Exploring the Gendered Dimensions of Teaching and Learning

Background Paper for the Education for All Global Monitoring Report 2013

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Acronyms

COPE Complementary Opportunities for Primary Education

EFA Education for All

EGRA Early Grade Reading Assessment

FAWE Forum for African Women Educationalists
GAC Gender Appropriate Curriculum (Malawi)

GBV Gender-based violence

GEMS Gender Equity Movement in Schools

GMR Global Monitoring Report

LMTF Learning Metrics Task Force

NGO Non-governmental organizations

PIRLS The Progress in International Reading Literacy Study
PISA Program for International Student Assessment

QUIPS Quality Improvement in Primary Schools

SACMEQ Southern and Eastern Africa Consortium for Monitoring Educational Quality

SAT Sistema de Aprendizaje Tutorial

TIMSS Trends in International Mathematics and Science Study

UNGEI United Nations Girls' Education Initiative

I. Introduction

This working paper was commissioned as a background paper for the Education for All (EFA) Global Monitoring Report (GMR) 2013/2014 – Teaching and Learning: Achieving quality for all¹. The report shows why education is pivotal for development in a rapidly changing world. It explains how investing wisely in teachers, and other reforms aimed at strengthening equitable learning, transform the long-term prospects of people and societies.

The broad purpose of this paper is to contribute to the discussion on why teaching and learning are pivotal for development by critically exploring their gendered dimensions. The paper proposes an overarching framework for understanding the role of gender in teaching and learning.

In particular, four specific research questions are addressed:

- 1. Which teaching and learning practices and policies are particularly effective in responding to the learning needs of girls, especially girls from disadvantaged groups?
- 2. Which teaching and learning practices can overcome gender discrimination and gender-based violence?
- 3. To what extent can a gendered approach to teacher education make a difference to the educational experience of girls, including their learning experiences?
- 4. What are examples of curriculum and assessment reforms that have supported teachers in improving and supporting equitable learning outcomes for girls?

In attempting to address these questions through an analytical review of existing evidence, the paper shows why a gendered understanding of teaching and learning is pivotal for equitable development. It puts forth an effective case for promoting investments in gender-focused teacher professional development and in a gender-equitable whole school approach.

This approach can create safe, supportive learning environments to improve learning for girls, especially those from disadvantaged groups, and contribute to more peaceful, equitable and sustainable development. The paper also reviews non-classroom interventions for dealing with gender-based violence.

The investments proposed in the paper include:

- Gender-responsive pre-service teacher education
 This will support future teachers through pre-service classroom teaching experience to use their knowledge and be empowered to shape and deliver a relevant, gender-equitable curriculum;
- Gender-responsive models of professional development for practicing teachers

 $^{^1\,} The full report can be accessed at \ http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/efareport/reports/2013$

- These models will support teachers to become skilled in using proven strategies that make a difference for girls; and
- Whole-school approach to developing a gender equitable learning environment
 This includes supportive school leadership, gender-equitable teaching and learning
 materials, teachers who have the right and responsibility to work continuously to improve
 their gender-responsiveness, and girls and boys who know about and enact both their
 right to quality education and their responsibility to act in gender-responsive ways.

II. Focus and Scope

In this paper the word 'gender' refers not to 'girls' or 'boys' but to a contextualized understanding of gender relations, with a focus on the social dynamics, social practices and power relations in which understandings of gender are constructed.² The focus of the paper, however, is on girls, especially girls from disadvantaged groups. This focus is justified from a human rights perspective, given the persistent inequalities in schooling and post-schooling opportunities and social outcomes for girls and women, and the realities of gender discrimination and gender violence, globally. Further, when gender intersects with other axes of marginalisation relating to poverty, ethnicity, and disability among others, girls and women are more likely to experience multiple layers of discrimination.

Several recent studies of girls' education have evaluated the broad spectrum of interventions that can have an impact on girls' learning. For example, a 2012 Camfed review examines the evidence for investing in key strategies for girls' education, including: scholarships and stipends; transportation and boarding; community engagement and sensitization; child protection and safety; gender-friendly infrastructure; school feeding and other health-related programming; mentoring, tutoring and peer support; and strengthening school governance and accountability. Other studies found that early childhood care and education also yields particular benefits for girls and boys, "offsetting disadvantage and inequality, especially for children from poor families."

However, classroom teaching involving face-to-face interactions between teachers and students, whether in formal or non-formal education, is not as well documented, despite its great potential for positive or negative gendered impact on girls' learning.

'Teaching and learning' is not a synonym for 'education.' Rather, teaching and learning refers to the actual work of teachers and students that takes place in the classroom. It is nested within a school – connected to the families of the children, the communities in which the schools operate, and after-school activities.

² Leach, Fiona, Eric Slade and Máireád Dunne, *Desk Review for Concern: Promising practice in school related gender based violence (SRGBV) prevention and response programming globally*, Concern Worldwide, Sussex, 2012.

³ See, for example, Ghana Education Service, *What Works in Girls' Education in Ghana: A critical review of the Ghanaian and international literature*, Prepared by Camfed Ghana with support from DfiD, January 2012. A forthcoming (2013) Department for International Development (DfID) study will offer a comprehensive review of the many dimensions of girls' learning.

⁴ United Nations Educational, Scientific and Cultural Organization, Strong Foundations: Early childhood care and education – Education For All Global Monitoring Report 2007, UNESCO, 2007.

Although teaching and learning is influenced by many other factors (sometimes called 'enabling inputs'), this paper is not about those inputs, but rather about the under-researched and documented actual work of teaching and learning that goes on in the classroom.

Our search identified very few studies that examined the gendered dimensions of teaching and learning in classrooms from the literature on early childhood education, education in conflict settings, or special and inclusive education related to girls with disabilities. These searches were limited by an imposed parameter on the content due to the constraints of time and resources, and the fact that only English-language studies were reviewed. In addition, while distance learning, technology and other media offer many emerging learning modalities and opportunities for girls' learning, this is not covered in the current paper and needs to be addressed in future research.

III. Methodology

The resources reviewed for this paper were identified in several ways. We conducted comprehensive keyword searches of academic databases followed by a careful review of bibliographies of relevant academic literature and grey literature as well as a review of Google Scholar (a meta-search engine of academic databases including Eric, JStor and others).⁷

Searches included systematic combinations of the following keywords: gender, girl(s), teacher(s), pedagogy, violence, development, assessment, curriculum, teaching and learning, teacher effectiveness, learners, inclusive, classroom, Africa, Asia, Latin America, Middle East, India, gender discrimination, students and relationships.

Additional grey literature was identified by searching the digital libraries of international and regional non-governmental organizations (NGO), development agencies, and aid organizations engaged in work on gender and girls' education. Illustrative of these sites are ActionAid, BRAC, CARE, Concern International, Education International, Forum for African Women Educationalists (FAWE), MUSTER, Plan International, Promundo, Save the Children, and multiple United Nations agencies including UNESCO.

Gender analyses of international assessments were also reviewed (i.e., the Southern and Eastern Africa Consortium for Monitoring Educational Quality [SACMEQ], Trends in International Mathematics and Science Study [TIMSS], The Progress in International Reading Literacy Study [PIRLS], and the Program for International Student Assessment [PISA]).

⁵ Since the literature review for this paper was limited to English-language documents that could be identified within a short period of time, the author hopes that, as this paper circulates, others will share studies in other languages from the global South that address the four questions.

⁶ The literature search located two articles on gender and technology-related topics. Mitra (2005) examines how children in rural India can learn on their own to use public computers and the Internet, which could benefit disadvantaged girls in particular ways. Banerjee, et al., (2007) examined a basic literacy and mathematics remedial education programme that employed young women to help students using computer-assisted learning. The project showed solid results (i.e., increased average test scores of all children in treatment schools by 0.28 standard deviation, mostly due to large gains experienced by children at the bottom of the test-score distribution). Neither study, however, focuses on gendered dimensions of learning and/or teaching.

⁷ Frances Vavrus, Moira Wilkinson, and Laura Wangsness Willemsen worked with me on this paper. They conducted literature searches, prepared annotations, drafted text and offered feedback. Their contributions significantly shaped this paper. Nevertheless, I accept full responsibility for the content of the paper, and any errors are mine alone.

Finally, the UNGEI New York office and presenters at the 2013 Comparative and International Education Society Conference also provided useful documents.

Over 150 documents were identified in the search and sorted further based on criteria, including a clear focus on impact related to gender, teaching and learning (not just barriers and problems); robust evidence; a systems approach; lower or middle income countries; and potential for scaling up. This filter reduced the number of relevant documents to approximately 35.8 This clearly indicates that there is a dearth of studies on gendered dimensions of teaching and learning in the global South from early childhood through secondary that meet the outlined criteria.

In addition, given the emerging focus on learning in the post-2015 development framework, and the acknowledgement of the unfinished business of the Millennium Development Goals relating to girls' education and gender equality, the review also indirectly reflects a focus on what we need to know – that is, what research is needed – in order to improve learning, particularly among girls and boys most in need.

We utilized research that conforms to generally accepted standards of rigour for qualitative, quantitative, and mixed-methods research. No studies were identified that applied the 'gold standard' of randomized controlled experiments. Instead, we gleaned robust evidence from studies that use a variety of designs and methods, and the following criteria were applied:

- i) The research methods are appropriate to answer the research questions at the level of precision implied in the questions;
- ii) The research design, methods and analytical tools are clearly described;
- iii) The selection criteria are explained and justified;
- iv) The context (i.e., the setting, the time, the events, and the social forces that affect, or even constitute, a given body of data is adequately addressed);¹⁰
- v) Alternative explanations and negative cases are considered; and
- vi) There is some degree of generalizability beyond the specific case to inform research on similar topics or in similar contexts.

All the studies discussed in this paper have passed through this grid with the exception of several that are considered relevant but 'promising,' and in need of more evaluation.

Each section below begins with the key findings from the core set of evidence identified according to the process described above, and is followed by a brief discussion of the evidence and its implications.

⁸ Select unpublished papers and dissertations are cited that enhance these studies or offer new related insights.

⁹ Research inquiry in education and gender can seldom be narrowed to a question of the cause of treatment X on effect Y while controlling for potentially confounding variables (Phillips, 2011).

¹⁰ Seltzer, Michael, and Mike Rose, 'Constructing Analyses: The development of thoughtfulness in working with quantitative methods', *The SAGE Handbook for Research in Education*, edited by Clifton F. Conrad and Ronald C. Serlin, SAGE Publications Inc., 2011, pp. 245-262.

Question 1. Which teaching and learning practices and policies are particularly effective in responding to the learning needs of girls, especially girls from disadvantaged groups?

Girls from disadvantaged groups include those who experience stigmatization, discrimination, and inequalities linked to gender, ethnicity, language, relative wealth or poverty, location and disability. The teaching and learning practices that are particularly effective in responding to girls' needs, especially girls from disadvantaged groups, are drawn from evidence in the global South and include the following:

- 1. Teachers who speak the mother tongue of the girls and use proven bilingual teaching strategies are particularly effective in responding to the learning needs of girls from disadvantaged groups.
- 2. Child-friendly classroom practices have a significant impact on primary school girls' learning of literacy and mathematics.
- 3. Teachers' gender-equitable treatment of girls and positive attitudes toward them are important and effective in responding to girls' learning needs.
- 4. Whole school support for a gender-equitable, caring learning environment results in improved self-confidence and learning, especially for girls from disadvantaged groups.
- 1. A strong foundation in a first language, especially during the early years of school, is crucial to a child's educational success.¹² Mother tongue instruction is important for girls and boys alike, and it is especially important for girls.¹³ Where teachers use a language of instruction that girls understand, girls are more likely to stay in school longer, be identified as good students, do better on achievement tests, and repeat grades less often than girls who do not get mother tongue instruction. Under these conditions, they are, "more likely to enjoy school, experience success, and perceive that schooling is relevant, which will give them the skills and confidence to continue their school careers." ¹⁴ For this effective learning to take place, teachers who speak the girl's mother tongue also need to use proven bilingual teaching strategies that will enable the girl to learn to read, write and transition successfully into the dominant language, as appropriate.¹⁵

National policies need to support mother tongue instruction by recognizing it both as a human right and as a cognitive and pedagogical advantage for a nation's schools. Mechanisms for costing and funding these initiatives need to be set up simultaneously,

¹¹ United Nations Educational, Scientific and Cultural Organization, Reaching the Marginalized – Education For All Global Monitoring Report 2010, UNESCO, 2010.

¹² Center for Universal Education at Brookings, *A Global Compact on Learning: Taking action on education in developing countries*, Brookings Institution, Washington, DC, 2012.

¹³ Benson, Carol, 'Bilingual Education in Africa: An Exploration of Encouraging Connections Between Language and Girls' Schooling', In Melin, M., (Eds.), Research presentations at the Poverty Conference 2001: Education - A Way out of Poverty?, Stockholm, Sweden: Education Division at Sida, Department for Democracy and Social Development, pp. 80-95, 2001.
¹⁴ UK Aid, 'Helpdesk report: Mother tongue education and girls and poor children', Department for International Development Human Development Resource Centre, November 2011.

¹⁵ Klaus, David, 'The use of indigenous languages in early basic education in Papua New Guinea: A model for elsewhere?' *Language and Education*, vol. 17, no. 2, 2003, pp. 105-111.

and teacher education will need to introduce curricula that prepare teachers to use effective bilingual teaching and learning strategies for achieving literacy in both mother tongue and national languages.

2. In addition to the critical importance of using the home language for instruction, 'child-friendly' classroom practices can lead to increased learning outcomes for primary school girls and boys. ¹⁶ In a landmark study of 900 rural government primary schools in five states of India, researchers found a, "clear correlation between child-friendly classrooms and students' learning" for the Standard 2 and Standard 4 students in the study. ¹⁷ The six child-friendly methods documented through classroom observations included: teachers' use of teaching and learning materials besides textbooks; use of local examples to explain classroom material; organizing the whole class into small groups; smiling or joking with students in the class; students asking questions in class; and displaying student work in the classroom. These methods stand in sharp contrast to classes dominated by teacher talk and students' whole-class, choral repetition.

Analysis of baseline test data for the approximately 29,000 students in the observed Standard 2 and Standard 4 classrooms indicated a strong relationship between child-friendly classrooms and student learning outcomes in both standards. The mean and median classroom test scores for both Standards 2 and 4 increased steadily as the number of child-friendly indicators observed in the classroom increased. The strength of the relationship varied both across indicators and also across the two classes studied. In both Standard 2 and Standard 4, the largest difference was seen in classrooms where the teacher was observed using any teaching and learning materials other than the textbook. Working in small groups was strongly correlated with Standard 4 learning outcomes, less so with Standard 2 outcomes.

The study disaggregated achievement data by sex, but it did not examine gender dimensions of teaching and learning materials (e.g., textbooks), children's questions to the teacher, or pedagogy (e.g., teachers' local examples used to explain classroom material, or small group arrangements). These dimensions are critical for the messages communicated to girls, as Nancy Kendall noted in her study in Malawi.18 In the ten schools visited for the study female and male primary school teachers called on girls and boys proportionately, organized the class into small groups, and the teachers regularly assigned boys to be small group leaders.

3. Although the India five-state study on child-friendly methods, cited above, did not look specifically at 'girl-friendly' teaching and learning, analysis of project data from international NGOs in another region of India underscored that teachers' actions and interactions with girls and boys and students' perceptions about the teachers' actions are

¹⁶ Bhattacharjea, Suman, Wilima Wadhwa and Rukmini Banerji, *Inside Primary Schools: A study of teaching and learning in rural India*, Pratham Mumbai Education Initiative, Assessment Survey Evaluation Research (ASER), October 2011.

¹⁷ ibid

¹⁸ Kendall, Nancy, Achieving our Goals and Transforming our Schools: Best practices in the Malawi Teacher Training Activity, USAID, 2008, p. 93.

indeed important for girls' learning. ¹⁹ In this study, although teachers stated that girls should have the same right as boys to go to school, classroom observations revealed that the teachers called on boys more often in class, praised boys more frequently, and asked boys more challenging questions. In a sample of 72 teachers, the teachers engaged positively with boys about three out of every four times but only two out of every four times with girls (based on a ratio of girls and boys attending class). The study further found that some boys in these classes thought that their teachers called on boys more frequently than on girls, and other boys thought the teacher called on girls more often. The boys who thought girls were called on more often, held more favourable attitudes toward girls as being "intelligent," "good at school," and "able to answer questions."

In related project data from Bangladesh and Mali, teachers were observed to engage with girls and boys nearly equally. These teachers said they believed girls and boys were equally intelligent and good in school. The girls in these classes tended to hold more favourable attitudes about their own intelligence and abilities in school than did the girls in India. Taken together, the data suggest that boys' and girls' attitudes about girls' ability to learn and participate in class are indeed related to whether a teacher engages (or is perceived to engage) girls in the classroom.

An earlier, small but comprehensive mixed-methods study of educational quality related to girls' attainment in co-educational schools in Kenya concluded that school environments are discouraging to girls, and girls' chances of dropping out increase, "where boys are favoured in class and provided with a more supportive environment in terms of advice, where teachers take the importance of more difficult subjects like math less seriously for girls, where boys are left free to harass girls, and where girls' experience of less equal treatment is not fully recognized by boys."²⁰

4. Whole school support for a gender-equitable learning environment involves school leadership, teachers and students working together to develop a culture of caring that builds girls' self-confidence and supports girls' academic learning. Evidence comes from schools affiliated with NGOs that focus on the needs of girls from disadvantaged groups. The findings come from case studies of schools in Zambia, India and Honduras, for girls whose families live in extreme poverty, are affected by HIV/AIDS, and/or are from marginalized ethnic groups.

The importance of whole school reform as a means of responding to the learning needs of girls, especially girls from disadvantaged groups, is also evident in a case study of a low-cost private secondary school in Zambia whose students are largely poor and living in households affected by HIV/AIDS.²¹²² The school actively promotes a philosophy of caring

¹⁹ DeJaeghere, Joan and Nancy Pellowski Wiger, *Discourse and Social Practices of Gender in an NGO Project: What can it tell us about gender justice?* unpublished manuscript, 2013.

²⁰ Lloyd, Cynthia B., Barbara S. Mensch and Wesley H. Clark, 'The Effects of Primary School Quality on School Dropout among Kenyan Girls and Boys,' *Comparative Education Review*, vol. 44, 2000, p. 142.

²¹ Bajaj, Monisha, 'Un/doing gender? A case study of school policy and practice in Zambia,' *International Review of Education*, vol. 55, no. 5, 2009, pp. 483-502.

²² For another case study of the important role of teacher caring amidst the AIDS crisis in Africa, see Bhana, et al., 'The hidden work of caring: Teachers and the maturing AIDS epidemic in diverse secondary schools in Durban,' *Journal of Education*, vol. 38, pp. 5-23.

that is enshrined in the school's policies and practiced by teachers and students in their interactions with one another.²³

For instance, the school controlled costs but still maintained smaller classes and more hours of instruction relative to local public schools. There was also, "strict oversight of teachers by the school administration," which led to the enforcement of policies prohibiting paid tutoring by teachers and ensuring teachers were present for the entire school day. The school had whole school assemblies twice a week, at which time school administrators provided advice aimed at girls and/or boys on topics ranging from, "relationships to family life to their futures." In addition, students and alumni reported in interviews that teachers regularly advised students in class and out of class on matters related to HIV/AIDS, education and their future plans. As the author explained, "the close relationship fostered by school policy, content, and structure... created opportunities formally and informally for teachers to give such advice and differed from government schools."²⁴

A nationwide residential primary school programme in Gujarat, India, Kasturba Gandhi Balika Vidyalaya, for girls from disadvantaged backgrounds who are often also affected by violence, has the explicit goal of girls' empowerment.²⁵ A case study conducted over a 15-month period illustrates how effective teaching and learning practices for the most disadvantaged girls involved developing caring, conscientious teachers who set as a priority the development of girls' self-confidence, decision-making capabilities and academic skills. Many of the school's teachers also come from disadvantaged backgrounds and serve as role models for their students. Moreover, the school cultivates a sense of professionalism in the teachers as it "provides increased responsibility and flexibility for teachers and administrators, and more opportunities for them." Trainings and workshops are specifically tailored towards implementing and achieving the programme's unique socio-cultural goals, and the programme seeks to build a cadre of empowered young professionals who can share experiences and support each other.²⁶

The *Sistema de Aprendizaje Tutorial* (SAT) is a secondary school-level programme that serves girls in rural areas, including from the ethno-linguistic Garifuna group in Honduras. SAT intentionally attends to issues of content (curriculum) and pedagogy in an effort to promote girls' and women's empowerment. ²⁷ SAT teachers present interdisciplinary content in ways that purposefully question dominant, patriarchal power structures. Pedagogy is student-centred and emphasizes dialogue. Teachers work to empower students by emphasizing local application of knowledge, making it relevant to the context in which the students will soon negotiate their lives.

²³ Bajaj, op. cit.

²⁴ Bajaj, op. cit.

²⁵ Shah, Payal P., 'Girls' education and discursive spaces for empowerment: Perspectives from rural India,' *Comparative and International Education*, vol. 6, no. 1, 2011, pp. 90-106.

²⁶ ibid

²⁷ Murphy-Graham, Erin, 'Opening the Black Box: Women's empowerment and innovative secondary education in Honduras', *Gender and Education*, vol. 20, no. 1, January 2008, pp. 31-50..

SAT graduates have higher achievements than those who were not involved in the programme and students displayed more gender awareness, self-confidence, and knowledge as well as a greater ability to identify problems and develop solutions. The study's findings suggest that education can be a catalyst for empowerment if it increases women's knowledge and understanding, self-confidence and awareness of gender equity. This qualitative study in four villages was based on several months of fieldwork, which included numerous interviews with and observations of 12 women graduates from an SAT programme and a control group of six women from a similar village who had attempted to enrol in an SAT programme years earlier that was never implemented. A quantitative evaluation of SAT used a, "quasi-experimental design to compare learning outcomes between SAT schools and regular public schools and found, after two years, that adolescents in SAT villages had higher composite test scores."²⁸

These examples highlight effective teaching and learning practices that respond to the needs of girls. They include whole school approaches to school change, which are maintained through support and monitoring by school administrators and involve the entire teaching staff. These approaches cultivate a culture of caring that supports all students, and especially girls from disadvantaged groups. They implement gendered curriculum reform with careful attention to pedagogy and application (i.e., learner-centred instruction). Finally, they offer respectful, empowering professional development for teachers.

²⁸ McEwan, Patrick J., Erin Murphy-Graham and Claudia Aguilar, *The impact of alternative secondary schools on rural adolescents: Evidence from Honduras*, unpublished paper, 2012.

Question 2. Which teaching and learning practices can overcome gender discrimination and gender-based violence?

Solid evidence on teaching and learning practices that can address gender discrimination and gender-based violence (GBV) in schools is limited, but emerging evidence points to the following:

- 1. National laws and policies together with school-level strategies can effectively address GBV.
- 2. Women teachers and classroom assistants who understand gender discrimination are effective role models for girls and make schools safer in both conflict and non-conflict contexts.
- 3. New ways of approaching GBV are expanding the solutions designed to deal with the problem. Promising interventions include girls' clubs, community involvement and using art and media.²⁹
- 1. A comprehensive approach to ending violence in schools, which operates through national policies and through gender-responsive policies and practices in schools, is necessary.³⁰ Teachers, school administrators and teachers' unions are key partners in this. Teachers who rely on constructive, positive discipline are more likely to create safe spaces for learning in which both girls and boys can excel. Following a review of school policies, the government of the Philippines acknowledged that, "deeply engrained social norms justifying teachers' punitive authority over students" fostered practices that disregarded national policies. In response, the government made a commitment to focus on promoting gender equality, non-discrimination, non-violence and other dimensions of the child-friendly school model.³¹

The Gender Equity Movement in Schools (GEMS) project, an NGO-sponsored, school-based campaign in Mumbai, India, demonstrated an effective school-level strategy that implements the government's commitment to child protection, by aiming to achieve gender equality and reduce violence for girls and boys in Grades 6 and 7.³² The study used a quasi-experimental design in a randomly selected sample of 45 schools over a period of two academic years. The schools were divided into three equal groups – one control group and two intervention groups. Both intervention groups participated in a school-based campaign for gender equality and violence reduction. One of the intervention groups also participated in an in-school curriculum of group education activities. All groups were given a pre-assessment, and the two intervention groups were given post-assessments after each of the two academic years. The assessments focused on gender roles, violence and sexual and reproductive health.

²⁹ Other projects for men describe interventions that are important in changing gendered relations, but are not reviewed here (see, for example, Barker, Nascimento, Segundo and Pulerwitz, 2004).

³⁰ Plan International, A Girl's Right to Learn Without Fear: Working to end gender-based violence at school, Plan International, Woking, Surrey, 2013.

³¹ The previous Plan reference also discusses social media as a site for violence against girls.

³² International Center for Research on Women, *Building Support for Gender Equality among Young Adolescents in School: Findings from Mumbai, India,* ICRW, 2012.

Students in all three groups had higher scores for gender equality over time, however there were greater increases for girls and boys in the intervention groups. Students who participated had higher scores for gender equality than their counterparts who did not participate. Also, more GEMS students who participated in the classes also opposed early marriage, domestic violence, and believed girls should continue to higher education.³³ Overall, the gender equality scores of girls from schools with the campaign and curriculum increased from 28 per cent before the intervention to 57 per cent after the first year, and the scores of the boys in the same group increased from 12 to 28 per cent during the same time. Counterparts who did not participate had pre- and post- scores of 24 and 32 (girls) and 9 and 12 (boys).

2. The presence of women teachers who have appropriate gender training can improve girls' enrolment and achievement in schools, especially in more traditional contexts.³⁴ A multi-level analysis that linked household- and district-level data of primary school enrolment in 30 developing countries found that girls' enrolment (but not boys') was positively associated with the percentage of female teachers in the district.³⁵ Other studies have also demonstrated a relationship between teacher gender and student achievement. ³⁶ However, as noted in Question 3 below, ongoing education in gender awareness is important for female and male teachers alike, since female teachers may demonstrate biases against girls.³⁷ Policies and plans to expand the number of women teachers in the teaching force must also take into account issues related to female teachers' safety, especially those posted to rural areas.

Where there are few or no trained female teachers, the presence of trained 'guardian teachers' or classroom assistants whose responsibilities include advising and protecting girls and serving as advocates when abuse is reported to them, also positively impact the reduction of gender-based violence. Classroom assistants who worked in pairs in refugee schools in Sierra Leone and Guinea carried out specific tasks such as monitoring attendance, maintaining a log book with grades, and supporting additional skill-based learning. They also protected girls from sexual exploitation by being another adult observer and an explicit advocate for girls. Assistants provided advice to girls and supported the transformation of classrooms into 'girl-friendly spaces,' with learning environments that fostered girls' active participation. Despite the successes in reducing gender-based violence, assistants were not able to challenge inequitable classroom and social structures. Thus, while including these personnel in the classroom is one practical response to discrimination and gender-based violence, it is not likely to result in deeper structural change.

³³ ibid

³⁴ Ghana Education Service, *What Works in Girls' Education in Ghana: A critical review of the Ghanaian and international literature*, Prepared by Camfed Ghana with support from DfiD, January 2012.

³⁶ Plan UK, Girls' learning: Investigating the classroom practices that promote girls' learning, Plan UK, 2013.

³⁷ Center for Universal Education at Brookings, op. cit.

³⁸ Kirk, Jackie, and Rebecca Winthrop. 'Female Classroom Assistants: Agents of change in refugee classrooms in West Africa?' In *The structure and agency of women's education*, edited by M. A. Maslak, SUNY Press, 2008.

As an addition to a large-scale, school-based HIV/AIDS education programme, 20 urban and 20 rural primary schools in the Mwanza region of Tanzania began a guardian programme, wherein at least one female teacher from each school was trained during a one-day workshop to advise and protect girls from sexual exploitation.³⁹ An important component to the programme was that guardians were supported by regional committees. The study compared the self-reported experiences of sexual exploitation of the girls in the guardian schools with those in schools without guardians (a control group of 22 other schools). Results of qualitative, semi-structured interviews of girl students and the guardians themselves indicate that the programme was effective. Girls felt they had someone to go to for advice or protection (61 per cent said they had met with their guardian at least once); communities began to confront sexual abuse more openly, resulting in both protection for the girls and persecution of perpetrators; and the programme's focus made it particularly difficult for male teachers to abuse their female pupils.

3. New ways of approaching the problem of GBV against girls means emphasizing not only the acts of violence (e.g., bullying, sexual harassment, rape) but also helping girls build skills to identify, name, and at times, confront the social conditions and gendered relations behind these acts. 40 Some effective ways of enabling girls to deal with the complexity of GBV include school-based clubs for girls. The clubs are effective mechanisms to increase girls' safety in schools. They also create ways to monitor and report GBV, to build girls' self-confidence, to increase their agency in speaking out, and to foster better relationships. 41

Other related activities also offer new spaces for girls to increase their self-confidence and learn new information and behaviour. For example, girls in Bangladesh learned about sexual and reproductive health through sport and leadership activities. ⁴² Similarly, girls in Malawi reported that they felt they had learned to talk to boys. The boys treated them with respect and had learned about chatting, in contrast to the primarily sexualized conversations and relationships they had experienced previously. ⁴³ In some contexts, the community has also played an important role in contributing to creating safe and supportive learning environments in school. For example, in Malawi, the village chief was involved in ensuring the safety of girls in school within the community. ⁴⁴

Using art and other media with adolescents to explore alternatives to GBV has not been studied widely, but positive effects are also promising. Arts-based participatory approaches have used drawings, photo, voice, collaborative video, video screenings and

³⁹ Mgalla, Zaida, Dick Schapink and Jties T. Boerma, 'Protecting school girls against sexual exploitation: A guardian programme in Mwanza, Tanzania,' *Reproductive Health Matters*, vol. 6, no. 12, 1998, pp. 19-30.

⁴⁰ Leach (2012) op cit.

⁴¹ ibid

⁴² CARE USA, CARE Bangladesh Girls' Education and Leadership Evaluation – Innovation through Sport: Promoting leaders, empowering youth, CARE USA, December 2011.

⁴³ CARE USA, The Power to Lead Alliance (PTLA): Empowering Girls to Learn and Lead – Final Evaluation Report, CARE USA, 2011

⁴⁴ Kaunda, Zikani, *Including Critical Voices: A preliminary analysis of girls' participation in defining capabilities in select education initiatives in Malawi,* Presented at the Council for International Exchange for Scholars annual meeting, Quebec, May 6, 2011.

drama with follow-up discussions to address gender violence in mixed race and class groups.⁴⁵

Teachers who understand gender can challenge gender discrimination and gender violence so that schools are safer places for girls. Teachers who understand gender discrimination and the violence that girls face can help girls challenge and overcome it – at home as well as in school. Before that happens, however, teacher education has to help teachers understand the gendered environment in which they work and live so they can do something about it.

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⁴⁵ Mitchell, Claudia, Shannon Walsh and Relebohile Moletsane, 'Speaking for Ourselves: A case for visual arts-based and other participatory methodologies in working with young people to address sexual violence,' In *Combating gender violence in and around schools*, by Fiona Leach and Claudia Mitchell, Trentham Books, 2006.

Question 3. To what extent can a gendered approach to teacher education make a difference to the educational experience of girls, including their learning experiences?

A gendered approach to teacher preparation can make a significant difference in girls' learning. Gender-informed teachers provide a stronger, safer environment in which girls can learn.

- 1. Training in-service and prospective teachers on gender, human rights, and GBV is central to positively influencing the teachers' own understanding and attitudes about gender.
- 2. A gendered approach to teacher education must also include classroom experience in using gender equitable teaching strategies.
- 3. A national policy with resources and structures for ongoing professional development for gender-equitable teaching and learning is required to make a difference over time. One or two gender trainings are not enough.

A gender hierarchy exists in many schools, just as it exists in society. Teachers have a critical role to play in confronting this hierarchy, but first they need to understand that it exists and that they have a right and a responsibility to change it. Whether they teach in single-sex or co-educational schools, teachers need to systematically learn about the power relations that maintain this hierarchy, what they do as teachers – both unwittingly or willfully – to maintain it, what they can do to challenge and change it, and how they can empower their students to do the same. This is at the heart of a gendered approach to teacher education.

In addition, it is critical to understand the teacher as a learner as well as an agent for change in the classroom, and potentially beyond. This understanding is necessary in teacher education and in ongoing teacher professional development throughout a teacher's career. It also builds on the principle of being a lifelong learner.⁴⁶

1. Teacher education courses for future teachers as well as courses on human rights and gender for practicing teachers are an important first step in positively influencing gender attitudes. A one-term, pre-service teacher education course on gender equity taught in Turkey had a significant impact on the gender attitudes and awareness of female teachers.⁴⁷ Of the 133 female study participants, the 33 who participated in the course experienced a significant increase (i.e., 13.12 points) on the Attitudes Toward Gender Roles Scale, when comparing the mean test scores before and after the course.⁴⁸ The course included topics such as gender socialization, selection of teaching materials, and the school environment.

Human rights education for practicing teachers in 18 states across India has also shown a profound influence on teachers' own personal attitudes and professional practices in

⁴⁶ Yang, Jin, and Raúl Valdés-Cotera (Eds.), *Conceptual Evolution and Policy Developments in Lifelong Learning*, United Nations Educational, Scientific and Cultural Organization Institute for Lifelong Learning, 2011.

⁴⁷ Tantekin Erden, Feyza, 'A Course on Gender Equity in Education: Does it affect gender role attitudes of pre-service teachers?' *Teaching and Teacher Education*, vol. 25, no. 3, 2009, pp. 409-414.

⁴⁸ Tantekin Erden, Feyza, 'The Attitudes of Early Childhood Teachers Toward Gender Roles and Toward Discipline, *Dissertation Abstracts International*, vol. 63, no. 2, 2002, p. 493.

schools. After participating in the human rights course, teachers took action on abuse in their own lives and their students' lives, changed their teaching practices to eliminate corporal punishment, and interacted more with students and colleagues of different backgrounds, especially those from different ethnicities and social status. Since teachers were respected in the community, they were also able to bring about wider positive changes.⁴⁹

While there is evidence that such courses have a positive impact on teacher practices, the content and pedagogy of the courses that produce these results also matters, and research is needed to determine the most effective gender content in different contexts. As noted under Question 2 above, courses for teachers that address GBV in schools are also critical to improving the learning environment for girls.

2. A gendered approach to teacher education must include classroom experience using gender-equitable teaching strategies. Learning about gender, gender bias and discrimination, and changing attitudes toward girls (and boys) is a necessary first step, since much of the literature on gendered dimensions of teaching and learning documents the ways in which teachers' gendered beliefs and practices lead to different treatment of and outcomes for girls and boys. For example, a study from Tanzania determined that teachers assigned primary school students to do different kinds of work based on the teachers' own views of what constitutes gender-appropriate tasks for girls and boys. In a recent study from Benin, the majority of teachers surveyed believed science was less important for girls than boys. They classified subject matter knowledge according to gendered divisions in society, and science was for boys. Teachers' beliefs about the importance of science for girls' future lives and their attitudes toward girls' academic abilities influenced how they taught. In the survey of the science of the science of the survey of the science was for boys. Teachers' beliefs about the importance of science for girls' future lives and their attitudes toward girls' academic abilities influenced how they taught.

When teachers perceive girls to be less capable in particular subjects, they also appear less likely to use gender-responsive pedagogies. This is a potential barrier to teaching in ways that promote gender equality and needs to be addressed in teacher education programmes.

Future and practicing teachers who have not learned how to make their classrooms gender-equitable can talk about equal rights for girls and boys but may continue to discriminate against girls in the classroom. This discrimination can affect girls' self-confidence, participation and learning.⁵² Whether intended or not, teachers who have not learned to use gender-equitable pedagogy will call on boys more often, ask them more challenging questions, and appoint mostly boys to be small group leaders.

⁴⁹ Bajaj, Monisha, 'Teaching to transform, transforming to teach: Exploring the role of teachers in human rights education in India,' *Educational Research*, vol. 53, no. 2, 2011, pp. 207-221.

⁵⁰ O-saki, Kalafunja M., and Augustine O. Agu, 'A study of classroom interaction in primary schools in the United Republic of Tanzania,' *Prospects*, vol. 32, no. 1, 2002, pp. 103-116.

⁵¹ Anderson, Sonya, 'The Pedagogy of Difference: Understanding teachers' beliefs and practice of gender equity in Benin', in *Gender, Equality and Education from International and Comparative Perspectives (International Perspectives on Education and Society, Volume 10)*, edited by David Baker and Alexander Wiseman, Emerald Group Publishing Limited, 2009, pp. 39-88. ⁵² DeJaeghere and Pellowski Wiger, op. cit.

Few, if any, current teacher education models seem to explicitly integrate gendered approaches to teaching into classes on content and pedagogy. This seems to be the case from the first term of teacher education, to classroom observations, and up through teaching experiences while still a teacher education student.⁵³ An integrated model would require teacher educators to instill in future teachers the habit of learning about, reflecting, and acting on gender equity in the classroom – a habit that would then become an integral element of teaching practice in schools.

3. Structured, ongoing teacher professional development in the areas of gender-equitable teaching and learning as well as gender-equitable school environments make a sustained difference in girls' learning. Teacher professional development includes peer observation, mentoring by expert teachers, and opportunities for dialogue and professional reflection. Reflection on girls' participation, learning needs, content, gender-equitable interactions, and creating safe environments can take place through professional learning communities, lesson study, or action research. One or two trainings or short-term projects are not enough.

The USAID-funded 'Quality Improvement in Primary Schools (QUIPS)' project in Ghana was an attempt to build a professional learning community, improve the quality of teaching and increase girls' enrolment. After two years of interventions, girls' enrolment increased, as did the children's English and mathematics scores. ⁵⁴ Both total enrolments and the percentage of girls enrolled were higher for QUIPS project schools than for control schools. ⁵⁵ The changes in teachers' classroom practice regarding girls' participation, however, lasted only as long as the head teacher, other teachers and mentors continued to give their support. ⁵⁶ As noted under Question 1, the role of the school head in creating and sustaining change in the school environment is critical in improving girls' education.

In a UNICEF-funded Teacher Action Research project in Ghana in 2000, a group of teachers conducted a gender analysis of their school curriculum and identified four areas to address and improve girls' self-esteem in their classrooms: gendered division of labour in the classroom, small group work, gender-biased curricula and sexual harassment. In their action research, teachers changed the school curriculum by creating stories and having students do role-play exercises. They disallowed sexual harassment in cooperative group learning, which reportedly increased girls' self-esteem and confidence and improved boys' and girls' attitudes toward working together. Teachers also encountered resistance, which they interpreted as fear on the boys' part of losing control or power, and both girls' and boys' discomfort with changing tradition. While more rigorous documentation on this project was not available and the project was not scaled up, it demonstrates the intersection of teacher professional development and the transformative dimensions of teaching and learning in the classroom. Through action research, careful documentation

⁵³ Our literature review uncovered no models of teacher education such as this.

⁵⁴ Achievement data in the study were not disaggregated by sex.

⁵⁵ ANOVA results showed statistical significance, p< 0.05.

⁵⁶ Ghana Education Service, What Works in Girls' Education in Ghana: A critical review of the Ghanaian and international literature, Prepared by Camfed Ghana with support from DfiD, January 2012.

and critical reflection, teachers were key players in transforming gender relations through teaching and learning in their classrooms.⁵⁷

It stands to reason that well-prepared teachers with solid pedagogical content knowledge who use strong curricula and good, gender-responsive practices will be able to help girls achieve their academic and life goals. From the case studies of schools whose mission is to empower disadvantaged girls, as documented in Bajaj (2009), Shah (2009) and Murphy-Graham (2008), one can see that teacher education and support through professional development can have an enormous influence on the educational experience of girls. Teachers who understand the gender discrimination girls face can help girls challenge and address it at home as well as in school. These are important findings, but more studies of a similarly robust nature are needed, as well as larger studies that use mixed-method, quasi-experimental designs. Studies that examine the content of the courses that seem to work in the different contexts are also needed.

⁵⁷ MacKinnon, Paula, *Improving Girls' Self-Esteem: The role of the teacher – an action research project (pilot study)*, UNICEF, Accra, Ghana, 2000.

Question 4. What are examples of curriculum and assessment reforms that have supported teachers in improving and supporting equitable learning outcomes for girls?

The literature search for this paper produced some examples of curriculum and assessment reforms from the global South that support teachers in improving and supporting equitable learning outcomes for girls.

- 1. Curricula for alternative basic and lower secondary education, developed with a focus on girls, helps teachers support equitable learning outcomes for girls.
- 2. Gender-responsive curricula can support teachers in gender-responsive teaching.
- 3. Curricula that are appropriate to girls' (and boys') learning levels combined with attention to formative (continuous) assessment in the classroom support teachers in improving equitable learning outcomes for girls.
- 4. International assessments may be useful in a limited way for national policy dialogues on learning outcomes and, when they specify a focus on gender equality, they will be even more valuable for girls.
- Complementary or alternative learning programmes that take into account why girls are
 not in school and that address their particular learning needs have made it possible for
 more girls to attend school, especially older girls from vulnerable populations and
 disadvantaged groups. The curricula for these programmes either compresses or
 restructures the content so that facilitators and/or teachers can offer the lessons in an
 alternative format.

To address the lack of access to education in Uganda in 1994-1995, UNICEF, in partnership with the Government of Uganda, developed the Complementary Opportunities for Primary Education (COPE) programme. ⁵⁸ The programme produced a three-year curriculum for primary Grades 1 to 5. COPE gave enrolment priority to girls and to physically disabled children who were least able to travel and most likely to be left out of conventional schools. ⁵⁹ The materials included instructors' manuals and student textbooks, and COPE curriculum writers attended gender-training workshops to learn how to design gender-equitable learning outcomes in basic education for girls. ⁶⁰ The Government of Uganda formally recognized the COPE non-formal education curriculum, thereby creating, "a policy environment conducive to cooperation between COPE and nearby formal schools and teachers' colleges." ⁶¹ However, while the schools helped to close the gender gap in enrolment, a 2002 evaluation determined that little interactive teaching and learning was occurring, as had been planned.

⁵⁸ United Nations Children's Fund, *Child-Friendly Schools Case Study: Uganda*, UNICEF, New York, January 2010.

⁵⁹ ibid

⁶⁰ Jones, Shelley Kathleen, 'Girls' secondary education in Uganda: Assessing policy within the women's empowerment framework,' *Gender and Education*, vol. 23, no. 4, 2011, pp. 385-413.

⁶¹ UNICEF, op. cit.

In Honduras, the *Educatodos* programme is a well-studied, alternative non-formal education programme that supports equitable learning outcomes for girls in academic subjects and human rights awareness, and aims to build girls' self-confidence. It is a cost-efficient and effective integrated education programme that uses audio tapes, community projects, multi-grade and multi-level classrooms, and flexible scheduling based on community needs.⁶² This allows participants to complete three levels in 1.5 years.⁶³ The Secretariat of Education supports *Educatodos* by giving official certificates and allowing matriculation into the next grade level at any basic education centre or secondary education institution.⁶⁴ Both female and male *Educatodos* participants increased their knowledge of rights and distanced themselves from traditional socio-cultural gender roles to develop into more effective change agents.⁶⁵

The SAT programme described in Question 1 above is an example of an inquiry-based, pedagogical approach offered in an alternative secondary school setting for Garifuna girls in Honduras. The SAT teacher-facilitators use the 70 books prepared by SAT founders to teach girls to ask questions and to challenge disempowering gender stereotypes. The Ministry of Education supports the process and upon completion of the curriculum the girls receive an equivalent secondary school diploma. An in-depth evaluation of this programme revealed that SAT graduates involved displayed greater ability to identify problems and conceive solutions, and displayed more gender awareness, self-confidence and knowledge.

2. There are few robust studies of national curriculum reforms in formal education from a gender perspective. Studies are needed that describe and analyze gender-responsive reforms of syllabi and/or textbooks that support teachers in improving and supporting equitable learning outcomes for girls. Most studies "show how curricula are gender-insensitive rather than whether attempts to 'engender' them work." For example, an analysis of 40 textbooks used in government schools in Tanzania in 2004 concluded that female and male figures were shown according to traditional representations of femininity and masculinity, in accordance with the official curriculum. 88

Reviews of gender-insensitive curriculum have resulted in some changes that provide teachers with more gender-equitable curriculum, such as including gender in the syllabus and greater gender equity in the textbooks. For example, Tanzania's national syllabi for secondary schools, which was disseminated in 2010, now contains topics related to

⁶² Improving Educational Quality - American Institutes for Research, Evaluation to Support Learning: The evaluation process of the 7^{th} – 9^{th} grade (third cycle) of Educatodos, IEQ, 2002.

⁶³ Schuh Moore, Audrey, Joseph DeStefano and John Gillies, 'Creating an Opportunity to Learn through Complementary Models of Education', *Journal of Education for International Development*, vol. 3, no. 3, 2008.

⁶⁴ Marshall, Jeffrey, et al., 'Quality and efficiency in a complementary middle school program: The Educatodos experience in Honduras,' *Comparative Education Review*, vol. 52, no. 2, 2008, p.149.

⁶⁵ Improving Educational Quality - American Institutes for Research, *El impacto de Educatodos en la vida de las mujeres: Una lectura cualitativa desde la perspectiva de género*, IEQ, 2002.

⁶⁶ Murphy-Graham, op. cit.

⁶⁷ Ghana Education Service, op.cit.

⁶⁸ Mkuchu, Sydney Gamaliel Valentino, *Gender roles in textbooks as a function of hidden curriculum in Tanzania primary schools*, PhD dissertation, University of South Africa, 2004.

gender.⁶⁹ The "O" level civics syllabus devotes nearly 25 per cent of the Form 2 lessons to gender; Form 4 includes gender during the study of culture; and the 2010 civics examination included the term "gender inequality" among the test items.⁷⁰

Malawi's Gender Appropriate Curriculum (GAC) unit was established in 1992 to make primary and secondary textbooks more gender-sensitive and to portray girls and women in more positive roles. The unit has provided training for school textbook writers and editors, as well as teachers, to make their work gender-sensitive.⁷¹ To date, however, the impact of the work on teaching and/or learning outcomes has not been studied.

Tools to conduct gender analysis of curricula are available and can be used to examine gender bias in formal and non-formal curricula, and to revise curricula according to more gender-equitable content. ⁷² While efforts at gender-equitable curriculum review and revision continue to be important at the national level, introducing these tools to teachers through pre-service teacher education and teacher professional development is even more urgent. With tools and information on how to analyze the existing curriculum, all teachers who are preparing lessons and delivering the curriculum on a daily basis will have the skills to conduct a gender analysis of their own lesson units and lesson plans. This was the way that the junior secondary school teachers performing action research in Ghana learned to conduct a curriculum analysis. ⁷³ Teachers equipped with these tools and knowledge, like the action research teachers in Ghana, will also be able to teach girls and boys in their classes how to analyze textbooks, lesson content and teaching and learning interactions, thus developing a life skill to build toward gender equality.

Other NGO-developed curricula, such as the group education activities in India's GEM project provide an add-on curriculum for teachers to use in schools. The activities focus on gender roles, violence and sexual and reproductive health for Standard 6 and 7 girls and boys. This curriculum, combined with an advocacy campaign, improved gender equality scores and changed girls' attitudes about their futures. Since the course was taught by outside NGO trainers, the curriculum – as described in the study – only supported classroom teachers indirectly. However, the teachers did request future training in the approach.

Other examples of curriculum reforms with documented results have also been described earlier in this paper, with reference to the first research question. The common feature is that in each of the cases, the curricula are part of a unified, comprehensive, whole school approach to empowering girls through education. In each case, the curriculum has a learner-centred inquiry focus. In addition, teachers are supported to develop both content

⁶⁹ Thomas, Matthew A. M., and Allen Rugambwa, 'Equity, Power, and Capabilities: Constructions of gender in a Tanzanian secondary school', *Feminist Formations*, vol. 23, no. 3, Fall 2011, pp. 153-175.

⁷⁰ Thomas, Matthew A. M., and Allen Rugambwa, 'Gendered Aspects of Classroom Practice', In *Teaching in Tension: International Pedagogies, National Policies, and Teachers' Practices in Tanzania*, edited by Frances Vavrus and Lesley Bartlett, Sense Publishers, 2013, pp. 133-148.

⁷¹ Center for Universal Education at Brookings, op. cit.

⁷² Leach, Fiona, *Practising Gender Analysis in Education*, Oxfam Publishing, Oxford, 2003.

⁷³ MacKinnon, op. cit.

⁷⁴ International Center for Research on Women, *Building Support for Gender Equality among Young Adolescents in School: Findings from Mumbai, India,* ICRW, 2012.

knowledge and new pedagogical strategies to implement the curriculum and to help girls learn to question, challenge, and reconstitute gender social norms in school and beyond.

3. Gender-responsive curricula that are matched to girls' and boys' learning levels, where teachers use gender-responsive materials that supplement the curriculum, combined with attention to formative and continuous assessment in the classroom, also support teachers in improving equitable learning outcomes for girls.

Recent studies suggest that girls' and boys' learning is hampered by a formal curriculum that is two years or more ahead of children's capacity to learn it.⁷⁵ The study of 29,000 children in India, for example, showed a substantial gap between what the textbooks expected and what children could actually do in language and mathematics. Although girls' and boys' learning levels showed improvement over the course of a year, most children's performance from baseline to endline was at least two grades below the level of proficiency assumed by the textbooks and curriculum content.⁷⁶

This curriculum "gap," combined with the reality that in any class girls and boys have a wide range of learning levels, highlights the importance of teachers being able to assess student learning on a regular basis and to diagnose what students need, based on the assessment.

Continuous assessment of what students know and what they can do is important to good teaching and to learning. How teachers use the curriculum in teaching and how teachers use assessment to help improve student learning outcomes is critical. However, sometimes teachers' pedagogical content knowledge within the subject they are teaching limits their ability to provide feedback to the student based on those assessments. This points once again to the need for robust, ongoing structures for teacher professional development.

A small, continuous assessment feasibility study in Malawi's Ntcheu district demonstrated the benefit of teachers learning to integrate formative assessment into their teaching. The 57 teachers who participated in the pilot project learned to conduct individual, formative assessments of their students in the national language, English, and mathematics. They charted students' progress on colour-coded charts, which also enabled children to follow their own progress. Teachers and children reported greater satisfaction with teaching and learning and diminished use of corporal punishment in the pilot study classrooms. ⁷⁷ Although a more rigorous study of the approach over time is needed, a comparison of Standard 3 pupil scores in mathematics and English between Ntcheu pilot schools and schools in the neighbouring district showed that while pupils in both districts performed similarly at the baseline, pilot school scores were significantly higher at the end of one year of the study.

⁷⁵ Bhattacharjea, et al., op. cit.; Pritchett & Beatty, 2011

⁷⁶ Bhattacharjea, et al., op. cit.

⁷⁷ Miske, Shirley, *Proud Pioneers: Malawian teachers implement continuous assessment in primary school classrooms*, Improving Educational Quality Project, American Institutes for Research, 2003.

National assessments for literacy and mathematics are currently under revision or development in many countries. A project brief published by USAID in 2011 on reading skills as assessed by the Early Grade Reading Assessment (EGRA) highlights the importance of context in understanding the findings of these national assessments. In Ethiopia, for example, results disaggregated by school location show that girls outperformed boys in urban schools, but boys outperformed girls in rural schools. In Kenya, however, girls outperformed boys regardless of location.

4. International assessments (e.g., PIRLS, PISA, TIMSS) can, to a limited extent, leverage change within a national system and, for teachers, within an education system. For example, the data from countries where girls' mathematics or science scores are higher than boys' provide strong counter-evidence to those who are convinced that boys are naturally better than girls at mathematics or that "science is for boys." Findings from the assessments can also create a sense of urgency to improve teaching and learning in an education system where data are needed to convince certain stakeholders of the need for improvement.

International assessments can also be useful in presenting a broad picture of trends across countries, but the studies also have serious limitations for the global South. PISA, for example, does not include any countries in sub-Saharan Africa, and TIMSS does not include Brazil, China or India. None of the tests are free of concerns about comparability across contexts or about the validity of the questions themselves.⁷⁸ In addition, the international assessments do not adequately address the context in different countries, and especially in different regions within a country, where ethnicity, race, religion and gender may have important effects on teaching and learning.

Since at least 2000, desired learning outcomes for girls have been defined broadly in terms of literacy, numeracy and other life skills; human development and national development; and opportunities for lifelong learning, empowerment and positive participation in society. Figure 19 Equitable learning outcomes have usually been discussed in terms of academic subjects, but this is changing.

As the above data highlight, equitable learning outcomes related to formal schooling have been measured primarily in terms of reading, mathematics and science, but changes are currently underway as part of the development of the post-2015 development framework. Following an international, wide-ranging consultative process, the Learning Metrics Task Force (LMTF), hosted by UNESCO and the Brookings Institution, has proposed a broad definition of learning that encompasses seven domains: physical well-being; social and emotional well-being; culture and the arts; literacy and communication; learning approaches and cognition; numeracy and mathematics; and science and technology.

⁷⁸ Baum, Donald Rey, Cross-national impacts of public-private partnerships on equitable student achievement: A quasi-experimental assessment of the 2009 PISA exam, unpublished PhD diss., University of Minnesota, 2013, pp. 104-105.

⁷⁹ UNESCO Education For All goals: http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-all/efa-goals/

In the first phase of meetings, the overwhelming majority of global consultation participants, especially those from the global South, "argued for a broad definition of learning that goes beyond basic literacy and numeracy." In the second phase, the task force agreed that attempts to measure learning outcomes, "should describe average achievement levels in addition to progress over time and equity across groups (girls/boys, urban/rural and wealth levels, at a minimum)."80

Describing average achievement levels and progress over time in terms of gender parity (girls/boys) will continue to be important, since disaggregating data by sex is always the first step in examining gender equity in learning outcomes. However, the broad definition of learning that goes beyond basic literacy and numeracy to include a social and emotional domain is needed to measure gender awareness. Ender awareness refers to that basic knowledge of gender that is necessary to understanding inequalities in one's own personal circumstances (e.g., family, community, societal, global) and to living out a societal commitment to equality, as enshrined in the human rights conventions. The process essential to develop this knowledge over time suggests that the social learning outcome might even be 'gender responsiveness,' whereby one has not only learned about gender and gender inequalities (including GBV) but has also learned about the development of equitable approaches to change, both personally and collectively.

As targets are set for the sustainable development goals that will follow the Millennium Development Goals, including gender awareness and gender responsiveness in assessments of individual learning outcomes will be important, but not sufficient. It will also be critical to develop indicators and set targets to change unequal gender norms as they affect teaching and learning. This element is important to measure both as a process and as an outcome of education. For example, these measures could examine norms about learning (e.g., beliefs about who is intelligent, who is 'good in school') and about actions or behaviours (e.g., how teachers engage with girls and boys in gender-equitable learning). Studied over time, the measures would help us to understand the effect of such norms as well as changes, both within the teaching and learning context and beyond.

It has been said that we treasure what we measure. Metrics for measuring gender awareness and gender responsiveness individually, and for measuring gender equity in teaching and learning, have the potential to propel research forward on the gendered dimension of classroom teaching and learning. This would also aid interventions to transform the gender dimensions of day-to-day classroom teaching and learning at all levels, from early childhood through secondary.

⁸¹ Similarly, Lloyd (2013) proposes "gender consciousness" as a social competency for girls' empowerment (p. 8).

⁸⁰ http://www.brookings.edu/blogs/education-plus-development/posts/2013/03/08-measurement-global-tracking-winthrop

IV. Conclusions

This paper has reviewed the emerging evidence that wise investments in gender-focused teacher professional development and in a gender-equitable, whole school approach to developing safe, supportive learning environments, will directly improve learning for girls, especially girls from disadvantaged groups. The expectation and the hope is that this will contribute to more peaceful, equitable and sustainable development.

This development will include investments in gender-responsive, pre-service teacher education that includes gender and girls' rights in coursework and in the pre-service classroom teaching experience. The evidence shows that elements of this kind of pre-service education make a difference, but a model of teacher education that integrates the development of gendered approaches to teaching does not exist and is needed.

Wise investments will also include the development of policies and structures for genderresponsive models of teacher professional development, and opportunities for practicing teachers to study and reflect on the diverse needs of girls, teaching strategies and content. Regular occasions for professional development would support teachers to become experts in using proven strategies that make a difference for girls.

Finally, the evidence points to the value and necessity of a whole school approach to developing caring and gender-equitable learning environments. This is central to addressing girls' learning needs, overcoming GBV in schools, and supporting teachers in learning to teach new curricula in gender-responsive ways. The whole school approach includes supportive school leadership, gender-equitable teaching and learning materials, teachers who have the right and responsibility to work continuously to improve their gender responsiveness, and girls and boys who know and enact their right to quality education.

Suggestions for future research

While the evidence cited in the paper supports these conclusions, additional studies are necessary to strengthen collective confidence in the findings and to help chart future directions to guide planning and programming. The suggestions below align with the four research questions.

Classrooms and schools need to be safe learning environments for girls. An agenda for research and action to understand gender hierarchies in schools and the ways in which classroom teaching and learning, pedagogies and curricula can address gender discrimination and gender violence is of primary importance. Studies from international NGOs offer evidence of curricula that are effective and related strategies that are promising. The effectiveness of life skills curricula and teaching in government schools also need to be studied and strengthened. Education ministries, with support from gender units and gender ministries, need to marshal the evidence, identify ways to scale up effective anti-violence campaigns and practices, and study this work on a larger scale.

Studies of gender-responsive teacher education and teacher professional development, both small-scale qualitative studies and larger-scale experimental design mixed-methods studies, need to go hand in hand with the research on gender violence described above and the classroom-based research described below.

Studies from the global South have only begun to emerge linking teachers and teaching with students and learning from a gendered perspective. More interventions and studies are needed that examine the ways in which teachers teach or deliver gender-equitable curricula in the classroom through gender-equitable teaching and learning strategies. These strategies include the use of the child's mother tongue in instruction and the implementation of child-friendly methods, which have been proven to be effective.

Documenting and analyzing the teaching and learning that goes on in classrooms, especially seeing and measuring it through a gender lens, is a complex task. To date, this research in the global South has been in the domain of small-scale qualitative studies. These studies reveal much about the multidimensional nature of the interventions and more such studies are needed. Also needed are quasi-experimental design studies with larger databases that can provide answers to new questions.

CARE's Common Indicator Framework (Figure 1 below) has an item bank for instrument development that can be used to design larger, cross-site studies to examine the relationships between educational attainment, equality, empowerment and quality. One indicator of equality according to this framework is "teachers' gender sensitivity", which is defined as "the degree to which teachers are observed to be facilitating equal conditions for girls' and boys' learning using a standardized instrument." Designing studies that examine this indicator in relation to an indicator of quality (e.g., girl-centred processes or teaching methodologies) and empowerment (e.g., girl's agency) will advance our understanding, agenda and capacity to act in relation to the critical gendered dimensions of teaching and learning.

Annex I. CARE's Common Indicator Framework

ATTAINMENT	EQUALITY	QUALITY	EMPOWERMENT
Completion is defined as the degree to which enrollees that start a Patsy Collins Trust Fund Initiative (PCTFI) supported educational programme finish based on a set of predetermined requirements for the programme.	Communities' educational opportunity perception is defined as the degree to which community members believe girls and boys have equal opportunities to participate in and benefit from education in the programme area.	Suitable educational environment is defined as the degree to which schools and classrooms in PCTFI target areas demonstrate social and physical learning environments that are gender-sensitive, healthy, safe, protective and include adequate facilities (adapted from UNICEF).	Supportive strategic relations is defined as the degree to which formal and informal decision makers exercise their ability to make decisions in favour of girls' rights to development.
Persistence/retention is defined as the degree to which beneficiaries that are enrolled in an educational programme continue to subsequent years, periods and/or levels.	Teachers' gender sensitivity is defined as the degree to which teachers are observed to facilitate equal conditions for girls' and boys' learning using a standardized instrument.	Relevant educational content is defined as the degree to which PCTFI innovations are able to promote regular use of curriculum and learning materials that cover basic skills with pertinent, gender-sensitive and contextually appropriate subject matter (adapted from UNICEF).	Girls' agency is defined as the frequency with which girls exercise their rights and/or their rights are recognized in the law.
Achievement is defined as the degree to which direct beneficiaries demonstrate attainment and practical application of new skills as a result of a PCTFI supported programme.	Children's perception of educational equity and equality is defined as the degree to which children in the impact area believe girls and boys have equal opportunities to participate in and benefit from education in the programme area.	Girl/child-centred processes is defined as the degree to which girl/child-centred pedagogies and methodologies are evidenced in practice in the educational environment.	Structural environment for girls is defined as the degree to which girls have equitable access to basic human services.

Annex II. Teaching and Learning: An Overview

Question 1. What teaching and learning practices and policies are particularly effective in responding to the learning needs of girls, especially girls from disadvantaged groups?

- Teachers who speak the mother tongue of the girls and use proven bilingual teaching strategies are particularly effective in responding to the learning needs of girls from disadvantaged groups.
- 2. Child-friendly classroom practices have a significant impact on primary school girls' learning of literacy and mathematics.
- 3. Teachers' gender-equitable treatment of girls and positive attitudes toward them are important and effective in responding to girls' learning needs.
- 4. "Whole school support" for a gender-equitable, caring learning environment results in improved self-confidence and learning, especially for girls from disadvantaged groups.

Question 2. What teaching and learning practices can overcome gender discrimination and gender-based violence (GBV)?

- 1. National laws and policies together with school-level strategies can effectively address GBV.
- 2. Women teachers and classroom assistants who understand gender discrimination are effective role models for girls and make schools safer in both conflict and non-conflict contexts.
- 3. New ways of approaching GBV are expanding the solutions designed to deal with the problem. Promising interventions include girls' clubs, community involvement and using art and media.

Question 3. To what extent can a gendered approach to teacher education make a difference to the educational experience of girls, including their learning experiences?

- 1. Training in-service and prospective teachers on gender, human rights and GBV is central to positively influencing the teachers' own understanding and attitudes about gender.
- 2. A gendered approach to teacher education must also include classroom experience in using gender-equitable teaching strategies.
- 3. A national policy with resources and structures for ongoing professional development for gender-equitable teaching and learning is required to make a difference over time. One or two gender trainings are not enough.

Question 4. What are examples of curriculum and assessment reforms that have supported teachers in improving and supporting equitable learning outcomes for girls?

- 1. Curricula for alternative basic and lower secondary education, developed with a focus on girls, helps teachers support equitable learning outcomes for girls.
- 2. Gender-responsive curricula can support teachers in gender-responsive teaching.
- 3. Curricula that are appropriate to girls' (and boys') learning levels combined with attention to formative (continuous) assessment in the classroom support teachers in improving equitable learning outcomes for girls.
- 4. International assessments may be useful in a limited way for national policy dialogues on learning outcomes and when they specify a focus on gender equality, they will be even more valuable for girls.

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