on our midline findings by incorporating discussion items on the following topics:

- Conflict among ethnic groups
- Teachers' perceived influence in the community
- Community reception of the training
- Cultural norms as they related to the training topics
- Changes in gender-sensitive practices and conflict management since teachers had begun implementation
- Refresher training sessions

Sampling. We conducted FGDs in the same six randomly selected intervention schools as at the midline point: two schools for each of the three districts. Within each school, we organized separate focus groups for female and male teachers,¹⁷ so that participants would feel free to express their authentic experiences. We targeted six participants for each focus group, but it was not always possible to achieve this number because of the few female teachers in each school. Therefore, we conducted FGDs with all of the available teachers in each school. When there was only a single female or male teacher in the school, we instead conducted a one-to-one interview with that teacher, covering the same topics. Appendix C shows the number of teacher FGD participants by data collection setting, district, school name, teacher sex and study group (see *Table C3.1*).

3. Student participatory assessments

Endline qualitative data collection also included participatory assessments of female and male Primary 4 students from six intervention schools and two control schools. Data collection procedures for use with children must adapt typical qualitative methodologies according to the age and relative cognitive development of the children involved, to keep their attention and maintain their interest. The purpose of conducting participatory assessments in the case study schools was to examine students' experiences in the classroom in relation to teachers' self-reported practices and teachers' implementation in the classroom of concepts from the training. Qualitative data do not allow for change to be connected specifically to an intervention, especially when the data are from students not directly involved in the intervention. Since teachers did not directly address students about the training concepts – or did so passively – we chose to ask students generally about their activities and experiences in school so as not to encourage them to misattribute any information that might not be a result of the programme. We targeted older primary school students (from age 8 through to the beginning of adolescence) as research involving older children has been shown to elicit the richest information that contributes to knowledge about their experiences (Greene and Hogan, 2005). Appendix C shows the number of student participants by data collection setting, district, school name, student sex and study group (see *Table C3.2*).

Protocols. The research team adapted a general student participatory assessment tool that had been developed by UNICEF but which was not specific to Uganda (UNICEF, 2007). We used the preparatory session (introduction), storytelling activity and picture drawing activity models from the tool. In addition, we discussed positive experiences in the home and school before asking about negative experiences. We had the tool vetted by multiple child education specialists, including a principal researcher from AIR, a member of the UNICEF Research and Policy team and an early childhood practitioner based in the United States of America. Our team also invited a child expert from the Karamoja region to attend the training and help facilitators to understand the challenges that Karamojong students encounter.

The participatory assessment tool required further contextual adaptations during the pilot stage to ensure that case study students would be comfortable participating and that they would understand the language of the study and the activities. The research team incorporated the first revisions during facilitator training. Three of the five data collection team members were from Karamoja and were therefore able to provide contextual feedback on the proposed activities. The research team piloted four activities at Kotido Primary School (see *Table 4*).

TABLE 4
Student participatory assessment activities

Activity	Description	Purpose
Gender role activity	<ol style="list-style-type: none"> 1. Students brainstormed and drew activities that they performed in their homes. 2. Students discussed why they performed these activities. 3. Students drew what their sisters/brothers (opposite gender) did at home. 4. Students explained why their sisters/brothers performed those activities. 	To determine students' self-defined gender roles and the ways in which roles differed between girls and boys
Positive experience activity	<ol style="list-style-type: none"> 1. Students listened to a story about somebody who had had a positive experience with a teacher. 2. Students described what their teachers did that made students happy. 3. The facilitator wrote each student experience on a ray of a drawn sun. 4. Each student then placed an eraser on the experience that made her or him happiest. 	To determine positive gender experiences and the ways in which these experiences differed between girls and boys
Negative experience activity	<ol style="list-style-type: none"> 1. Students listened to a story about somebody who had had an unhappy experience with a teacher. 2. Students described what their teachers did that made students unhappy. 3. The facilitator wrote each student experience on a leg of a drawn spider. 4. Each student then placed an eraser on the experience that made her or him unhappiest. 	To determine negative gender experiences and the ways in which these experiences differed between girls and boys, and to explore how teachers responded to issues of gender and conflict in the classroom
Movement activity	<ol style="list-style-type: none"> 1. Students volunteered to lead a song and dance activity of their choice. 2. All students participated in a song and dance activity. 	To make students feel happy and comfortable after the activity and ensure that they did not leave with negative feelings as a result of anything the group had discussed

The research team made three revisions to the participatory assessment tool on the basis of the pilot. First, the research team recognized the need for more frequent 'energizers' for students and incorporated student-led song and dance breaks between activities. Second, we conducted separate activities for girls and boys so that students could more easily distinguish girl activities from boy activities in their answers. Third, facilitators suggested that we might be able to better understand classroom dynamics from discussions with Primary 4 students, as Primary 3 students had had difficulty understanding some of the discussion concepts and the aim of the questions. Each participatory assessment lasted between one and two hours.

4. Classroom observation (case studies only)

The primary component of a case study is observation. Ideally, case study observations occur over an extended period of time, during which the researchers can assimilate into the community to better understand the context of each community and thus consider the nuances that may help to explain the complexities in programme implementation. Financial constraints did, however, limit the possibility of conducting the most comprehensive observations, since this was the pilot year of the programme

and thus short term in nature, with a smaller associated budget. As an alternative, the research team spent a full day at each case study school to observe the environments and one lesson in each school. These observations provided insights into gender dynamics and conflict resolution in the three schools on a given day.

Protocols. The research team adapted the observation protocol for gender equitable practices in schools (UNICEF, 2007). We used the observation protocol, with a group of 26 indicators for teacher activities and a group of 17 indicators for student activities, to observe one female teacher and one male teacher in each school. Teacher indicators included items such as “calls on pupils to answer questions” and “uses examples of boys/girls in lesson plans”, while student indicators included items such as “asks questions” and “reads aloud from chalk board or book”. Observers ticked the number of times they observed each item occur among girls and among boys. Observers took notes where clarification was necessary and commented on the overall classroom environment. Appendix B contains the observation protocol in full, and we discuss each of the case study schools in more detail in the Emerging Qualitative Findings and Case Study report.

3.3 DATA COLLECTION

Overall, the study collected three rounds of data between March and December 2015. Baseline data collection took place in March over a period of three weeks. Midline data collection occurred in September and endline data collection between 17 November and 2 December.

Data collection in the intervention group was organized around the three UNICEF teacher training sessions, and took place in the training locations on the first day of the training and before the teachers had received any training. All teachers attending the training session were asked to complete the teacher survey, and all teachers agreed to do so. The data collection team members assembled teachers in classrooms, explained the goals of the study, read the terms of consent aloud and stayed in the classroom to respond to individual questions and clarify aspects of the teacher survey. This data collection strategy allowed us to survey all teachers who participated in the teacher training in a cost-effective manner and within the limited budget for this evaluation. We also conducted a shorter, post-training teacher survey during the endline stage to assess whether the final training had immediate impacts on teachers' knowledge and attitudes.

Data collection in the control group always took place in the schools from Monday to Thursday during the same weeks as for the intervention group. All teachers working in the control schools were asked to complete the teacher survey, and all agreed to do so.¹⁸ As with the intervention group, the data collection team gathered teachers in classrooms and followed the same protocols, standardizing as far as possible the data collection process for the two groups.¹⁹ The training activities, and the quantitative and qualitative data collections are summarized below (see *Table 5*).

TABLE 5
Summary of data collection activities

Programme Activities:	2015								
	March	April	May	June	July	August	September	October	November
	Training no. 1	R. Text	R. Text	R. Text	R. Text	R. Text	Training no. 2 R. Text	R. Text	Training no. 3 R. Text
Research Activities:	Baseline						Midline		Endline
	---	M. Text	M. Text	M. Text	M. Text	M. Text	M. Text	M. Text	M. Text
Treatment 1: Training Only	Teacher survey						Focus Groups, Interviews		Teacher survey
									Focus Groups, Interviews, Case Study
Treatment 2: Training plus texting	Teacher survey						Focus Groups, Interviews		Teacher survey
									Focus Groups, Interviews, Case Study
Control: Business as usual	Teacher survey						Focus Groups, Interviews		Teacher survey
									Focus Groups, Interviews, Case Study

M. text = monitoring text message

R. text = reinforcing text message

3.4 ETHICAL CONSIDERATIONS

AIR holds a Federalwide Assurance for the Protection of Human Subjects (FWA00003952) from the Office for Human Research Protections of the US Department of Health and Human Services. We have systems in place to prevent conflicts of interest related to our institutional review board members or to submission and determination reviews.

Our institutional review board determined that the evaluation's activity with students was exempt from parental consent following careful examination of the Office for Human Research Protections regulations on human research subject protection; the United Nations Convention on the Rights of the Child; US Federal Regulation 45 CFR 46 Subpart D, Additional Protections for Children Involved as Subjects in Research; and the Ethical Research Involving Children compendium (Graham et al., 2013). On the basis of the AIR protection systems, the Convention on the Rights of the Child and the Ethical Research Involving Children compendium, the institutional review board determined that the evaluation did not require the consent of the parents/guardians of the research subjects, despite their age for the following reasons:

- The research would involve no more than minimal risk to the subjects.
- The waiver or alteration would not adversely affect the rights and welfare of the subjects.
- The research could not practicably be carried out without the waiver or alteration.
- Whenever appropriate, the subjects would be provided with additional pertinent information after participation.

In planning the study, AIR believed that students had the autonomy and capacity to express their opinions and to participate in research – particularly as the subject matter directly related to them – as is required by the Convention on the Rights of the Child. The sociocultural aspects of community and family in the Karamoja region also led the institutional review board to the conclusion that parental consent and opt-in or opt-out consent procedures would not be practical and could hinder the research team's ability to undertake the research. For example, low literacy rates among adults made securing written consent from parents/guardians unfeasible; migrant and non-Western family structures made the identification of parents/guardians from whom to secure consent unrealistic; and the possibility that gender topics could be taboo might have caused parents/guardians to try to exclude their children from the research to prevent others from finding out their stance on gender issues or because they did not believe their children had the right to express such opinions. In addition, this was not a biomedical research activity, and there was no more than minimal risk to the subjects. Our research was therefore exempt from collecting documentation of parental consent from student participants.

The research team received consent from all adult participants and handled the qualitative data according to procedures and protocols approved by our institutional review board. Standard practices included securing written consent for adult participants; securing verbal consent for student participants; the use of digital recording, transcription and translation where necessary; and complete anonymization of data and protection of confidentiality.



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Impact analysis

This section describes the impact analysis – both quantitative and qualitative – conducted to examine all of the data collected for the impact evaluation. The analysis section is followed by the presentation of the impact results.

4.1 QUANTITATIVE ANALYSIS

To ensure the robustness of the impact estimates that we present in the results section, we conducted several analyses. These analyses included the creation of outcome indexes and an examination of the internal reliability of these constructs. We also carefully examined the missing data of teachers at the baseline and endline points. In addition, we re-estimated the statistical power of the study after taking into consideration the observed intraclass correlation of the outcomes during the baseline stage and the levels of missing teacher data during the endline stage. We examined the main impacts of the interventions on the outcomes of interest, using an analysis of covariance (ANCOVA) model, and we explored the robustness of the treatment estimates to several different model specifications. We also examined whether the interventions showed a differential effect for female and male teachers by conducting exploratory subgroup analyses by sex. We present the results of the individual endline items in descriptive statistics tables. We also examined the response rate for the monitoring text messages. Moreover, we compared the before and after endline surveys from intervention teachers who had participated in the final training session. Finally, we illustrated the overall quantitative results using graphs, which present the effect sizes and confidence intervals for the various outcomes of interest.

Analysis of impact

To estimate the impact of the two interventions on teacher outcomes, we used an ANCOVA model. An ANCOVA model is a statistical technique that allows for the causal effect of the programme to be estimated by comparing outcomes in the intervention schools with outcomes in the control schools, and controlling for the value of the outcome variable at the baseline stage. The main advantage of an ANCOVA model over difference-in-difference analysis is that the use of the ANCOVA model results in increases in

statistical power, particularly when outcomes are not strongly autocorrelated, as in this study (McKenzie, 2012). This model was also particularly appropriate for this study because we made a few changes to some items and to the wording of a few questions between the baseline and endline points in response to feedback and analysis of the baseline data. Our ANCOVA model used cluster robust standard errors at the school level to account for the nested structure of the data.

To check the robustness of the treatment estimates, we specified different regression models that each included a different set of covariates. Our findings indicated that impact estimates were mostly robust to the specification of the regression. The different model specifications included the following covariates:

- Model 1: The first model specification included only the two treatment indicators.
- Model 2: The second model added the outcome at the baseline point to Model 1.
- Model 3: The third model added the district fixed effects for Abim and Kaabong to Model 2, using Napak as a reference.
- Model 4: The fourth model included all of the covariates from Model 3, plus several teacher characteristics as covariates. These teacher covariates included dummy indicators that captured the teacher's sex, language, religion, education and number of official and unofficial spouses, as well as whether the teacher had attended a gender training session at the baseline point and whether the teacher had a mobile phone.
- Model 5: The fifth model included all of the covariates from Model 4 and added characteristics of the school as covariates. These school covariates included dummies that identified whether the school was a mixed or a single-sex school, whether the school had separate latrines for girls and boys, the number of students (hundreds) and the percentage of female teachers.
- Model 6: The sixth model presented the results of Model 2 but combined Treatment 1 and Treatment 2 as a single indicator.

We tested several other model specifications in which we controlled for other teacher and school covariates in the regressions. Since some of these covariates presented high rates of missing data or a lack of explanatory power, however, we chose not to use those specifications. Section 5 of Appendix C presents the impact results for all outcome measures for Models 2 and 4. (The findings of all of the other regressions are available on request.) The first column presents the list of covariates, the regression constant, the R-squared value and the number of observations. This column also presents the test for the equality of regression coefficients for Treatment 1 (teacher training only) and Treatment 2 (teacher training plus reinforcing text messages). The second column presents the impact estimates for the outcome variable and clustered standard errors for the index, both computed as the number of correct answers and computed as a factor score.²⁰ In these columns, we also present the p -value of the test for the equality of regression coefficients for Treatment 1 and Treatment 2.

The impact results for the ANCOVA Model 2 are illustrated in graphs in section 5. We present the ANCOVA Model 2 results because the point estimates are estimated with more precision and are consistent across the different model specifications.²¹ The graphs show the different outcome indexes computed as the number of correct answers on the y -scale and the size of the effect on the x -scale. In addition, the graphs present the effect size computed as the mean difference between the intervention group and the control group, the confidence interval of the effect size and the p -value of the point estimate.²²

We also estimated the impact of the programme on the individual items to gain a deeper understanding of the ways in which the programme changed teachers' outcomes. For these analyses, we conducted ordinary least square regressions for continuous variables and probit regressions for binary variables. In each of these regressions, we included two binary indicators that contrasted Treatment 1 with the control group and Treatment 2 with the control group. In these analyses, we also accounted for the nested structure of the data by using clustered standard errors at the school level. The results of these analyses are presented in Appendix C, section 5.

Exploratory: Subgroup analysis, by gender

We also explored the possibility of heterogeneous programme effects for female and male teachers. For this purpose, we used ANCOVA models in which the treatment indicators were made to interact with the dummy covariate that distinguished between female and male teachers. These analyses should be considered exploratory only since the sample size of the study was designed for detecting small but meaningful heterogeneous effects. Moreover, the proportion of female teachers in the sample was only 25 per cent, which presented an additional limitation to this analysis. The results of the exploratory regression analyses, which are discussed in section 5, are available on request.

Exploratory: Analysis of the effect of the last training

In November 2015, we collected teacher survey data before the first day of the final refresher training session and following the third day of this training session, to allow us to explore the effect of the final refresher training session, in addition that of the previous training sessions. For this purpose, we analysed the differences in the mean values of the outcome variables before and after the training. For these analyses, we conducted ordinary least square regressions for continuous variables and probit regressions for binary variables. In each of these regressions, we included a single binary indicator that contrasted intervention teachers (from the Treatment 1 and Treatment 2 groups) before the final training session with the same intervention teachers after the final training session. In these analyses, we also accounted for the nested structure of the data by using clustered standard errors at the school level. The results of these analyses are discussed in section 5 and presented in Appendix C, section 6.

Analysis of the outcome indexes

As discussed in the previous section, we created outcome indexes or composite measures to summarize specific items and represent a more general dimension for measuring teachers' knowledge, attitudes and practices. We generated two index scores for each of the outcome measures of interest. We also assessed the consistency of the gender indexes by exploring the internal consistency of the outcome indexes. These analyses checked whether the items proposed to measure the same general gender construct produced similar scores. Internal consistency ranges between negative infinity and 1. A commonly accepted rule for describing internal consistency using Cronbach's alpha defines internal consistency as excellent if $\alpha \geq 0.9$, good if $\alpha \geq 0.7$ and $\alpha < 0.9$, and acceptable if $\alpha \geq 0.6$ and $\alpha < 0.7$. The Cronbach's alpha coefficients for the knowledge indexes range from 0.62 to 0.73; for the attitudes indexes, from 0.64 to 0.88; and for the practices indexes, from 0.68 to 0.72. Finally, for the descriptive indexes, the Cronbach's alpha coefficients range from 0.71 to 0.82. For more details about reliability and factor analyses, see Appendix C.

Analysis of missing data

During endline data collection, about 29 per cent of the teachers who had participated in the baseline survey were unavailable to complete the endline survey. Of the 916 teachers surveyed at the baseline stage, 650 were present at the endline stage. We called teachers to ask them why they had missed the final training session or final survey. The three main reasons were reported as follows: (1) Teachers had not been informed about the teacher training or had arrived late to the training session (in the case of intervention teachers); (2) teachers had been off sick during the data collection; or (3) teachers had been busy marking primary school leaving exams.²³

To assess the potential for bias because of missing data, we conducted three types of data analyses. First, we examined whether the proportion of teachers with missing data was similar or different across the three study groups. Second, we assessed whether teachers with complete data at the baseline and endline points were equivalent at the baseline point across the three study groups. Third, we determined whether teachers with missing data were similar at the baseline point to those with complete data. These analyses revealed that the proportions of teachers with missing data were similar across the three study groups: 28 per cent, 33 per cent and 26 per cent for the control, Treatment 1 (training only) and Treatment 2 (training plus texts) groups respectively.²⁴

Moreover, attrition results showed that teachers with complete data at the baseline and endline points were equivalent in the vast majority of observed characteristics gathered in the teacher survey. The results from differential attrition analysis suggested that the benefits of the randomization were preserved despite the high rates of missing data. Nevertheless, our regression analyses also controlled for a subset of covariates to examine the robustness of the treatment estimates against differential attrition. The equivalence in observable characteristics enabled us to attribute impacts to the intervention. Section 4 of Appendix C presents the results for the three attrition analyses described above.

Spillovers analysis

In this study, spillovers or contamination could occur when teachers assigned to the control group benefited from the programme activities offered to the intervention group, or when teachers assigned to the Treatment 1 group benefited from the text messages offered to the Treatment 2 group. Implementers attempted to minimize spillovers by encouraging local education authorities not to share information about the programme with control schools. Nevertheless, spillovers were still possible and were often of policy interest because they constituted indirect programme impacts. We asked a few questions in the endline survey to explore this phenomenon. These questions allowed us to investigate the following:

- Spillovers from intervention to control schools. We asked control teachers whether they had received any training in gender, conflict and peacebuilding; any coaching from a CCT on gender, conflict and peacebuilding; or any text message about gender, conflict and peacebuilding.²⁵ If the answer to any of these questions was 'Yes', we also asked about the number of training sessions, coaching sessions or text messages received, as appropriate.
- Spillovers from Treatment 2 (training plus texting) to Treatment 1 (training only). We asked Treatment 1 teachers whether they had received any text messages about gender, conflict and peacebuilding, and if so, how many.

We found some limited evidence for spillovers from intervention to control schools. Overall, we found that 33 per cent of control teachers (76 teachers) indicated receiving some training in gender, conflict and peacebuilding, and at the baseline point, approximately 20 per cent of control teachers reported having already received training on gender issues. Moreover, 18 per cent of control teachers reported receiving some coaching on gender, conflict and peacebuilding, and 7 per cent indicated receiving some text messages about gender, conflict and peacebuilding. These results suggest the presence of spillovers from intervention to control teachers, which may have resulted in an underestimation of the programme impact. We did not, however, encounter any additional evidence that control teachers had attended the training sessions. Perhaps some teachers confused the different gender training sessions.²⁶

We also found some evidence for spillovers resulting from ineligible teachers receiving text messages about gender. Our results show that 12 per cent of Treatment 1 teachers (26 teachers) reported receiving some text messages about gender, conflict and peacebuilding. These results suggest modest levels of spillovers from the Treatment 2 group to the Treatment 1 group, which may have contributed to the underestimation of the training-plus-texting effect. Again, however, we must remain cautious in our interpretation of this result, as we did not encounter any additional evidence that ineligible teachers had received such text messages.

Text message analysis

We examined the monitoring text messages created by the research team. We then computed response rates for each message and analysed the responses for each question by subgroup, including the sex of the teacher and the district in which the school was located. For example, in May 2015, we asked, “In general, are more boys or girls absent?” and “Is it more difficult to encourage boys or girls to attend? (1) Girls, (2) Boys”. In June 2015, we asked, “During your last class, who was more likely to respond to questions? (1) Girls, (2) Boys, (3) Boys and Girls” and “Do you think girls participate as much as boys in classroom activities?”. In November 2015, we asked, “Do you check more with boys or girls to ensure that everyone understands the topic in mathematics class? (1) Boys, (2) Girls, (3) I check with boys and girls equally”. Although on average less than 33 per cent of Treatment 2 teachers responded to the monitoring text messages, we observed a positive trend over time. The detailed results for the text message data are summarized in Appendix C.

Power calculations

We re-estimated the power of this study using empirical data collected for the study, to assess the validity of the initial assumptions made regarding the intraclass correlation and the R-squared value. Our initial power calculations assumed 90 schools (30 in each group), 210 teachers in each group (630 teachers in total), an intraclass correlation of 0.05, an R-squared value of 0.4 and a minimum detectable effect size of 0.4. During the baseline stage, we collected data from 105 schools (instead of only 90) and 916 teachers across the three study groups. After attrition, the sample dropped to 650 teachers. The one-way analysis of variance (ANOVA) for each of the indexes created for this study revealed that the intraclass correlation we used for our initial power calculations was similar to 0.05. The average R-squared value across the different ANCOVA models was found to be 0.22 instead of 0.4. Using these parameters, and a larger number of schools, we found that the study had 80 per cent power to detect minimum effect sizes of 0.28.

4.2 QUALITATIVE ANALYSIS

The research team's analysis objective was to ensure that all facets of the research (i.e., data collection, data management, data analysis and reporting) systematically cohered with the goal of ensuring data trustworthiness and thus credibility of the findings. For this reason, the study used triangulation techniques (Denzin, 1978), including methodological triangulation (Lincoln and Guba, 1985; Guba and Lincoln, 2005) and triangulation among raters, which helped to support efforts to promote the integrity of the overall research. The research team also employed several analytic methods to systematize the data review and coding, and to ensure reliability of the findings. These methods included: (a) content coding, (b) systematic data management and comparison of findings among researchers, and (c) grounded theory to guide a team of analysts trained in using the qualitative software program selected for this project (NVivo qualitative data analysis software, QSR International Pty Ltd., Version 10, 2012).

Content coding

The first step in analysing qualitative data is to develop a coding structure that helps to systematically categorize information. The research team began with the analytic framework of the study (knowledge, attitudes and behaviours) to assess the programme concepts of gender and peacebuilding. Three raters separately open-coded data to independently identify the themes in the discussion. These themes formed the coding structure that we used to categorize the raw data from interviews and focus groups into sub-themes, which are the primary findings. The research team defined each theme and sub-theme to ensure consistency across coders and over time, and coded the data as presented below (see Table 6). For example, the first row reflects that teachers revealed their attitudes about valuable qualities of women and men in Karamoja by discussing physical traits, personality traits, responsibilities and cultural traditions. The sub-themes – such as that household work and marriage are female traits and head of family and initiation are male traits – provide a more detailed understanding of these discussions.

TABLE 6
Qualitative data analysis themes

Analytic framework	Concept	Themes	Sub-themes
Attitudes	Valuable qualities of women and men in Karamoja	Physical traits (male teachers), personality traits (male teachers), responsibilities, cultural traditions	Household work, marriage (women); head of family, initiation (men); presentable, attractive, kind, polite, humble (male teachers toward girl students)
Knowledge	Gender-sensitive environment	Ways to ensure a gender-sensitive environment	Classroom set-up; equal participation, representation and equal distribution of materials; responsibility sharing; gender-sensitive lesson plans
Attitudes	Gender-sensitive environment	Importance of a gender-sensitive environment	High performance, cooperation among students, classroom management
Practices	Gender-sensitive environment	Implementing a gender-sensitive classroom	Action plans; equal participation; involvement of the community; games, dramas or activities
Attitudes	Conflict in the classroom	Understanding the potential causes of conflict in the classroom	Intertribal/clan conflicts, treatment of girls during menstruation, traditional norms that conflict with gender equitable practices

Knowledge	Conflict in the classroom	Examples of positive conflict resolution	Guidance and counselling, not caning children, rules and regulations
Attitudes	Conflict in the classroom	Benefits of positive conflict resolution	Better understanding of other pupils, less violence, boys not using bad words
Practices	Conflict in the classroom	Ways in which teachers handle interpersonal conflicts in school	Guidance and counselling; talking to students, parents, or management

Note: This knowledge was in response to techniques teachers learned as part of the training; teachers also said, however, that they use the concepts that constituted a 'gender-sensitive environment' in practice in their classrooms. In the analysis, we discuss these concepts in terms of practices, as described by teachers, in addition to responses provided by teachers in the separate 'practices' section.

Data management and comparison

The research team conducted a coding comparison by selecting one transcript from the semi-structured interviews and one transcript from the FGDs to be coded within the established coding scheme. The purpose of this exercise was to ensure that all researchers coded information from the transcripts in a consistent manner. The research team ran an inter-rater reliability test that showed that the three primary coders had an overall average of 99.1 per cent agreement, with an estimated Kappa value of 0.68 (good agreement) for student participatory assessments. The two primary coders had an overall average of 99.2 per cent agreement, with an estimated Kappa value of 0.62 (good agreement) for teacher FGDs. These averages indicated a high level of consistency among researchers in the interpretation of data and hence clarity of the coding scheme. While incorporating the information into the coding structure, researchers met to discuss new codes that had emerged during the coding process, as well as any other necessary revisions to the coding scheme (e.g., deletions, recategorizations, clarifications). In addition, the research team met throughout the coding process to discuss the emerging findings and to compare similarities in thematic analysis.

Grounded theory

Grounded theory advocates a systematic approach to data collection and management, involving the methodical coding of data through an iterative process that promotes consistency in all facets of data collection, analysis and reporting. The research team met regularly throughout the coding process to discuss the prominent theories emerging that could guide the reporting of the research. After coding, the research team attempted to quantify the data, where applicable, using code counts to illustrate findings. This method helped to characterize the prevalence of responses to deduce which themes were common and which were outliers. It is important to note, however, that we did not use methodologies based on a systematic count of the prevalence of opinions.





5

Impact results

This section summarizes the findings of the study by examining the impact of both the teacher training and the SMS text messaging component of the Gender Socialization in Schools programme pilot on teachers' knowledge, attitudes and practices. We triangulate these quantitative results with the qualitative findings about teachers' conceptual understanding of gender and conflict, the contextual sensitivity of implementation, teachers' influence in the community and the programme's potential contribution to social cohesion.

We present, in the following order, the impact results for:

- knowledge outcomes
- attitudes outcomes
- practices outcomes
- the effect of text messages
- Treatment 1 and Treatment 2 combined.

In addition to the impact results, we also present in this section the:

- exploratory results examining differential treatment effects for female and male teachers
- results for secondary and long-term outcomes on the index scores for Gender and culture in schools, Problems in the school environment and Teachers' sense of self-efficacy
- additional qualitative results that explore the potential of the programme to contribute to social cohesion in the long term
- exploratory findings of the analysis that examined the immediate effect of the final training session on teachers' knowledge and attitudes.

For knowledge, attitudes and practices, we first describe the quantitative results, followed by the qualitative results. The quantitative results present the impact on index scores created as the summations of individual items, as the impact estimates on summations and factors showed approximately the same results. Moreover, since the results were found to be quite stable across different model specifications, we present the results from ANCOVA Model 2, which only includes the pretest scores and treatment

indicators, and was estimated with the highest number of teachers. The triangulation of the quantitative and qualitative data provides a comprehensive overview of the results.

The impact analysis yielded three main findings:

- Positive evidence showed that the programme succeeded in increasing teachers' knowledge of and attitudes towards gender equality issues in the short term.
- Limited evidence was found to demonstrate that the programme influenced overall teacher practices (at least in the short term).
- Limited evidence was found for positive complementary effects of the SMS text messaging component on teachers' attitudes or practices.

In addition to the main impact results, the study yielded the following findings:

- As expected, no impacts on secondary and long-term outcomes on the index scores for Gender and culture in schools, Problems in the school environment and Teachers' sense of self-efficacy.
- No evidence of heterogeneous or differential treatment effects among female and male teachers.
- Evidence about the importance of targeting the community to create a more enabling environment in which new ideas can be welcomed, understood and translated into practices.
- Improvement in knowledge and attitudes after two days in the final training session.

All of the findings are summarized below.

5.1 RESULTS ON KNOWLEDGE

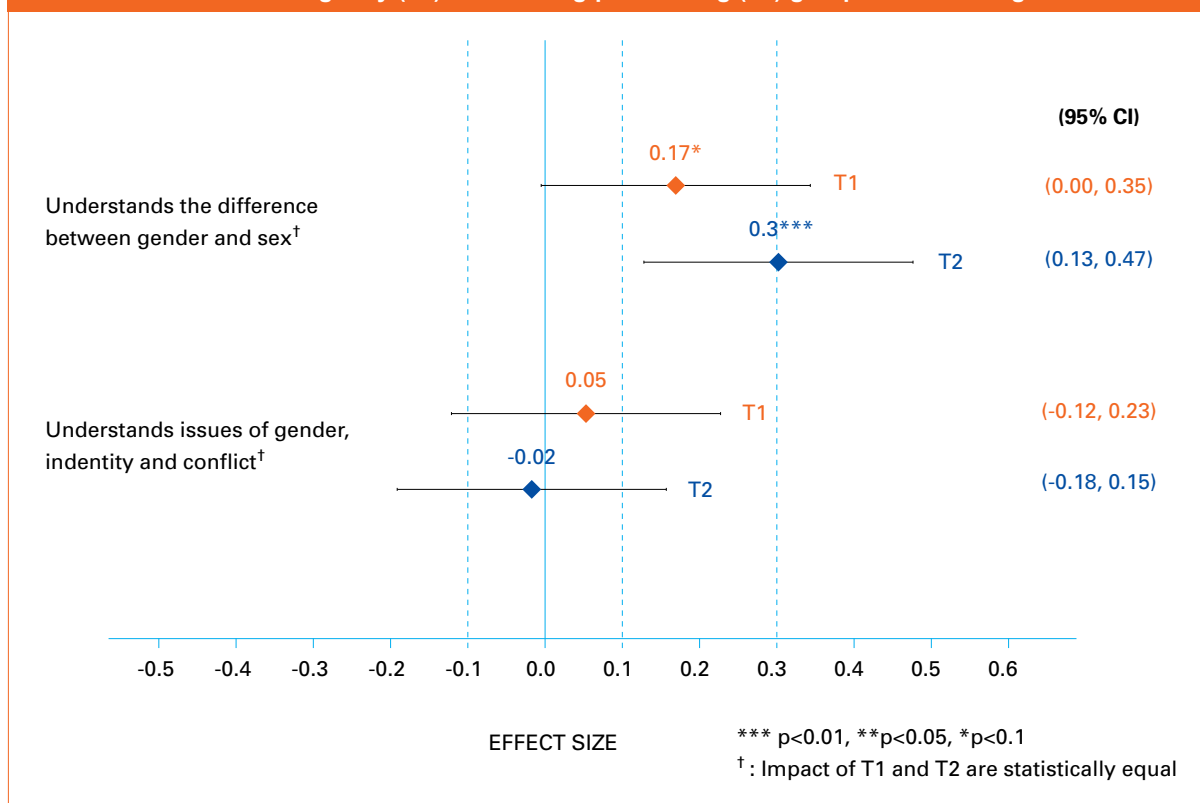
The quantitative results are presented first, followed by the qualitative results. Overall, the triangulation of the quantitative and qualitative evidence indicates that the programme resulted in an increase in teacher knowledge of the information provided in the training.

Quantitative data

We found evidence of the programme having positive impacts on teachers' knowledge about the difference between gender and sex. The point estimates were 0.35 ($p < 0.1$) for the training-only group and 0.60 ($p < 0.01$) for the training-plus-texting group, both of which are statistically significant. The effect sizes, when compared with those of the control group, were 0.17 and 0.30 for the training-only and training-plus-texting groups respectively, indicating that the effect for the training-plus-texting group is almost twice the effect for the training-only group. These effects are of medium size, according to Cohen's definition.

We found no positive impacts, however, on the second indicator of knowledge about gender, identity and conflict (questions 2, 6 and 9 to 11). In addition, we found no evidence of statistically significant differences between Treatment 1 and Treatment 2 (see *Figure 3*). *Figure 3* illustrates the results on knowledge and presents the effect sizes, confidence intervals and statistical tests.

FIGURE 3
Effect sizes for the training-only (T1) and training-plus-texting (T2) groups on knowledge



The results for individual items are presented in Appendix C (see *Tables C5.4 and C5.5*).

Qualitative data

Qualitative data also indicated that teacher knowledge increased between the second and third training sessions. The qualitative evidence indicated that teachers were more likely to correctly use gender and conflict terms following the training. Furthermore, teachers were more likely to use the concepts of gender and sex consistently with the training programme's definitions (e.g., gender sensitive, gender socialization). Finally, teachers also identified that classroom discrimination based on gender identity could affect social interactions, girls' confidence in school and girls feeling the need to miss school during menstruation. Teachers identified ways to ensure a more gender-sensitive environment, including through classroom set-up, equal participation and representation, and responsibility sharing.²⁷

5.2 RESULTS ON ATTITUDES

Quantitative results for the index on gender roles, gender identity, gender equality and attitudes towards sexual harassment and violence are presented first, followed by the qualitative results. Overall, the triangulation of the quantitative and qualitative evidence indicated that the programme resulted in more positive teacher attitudes towards gender roles and more positive teacher attitudes towards gender identity. Evidence of positive impacts was found in neither the index that measured gender equality, nor in the individual dummy indicators that measured attitudes towards sexual harassment, attitudes towards punishment for sexual harassment and attitudes towards violence. We also found no evidence that Treatment 1 and Treatment 2 were statistically significantly different from each other. Also, the effect sizes were almost the same for almost all attitude indexes across the two treatments.

Quantitative data: Attitudes towards gender roles

To investigate teachers' attitudes towards gender roles, we used three different types of indexes to triangulate information and minimize the likelihood of social desirability bias. For the three indexes, we found statistically significant differences between the intervention and control teachers in favour of the intervention teachers. In other words, intervention teachers were more likely to agree with statements that indicated relatively progressive attitudes towards gender roles.

The programme appears to have had a medium-sized positive effect on the likelihood that teachers would agree with statements that suggested that women and men were equally capable of conducting jobs that were traditionally associated with one of the genders. Intervention teachers were more likely to respond affirmatively to questions suggesting that women and men were equally capable of doing engineering work, being employed as a mechanic, working as a nurse, preparing food, teaching primary school, engaging in political leadership, working as a secretary and serving as a doctor. The ANCOVA point estimates on the full scale were 0.83 ($p < 0.01$) for the training-only group and 0.48 ($p < 0.05$) for the training-plus-texting group, both of which are statistically significant. This index ranges from 0 to 10 points. The effect size, when compared with that of the control group, was 0.35 for both intervention groups, which is considered a medium-sized effect. These effect sizes are presented above (see Figure 3).

We also found evidence of the programme having medium-sized positive effects on teachers' attitudes towards gender roles, as measured by vignettes. Question 20 attempted to capture teachers' attitudes towards traditional gender roles through the use of a vignette. The vignette presented a hypothetical situation in which an image of a father cooking dinner and looking after his baby was proposed for inclusion in a new English textbook (see image below).



The question then asked teachers whether they would support such a picture appearing in the textbook, whether this was an example of gender equality that they would promote, and if the man pictured were their brother, whether they would think that his wife was treating him well. The ANCOVA point estimate was 0.44 ($p < 0.01$) for the training-only and the training-plus-texting groups, which is both positive and statistically significant. This index ranges from 0 to 3. The effect size, when compared with that of the control group, was the same for the two intervention groups and equal to 0.35, which is considered a medium-sized effect. The effect sizes for question 20 are presented below (see Figure 4).

Our findings indicated that the programme had medium-sized effects on teachers' attitudes towards gender norms in the community. Question 26e²⁸ attempted to capture teachers' attitudes towards gender norms in the community, by asking teachers for their level of agreement with statements such as:

- "I would not want my friends to see me washing women's clothes."
- "I would not want my friends to see me taking care of children."
- "I would not want my friends to see me cleaning the home."
- "I would not want my friends to see me cooking meals."
- "I would not want my friends to see me teaching primary [school]."
- "I would not want my friends to see my spouse correcting me in public."

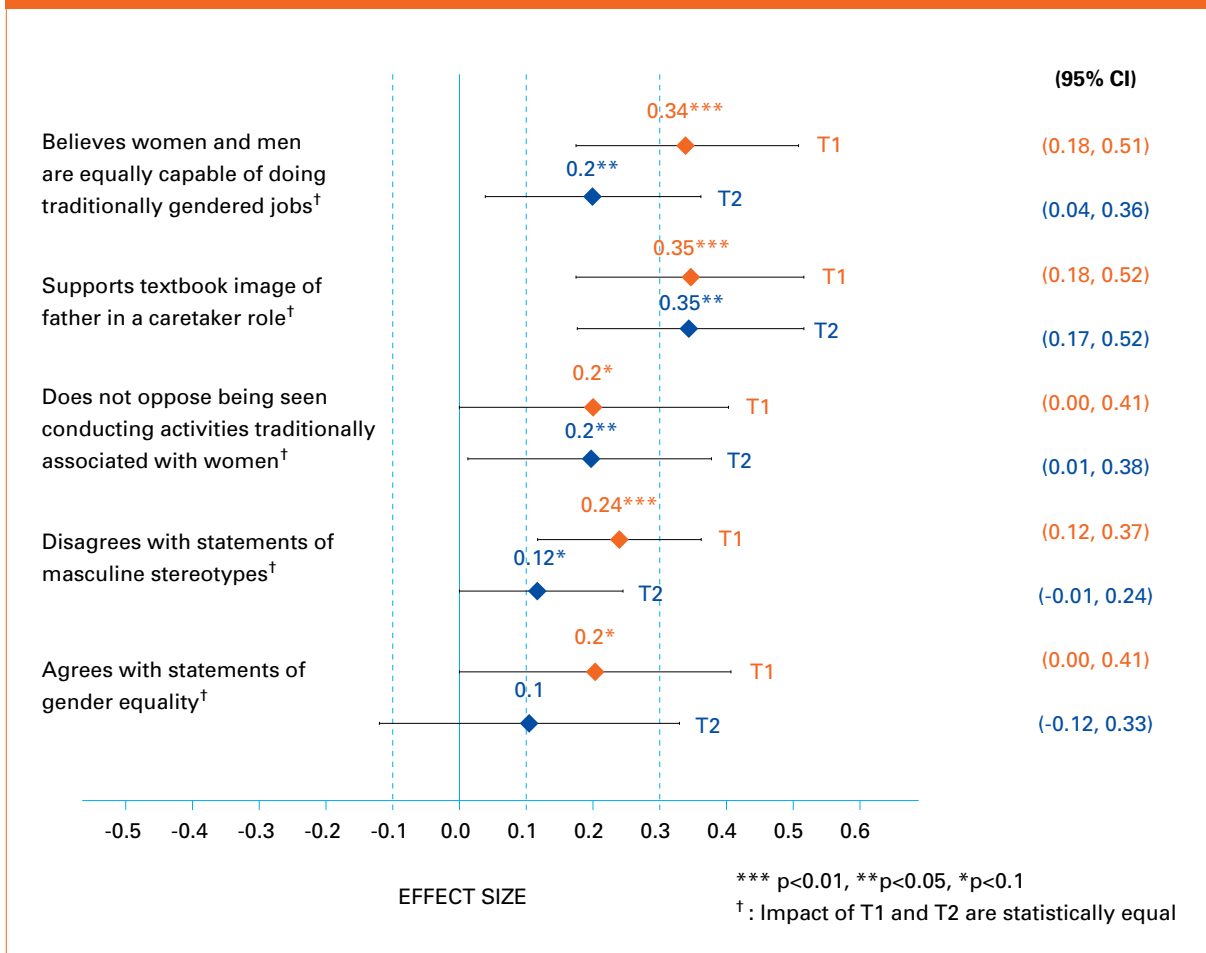
Intervention teachers were more likely to disagree or strongly disagree with the statements "I would not want my friends to see me washing women's clothes" and "I would not want my friends to see my spouse correcting me in public." The pattern of responses for the other items was more similar for the

three groups. The regression point estimates for the index score were 0.59 ($p < 0.10$) for the training-only group and 0.57 ($p < 0.01$) for the training-plus-texting group, both of which are positive and statistically significant. The index ranges from 6 to 24. The effect size, when compared with that of the control group, was the same for the two intervention groups and equal to 0.20, which is considered a medium-sized effect. The effect sizes for question 26e are presented below (see Figure 4).

Quantitative data: Attitudes towards gender identity

Positive quantitative effects of the programme were also found for teachers' attitudes towards gender identity. Intervention teachers were more likely to disagree with very traditional masculine stereotypes. For example, intervention teachers were more likely to disagree with statements such as "Some women need to be beaten", "Educated women make unruly wives", "When you beat boys, you raise disciplined men" or "When men are speaking, serious women are not supposed to talk." Our results suggested that the programme had small but positive effects on the degree to which teachers associated with a neutral, as opposed to masculine, gender identity. Nevertheless, there were some items to which the intervention teachers responded according to traditional norms, showing similarity to the control group, for example: "A real woman knows how to cook" and "Being humble is the greatest beauty of a woman." The ANCOVA point estimates for the full index were 1.26 ($p < 0.01$) for the training-only group and 0.62 ($p < 0.10$) for the training-plus-texting group. The index ranges from 13 to 52. The effect sizes, when compared with those of the control group, were 0.24 for the training-only group and 0.12 for the training-plus-texting group, which are considered medium-sized and negligible effects respectively (see Figure 4).

FIGURE 4
Effect sizes for the training-only (T1) and training-plus-texting (T2) groups on attitudes



Quantitative data: Attitudes towards gender equality

We found little evidence of positive effects of the programme on attitudes associated with the overall gender equality index (question 16).

When we analysed the individual items included in the gender equality index, we found that intervention and control teachers responded similarly to all but four items. For example, the three groups responded similarly to (i.e., agreeing with) items such as “It is important for girls to complete secondary education”, “It is important for boys to complete secondary education”, “It is important to educate boys to respect girls” and “Boys and girls have the same ability to learn mathematics.” The three groups were also likely to disagree with statements such as “Girls should be sent to school only if they are not needed to help at home”, “Girls are naturally better than boys in mathematics” and “Boys should ask questions in the classroom, but girls shouldn’t.”

The four items where at least one of the intervention groups responded differently to control teachers were: “It is important for girls to go to the university”, “Boys are naturally better than girls in mathematics”, “If there is only a limited amount of money for education, it should first be spent on a male child” and “Gender equality has already been achieved in Karamoja.” For the first statement, the training-only group was more likely than the control group to agree that it is important for girls to go to the university; for the second statement, both intervention groups were more likely than the control group to disagree that boys are naturally better at mathematics; and for the third statement, the training-only group was more likely than the control group to disagree that boys should be prioritized in the scenario of limited resources for education. All these differences were found to be statistically significant. For the last statement, however, control teachers were more likely than teachers from the training-only group to disagree that gender equality had already been achieved in Karamoja.²⁹ The results for the different items are summarized below (see Table 7).

TABLE 7
Qualitative data analysis themes

Dependent Variable	Control		Training only (T1)		Training plus texting (T2)		p-value		Difference (SD)	
	N	Mean	N	Mean	N	Mean	C = T1	C = T2	T1-C	T2-C
Statements of gender equality										
Q16. To what extent do you agree or disagree with the following statements? (Coding: Strongly agree = 4; Agree = 3; Disagree = 2; Strongly disagree = 1)										
A. It is important for girls to complete secondary education.	224	3.60	204	3.67	226	3.66	0.21	0.25	0.12	0.11
B. It is important for girls to go to the university.	224	3.59	204	3.74	225	3.67	0.00	0.14	0.26	0.14
C. It is important to educate boys to respect girls.	220	3.17	204	3.25	223	3.18	0.25	0.90	0.10	0.01
F. It is important to educate girls to respect boys.	222	2.87	202	2.94	225	2.83	0.49	0.63	0.07	-0.05
I. Boys and girls have the same ability to learn mathematics.	223	3.52	204	3.57	226	3.61	0.37	0.10	0.09	0.15

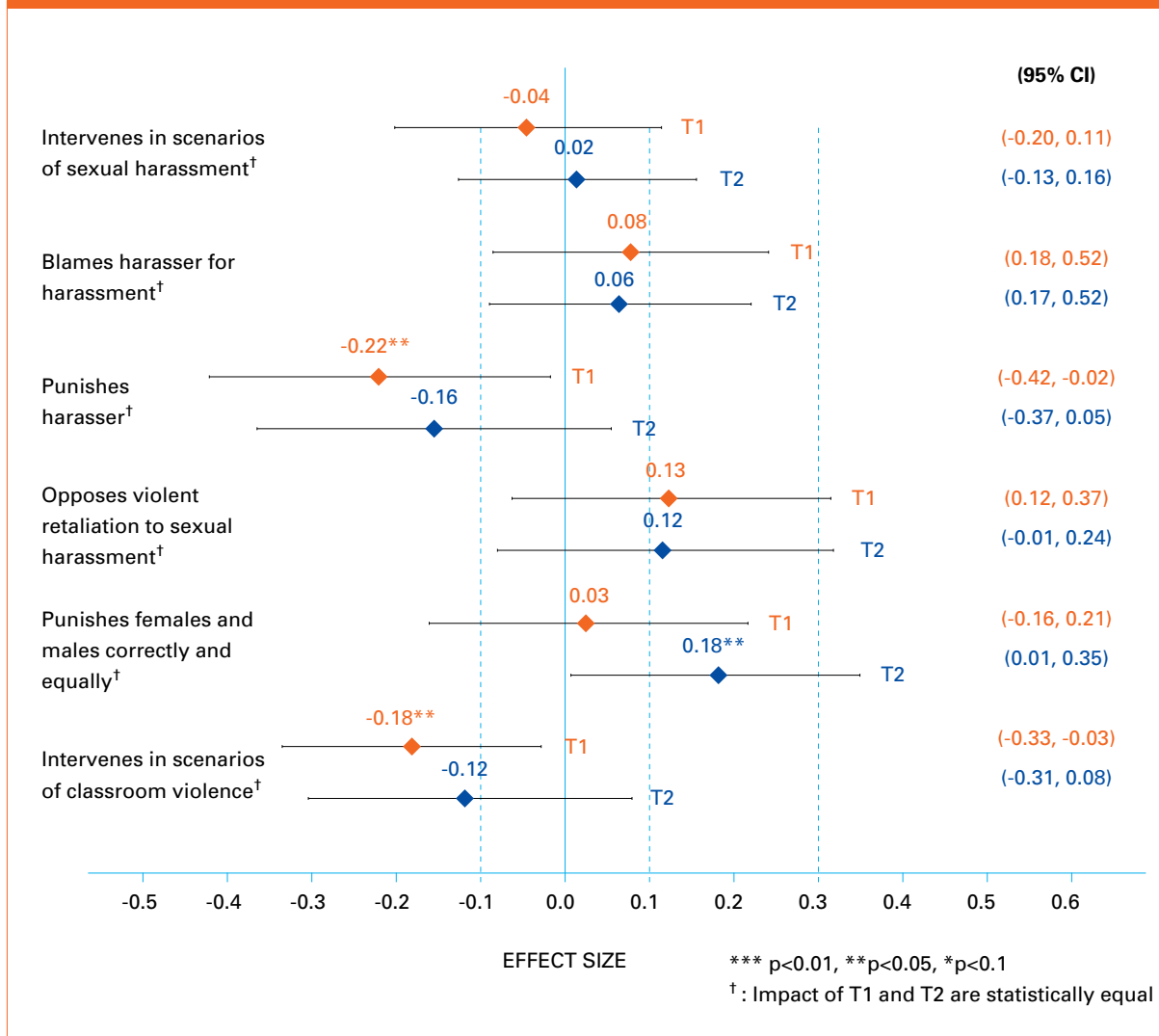
J. It is important for boys to complete secondary education.	222	3.50	204	3.50	225	3.51	0.99	0.80	-0.00	0.02
K. It is important for boys to go to the university.	222	3.55	204	3.63	224	3.57	0.21	0.72	0.14	0.04
N. It is my responsibility to help pupils solve conflict peacefully.	224	3.64	204	3.69	226	3.66	0.42	0.64	0.09	0.04
Statements of gender inequality										
Q16. To what extent do you agree or disagree with the following statements? (Reverse coding: Strongly agree = 1; Agree = 2; Disagree = 3; Strongly disagree = 4)										
D. Girls should be sent to school only if they are not needed to help at home.	223	3.55	201	3.51	226	3.63	0.64	0.14	-0.05	0.12
E. Girls are naturally better than boys in mathematics.	222	3.13	204	3.07	225	2.99	0.48	0.09	-0.08	-0.19
G. Boys are naturally better than girls in mathematics.	222	2.51	204	2.83	224	2.79	0.00	0.00	0.35	0.30
H. Gender equality has already been achieved in Karamoja.	223	2.70	203	2.52	224	2.45	0.04	0.00	-0.22	-0.29
L. Boys should ask questions in the classroom, but girls shouldn't.	223	3.66	204	3.72	225	3.73	0.22	0.21	0.10	0.11
M. If there is only a limited amount of money for education, it should first be spent on a male child.	223	3.49	204	3.63	226	3.58	0.03	0.23	0.20	0.12

Note: Robust *t*-statistics clustered at the school level.

Quantitative data: Attitudes towards sexual harassment, fair punishment for sexual harassment, and violence

We found no evidence for statistically significant effects of the programme on the attitudes revealed in the vignettes around reactions to sexual harassment and its punishment, or to violence. We used vignettes to understand the action that teachers might take in the presence of a situation involving sexual and physical violence, and another situation involving conflict between girls and boys in the classroom. The vignettes included several hypothetical situations including one in which a boy inappropriately touched a girl, another depicting physical violence towards a girl and, finally, situations in which men were displaying behaviour that was usually associated with women's roles. Although the direction of the point estimates was usually positive, the results are generally not statistically significant. Thus, the findings suggest little evidence for changes in attitudes regarding reactions to sexual harassment, the punishment of students for sexual harassment, or violence. The effect sizes were negligible for all of these indicators, and the confidence intervals included the value of 0 in all of these cases (see Figure 5).

FIGURE 5
Effect sizes for the training-only (T1) and training-plus-texting (T2) groups on attitudes towards vignettes



Results on individual attitude items are presented in Appendix C (see *Tables C5.6 to C5.11*).

Qualitative data

Qualitative data yielded mixed results on attitudes. Teachers' basic attitudes changed after the first training session, and they reported that girls and boys should have equality in terms of responsibilities, work and their futures. The majority of teachers said that children should not be encouraged to participate in only 'girl' activities or only 'boy' activities, but that girls and boys should be encouraged to participate in the same activities and to share responsibilities. A male teacher said that the training: "trains both girls and boys to become independent citizens in [the] future, like if you are a man and your wife becomes sick, you should be able to help in doing housework. Also, it will remove discrimination among boys and girls when they grow up, especially on the work issues."

Many teachers expressed that the training sessions had expanded their ideas about what girls could do in the classroom. Several teachers noted that after encouraging girls in mathematics, they found that their performance improved, sometimes beyond that of the boys. One teacher said: "I went through a girls' school throughout my education, so I never expected and I never knew that girls can do the same

work as boys. We used to say that boys do more work than girls, but with training and these techniques, we have come to learn that all these people are equal. They are supposed to be treated and learn in the very way the boys are learning.”

One teacher mentioned the difficulty in promoting equal opportunity and responsibility sharing in a community where gender norms heavily dictated children’s roles and responsibilities. Other teachers were also able to connect the socialization of students based on gendered stereotypes to negative effects on girls’ success in school and in their futures. This was a meaningful change for these teachers, particularly in light of the influence of traditional beliefs in Karamoja.

Despite these findings, teachers still expressed opinions indicating that traditional attitudes continued to shape some of their approaches in the classroom. Thus, our results suggest that the programme resulted in meaningful changes in teachers’ attitudes towards gender roles, but also that these changes brought challenges for teachers, given the wider social environment.

5.3 RESULTS ON PRACTICES

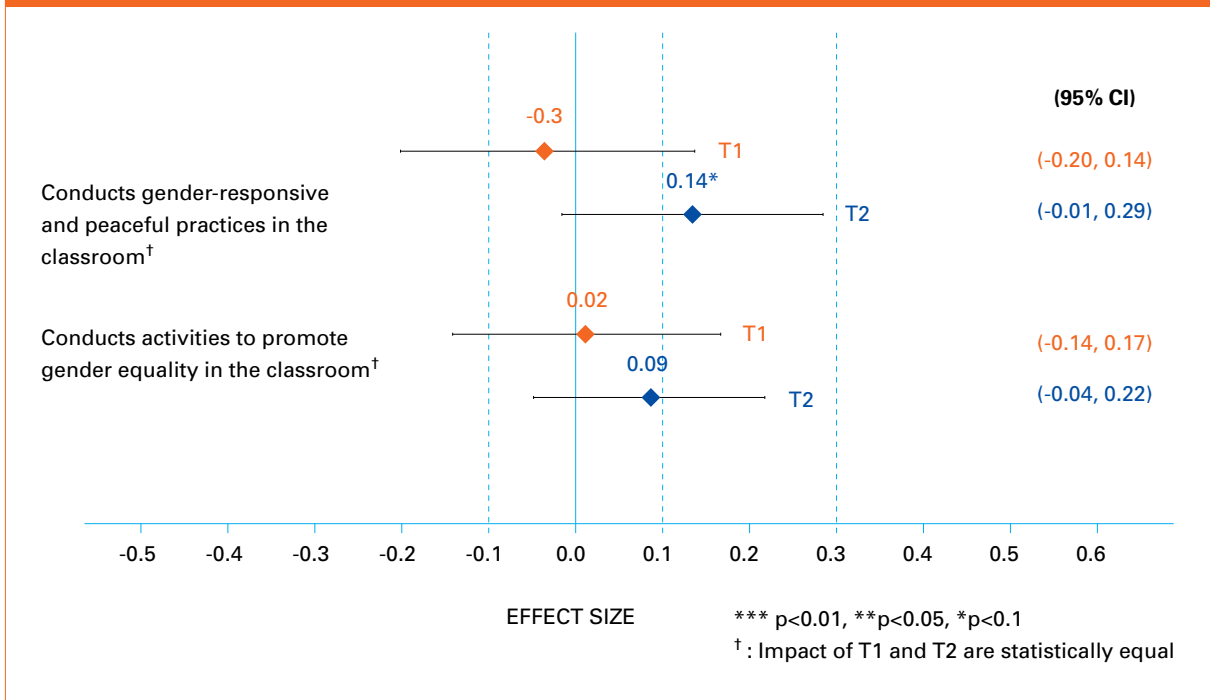
This section presents evidence on the impact of the programme on teacher practices. We first present the quantitative impact of the programme on practices referred to as ‘gender-responsive and peaceful practices’ and ‘gender equality practices’. Following this, we summarize the qualitative results. Overall, the triangulation of the quantitative and qualitative data yielded mixed results. The programme did not appear to influence overall teacher practices in the short term: No evidence was found for positive effects on the two overall indexes of practices that were created from the survey. Specifically, the teacher survey collected data on teachers’ gender responsiveness when planning, implementing activities and exercising discipline in the school, as well as on their practices associated with gender equality. In the survey responses, intervention and control teachers gave similar answers to most of the questions about how often they used different methods to manage pupils’ behaviour. Likewise, both groups of teachers responded similarly when asked how often they led different activities for boys and girls in the classroom. These neutral results align with research that suggests that teacher practices are difficult to change in the short term (Sullivan, 2013; World Bank, 2009; Mukhopadhyay and Wong, 2007; Stromquist, 2007; Bonder, 1992).

In analysing the qualitative data, it was found that posing additional questions to a subset of teachers yielded indications that the intervention teachers were adopting certain practices taught in the training. For example, many teachers who were interviewed reported that they had changed their classroom seating arrangements to mix girls and boys. Some teachers reported fostering equitable participation and representation by dividing resources equitably between girls and boys and encouraging equitable participation in class activities. Other teachers reported dividing classroom responsibilities, including leadership roles, between girls and boys.

Quantitative data: Gender-responsive and peaceful practices in the classroom

The ANCOVA point estimate for the training-only group was -0.12, but it was found not to be statistically significant. The point estimate for the training-plus-texting group was 0.57 ($p < 0.1$), which is statistically significant at the 10 per cent level. This index ranges from 12 to 48. The effect sizes, when compared with those of the control group, were -0.03 and 0.14 for the training-only and training-plus-texting groups respectively, which are considered negligible effect sizes. The effect sizes for the proxy measures of practice are presented below (see Figure 6).

FIGURE 6
Effect sizes for the training-only (T1) and training-plus-texting (T2) groups on practices



Although we did not observe differences in the overall index used for measuring gender-responsive practices, we observed some statistically significant differences in individual items. When analysing individual items, intervention and control teachers responded similarly to almost all 12 of the items in question 27, which asked teachers how often they used different methods to manage girl and boy students' behaviour. In five items, however, intervention teachers responded in a different, and statistically significant, manner to control teachers. The training-plus-texting teachers were more likely than control teachers to reward girls for behaving appropriately, while control teachers were more likely to reward boys for behaving appropriately than were teachers in the training-only group. Moreover, the training-only group was less likely than the control group to deny boys break time if the boys were troublemakers. Finally, both intervention groups were less likely than the control group to cane female or male students if they continued to be troublemakers. These results are presented below (see *Table 8*).

TABLE 8
Classroom environment: Gender-responsive and disciplinary practices (question 27, endline survey)

Dependent Variable	Control		Training only (T1)		Training plus texting (T2)		p-value		Difference (SD)	
	N	Mean	N	Mean	N	Mean	C = T1	C = T2	T1-C	T2-C
Gender-responsive and non-violent disciplinary practices										
Q27. How often do you use any of the following methods to manage your pupils' behaviour? (Coding: Often = 4; Sometimes = 3; Rarely = 2; Never = 1)										
A. I ensure that boys use peaceful means to resolve conflict with their peers.	219	3.60	202	3.63	225	3.64	0.67	0.55	0.05	0.07
B. I ensure that girls use peaceful means to resolve conflict with their peers.	220	3.56	202	3.62	225	3.63	0.29	0.22	0.11	0.12
C. I reward girls for behaving appropriately.	218	3.34	198	3.35	223	3.47	0.95	0.05	0.01	0.17
D. If a girl is absent for genuine reasons, I help her catch up on the lessons she has missed.	218	3.29	203	3.36	224	3.38	0.35	0.17	0.11	0.13
E. If a boy is absent for genuine reasons, I help him catch up on the lessons he has missed.	215	3.36	202	3.32	224	3.38	0.57	0.84	-0.06	0.02
F. If a boy is a troublemaker, I deny him break time.	218	1.57	202	1.42	226	1.60	0.05	0.69	-0.19	0.03
G. If a boy continues to be a troublemaker, I talk with his parents.	218	3.40	203	3.29	226	3.38	0.10	0.78	-0.18	-0.02
I. If a girl is a troublemaker, I deny her break time.	215	1.55	197	1.41	222	1.52	0.08	0.66	-0.18	-0.04
J. If a girl continues to be a troublemaker, I talk with her parents.	219	3.33	200	3.27	226	3.35	0.34	0.73	-0.10	0.03
L. I reward boys for behaving appropriately.	218	3.45	202	3.30	226	3.43	0.01	0.68	-0.22	-0.03
Violent disciplinary practices										
Q27. How often do you use any of the following methods to manage your pupils' behaviour? (Reverse coding: Often = 1; Sometimes = 2; Rarely = 3; Never = 4)										
H. If a boy continues to be a troublemaker, I cane him to set an example.	217	2.95	203	3.21	225	3.20	0.01	0.03	0.30	0.29
K. If a girl continues to be a troublemaker, I cane her to set an example.	219	3.04	202	3.30	226	3.27	0.02	0.05	0.29	0.26

Note: Robust *t*-statistics clustered at the school level.

Quantitative data: Gender equitable practices

We did not find major evidence for positive and statistically significant effects on the overall index associated with gender equitable practices. The ANCOVA point estimates for this index were 0.07 for the training-only group and 0.39 for the training-plus-texting group, which are not statistically significant effects. The index ranges from 15 to 60. The effect sizes, when compared with the control group, were 0.02 and 0.09 for the training-only and training-plus-texting groups respectively, which are considered negligible effect sizes.

Although we did not observe differences in the overall index used for measuring gender equitable practices, we observed some statistically significant differences in individual items. Intervention and control teachers responded similarly to almost all 17 items in question 28, which asked teachers how often they did different activities as teachers. Only in five items did intervention and control teachers provide different answers. The training-plus-texting teachers were more likely than the control group to: (a) discuss strategies for providing a safe learning environment for girls and boys with other teachers, (b) organize regular meetings with families to talk about their children, and (c) talk to parents about the importance of education. Moreover, the control teachers were more likely than the two intervention groups to ask boys to lead group work activities, while the training-only teachers were less likely than the control group to protect girls by warning them against competing with boys in the classroom. The results are presented below (see *Table 9*).

TABLE 9
Classroom environment: Teacher practices that affect gender equality (question 28, endline survey)

Dependent Variable	Control		Training only (T1)		Training plus texting (T2)		p-value		Difference (SD)	
	N	Mean	N	Mean	N	Mean	C = T1	C = T2	T1-C	T2-C
Practices that promote gender equality										
Q28. How often do you do the following activities as a teacher? (Coding: Often = 4; Sometimes = 3; Rarely = 2; Never = 1)										
B. I discuss strategies for providing a safe learning environment for girls and boys with other teachers.	219	3.61	204	3.70	224	3.75	0.12	0.00	0.16	0.26
D. I encourage girls and boys to work together.	219	3.91	204	3.92	226	3.94	0.94	0.41	0.01	0.07
E. I make sure girls and boys know their rights as children.	222	3.89	203	3.92	224	3.90	0.26	0.75	0.10	0.03
F. I organize regular meetings with families to talk about their children.	224	2.83	203	2.86	224	2.96	0.68	0.03	0.04	0.18
G. I talk about peaceful ways to resolve conflict.	223	3.60	200	3.65	226	3.71	0.29	0.03	0.11	0.21
I. I ask boys to lead group work activities.	218	2.22	200	1.75	225	1.80	0.00	0.00	-0.46	-0.41
J. I include arts, drawing, songs, role plays, music and stories in my lessons.	224	3.56	203	3.53	225	3.51	0.56	0.35	-0.06	-0.09

L. I ask girls to lead group work activities.	218	2.85	203	2.84	222	2.83	0.90	0.85	-0.01	-0.02
N. I help female pupils to develop self-confidence.	217	3.60	200	3.47	226	3.60	0.08	0.97	-0.17	0.00
P. I talk to parents about the importance of education.	224	3.63	204	3.71	226	3.72	0.11	0.04	0.15	0.18
Q. I help male pupils to develop self-confidence.	221	3.46	202	3.40	226	3.46	0.33	0.97	-0.08	0.00
K. If a girl continues to be a troublemaker, I cane her to set an example.	219	3.04	202	3.30	226	3.27	0.02	0.05	0.29	0.26
Practices that do not promote gender equality										
Q28. How often do you do the following activities as a teacher? (Reverse coding: Often = 1; Sometimes = 2; Rarely = 3; Never = 4)										
A. I seat boys and girls separately in the classroom to avoid conflict.	218	3.71	204	3.68	226	3.77	0.70	0.35	-0.04	0.10
C. I discourage girls from taking science and mathematics.	223	3.87	203	3.88	225	3.90	0.83	0.53	0.02	0.06
H. I assign more difficult tasks to boys.	220	3.44	201	3.58	225	3.48	0.08	0.62	0.17	0.05
K. I do not encourage girls to participate if they are shy.	219	3.59	202	3.73	225	3.69	0.06	0.18	0.19	0.13
M. I assign easy tasks to girls.	217	3.40	202	3.50	220	3.53	0.23	0.10	0.12	0.16
O. I protect girls by warning them against competing with boys in the classroom.	217	3.67	204	3.84	225	3.72	0.01	0.50	0.23	0.07

Note: Robust *t*-statistics clustered at the school level.

Qualitative data: Equitable classroom set-up

Although there is no quantitative evidence for positive effects of the programme on practices, the qualitative analysis suggests that intervention teachers were changing some of their more basic classroom practices. Teachers were best able to grasp more pragmatic training concepts such as equitable classroom set-up. Twelve teachers mentioned implementing an equitable classroom set-up, which mainly involved putting in place a mixed-sex seating arrangement. One teacher said that the change required helping some girls to overcome their fear of sitting next to boys. Teachers explained that mixing girl and boy students helped to foster friendships and the sharing of ideas. One respondent adopted a whole-classroom approach to an equitable classroom set-up, explaining: "A gender-sensitive classroom environment goes like this ... The sitting arrangement should be the first. If you have 10 boys and 10 girls, they should sit in [an] arrangement whereby a boy and a girl sit [in] the reading corners. The corners should be printed per subject with its instructional materials displayed there or hanged there on the chart so that when you are

giving a lesson, you use ... the objectives and the materials which can be appropriate for the learners, to ... make [them] understand the lesson.”

Some teachers felt that a gender-sensitive classroom set-up was particularly important for improving relationships between girls and boys. A teacher explained, “If a girl stays alone, she will stay alone knowing that even if a boy touches like this, she will never accept the boy. But should the boy come near and nearer, the girl will accept because she’s now used to the boy and when they become used to each other, they will just become friends, they will talk, interact and even share class ideas.”

Qualitative data: Equitable participation and representation

Teacher FGD participants described using equitable participation and representation in class. Similar to practices at the midline point, however, the ways in which gender equitable practices were being implemented were primarily at the surface level. Teachers fostered equitable participation and representation by dividing resources equitably between girls and boys ($n = 2$) and encouraging equitable participation ($n = 5$) and equitable representation ($n = 3$) in class activities. Teachers divided resources such as textbooks evenly between girls and boys ($n = 2$) and ensured that resources were shared between girls and boys ($n = 1$). This was important for girls ($n = 4$) and boys ($n = 10$) as students in the FGDs said that when teachers gave them class materials, it made them happy. Several teachers also noted that they encouraged both girls and boys in the classroom. One teacher stated, “They should also know that both girls and boys, they are able to continue with their education and ... they can become future leaders.” Student discussions also found that girls ($n = 2$) and boys ($n = 7$) enjoyed it when teachers encouraged or supported them during class. One teacher explained the perceived importance of these actions: “A gender-sensitive classroom can change attitudes of the boys and girls in sharing materials in the class.”

Qualitative data: Sharing responsibilities

Teachers divided classroom responsibilities between girls and boys, including leadership roles ($n = 14$) and classroom duties ($n = 2$). Several teachers said that they actively tried to encourage girls to be more involved in leadership roles and boys to be more involved in classroom tasks such as sweeping and clearing rubbish. Teachers noted in particular that they should make sure they appointed more girls to positions such as classroom monitor and assistant classroom monitor. One teacher stated: “In a gender-sensitive class environment, for me personally, when I am delegating responsibilities like sweeping the class, it should be a boy and a girl to clean the class and collecting the rubbish. Maybe even in performance, say in presentation, a girl should participate and also a boy should participate. Even in awardings [sic], if it is very good, both of them should have very good.”

Another teacher explained that sharing responsibilities “reduces inferiority among one group – especially the girls – as they will know that they are all at the same level”, a statement indicating an understanding of the effects of gender equitable practices in the classroom.

Qualitative data: Gender-sensitive lesson planning

Although a few teachers were confused about the idea of gender-sensitive lesson plans, they were the exception; many teachers in the FGDs referenced using gender-sensitive lesson plans in class. Several teachers who understood the concept explained that gender-sensitive lesson planning meant creating lessons that had objectives, activities and examples that catered to both girls and boys. One teacher explained: “What I learned from the previous training of gender and conflict resolution is that the way of modernizing lesson plans which can [consider] gender [issues] especially in classes. I also learned about

friendly methods which can make a child really [want] to participate in an activity and also the instructional materials which should be child friendly, and secondly, the activity which is given should cater for all without any gender discrimination.”

Teachers also noted that gender-sensitive lesson plans called for both girls and boys to be represented in examples (see Qualitative data: Equitable participation and representation, above) as well as making sure that both girls and boys were involved and could answer questions. Some teachers still struggled with the concept, however. One teacher said that his gender equitable lesson plan involved using activities where boys could see that girls were superior. Another teacher stated, “In that training, they told us that ... when you are lesson planning, you have to make sure that you go according to the gender.” Although some teachers seemed to understand more concrete activities, others appeared to struggle with the overarching concept of gender-sensitive lesson plans.

Gender-sensitive practices in the classroom are ineffective, however, unless the importance of respect for girls within and outside of the classroom is emphasized. Girl students highlighted the negative repercussions of sexual behaviour between female students and either male teachers or boys. One male student said, “Rape and other sexual assault [open] the girls to early pregnancy and marriage.” Students also connected such problems with the possibility that a girl would not be able to continue her education.

Qualitative data: Changes in the classroom

Teachers qualitatively indicated that their implementation of gender equitable practices led to changes in the classroom, and that these primarily related to improved performance, improved relationships and the discussion of girls’ health issues. Teachers said that gender equitable practices had improved girls’ performance in school³⁰ and that the positive effects had become apparent in the students’ overall performance, as well as in their willingness to answer questions and take on roles. One teacher explained that gender equitable practices were pushing girls to further their education: “At least I have seen the interest in them [now] for further studies.” Another teacher said: “I was handling the Primary 7, I found that there was a very great change, the girls who could always not go the blackboard to calculate some sums of maths were now begging to calculate and I could get them interacting with boys together ... Let us just work together as a team as a brother and a sister.”

Teachers also said that the gender and peacebuilding concepts had contributed to improved relationships between teachers and students, and between girls and boys. In addition, teachers said that these methods helped them to create trusting relationships with students and that students were no longer shy about answering questions. Interactions between girls and boys also improved through increased collaboration and interaction outside of the classroom. One teacher stated: “One, they are no longer shy as they used to be, when you’re talking and you say that Mary can you give us the answer, a child can just bend like this and keeps quiet and doesn’t even mention a word. But since now we made them to stay like this they have known each other. A child is confident even when she is putting up the hand, which was a great achievement we saw.”

Finally, teachers’ discussion of female health issues centred on menstruation. Teachers referenced strategies to normalize and accommodate girls’ menstruation and described educating male students on female health issues to encourage acceptance. Teachers communicated to girl students that they were available to help with any of their problems. One teacher said, “They don’t fear to come and tell you that this [menstruation] is a problem.” Another teacher described an interaction with a female student who came to him for help. He stated: “We explained the differences as far as the gender is concerned, whereby sometimes when we used to have meetings with girls alone and talk to them ... One day I entered a

[Primary 7] classroom ... and the child told me that she was sick, so when I went [and] I had to intervene and asked, my daughter, what are you suffering from? ... The child straight told me I am suffering from menstruation, so I told her, now wait [and] I called the senior woman.”

Multiple teachers ($n = 5$) also cited educating their female students on the proper construction and use of home-made sanitary pads. Some schools also tried to make sanitary pads available for girls in case of emergencies, which they explained is particularly important for ensuring girls' attendance at school.

Qualitative data: Action plans

The teacher training promotes positive practices through the creation of action plans that encourage a peaceful school environment for students. Teachers connected their action plans to larger goals such as sanitation, hygiene, guidance and counselling. Although teachers seemed to have a concrete understanding of the purpose and use of action plans, they continued to struggle with structural issues when implementing the plans. Many described the way in which certain challenges or topics were specifically incorporated into their schools' action plans or said that they did not have time for implementation. Teachers also expressed difficulty in completing the action plan goals because of the larger issue of poverty in their schools. For example, one teacher said, “I talked of the sitting arrangement in our action plan, but the challenge we have faced with this is inadequate sitting facilities.” Teachers also did not reflect a deeper understanding of the connection between the tasks in the action plans and the larger goal of peacebuilding.

Four different teachers (from three schools) said that they encouraged school attendance among students as part of their action plans, although in different ways. Two said that they used a daily roll-call to discourage absenteeism, and another mentioned a number of solutions including offering guidance on attendance, counselling and gender equality. Reflecting on his challenge of translating the training concepts into action, one teacher said, “We have encouraged the pupils to do income-generating activities in the community so that they can afford their own books and pens instead of waiting for their parents.” Finally, a number of teachers said that they had already made efforts to sensitize parents to the action plans. One male teacher also specifically connected the importance of increasing community understanding of the action plans to the plans' successful implementation.

Although the action plans developed as part of the training were helpful in translating concepts to real-life situations, the majority of teachers did not indicate a clear understanding of the connections between these actions and building peaceful or gender equitable schools. Action plans may be more helpful as a tool for building peaceful schools if teachers set goals more specifically associated with the training concepts. As previously discussed, most teachers referred to action plan items that concerned larger projects such as building separate latrines for girls and boys (which shows no correlation with outcomes in our quantitative data), which teachers may not be able to directly relate to peacebuilding. Some teachers, however, discussed more realistic and actionable activities, for example, teaching students about gender and removing corporal punishment.

Qualitative data: Student understanding of teacher practices

Despite many positive reports from teachers, participatory assessment data collected from Primary 4 students suggest that teachers were not clearly translating the training concepts to practice in the classroom. Teachers did not seem to directly articulate the ideas to Primary 4 students, which is important for translating positive gender practices and conflict resolution techniques into student understanding and uptake (UNICEF, 2013). Student accounts refer not only to the continued enforcement of traditional gender roles in the classroom through tasks, but also to the continued use of corporal punishment and a pervasive culture of fear around such corporal repercussions. In addition, female and male students mentioned the existence of verbal, physical and sexual violence directed by teachers towards female students, whereas teachers almost never referred to their own use of violence.

Although the majority of Primary 4 students said that their teachers did not explicitly discuss gender in class, students in approximately half of the participatory assessments mentioned some sort of action or information given to them by a teacher to promote gender equality in the classroom. One female student said, "Yes, the teacher taught us, telling us both boys and girls can do the same activities. They have also allowed us [to] participate in all activities in the school together with boys." In addition, boys in one participatory assessment said teachers had told them that both genders could do the same activities. One female informant said that teachers "tell us to fetch water together with the boys and do all other activities together with the boys. They also call both boys and girls to do activities in class." Although many intervention schools had begun to introduce gender-related ideas and concepts following the programme, informants' responses show that traditional notions of gender roles continue to be an important aspect of Karamojong society.

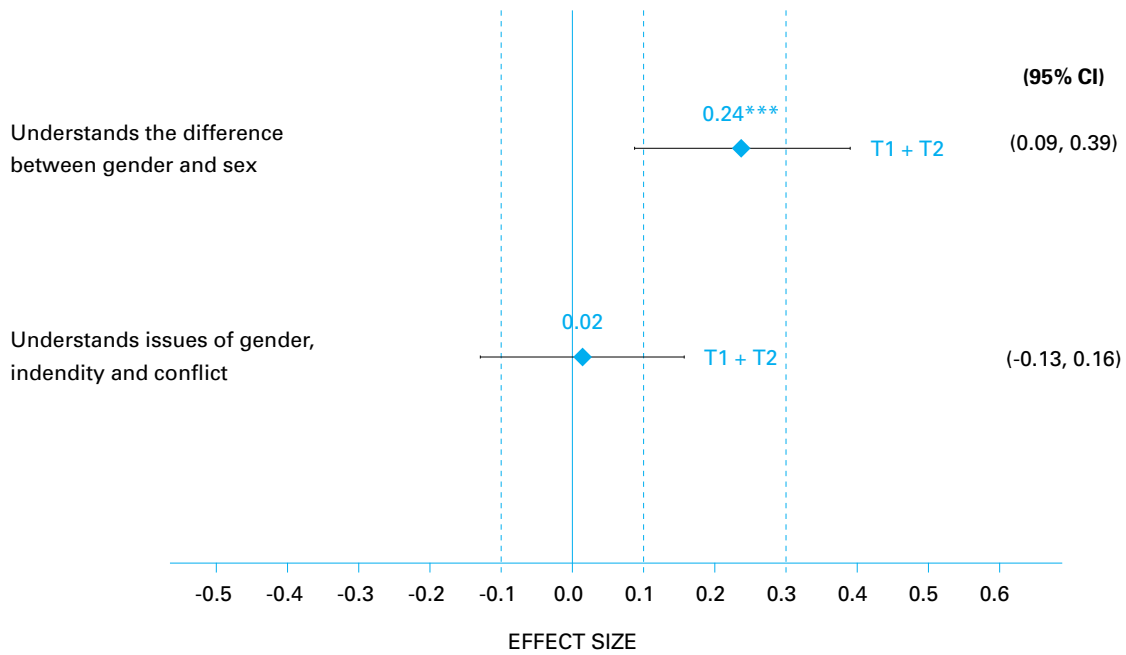
5.4 Results on the effect of text messages

We did not find consistent evidence across the different outcome measures that teachers who had received reinforcing text messages as well as the training activities obtained more positive scores than teachers who had received only the training. This lack of complementary effects for the training-plus-texting group is consistent with the finding that less than 33 per cent of the teachers in this group responded to the research-monitoring SMS messages. In addition, about 28 per cent of the teachers in this group reported not receiving any text message related to the programme. Apparently, however, the rest of the teachers in this group did receive the text messages. When we asked Treatment 2 teachers how many text messages they had received, they reported 13 text messages on average, which is the actual number of reinforcing messages sent by the programme. This finding suggests that at least in the first eight months of programme implementation, and during a period of intense training, the SMS text messaging component did not bring additional benefits to the teacher training. Possibly, however, messages about gender equality are too complex to communicate via SMS messages.

5.5 COMBINED RESULTS FOR TREATMENT 1 AND TREATMENT 2

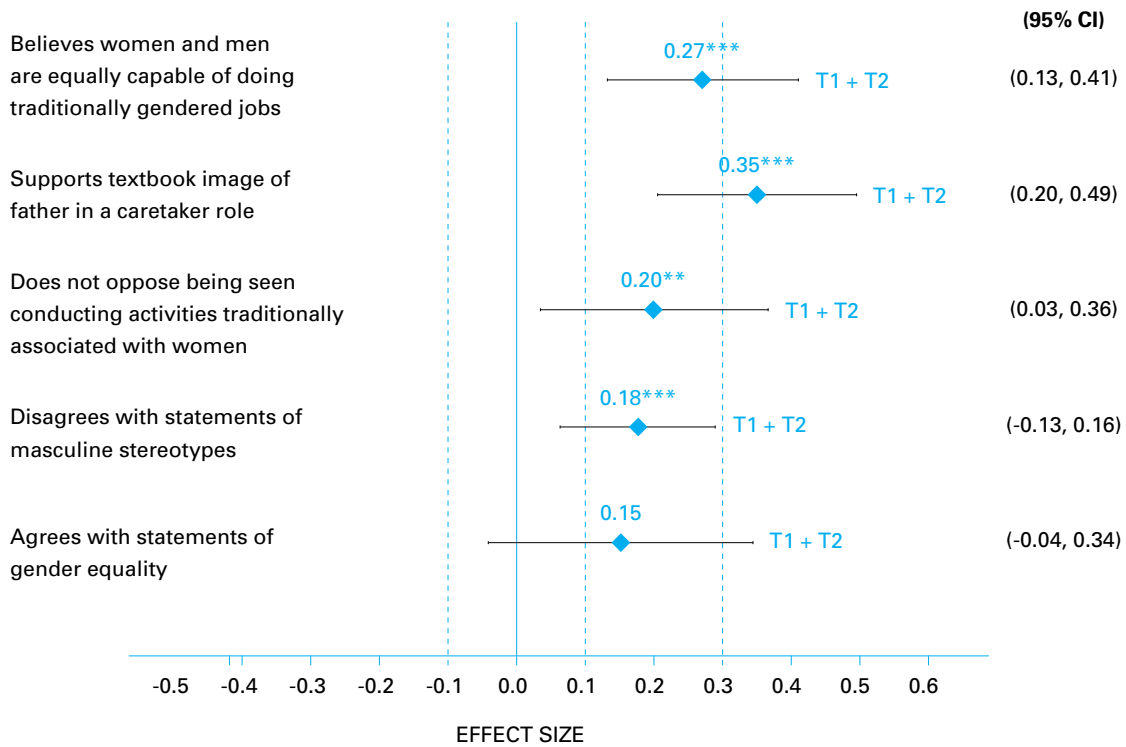
Because we did not find complementary effects for the training-plus-texting group, the next three figures present the combined results for the key outcomes of interest: knowledge, attitudes and practices (see *Figures 7, 8 and 9*). Overall, the combined results are very consistent with the results presented for the training-plus-texting and training-only groups.

FIGURE 7
Joint effect size of training-only (T1) and training-plus-texting (T2) groups on knowledge



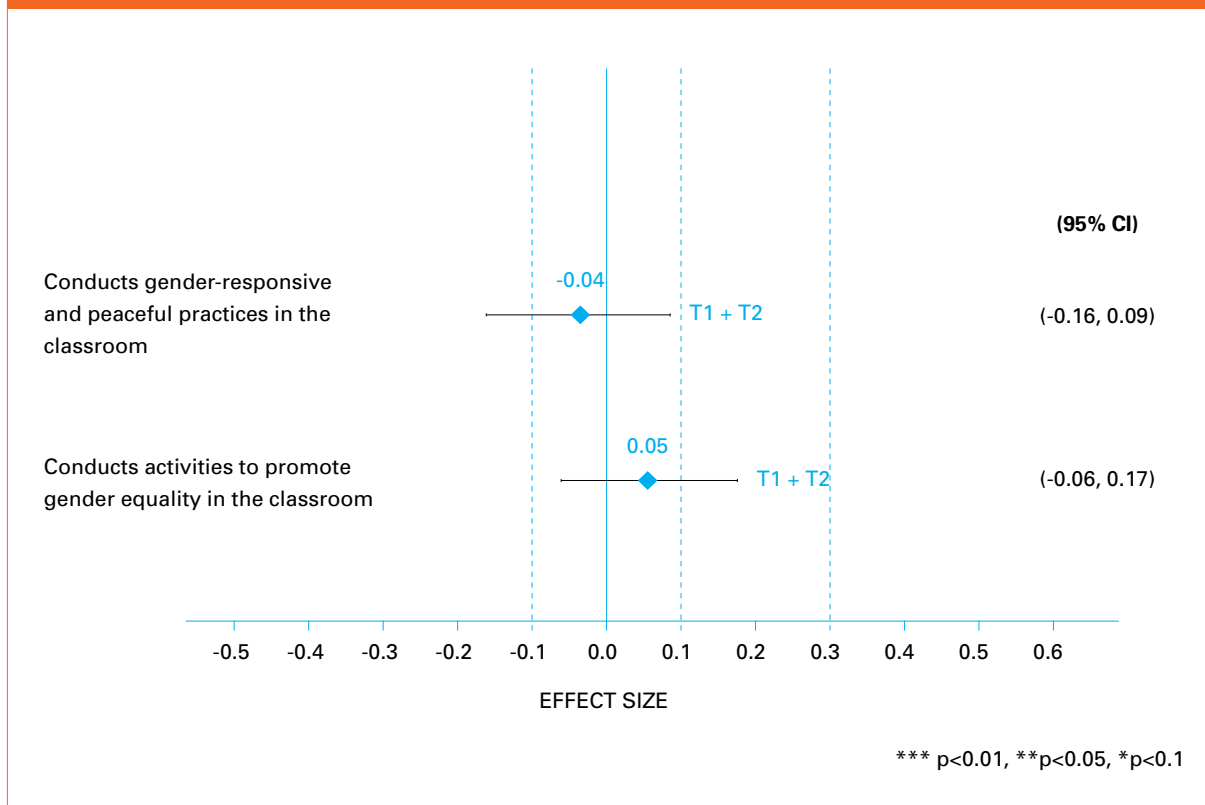
*** p<0.01, **p<0.05, *p<0.1

FIGURE 8
Joint effect size of training-only (T1) and training-plus-texting (T2) groups on attitudes



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

FIGURE 9
Joint effect size of training-only (T1) and training-plus-texting (T2) groups on practices



5.6 RESULTS ON DIFFERENTIAL TREATMENT EFFECTS FOR FEMALE AND MALE TEACHERS

We did not find evidence for statistically significant differences in the point estimates for female and male teachers. The lack of evidence for heterogeneous treatment effects may be explained by the under-representation of female teachers in the study schools (the ratio of female to male teachers was 1:3) and also by the lack of statistical power to detect subgroup effects beyond the three study groups of the research design. These results are not presented but are available on request.

5.7 RESULTS ON SECONDARY AND LONG-TERM MEASURES

Our results showed no evidence of positive effects of the programme on the indexes Gender and culture in schools, Problems in the school environment and Teachers’ sense of self-efficacy. The lack of positive and statistically significant effects of the programme on these indicators – which concern the most pressing problems of the schools – suggests that courtesy and social desirability bias might be limited. For various reasons, we did not expect any statistically significant effects of the programme on these outcomes, but courtesy and social desirability bias might still have resulted in statistically significant differences between the intervention and control teachers. That we did not find any such statistically significant differences provides reassurance of the accuracy of our positive impact estimates on knowledge and attitudes.

Gender and culture in schools: Teacher identifies positive gender culture in the school

Our results showed no evidence of positive effects of the programme on the Gender and culture in schools index. The ANCOVA point estimates were 0.75 for the training-only group and

-0.024 for the training-plus-texting group. The index ranges from 13 to 52. The effect sizes, when compared with the control group, were 0.17 and -0.01 for the training-only and training-plus-texting groups respectively. In both cases, the confidence interval included the value of zero. These results reveal that teachers from the three groups responded very similarly to all of the statements about the school (see *Figure 10*).

When we examined some of the individual items included in this index, we found that teachers responded similarly to statements such as “Some teachers believe that boys are better than girls in mathematics”, “My school tolerates bullying among boys” and “It is ok for girls to tease boys in my school.”

Problems in the school environment: Teacher identifies problems in the school

We found no statistically significant differences across the three groups for the index titled Problems in the school environment (question 14), which gathered information regarding the school environment, including around structural problems that schools faced (e.g., lack of basic necessities to educate pupils, students who were hungry for most of the time, child marriages of girls and boys), absenteeism problems faced by schools (involving girls and boys), discrimination on the basis of ethnicity, and student participation in the classroom, as well as more complex problems such as female genital mutilation/cutting. The ANCOVA point estimates for this index were 0.07 for the training-only group and 0.03 for the training-plus-texting group, which are not statistically significant. The index ranges from 0 to 13. The effect sizes, when compared with the control group, were 0.03 and 0.01 for the training-only and training-plus-texting groups respectively, which are considered negligible effect sizes (see *Figure 10*).

When we examined some of the individual items included in this index, we found that approximately 64 per cent of the teachers in the three groups had responded that the school lacked basic necessities to educate pupils; 57 per cent had reported that girls were often absent from school; 39 per cent had stated that boys were often absent from school; 56 per cent had responded that girls were too shy to speak in class; and 9 per cent had stated that boys were too shy to speak in class. In a similar manner, 18 per cent of the intervention and control teachers had indicated that pupils from some ethnicities were treated as inferior and 72 per cent had responded that girls were married too early.

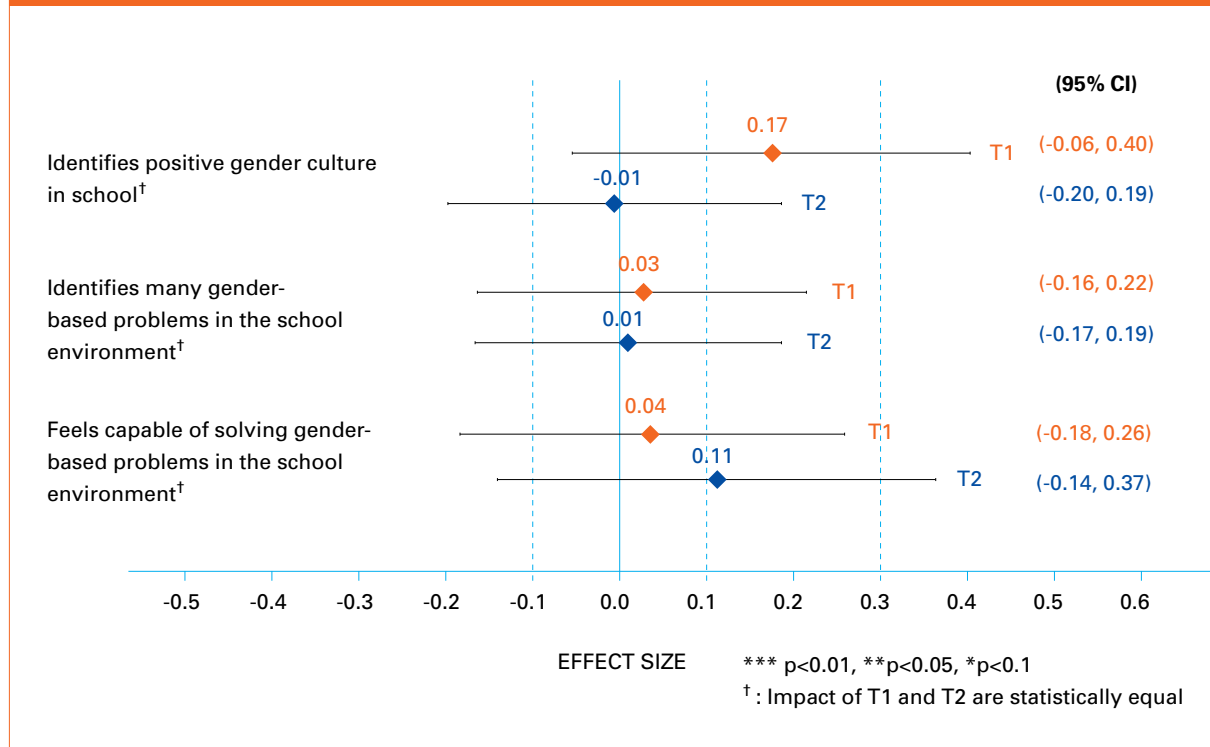
Teachers’ sense of self-efficacy: Teacher feels capable of solving gender-based problems

We found no statistically significant differences across the three groups for the Teachers’ sense of self-efficacy index, which focused on teachers’ belief that they could solve the most pressing problems of their schools. The ANCOVA point estimates for this index were 0.18 for the training-only group and 0.54 for the training-plus-texting group, which are not statistically significant. The index ranges from 10 to 40. The effect sizes, when compared with the control group, were 0.04 and 0.11 for the training-only and training-plus-texting groups respectively, which are considered negligible effect sizes (see *Figure 10*).

The three groups responded similarly to the 13 items included in this index, giving a pattern of responses similar to that achieved for question 14. In other words, the programme did not appear to have positive effects on teachers’ perception of their control over the various problems in the school environment

covered by the index. Only for the item “Girls do not benefit from equal opportunities to learn as boys do” did we find statistically significant differences between intervention and control teachers. Intervention teachers were more likely to respond that they could do a lot to solve this problem.

FIGURE 10
Effect sizes for the training-only (T1) and training-plus-texting (T2) groups on secondary measures



5.8 SECONDARY QUALITATIVE FINDINGS

Our qualitative inquiries elicited extensive data about teachers’ experience in the classroom of issues such as corporal punishment, discipline, conflict and distribution of resources. We also applied qualitative techniques with the aim of understanding whether the ideas that teachers learned from the Gender Socialization in Schools programme could contribute to greater social cohesion in the long term.

The findings speak of the importance of social participation in peacebuilding among multiple stakeholders to promote social cohesion. Teachers recognized the need for greater support and yet found it difficult to independently obtain support from parents, politicians and other community leaders. Lack of buy-in appears to be limiting the programme’s potential to bring about greater social cohesion in the community. Although many intervention teachers had made progress in their understanding of gender equality and peacebuilding, most of them continued to have difficulty in reconciling these concepts with the traditional ideas of gender held by the wider community. The disjunction between the training ideas and the deeply embedded norms in the community was evident throughout the data.

a. Corporal punishment

Corporal punishment continues to be a source of conflict in classrooms in Karamoja. Primary 4 students frequently mentioned teachers’ use of corporal punishment. When asked what makes girls unhappy, girls and boys referred to beatings by the teacher (*n* = 9) and sexual harassment or defilement by the teacher (*n* = 18). Girls and boys said that what makes boys unhappy is being beaten or abused by the teacher (*n* = 18). Although many students mentioned teachers’ use of corporal punishment,

girls in two FGDs stated that their “teachers treated them well”. That is, when the girl students were asked what teachers might do to make them unhappy, they had no response. Similarly, the majority of teachers stated that they had adopted “guidance and counselling” in place of corporal punishment. Abuse (both physical and sexual) by teachers was frequently cited by both girls and boys, indicating a barrier to programme uptake.

b. Discipline

Teachers said that they used positive discipline instead of corporal punishment to address conflict in the classroom, although much of what the students had to say does not support this. Several teachers said that they had adopted guidance and counselling in the classroom and assemblies, which they said had reduced fighting and verbal abuse among students. One teacher explained: “These children, the way they used to be fighting is like the way these Karamojong fight. They use sticks, even if they are at school, like this – one from here, he beats from this one; when this one is standing, he uses this one. But now when we addressed them on gender issues, this gender violence, we talked to them. Right now, even if they fight it is not as much as it used to be [in] those days. It is really an improvement.”

Two other teachers also noted that parents were learning about positive discipline tactics. One of these teachers explained: “You know, sometimes our parents also come when they are aggressive, that they want to beat the child. They want [us] to, but we always tell them, no, that is not the case for us. We are trained to handle these children, so instead of beating ... we discipline them positively, we just give some activities that we know this activity might benefit this child instead of harming a child. And you find that even the parents now getting used [to it].”

Although data also point to these positive changes in conflict resolution, the use of caning and other forms of physical punishment continues.

c. Conflict resolution and increased sensitization

Many teachers said the training was helping them to address conflict and drivers of conflict in their classrooms through positive discipline, increased sensitization and equal distribution of resources. One teacher stated, “Fighting in class has reduced and [there is] good cooperation amongst them and even they share knowledge, their performance is improving.” Teachers frequently referred to guidance and counselling to describe how they address conflict in their classrooms. Corporal punishment continues to be a problem, however.

Teachers described techniques for communicating information about conflict, including the use of dramas, role play, classroom communication and clubs. One teacher explained, “We can also [address conflict] in the form of drama and role plays. I think we also guide and counsel and sensitize them on the danger of gender conflict.” Several other teachers mentioned the importance of communicating rules and expectations to students about conflict in the classroom. One teacher stated: “You tell them ... the rules that we have to follow as class members; then they have to give you all those rules. Then you write down so that tomorrow they should know that they are the ones who have put these rules and they have to follow them strictly.”

Although few teachers seemed to have engaged students or the community in sensitization activities, several were able to describe avenues they could potentially take to sensitize stakeholders on particular issues.

d. Distribution of resources

Finally, teachers reported that the equal distribution of resources had helped to reduce conflict. Teachers cited tribal and clan divisions and favouritism as key drivers of conflict, and students noted being happy when teachers divided resources equally. One teacher explained that conflict “can also be reduced when your lesson plans are gender sensitive, of course. Instead of struggling for books, you know [you] have given books equally, so you find that you have solved a conflict which was going to arise.” Another teacher said that after distributing resources equally, “There is now little segregation on [a] tribal basis, even there is also equal distribution of resources.” These statements point to the importance of employing mechanisms for dealing with resource scarcity to reduce conflict.

Primary 4 students also independently stated that teachers’ equal distribution of resources to children made them happy. Student reports that receiving materials made them happy was the second most prevalent response to come out of the student FGDs, both those involving girls and those for boys. One girl participant from Lolelia Primary School said, “If the teacher provides [me] with a pen, especially if I did not have, this makes [me] happy.” In a similar manner, a boy who participated in the assessment from Lokopo Primary School said, “A teacher can divide for us the books which makes us happy and we learn well.”

Long-term outcome: Potential contribution to social cohesion

A secondary aim of the evaluation was to understand whether the ideas that teachers learned from the Gender Socialization in Schools programme could contribute to greater social cohesion, and if so, which elements of the programme are particularly useful in meeting this aim.

This study did not specifically construct or use a measure of social cohesion but instead included information that could lend insight into whether, and in what ways, the programme may have contributed to social cohesion and might do so in the future with some modification. We used a combination of the elements of the social cohesion index developed by UNICEF (2014) and Pham, Vinck and Gibbons (2015) to assess the programme’s potential contribution to social cohesion in Karamoja in the areas of (a) belonging and inclusion, (b) respect and trust, (c) constructive dispute resolution, and (d) civic and social participation.

a. Belonging and inclusion

The programme specifically addressed social relationships and inclusion in school with regard to gender, but it may benefit from tailoring training to address other social relationships specific to each area of implementation. Pham, Vinck and Gibbons (2015) define belonging as “related to an individual’s sense of being connected to a community that in turn recognizes the individual as a member of that community” and is “also related to an individual’s sense of connectedness to the state (e.g., perceptions of state legitimacy), social networks, social capital, as well as equality of opportunities and access” (p. 36). In Karamoja, for example, tribal and clan affiliation and community structures – including parents – are important to fostering this sense of belonging and inclusion.

Qualitative data point to challenges to the sense of belonging and inclusion felt among ethnic groups and among girls in school, although inclusive practices seem to be improving. In addition, research (e.g., Uemura, 1999) argues for the importance of ensuring that parents feel included in their children’s education, especially with regard to concepts that they may otherwise perceive as beyond their own level of education. The qualitative study explored the ways in which parents’ traditional beliefs and tribal and clan affiliations affected gender equality and conflict in schools.

Tribal and clan affiliations created conflict in the classroom because of language barriers, a refusal to mix with other ethnic groups and the preferential treatment given to fellow ethnic group members. It is common for students in Karamoja to speak local dialects that differ from those of their classmates or teachers. Teachers said that differences in spoken language could cause problems when students talked about the teacher or other students in their native tongue. In addition, teachers reported that students tended to exhibit favouritism towards classmates of the same ethnic group. One teacher explained, “You find that if the class monitor is from this region of the Teso, he/she believes that the Iteso should be given those materials.”

Teachers also had difficulty in addressing tribal and clan differences as they related specifically to concepts of gender and peacebuilding. Teachers found that some students did not believe in the equality of girls and boys because it conflicted with their traditional or tribal/clan beliefs. One teacher explained, “In most communities, it is the belief that boys are to be given respect, so if you say that boys and girls are to do the same work and are all equal, it becomes difficult for some people to accept that.” Other teachers cited challenges in seating girls and boys together and in disciplining boys who had undergone initiation rituals. One teacher described the difficulties faced in assigning girls as class monitors: “[Students] transfer their beliefs from home ... they say it is only a man in the family who can head a family. You find it is difficult for us to assign or give a girl responsibility because we have that belief of saying girls cannot manage.” Since these data are from teachers’ endline perceptions of classroom dynamics, it may be important to assess which social relationships are most important to fostering feelings of belonging and inclusion, and to directly address these relationships as part of the teacher training.

b. Respect and trust

The programme directly addresses respect and trust between gender groups in school, although efforts to build respect and trust outside of school and among other groups are not necessarily emphasized in concrete ways. The training aimed to normalize female health issues and build a culture of appreciation for female opinions within school, to create “acceptance and tolerance of diversity in other groups” (Pham, Vinck and Gibbons, 2015, p. 37). Ninety-four per cent of teachers (both control and intervention) in our study stated that they believed they had influence in the community, which is important because the training model positions teachers as the primary agents of change for the programme.³⁰ Even though the importance of respect and trust for females was apparent to some teachers, however, their subsequent difficulty in applying those ideas in the wider community made it difficult for these concepts to take hold outside of school.

The perception of education is changing positively, and many Karamojong understand the benefits of education for girls and boys alike. Some members of the population, however, continue to view school only as a centre for survival, particularly since schools in Karamoja have World Food Programme-supported school feeding programmes to encourage girls to stay in school. In addition, enrolment and completion rates remain low, and children stop attending school when food distribution in schools is withheld. This is especially true for girls, who have to look for other means of gathering food for the family.

Teachers discussed the prioritization within their action plans of ensuring for their female students proper access to sanitation facilities and feminine hygiene products, a notable step towards respect for girl students. Most discussions of female health issues centred on issues of menstruation. Multiple teachers cited educating their female students on the proper construction and use of home-made sanitary pads. As well as addressing the material challenges associated with menstruation, teachers also described educating male students on female health issues and encouraging acceptance of these

issues. Teachers believed that their female students had greater self-confidence as a result of these and other more gender-friendly practices. Girl students and teachers described difficulties with the level of acceptance and tolerance of such practices outside of school, however.

The Karamojong community respects teachers for their ability to impart knowledge and skills to their children. Teachers have limited powers outside of school, however, where political leaders tend to have more influence. The collective reputation of teachers also suffers as a result of those individual teachers who fail to follow their professional code of conduct, sexually abuse girl students or consume alcohol before school, limiting the respect and trust conferred by the community on the expected agents of change.

Finally, we have mentioned throughout the report that issues across different ethnic identities continue to affect respect and trust among students as well as between teachers and students. Students were found not to trust members of other ethnic groups that they had been taught were their 'enemies'. In addition, some students thought that they did not have to respect teachers because some teachers might not have undergone cultural initiation rituals. One teacher explained that when a boy who has undergone initiation rituals comes to school, "he can even disobey teachers because he sees himself as a man like his teachers. Mind you, some of his teachers might have not been initiated because most of us are not from Karamoja, so they see us as children, so they end up disrespecting [us]." These circumstances indicated a possible lack of respect for some teachers, as well as an ever-present tension among ethnic groups that affect levels of trust among students and between teachers and students. Both of these elements are important to address to build social cohesion through the programme in Karamoja.

c. Constructive dispute resolution

Qualitative data indicate that although teachers were aware of what was involved in constructive dispute resolution – frequently citing guidance and counselling as methods that they used – both verbal and physical abuse were still present in schools. Constructive dispute resolution was important, especially in Karamoja, where conflict was long driven by the possession of arms (before disarmament) and by war and post-war violence. While in the field, the research team observed the use of canes on students in seemingly mundane situations (e.g., telling students to return to class after break time) on multiple occasions and in multiple study schools. In addition, the evidence suggests that constructive dispute resolution is not consistently practised throughout schools.

Student participatory assessments indicated the use of violence as a form of conflict resolution. Boys most frequently responded that abuse made them unhappy. One respondent said, "And even when the children fight at school, you find that when the teacher comes, they could come and beat all boys ... They beat all children in class yet it is only two children fighting." Boys mentioned several types of emotional and physical abuse by teachers, including teachers beating boys with canes, destroying students' property, yelling at boys for "nothing" and teaching while consuming alcohol. One girl stated, "Teachers blame boys for noise-making in class even if boys and girls were making noise ... only boys are singled out ... this annoys the boys." Another respondent said that there was "prolonged punishment for the boys compared to the girls for the same offence committed." This indicated that teachers might not fully understand from the gender equality training that they should also take boys' needs into consideration.

The most-cited reason for unhappiness among girls (as reported in the girl student FGDs) was unequal gender practices, which included teachers not letting girls and boys work together, discouraging girls from doing mathematics and science work, "talking bad" about girls who were menstruating and not

selecting girls to participate in class. The abuse – both physical and sexual – of female students by their teachers was another manifestation of unequal gender practices. Four female respondents cited unwelcome touching and sexual assault as reasons for girls' unhappiness, while five female respondents cited physical abuse. Boys agreed that harassment and abuse were reasons why girls might become unhappy: 12 boys said that what would make girls unhappy was defilement by teachers, while 3 boys cited beatings by teachers. The second most frequent reason given by boys for girls' unhappiness was harassment by boy students, examples of which included boys stealing girls' school supplies, abusing girls, kicking girls, beating girls, using bad language when speaking to girls, touching girls in inappropriate ways and raping girls.

The prevalence of these perceptions among the Primary 4 students in the participatory assessments indicates the need for further explanation of how gender equitable practices and constructive dispute resolution contribute to peacebuilding.

d. Civic and social participation

Finally, qualitative data indicate that the programme's method of encouraging social relationships among girls and boys – as well as community engagement through parent teacher association meetings and other means of reaching parents – had increased social participation in issues of education. Social participation is a primary aspect of a child's education because of the need for parents and communities to support the importance of learning. Teachers in our qualitative sample recognized the programme's potential to encourage cohesion among students and throughout the wider community. One male teacher from Lokopo said: "Whenever the children are [taught] peaceful means of relating in the community or relating among themselves, they only transfer this to even those ones who are not in school and through them others also in the community will learn that these are the positive ways of living and relating with one another."

Teachers independently discussed the idea of viewing students as stewards of peace in the wider community, and this was a trend we also noticed during the midline stage. A few teachers specifically mentioned that having gender equitable classrooms boosted the morale of all students, and many said that students' ability to deal with conflict in a positive and constructive manner in the classroom would translate to their personal lives. According to our findings on teacher attitudes and practices, however, teachers continued to struggle with integrating training concepts into their daily practices.

Teachers recognized the need for greater support, yet found it difficult to independently obtain support from parents, politicians and other community leaders. Lack of buy-in appears to be limiting the programme's potential to bring about greater social cohesion in the community. One teacher described the difficulty with involving parents: "Problem comes when they disagree with you and I don't know now which means we should use, because we can also not force them ... so the influence, I think, is on the ground."

Teachers discussed the difficulty of communicating the training concepts to parents, and especially to those who did not speak the language of the classroom. Such parents might have felt inclined to leave their children's education to professionals because they felt incapable of being personally involved (Uemura, 1999).

Teachers said that they should involve parents in gender and peacebuilding because, as one teacher said, "it is from the community that [students] should learn first ... before they come to school." In response to the resistance that teachers faced in implementing training concepts, some had already involved community members by holding parent teacher association meetings and engaging school

management. One teacher pointed to the importance of such meetings: “When the community sees us practising gender [equality], to them it is a new thing, for them they feel is this thing good or bad? For them, sometimes they think twice, they think the thing is bad and yet when you talk of equality whereby a man is supposed to do some work which a woman is to do, to them they get surprised a bit, they say now how can I rival a woman in her job?”

One male teacher recommended involving parents, as “through dramas and plays in the parents teachers meetings, annual general meetings, the parents will learn from the pupils and they can do this at home.” One respondent discussed plans to involve the parents in the implementation of the action plan, after explaining how the plan linked to gender equality. Another said, “We shall carry [this] out in the assembly talks. We can also sensitize the parents, school stakeholders and the community at large.” Another teacher expressed hope that parents were becoming more involved in education: “We are seeing that even parents are taking concern about the children, not like those days when you’re teaching a parent comes and stands in the window and calls the name of the child [to] come out.” Finally, another respondent suggested: “I just feel like sometimes we, the teachers alone, cannot really influence these people, but I was bringing a suggestion that in future if [MoESTS] also can try to offer some training to especially the leaders on the political wing, because our people mainly like to listen to the politicians so much ... So it needs even the local councils to be trained ... so that they can come to understand certain things and ... also bring out the issues of gender.”

5.9 EXPLORATORY RESULTS OF THE IMMEDIATE EFFECT OF THE FINAL TRAINING SESSION ON TEACHERS’ KNOWLEDGE AND ATTITUDES

Overall, we found evidence that intervention teachers who participated in the final training session had improved knowledge and attitudes outcomes after two days of training. For instance, these teachers responded better to some of the knowledge items about the difference between sex and gender: After two days, a larger proportion of trained teachers were able to correctly classify as being related to sex or gender the statements “Men cannot cook” (correct classification increased from 61 per cent to 67 per cent) and “Women give birth to babies” (correct classification increased from 83 per cent to 88 per cent). Teachers were also more capable of identifying which practices represented violence against children and which practices promoted a peaceful school. The training was found to have had a consistent impact on several attitudinal items after two days of training. Trained teachers were more likely to indicate that females and males were equally capable of doing mechanics (increased from 65 per cent to 77 per cent), preparing food (increased from 64 per cent to 72 per cent) and looking after babies (increased from 46 per cent to 59 per cent). After two days of training, trained teachers were also less likely to agree with traditional masculine stereotypes and had improved on attitudinal items related to gender equality and gender roles.

It is interesting to note that teachers’ sense of self-efficacy to resolve problems in their school also increased after two days of training. These results are presented in Appendix C, section 6.



6

Summary and discussion of findings

The Gender Socialization in Schools programme pilot training was conceived to provide teachers with useful skills to foster change in gender norms, which would then enable the greater potential for gender equality and peacebuilding in the conflict-affected Karamoja region. The training aimed to empower primary school teachers to promote positive models of masculinity and femininity, redress teachers' gender biases and engage in social norm questioning. The programme provided teachers with materials offering guidance on the use of alternative classroom practices that promoted gender equality and peaceful conflict resolution. Using teachers as agents of change seemed an appropriate way to increase the capacity of schools to provide conflict-sensitive education, as trained teachers seemed empowered to resolve problems related to girls' unequal opportunities in education. The fact that the programme focused on the gender attitudes of both women and men increased its long-term sustainability, but the potential of the programme was limited, at least in the short term, by the limited exposure of teachers to the programme and by community members' lack of involvement.

Impact on knowledge and attitudes

Nevertheless, our results provide evidence for positive effects of the programme on teachers' knowledge and attitudes towards gender equality issues. The quantitative results show evidence for positive and statistically significant effects on various elements of teachers' knowledge and attitudes, as measured by the index on knowledge about the difference between gender and sex, the three indexes of attitudes towards gender roles and the index on attitudes towards gender identity. For all of these indexes, we found statistically significant differences between the intervention and control teachers. Intervention teachers were more likely to know more about the difference between gender and sex, and had more progressive attitudes towards gender roles and gender identity. Semi-structured interviews and FGDs also indicated that intervention teachers gained knowledge about the difference between gender and sex, and about gender equality, between the midline and endline points. Thus, the programme appears to have positively influenced teachers' knowledge about and attitudes towards gender equality.

The triangulation of qualitative and quantitative findings indicated that after eight months, the programme had equipped intervention teachers with new knowledge about gender, changed their basic attitudes related to gender equality issues and taught teachers about more progressive views on gender roles. The more in-depth qualitative data suggested, however, that teachers still related to their traditional gender norms and beliefs about gender and conflict resolution. Teachers reported that they had difficulty in enforcing new ideas about gender norms that did not align with traditional notions of gender in the community.

Impact on practices

In terms of impacts on final outcomes, the quantitative tool did not capture any positive impacts on teacher practices. The qualitative component, however, dug deeper into teacher practices in the school and in the classroom to show that intervention teachers appeared to be changing some of their classroom practices. Teachers reported having changed their classroom seating arrangement to mix girls and boys. Teachers also recognized that such practices were a way to increase girls' classroom performance and unity among students. Teachers did not, however, adopt more complex ideas or practices from the training such as tailoring lessons to female and male needs or connecting gender equitable practices to peacebuilding. The short-term nature of the programme may have limited its positive effects on more complex ideas and practices associated with gender equality, however. Future research may be required to determine the longer-term effects of the programme on teacher practices.

People may change their personal beliefs, but their outward behaviours will continue to reflect social expectations for longer, so as not to upset the status quo. Moreover, an enabling environment is very important for efforts to translate changes in attitudes and knowledge into changes in practice. Since the programme did not target other key community stakeholders – such as school management, parents or community leaders – it was to be expected that teacher practices would be difficult to change. Nevertheless, qualitative data showed that intervention teachers were changing some of their more basic classroom practices. We believe that these positive changes in practice are partly explained by the concrete examples given in the teacher training manual and training sessions that explain how to operationalize the training concepts.

Complementary impact of reinforcing text messages

We also found no clear evidence for positive complementary effects of the SMS text messaging component of the programme. In none of the indexes were the two treatment groups statistically different from each other. Teachers who received reinforcing text messages in addition to the training activities did not obtain more positive scores than teachers who received only the training. The lack of complementary effects for the training-plus-texting group is, however, consistent with the finding that less than 33 per cent of the teachers in this group responded to the research-monitoring SMS messages. In addition, about 28 per cent of the teachers in this group reported having received no text message related to the programme. The rest of the Treatment 2 teachers apparently did receive the text messages, however. When we asked Treatment 2 teachers how many text messages they had received, they reported 13 messages on average, which is the actual number of reinforcing messages sent by the programme. This finding suggests that at least in the first eight months of programme implementation, and during a period of intense training, the SMS text messaging component did not bring additional benefits to the teacher training.

Uganda has successfully been using SMS text messaging in education to improve communication between education stakeholders, as exemplified by the National Examination Board, which uses SMS

messaging to release exam results, increasing access to student performance data (Ndiwalana, 2011). Previous research indicates that SMS messages with reminders can be effective in encouraging saving in developing countries (Karlán et al., 2010). Possibly, however, messages about gender equality are too complex to communicate via SMS messaging. It seems important to reconsider the content of these messages, how they are delivered and any limitations on teachers' ability to access them.

Differential impact for female and male teachers

We did not find statistically significant differences between female and male teachers' responses on measures of knowledge, attitudes and practices. This lack of heterogeneous treatment effect may be explained by the under-representation of female teachers in the study schools (the ratio of female to male teachers was 1:3) and also by the lack of statistical power to detect subgroup effects beyond the three study groups of the research design.

The findings of the quantitative and qualitative research combined are consistent with the idea that training programmes can positively influence knowledge and attitudes in the short term, but that further reinforcement or a longer-term programme is required to encourage teachers to successfully transfer what they have learned to real-life situations in school and non-school settings. Moreover, the findings speak of the importance of community involvement from parents, politicians and other community leaders in creating a more enabling environment in which new ideas can be welcomed, understood and translated into practices. Previous research has indicated that changing gender norms in conservative communities is challenging and can result in anxieties or tensions (De Hoop et al., 2014; Sirin et al., 2004).

The results of the present study also suggest the importance of social participation in peacebuilding to promote social cohesion. Although many intervention teachers had made progress in their understanding of gender equality and peacebuilding, most of them continued to have difficulty in reconciling these concepts with the traditional ideas of gender held by the wider community, an issue which seemed to be adversely affecting the overall uptake of the training concepts in the community. The disjunction between the training ideas and the deeply embedded norms in the community was evident throughout the data. Not addressing this gap could make sustainability difficult, as "peacebuilding interventions are often not sustainable because they are not based on a deep understanding of social dynamics" (Marc, 2012, p. 1).



7

Recommendations

Taken together, the results provide positive evidence of the potential of the Gender Socialization in Schools programme to promote positive gender roles in primary schools. Our main findings inform the following recommendations for the programme's ongoing implementation, which we offer to the Government of Uganda and its implementing partners.

7.1 CONCRETE EXAMPLES IN MATERIALS AND TRAINING

- The data suggest that providing concrete examples helped teachers to operationalize what they had learned in the training. We recommend that the programme continues and extends this practice, adding further concrete examples of ways in which teachers can reach parents and community members to sensitize them to the training content, and examples of how teachers should respond when they encounter opposition to new ideas.
- We recommend directly addressing the idea of social cohesion as part of the school action plan, and helping teachers to connect their action plan goals to gender equality or long-term peacebuilding. This could be achieved by providing teachers with specific examples and concrete strategies that encourage them to think about how equitable gender practices and peaceful conflict resolution could concretely affect the community in the long term. Although teachers gained interesting knowledge during the training, they seemed not to make the connection between gender, conflict and peacebuilding. Teachers might benefit from connecting more concrete, short-term actions to long-term peace in the community – actions that they could feasibly measure and thereby monitor their progress against.
- The training materials would also benefit from providing concrete instructions to teachers on ways in which they could positively socialize both girls and boys to contribute to peacebuilding. Teachers focused not on a gender-sensitive strategy encompassing the needs of girls and boys equally, but more on the effects of the training activities on girl students specifically.

7.2 COMMUNITY INVOLVEMENT

We suggest that implementers explicitly involve the community and school governance bodies (e.g., school management committees) to ensure their buy-in. The agency of teachers depends on a number of external factors, including engaged parents and communities, functioning school governance bodies, effective relationships between the school and local education authorities, and communication between schools and communities. Explicit involvement could help to create an enabling environment in which individual knowledge and attitudinal change can be translated into broader social change. For example, as part of the school action plan, teachers could lead community meetings where parents could contribute ideas of ways to make the training concepts applicable to students (teachers would need concrete guidance on what to address in the meetings and how).

We also suggest that communities are involved in addressing social cohesion in the action plan – for example, with direct strategies to promote a peaceful educational environment. Without explicit community involvement, efforts to change teachers' practices within schools can run aground on a lack of understanding about the ways in which education and gender equality may contribute to peacebuilding and social cohesion.

7.3 MENTORING AND REINFORCEMENT (COACHING)

The teacher training literature suggests that training programmes involving long-term teacher mentoring or in-school teacher coaching – showing teachers how to employ the new methodology – tend to be most successful at improving student learning (McEwan, 2015; Conn, 2014; Showers and Joyce, 1996). In contrast, one-off in-service training sessions at a central location – typical of many teacher training interventions – are found to be not very effective. Similarly, an expanded version of the Gender Socialization in Schools programme could improve its implementation by providing teachers with regular coaching, monitoring visits or one-to-one reflection sessions (or a combination of these elements). The platform provided by coordinating centres seems suitable for delivering such services. Teachers expressed interest in consistent conceptual reinforcement and discussion, but additional training for teachers over a prolonged period of time may be unfeasible from a financial and/or practical perspective. Encouraging leaders to instead continue the discussion through a mentoring platform can provide additional opportunities for teachers to discuss and explore the practical application of the concepts they have learned as well as to obtain guidance and support for the design and implementation of their action plans.

Mobile technology could also be used to deliver more personalized and informal reinforcement to teachers, and to help them access and manage vast reservoirs of information in order to meet their action plans.

7.4 TRAINING LOGISTICS

We recommend that the programme ensures clarity of training logistics and provides, whenever possible, incentives for teachers to attend the training, arrive early and stay throughout the entire training session. Lack of clarity about such issues could reduce attendance or affect teachers' motivation and concentration during the training. Incentives could be as simple as raffling an interesting item among teachers who arrive early, or providing travel expenses or certificates on completion of the training programme to encourage teachers to stay until the end.

We also recommend ensuring that the training is scheduled for a time of year when it will be feasible for teachers to attend. The final refresher training was scheduled very close to the end of the school year, when teachers were busy preparing for or marking primary school exit exams. Finally, we also suggest confirming that head teachers are supportive of the programme and the training activities. We found that

a significant proportion of teachers did not participate in the final training session because their head teachers had not extended the invitation to them. Apparently, in some schools, head teachers decided which teachers would participate in the training and which would not.

7.5 CONDUCT LONGER-TERM RESEARCH

The impact evaluation presents evidence for positive short-term effects of the Gender Socialization in Schools programme on teachers' knowledge and attitudes. It is unclear, however, whether the programme will be effective in improving teacher practices and student outcomes in the longer term. The research evidence is limited regarding the role of gender education interventions in promoting social cohesion. This research study contributes to the research literature by providing rigorous evidence about the short-term impacts of just such a teacher training programme.



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End notes

1. Gender equality refers to the absence of discrimination on the basis of a child's sex. Gender socialization is the process, which begins at birth, of learning cultural roles according to one's sex.
2. The Gender Inequality Index measures gender inequalities in three important aspects of human development: reproductive health, empowerment and economic status. The higher the index number, the higher is the rank of the country. The index number for Uganda was 0.538, similar to Lesotho (0.541), Senegal (0.528) and Pakistan (0.536). See United Nations Development Programme, 'Table 5: Gender Inequality Index', UNDP, <<http://hdr.undp.org/en/composite/GII>>, accessed 6 June 2016.
3. Learning for Peace is a four-year partnership between UNICEF, the Government of the Netherlands, the national governments of 14 participating countries, and other key supporters. The cross-sectoral initiative leverages the delivery of education and other social services for peacebuilding in fragile and conflict-affected contexts, to "strengthen resilience, social cohesion and human security". See United Nations Children's Fund, 'Learning for Peace', UNICEF, <<http://learningforpeace.unicef.org/about/learning-for-peace/>>, accessed 6 June 2016.
4. United Nations Children's Fund, Gender, Education and Peacebuilding Brief, UNICEF, 2016.
5. CCTs are staff in charge of providing in-service, management and professional development training within schools and classrooms in Karamoja. The CCTs conduct regular visits to the schools in their catchment areas.
6. Gender equality refers to the absence of discrimination on the basis of a child's sex. Gender socialization is the process, which begins at birth, of learning cultural roles according to one's sex.
7. The Gender Inequality Index measures gender inequalities in three important aspects of human development: reproductive health, empowerment and economic status. The higher the index number, the higher is the rank of the country. The index number for Uganda was 0.538, similar to Lesotho (0.541), Senegal (0.528) and Pakistan (0.536). See United Nations Development Programme, 'Table 5: Gender Inequality Index', UNDP, <<http://hdr.undp.org/en/composite/GII>>, accessed 6 June 2016.
8. Ministry of Gender, Labour and Social Development and UNICEF Uganda, *Situation Analysis of Children in Uganda*, UNICEF, 2015, p. 59.
9. Ibid., p. 13.
10. Kotido is inhabited by the Jie; Abim by the Ethur; Amudat by the Pokot; Napak by the Bokora; Moroto by the Matheniko and the Tepeth; Kaabong by the Dodoth and the lik; and Nakapiripirit by the Pian and Chekwii.
11. United Nations Children's Fund, 'Learning for Peace', UNICEF, <<http://learningforpeace.unicef.org/about/learning-for-peace/>>, accessed 6 June 2016.
12. GenderTrac SMS messaging uses the RapidPro open-source platform developed by UNICEF to help governments deliver rapid and vital real-time information, and connect communities to life-saving services. For more details about the platform, see United Nations Children's Fund, 'RapidPro', UNICEF, <www.unicef.org/innovation/innovation_75975.html>, accessed 6 June 2016.
13. The first message was a welcome message.
14. Examples of such inventories are discussed in: Ashmore, Del Boca and Bilder, 1995; Glick and Fiske, 1997; Baber and Tucker, 2006; and Pulerwitz and Barker, 2008.
15. See Appendix E for semi-structured interview protocols for CCTs and head teachers.
16. To ensure that key informants were appropriately and purposively selected to elicit rich feedback that could help us to gain a preliminary understanding of the strengths and challenges associated with the programme, the head teachers were evaluated on seven criteria: (1) The head teacher attended the entire training; (2) the head teacher was an active participant during training; (3) the head teacher asked questions during training; (4) the head teacher demonstrated positive interactions with colleagues during training; (5) the head teacher had followed up with the implementing partners about training content; (6) the head teacher had responded to the SMS messages to date (if applicable); and (7) the head teacher's attendance at school had been consistent since the training ended.
17. We conducted one to one interviews in the schools that had only a single female teacher.

18. During the training of trainers, UNICEF informed all district inspectors of schools and all CCTs about the research study and the data collection plans. All CCTs were informed that some schools within their jurisdiction would be invited to the training and others would not. Moreover, the data collection team leader, in coordination with the UNICEF Uganda coordinator, notified all district inspectors of the dates the control schools would be visited, and the inspectors notified the control schools. All control schools were expecting our enumerators.
19. The enumerators who collected data in the intervention group were the same enumerators who collected data in the control group. They gathered data in control schools from Monday to Thursday, and in the intervention training centres on Friday.
20. All of the other model specifications can be shared on request.
21. Because of missing data on some covariates, Models 4 and 5 are estimated with smaller sample sizes, and therefore less precision, than Model 2.
22. To interpret the standardized mean differences, we used Cohen's *d* (1962), which defines the effect as "negligible" if the absolute value is <0.15 , "small" if the absolute value is ≥ 0.15 and <0.40 , and "medium" if the absolute value is ≥ 0.40 and <0.75 .
23. A complete list of all of the reasons is presented in Appendix C, section 4.
24. We tested for statistical differences in the missing rates between the control group and the training group, and between the control group and the training-plus-texting group. These analyses revealed that teachers left treatment and control conditions at statistically equal rates.
25. These are questions 57, 58 and 63 in the endline survey.
26. Approximately 49 per cent of the 76 control teachers who reported attending the gender, conflict and peacebuilding training also reported attending another training programme in gender issues.
27. We discuss in section 5.3 the ways in which teachers used these techniques.
28. The letter *e* indicates that this question was only included in the endline survey and not also in the baseline survey.
29. Perhaps intervention teachers were influenced by the egalitarian norms communicated in the training, while the control teachers – not having been influenced by the norms communicated in the training – were more realistic.
30. The data on performance are derived solely from qualitative information given by teachers; we have no quantitative performance data to support this opinion.
31. This percentage was obtained from the quantitative survey.

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