Implementation Baseline

Report

PlayMatters Project

The PlayMatters Consortium is led by the International Rescue Committee, and includes Plan International, War Child Holland, Innovations for Poverty Action, the Behavioral Insights Team in partnership with the **LEGO Foundation.**

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Ethiopia

In partnership with

PlayMatters seeks to improve holistic learning outcomes and well-being for **800,000** refugee and host community children ages **3-12+** who live in refugee and host community contexts in **Ethiopia, Uganda and Tanzania** using **Learning through Play** methodologies.

Contents

PlayMatters

List of Figures

List of Tables

Background

A growing body of evidence suggests that play is one of the most important ways in which children gain knowledge and skills (Zosh et al., 2017). Play is extremely critical to promote learning during the early years, from birth to eight years old (Garcia et al., 2017; Shonkoff & Phillips, 2000), but it continues to be beneficial across all age groups. And despite the emphasis that traditional schools put on academic content such as learning to read and do mathematics, research shows that children also need to develop their physical, social, emotional, cognitive, and creative skills (Dore, Smith & Lillard, 2015; San, Myint, & Oo, 2021; McClelland & Tominey, 2011; Toub, et al., 2016; Win & New, 2020; Zosh et al., 2017). In this regard, the use of Learning through Play (LtP) methodologies has shown long-term societal and economic benefits stemming from improved academic, social, emotional, creative, and physical outcomes for children (Parker & Thomsen, 2019).

Conflicts are reverberating across the globe, affecting the lives of millions of children (Biset et al., 2023) and leaving the remains under stress and traumatic situations. Disaster be it human or natural deprives children of their rights and exposes them to crises with significant impacts on their health, development, and wellbeing (McGill et al., 2023). As conflict and disaster can significantly impact the socioemotional well-being of a child, with long-term negative consequences for their future and development, for children who have experienced stress, poverty, and conflict, play is arguably more important because it not only supports the development of their cognitive, social, emotional, physical and creative skills, but it also helps them counteract the negative effects of trauma. Play also allows children to problem solve, manage strong feelings, express thoughts, and feelings both verbally and non-verbally, and develop confidence in their abilities (UNESCO-IICBA, 2019). Research also show that providing conflict-affected children with opportunities to engage in playful activities with supportive adults can mitigate the effects that toxic stress can have on the mind of the developing child (Shonkoff, 2012; INEE, 2016), and support them in the process of healing from trauma and developing to their full potential. And yet, existing evidence about the impact of learning through play methodologies largely comes from stable middle- and high-income countries, as opposed to from humanitarian or resource-limited contexts.

Therefore, while the shreds of evidence suggest that educators in humanitarian settings can enhance holistic learning and mitigate the negative effect of toxic stress by scaffolding play in their classrooms, it is difficult to generalize findings from mostly middle and high-income stable settings to humanitarian contexts because the challenges educators face in refugee settings are extreme (INEE, 2019), and the realities of overcrowding, scarce materials, curricula, cultural or traditional understandings of teaching and learning, as well as gendered social and economic barriers may act as barriers to educators implementing Learning through Play approaches. For this reason, research was needed to identify whether evidence-based learning through play methodologies can be implemented as intended in conflict and crisis settings, especially in low-income countries, and whether they contribute to the development of children's holistic outcomes and well-being in cost-effective ways.

PlayMatters (2020-2026) is an education initiative implemented by a Consortium of partners led by the International Rescue Committee (IRC) and includes Plan International, War Child Holland, Innovations for Poverty Action, and the Behavioral Insights Team in partnership with the LEGO Foundation. The program reimagines childhood for over 800,000 refugee and host-community children across Ethiopia, Tanzania, and Uganda – children whose education and social development have been affected by displacement and trauma. Building on children's resilience and a growing evidence base supporting Learning through Play (LtP) methodologies, PlayMatters cultivates holistic learning for children ages 3-12+. For PlayMatters, learning through play (LtP) is an active teaching and learning method that capitalizes on a child's natural desire to engage in play. LtP is based on the premise that play is a process that improves brain structure and function and facilitates the process of learning by helping children pursue goals, ignore distractions, and build resilience.

The overall goal of the PlayMatters project is to improve the holistic skills and psychosocial well-being of refugee and host community children (ages 3-12+) in Ethiopia, Tanzania, and Uganda, with the following specific objectives (expected outcomes):
- Integrate Learning through Play (LtP) into Teaching and Learning
- Increase Community Engagement in LtP
- Strengthen LtP in Policy and Systems

PlayMatters studies LtP with a focus on interactions that result from teachers intentionally planning and delivering contextually and age-appropriate guided playful experiences with clear learning objectives. LtP experiences promote interactions with people and/or materials that allow children to question, experiment, practice, and discover, developing critical skills that they need to thrive today and, in the future, and the teachers deliberately create and maintain a positive, safe, and inclusive environment for children, allowing them to feel comfortable and joyful. Based on this definition, PlayMatters trains and supports teachers, school leaders, community leaders, and education system actors on 1) Skills & Practices for LtP, 2) Tools & Materials for LtP, and 3) Enabling Environment for LtP. PlayMatters also partners with governments and key stakeholders at all levels from local to national to support implementation and ensure that structures, systems, and policies are also enabling LtP *(See the Theory of Change in Figure 1).*

In Ethiopia, PlayMatters is planning to serve over 69,000 children, 1,725 teachers and 94 schools in the Somali region. Prior to the intervention, a baseline study was conducted to capture the incumbent practices and views of facilitators and the overall development level of children. This report presents the results of the baseline study.

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Figure 1. PlayMatters Theory of Change

PlayMatters Theory of Change

If pre-primary and primary teachers, schools/ECD centers, surrounding communities, and education systems are equipped with critical inputs to develop inclusive LtP practices,

then inclusive LtP methods promoting psychosocial well-being will be sustainably integrated into teaching and learning environments and systems,

then children's engagement in inclusive and meaningful LtP activities will increase over time,

leading to holistic learning and improved psychosocial well-being

Teacher Professional Development models and systems sustainably incorporate inclusive LtP methods that emphasize psychosocial well-being

School/Learning Center Leadership and Management structures support and incentivize inclusive LtP methods

Teaching and Learning materials that support inclusive LtP methods are available in classrooms

School environments meet minimum quality and inclusion standards, including during crises*

Educators' skills, motivations, and resources are harnessed to implement inclusive LtP activities in learning spaces

School communities are mobilized to support inclusive LtP opportunities and psychosocial well-being for children

Community structures, spaces and environments are enabled to support community members and all children to participate in LtP

Parents/Guardians are supportive of inclusive LtP methods in educational settings

School community members participate in activities, events and other targeted LtP experiences

School communities are actively engaged with and supportive of inclusive LtP opportunities and psychosocial well-being for children

Children are engaged in inclusive and meaningful LtP activities

Improved holistic learning outcomes (creative, physical, emotional, cognitive and social skills) and psychosocial well-being of children ages 3-12+

Psychosocial well-being is integrated into inclusive LtP activities, benefiting both educators and children

Education policy priorities integrate inclusive LtP methods that emphasize psychosocial well-being

Advocacy and Partnership strategies are in place to promote the expansion of inclusive LtP methods in education

Policy implementation supports inclusive LtP methods in education systems

Inclusive LtP methodologies promoting psychosocial well-being are aligned with policy and systems

*In acute crisis contexts, PlayMatters will deploy the Emergency Response Mechanism (ERM), which has its own embedded Theory of Change. A contextualized ERM Theory of Change will be developed upon ERM deployment outside of Ethiopia.

*Gender, Inclusion, Psychosocial Wellbeing and Accountability are incorporated throughout PM activities.

PlayMatters

Context of Ethiopia and the Somali Region

Ethiopia is a diverse country located in the Horn of Africa, with over 120 million people with highly diverse ethnic, cultural, and language characteristics. The country operates using a federal government with twelve regions and two city administrations. For the past three decades, Ethiopia has been experiencing internal displacement due to conflict and droughts and is the third largest host in Africa of refugees from countries like Somalia, Eritrea, and South Sudan. As of October 31, 2023, Ethiopia was sheltering approximately 953,664 registered refugees and asylum-seekers in twenty-six camps (UNHCR, 2023). Addis Ababa and other cities of the country also host refugees. In the Somali region, one of the refugee hosting regions in Ethiopia, over 259,781 refugees are living in eight refugee camps and the surrounding host communities: 46,229 in Kabribayah, Awbare and Shedder refugee camps and host communities in Jigjiga; and 213,552 in Bokolmayo, Hilaweyn, Kobe, Buramino, and Melkadida refugee camps and host communities in the Melkadida site (UNHCR, 2023). In addition to displacement caused by protracted conflict in neighbouring countries, a prolonged drought has severely affected the livelihood system in the Somali region for the last decade, one worth mentioning is the drought of the year 2022/23. The poor performance of the two consecutive rainy seasons in Somali called gu and deyr during 2021 and the long dry season called jilal of 2022 worsened already poor household assets and livestock body conditions and resulted in crop failure and depleted pasture. The drought has affected over 81 woredas (districts) in 11 zones, where more than 3.4 million people need water, food, and shelter.

Education sector in Ethiopia and the Somali Region

The education system in Ethiopia consists of 6 years of elementary schooling, 2 years of middle school (grades 7 and 8), and 4 years of secondary education (MoE, 2020). The system has achieved success in terms of access but is facing challenges with which it is staggering to ensure quality. Such deficits would exacerbate when accounted for learner diversities. For example, the delivery of refugee education in relation to the national education system has been described as "one system, two administrative bodies" (UNHCR, 2017). In refugee camps, RRS (Refugee and Returnee Service) coordinates education programming and the delivery of primary education, while delivery of the ECCD education in refugee camps is the responsibility of NGOs. However, refugee schools operate in the same way as host community schools, as they both deliver the national curriculum and have the same cycles.

In Ethiopia, 201,714 refugee children are supported with formal education. Of these children, 68,824 (34%) are reached by NGOs. The remaining 132,890 (66%) are reached by the RRS. In refugee camps, all ECE teachers and 73% of primary school teachers are unqualified incentive refugee workers. The great majority of pre-service and in-service training is delivered by implementing partners in camps, but the MoE does not recognize NGO training or qualifications. The MoE provides very limited in-service training for refugee teachers. Since 2019, RRS has recruited national

teachers mostly for upper primary and middle level (grades 5-8). Albeit these, efforts are being undertaken by different actors to fill gaps and improve learner outcomes.

Despite the overall positive trends in terms of improved access and enrolment nationally, the enrolment rate in the Somali region is low compared to other regions in Ethiopia, except Afar. According to the Education Statistics Annual Abstract (ESAA) 2022/23, the 9 percent Gross Enrolment Ratio (GER) and the 7 percent Net Enrolment Ratio (NER) for pre-primary education (ages 4-6) in Somali region are the lowest in the country (ESAA, 2023).

According to the ESAA (2023), the gross enrolment ratio for primary and middle-level education for Somali is 40.8 percent (NER of 16.5 percent) followed by the second lower which is Afar with 22.9 percent for GER and 11.9 percent for NER. These indicate that the region's education system performance is very low on quality indicators as well. Many children who attend school fail to acquire basic learning such as literacy and numeracy, and these also influence overage children who are either out of school or enrolling at an inappropriate age. Poor infrastructure, few schools against the ever-increasing enrolment, communal conflicts, weakness in school networks, the mobile nature of the community, and little motivation of teachers are the main factors affecting the quality and access of education in the region (SSIE, 2012). A study in Ethiopia by the World Bank corroborated these results, revealing that learning poverty in Ethiopia stands at an alarmingly high rate of 90 percent—that is, 90 percent of children aged 10 cannot read or understand a simple text (World Bank, 2022).

Early Grade Learning In the Somali Region

Early-grade learning is foundational for future learning and success in life. However, in the series of six-round national learning assessments the achievement in subjects of mother tongue, mathematics, English, and Environmental science for grade 4 students has not shown any improvement (NEAEA, 2020). An analysis that examined the National Learning Assessment (NLA) carried out by Frontieri (2022) highlights an overall low performance in literacy and numeracy calling for more concerted efforts to improve the situation. The early grade learning performance in Ethiopia in general is in a declining pattern with the percentage of zero scorers increasing from 32.1% in 2016 to 37.2% in 2018 to 59.5% in 2021 (EAES, 2021). The pattern in Af Somali fluctuates where zero scorers were 42.4% in 2016 (AIR READ M&E, 2016), 29.2% in 2018 (AIR READ M&E, 2018), and 35% in 2021 (EAES, 2021). The national learning assessment results also indicated that the mean percent correct of grade 4 students for mother tongue is 37.38 and mathematics 38.15 (NEAEA, 2020) both of which are below the expected target of 50%.

The percentage of students who scored zero in EGMA subtasks in Somali region was reported to be 0.8% in Number Identification, 1.7% in Addition Level 2, 4.8% in Subtraction L2, and 6.7% in Word Problem in 2014 (NEAEA, 2014), and found to be 2.33% in Number Identification, 5.88% in Addition Level 2, 7.68% in Subtraction L2, and 12.97% in Word Problem in 2018 (NEAEA, 2018). In the study by RISE Ethiopia, it is estimated that during the Covid crisis and drought

PlayMatters

crisis in 2020 and 2021, primary school children only learned 30% to 40% of the maths they would have learned if it had been a normal school year (Tiruneh et al., 2021). The data analytic report of an EGRA conducted by USAID in a subset of schools whose teachers had undergone training by the MOE also showed results that while students performed relatively well on the lower order listening comprehension subtask, about 70% obtained a zero on the more challenging reading comprehension subtask (AIR M&E, 2016).

Another study including refugee contexts also indicated that taking appropriate measures in policy, practice, and research to inform stakeholders and integrate initiatives is a timely call (Asfaw, 2023). These all justify the importance of this study and conducting a follow-up intervention program by which an improvement in teacher practice and children's learning outcomes can be attained.

The Present Study

The present study aims to conduct a baseline to help fill an evidence gap with regards to the quality and fidelity of an intervention that aims to change teachers' motivation, skills, and practices in the classroom to impact holistic learning outcomes, mental health, and well-being of children in contexts affected by conflict and crisis. Specifically, this study tried to answer the following research questions.

1. Headteachers
   • What are Head Teachers' baseline views about LtP and what support they provide for teachers?

2. Teachers
   • What professional development supports have teachers received in their schools?
   • What are teachers' baseline instructional practices and knowledge, motivation, attitudes, and behaviours towards LtP? What are their levels of wellbeing?
   • How do they vary by teachers' age, gender, teacher displacement status, level of education and teaching experience, type of school, and site?

3. Learning Environment
   • What is the baseline status of schools and classrooms' learning environment?
   • How do they vary by grade, type of school, and site?

4. Children
   • What is the baseline status of children's

literacy, numeracy, SEL, and creativity? What is the status of their mental health and wellbeing?
   • How do they vary by age, grade, gender, socio-economic status, displacement status, disability and site?

5. Associated Factors
   • What individual, teacher, classroom, and school characteristics are associated with students' literacy, numeracy, SEL, and mental health?

The evidence generated to answer these research questions will provide highly valuable information for practitioners and policymakers in Ethiopia and other conflict and crisis-affected settings about cost-efficient solutions to support primary school teachers implement student-cantered instructional practices and promote children's holistic learning outcomes in conflict and crises affected settings. In Ethiopia, the information can provide government officials with information on the cost-efficiency of LtP as a model with the potential to effectively shift school and classroom practices on the ground in ways that are aligned with existing policies to implement student-cantered learning methodologies in Ethiopian schools.

In other settings, the research can inform policymakers and practitioners interested in understanding what works to improve children's holistic learning skills, and the cost-efficiency of LtP programs in conflict-affected settings.

Methods

The PlayMatters implementation research study uses a mixed-methods sequential design with qualitative, quantitative, monitoring and costing data to answer the questions of interest. Data will be collected using a mix of quantitative data from surveys, tests and observations, and qualitative data from interviews and focus group discussions in a sequential way, where qualitative data will shed light into findings

from the quantitative component of the evaluation. Additionally, financial data from budgets and M&E data is to be collected in an ongoing way. Figure 2 shows the sequencing of the data collection process for the project. This report focuses on baseline quantitative data gathered from children, head teachers, teachers, and classroom observations.

Figure 2. On-going Monitoring and Evaluation and Costing Study

Baseline Quantitative → Midline Qual → Endline Quantitative → Endline Qual
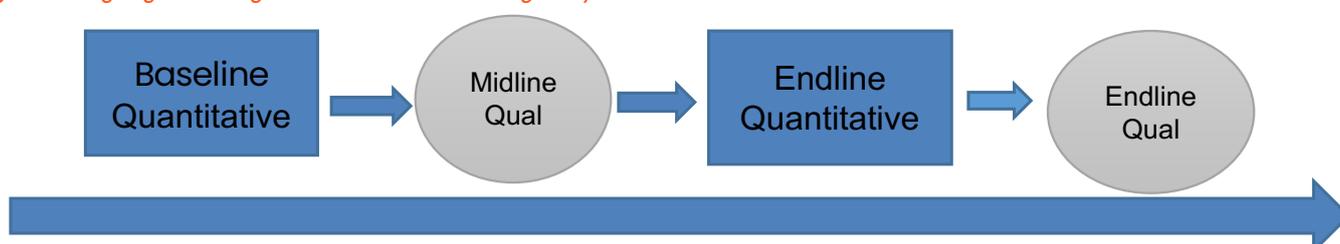
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Target Group, Sample and Sampling Procedure

The population that PlayMatters targets is children living in refugee camps and host community children in the surrounding areas in Ethiopia. The program planned to provide services to 69,000 children, 1725 teachers and 94 schools in the Somali region, over the course of 4 years (2022-2026). The baseline research study comprised of a sample of 18 schools in 8 districts of the Somali region of Ethiopia namely Kebribyah and Awbare from Jigjiga site, and Dollo Addo, Kobe, Boqolmayo, Melkadida, Buramino, and Hilaweyin from Melkadida site Camps and Host communities' which will receive the PlayMatters intervention starting from September 2023. The 18 schools will receive teaching and learning materials, face-to-face training, TLCs, coaching visits, scholastic materials, and school rehabilitation support. For the baseline study, data were planned to be collected from each head teacher of the target schools (18 in total), 10 teachers (2 teachers per grade; 1st - 5th grade) for a total of 180 teachers, and 24 children from Grade 2 to Grade 4 (8 children per grade) for a total of 432 children (144 per grade). So, the planned participants for the baseline study were a sample of 18 head teachers, 180 teachers, and 432 students in 18 schools in the Somali region of Ethiopia.

The quantitative research aspired to identify the state of teachers' motivation, skills, and practices of integrating LtP methodologies into their classroom and the holistic learning outcomes, mental health, and wellbeing of children in the context of the project sites during baseline. Table 1 shows the quantitative sample for each category of participants.

Table 1. Background Characteristic of Quantitative Sample

	Jijiga	Melakdida	Total
Primary Schools	7 schools (1 refugee school, 6 host community schools)	11 (7 refugee schools and 4 host schools)	18 (8 refugee schools, 10 host community schools)
Head Teachers	5 (4 Male & 1 Female))	11 (11 Male)	16 (15 Male & 1 Female)
Classrooms	54 (45 Host and 9 Refugee)	109 (40 Host and 69 Refugee)	163 (85 Host and 78 refugee; 54 Open/Outdoor, 26 covered with open sides, 83 covered with 4 walls)
Teachers (Teaching in grades 1st to 5th)	58	108	166
Students (2nd - 4th grades)	163	261	424

The background characteristics for teachers, head teachers, and children are further disaggregated by site, sex, community type, status of disability, with addition of grade level for student and education level for teacher participants. Table 2 shows the background characteristics of teachers.

Table 2. Background Characteristics of Teachers and Head Teachers

		Level of Education								
		Certificate		National Diploma		Bachelor's Degree		Master's Degree or Higher		
		Count	%	Count	%	Count	%	Count	%	Count
Teachers										
Host	Male	6	14.0%	26	60.5%	11	25.6%	0	0.0%	43
	Female	1	6.3%	15	93.8%	0	0.0%	0	0.0%	16
	Subtotal	7	11.9%	41	69.5%	11	18.6%	0	0.0%	59
Refugee	Male	26	30.6%	37	43.5%	21	24.7%	1	1.2%	85
	Female	5	22.7%	17	77.3%	0	0.0%	0	0.0%	22
	Subtotal	31	30.0%	54	50.5%	21	19.6%	1	0.9%	107
Head Teachers										
	Male	2	13.3%	6	40.0%	6	40.0%	1	6.7%	15
	Female	0	0.0%	1	100%	0	0.0%	0	0.0%	1
	Subtotal	2	12.5%	7	43.7%	6	37.5	1	6.3%	16

Though the planned sample included 180 teachers, the actual sample achieved included 166 teachers. Table 3 presents the background characteristics of children from Grade 2 to Grade 4 from the selected schools who participated in this study.

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Table 3. *Background Characteristics of Children*

Zone	Grade	School Type	Male Count	Male %	Female Count	Female %
				Sex of Child		
			Male		Female	
			Count	%	Count	%
Fafan (Jigjiga)	2	Host	20	44.4%	25	55.6%
		Refugee	6	60.0%	4	40.0%
		Subtotal	26	44.3%	29	52.7%
	3	Host	22	56.4%	17	43.6%
		Refugee	7	58.3%	5	41.7%
		Subtotal	29	56.9%	22	43.1%
	4	Host	28	63.6%	16	36.4%
		Refugee	5	41.7%	7	58.3%
		Subtotal	33	58.9%	23	41.1%
	Total	**Host**	70	54.7%	58	45.3%
		Refugee	18	52.9%	16	47.1%
Liben (Melkadida)	2	Host	18	62.1%	11	37.9%
		Refugee	32	55.2%	26	44.8%
		Subtotal	50	57.5%	37	42.5%
	3	Host	19	67.9%	9	32.1%
		Refugee	26	44.8%	32	55.2%
		Subtotal	45	53.3%	41	47.7%
	4	Host	20	60.6%	13	39.4%
		Refugee	28	50.0%	28	50.0%
		Subtotal	48	53.9%	41	46.1%
	Total	**Host**	57	63.3%	33	36.6%
		Refugee	86	50.0%	86	50.0%
Both Zones	2-4	**Host**	127	58.3%	91	41.7%
	2-4	**Refugee**	104	50.5%	102	49.5%
	2-4	**Total**	231	54.5%	193	45.5%

We conducted classroom observations in 163 classroom observations out of which 52.1% are host community schools and 47.9% refugee schools. The medium of instruction of both settings is Af Somali language.

Table 4. *Sample Classrooms Observed*

Site of School	No. of Schools	Host	%	Refugee	%	Total
		School Type				
Jigjiga	7	45	83.3%	9	16.7%	54
Melkadida	11	40	36.7%	69	63.3%	109
Total	18	85	52.1%	78	47.9%	163

Instruments

Several tools were used to collect data about students' outcomes, teachers' instructional competencies, and the quality of the implementation. Measures included instruments used in prior studies as well as newly adapted measures for the purposes of this study. Final measure selection was guided by four overlapping factors: (a) prior use of the tool in similar studies/settings, (b) the tool's ability to capture change in teacher/child outcomes over time, (c) alignment of the tool with targeted skill areas, and (d) how effectively the tools function during field-testing. The tools described below have already undergone a process of localization that included translation, cognitive pre-testing, and piloting as part of previous PlayMatters implementation research. Based on the findings from the analysis of the psychometric properties of the tools for the Af Somali language, tools were further refined prior to this study. The measures are classified as school-level, teacher-level, and student-level, and each is explained below.

School-level Measures

1. School background information questionnaire: Head teachers answered a questionnaire providing information about school characteristics such as school size, teacher-student average ratio, school resources (e.g. latrine availability), teacher attendance, and student attendance.

2. Head teacher questionnaires: This tool was administered to head teachers to collect data about their own background (e.g. age, gender), educational and professional trajectories (e.g. education level,

PlayMatters

certification, years of teaching experience, supervision to teacher professional development, etc). We also asked head teachers about the difficulties they face

as school leaders and their knowledge, and about their attitudes and beliefs about LtP. (See Table 5)

Table 5. Descriptive Statistics and Reliability of Head Teacher Survey

Scale	No. of Items	Mean	SD	Min	Max	Cronbach Alpha
Level of Tasks difficulty for head teachers	10	39.19	10.05	10	50	.947
Perceptions of Learning Through Play	7	28.44	8.49	7	35	.980

Teacher-level Measures

1. Teacher background information questionnaire: This tool was administered to teachers to collect data about their own background (e.g. age, gender), educational and professional trajectories (e.g. education level, certification, years of teaching experience, attendance to teacher professional development, etc). It includes a set of scales described below.

a. Applying Learning through Play Strategies Self-Report: is an 11-item self-report which teachers use to identify the degree to which they feel able and motivated to implement Learning through Play methods in their classroom, using a 4-point Likert scale (0=not at all, 3=A great deal). The scale has been used in Uganda, Ethiopia, and Tanzania during PlayMatters project implementation and showed good evidence of reliability.

b. Well-being Assessment of Skills and Supports that Enable Teachers to Succeed (Well-being ASSETS) (D'Sa et al., 2022). This instrument assesses how teachers feel and function in their jobs; it is context-specific and includes teachers' affections, attitudes, and evaluations of their work" (Falk et al., 2019; p.7). The tool has been validated in Uganda (D'Sa et al., 2022). For the present study, we included 5 subscales from this tool:

• *Peer Collaboration:* 10 items to explore the degree to which teachers are "working hand in hand" and sharing with other teachers. Bi-directional relationship of helping colleagues and being advised/supported by them, which will enable teachers to learn from each other, improving teaching practices, providing more ideas, and/or widening thinking capacity.

• *Preparation:* 10 items to explore the degree to which the teacher, before the start of class, plans and prepares the materials, content, and strategies needed for the teaching-learning process, which will enable the teacher to effectively deliver content.

• *Support from Administration:* 10 items to assess the physical, emotional, material, or economic help/motivation given to the teacher directly by members of the school administration or the structures/facilities that the administration put in place.

• *Intrinsic Motivation:* 9 items to assess teachers' affinity/love/motivation/drive for or positive attitude toward teaching, school or students, which will help the teacher feel motivated to prepare for class, be on time, or find avenues to further personal learning.

• *Sense of well-being:* 7 items to assess teachers' general sense of safety in the school and community, and the presence of strong relationships inside and outside the school.

c. Teacher stress inventory (Fimian, 1984): 20 items assessing sources of occupational stress for

teachers in the classroom, using a 5-point Likert scale from no stress (0) to extreme stress (4). The scale has been used in different contexts, with good evidence of validity and reliability (Kourmousi et al., 2015).

d. Teacher Self-Efficacy Scale (TSES): TSES is a self-report questionnaire created by Tschannen-Moran and Woolfolk Hoy (2001). The tool measures educators' beliefs in their capability to make a difference in student learning through three constructs: teacher efficacy in (a) instructional strategies, (b) classroom management and (c) student engagement. Efficacy in instructional strategies measures how well teachers utilize various teaching strategies according to learner needs and understanding level. Efficacy in classroom management has 4 items to measure how well teachers manage classroom rules and student behaviour. Efficacy in student engagement has 4 items to measure how much teachers promote student learning and engagement at school. All items are scored using a 4-point Likert scale ranging from 1 = Not at all to 4 = A great deal.

Table 6 presents a summary of relevant information for the scales included in the teacher questionnaire. We observe that all scales and subscales exhibit acceptable levels of reliability.

Classroom-level Measures

2. Teacher Classroom Observation (TCO) (Lee & Brown, 2020). This tool contains 22 items of measure to assess the quality of classroom instructional practices through direct observation of teachers. Items are scored on a four-point Likert type scale to illustrate the "degree" to which a feature is present in the classroom. The scale has been validated in Lebanon and Tanzania and used in other countries such as Pakistan and Nigeria, with good evidence of validity and reliability. The instrument includes scales that aim to measure: 1) Teacher instructional practices, 2) Classroom management and positive discipline, and 3) Student engagement. The instrument also estimates indexes for observational variables to capture 1) The quality of the learning environment, 2) Teaching and learning materials available and in use, and 3) Time on task, or number of minutes spent on learning. Table 7 presents a summary of relevant statistics for the classroom observation tool.

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Table 6. Descriptive Statistics and Reliability of Teacher Survey

Scale	No. of Items	Mean	SD	Min	Max	Cronbach Alpha
Teacher Self-efficacy	12	3.15	0.08	1	4	.858
Efficacy for Instructional Strategy	4	3.16	0.03	1	4	.714
Efficacy for Classroom management	4	3.10	0.08	1	4	.697
Efficacy for Student Engagement	4	3.19	0.09	1	4	.653
Application of LtP Strategies	11	3.00	0.09	1	4	.916
Teachers' Role and Wellbeing						
Intrinsic Motivation	9	4.02	0.44	1	5	.726
Preparation	10	3.87	0.37	1	5	.693
Support within school						
Peer Collaboration	10	4.03	0.09	1	5	.763
Support from administration	10	3.85	0.33	1	5	.763
Sense of wellbeing	7	4.26	0.57	1	5	.541
Sociability	10	3.95	0.35	1	5	.709
Teacher-pupil relationship	10	3.94	0.31	1	5	.719
Sources of Teachers' Stress	20	1.60	0.26	0	4	.945

Note. Unacceptable reliability is Cronbach's alpha below .5. Poor reliability is Cronbach's alpha between .5 and .6. Questionable reliability is Cronbach's alpha between .6 and .7. Acceptable reliability are Cronbach's alpha above .70, Good Reliability is Cronbach's alpha above .80.

Table 7. Teacher Classroom Observation Instrument Reliability Scale

Scale	No. of Items	Mean	SD	Min	Max	Cronbach Alpha
Aggregate	16	2.86	0.11	1	4	.935
Teacher Instructional Practices	8	2.83	0.07	1	4	.878
Classroom Behaviour and Positive	5	2.88	0.16	1	4	.841
Discipline	3	2.93	0.08	1	4	.809
Student Engagement	3	27.4	13.8	0	45	NA
Time on Task						
Environmental Scan						
Classroom Structure	3	NA	NA	1	1	NA
Adequacy of Learning Environment	5	4.34	1.02	0	5	NA
Materials (Visible)						
Teachers Aids	6	1.24	.50	0	6	NA
Seating Areas for Students	5	1.04	.37	0	5	NA
Hands on Materials for Students	9	.82	.68	0	9	NA

Note. Unacceptable reliability is a Cronbach's alpha below .5. Poor reliability is Cronbach's alpha between .5 and .6. Questionable reliability is associated with a Cronbach's alpha between .6 and .7. Acceptable reliability is Cronbach's alpha above .70, Good Reliability is Cronbach's alpha above .80.

Student-level Measures

A set of tools were included to evaluate children's holistic learning outcomes,

1. Student background information questionnaire: This tool aims to collect demographic and contact information from participants (age, gender, grade, displacement status, disability, and socio-economic status).

2. Early Grade Reading Assessment (EGRA): A performance-based assessment in Af Somali language, which aims to capture students' reading skills, with subscales assessing vocabulary, letter identification, oral reading fluency and reading comprehension.

3. Early Grade Reading Assessment (EGMA): A performance-based assessment in Af Somali language designed to orally assess foundational numeracy skills, including number identification, addition combined, subtraction combined, and word problems.

4. Battery of Social Emotional Learning (SEL) tools:
   • Empathy (ICFES, 2013): 10 vignettes ask children to imagine seeing others experiencing difficult situations (e.g. a classmate gets punished unfairly) and identify how they would feel about it: I would think it is funny (1), I wouldn't care (2), I would feel bad (3). Scores range from 0 to 100% and are a percent estimate of the times the participant chose an empathetic response.

   • **Emotional Attribution Accuracy (ACES) (Schultz & Izard, 1998):** measures children' ability to accurately recognize the emotions of other people. The tool contains 10 items where participants are asked to identify the emotions (e.g. Happy, sad, angry, scared, No feeling) that a character would experience in different situations. Scores range from 1 to 100 and reflect percent correct with higher scores representing higher ability to identify how others would feel in a given situation.

   • **Socio-Emotional Response and Information Scenarios (SERAIS) (Kim & Tubbs, 2019):** Four scenarios adapted from children's Stories (Dodge et al., 2015) that ask children to imagine that a peer does something negative to them (e.g. spill water in their drawing) but without providing any information on why he/she acted in that way.

   - **Hostile attribution bias:** Scores are estimated based on whether children think the actions

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had a hostile intent (1) or occurred by accident (0). Scores range from 0 to 1, and represent a percent estimate of the times the participant attributed hostile intent to an ambiguous scenario, with higher scores indicating higher levels of hostile attribution bias. The reliability for this measure was unacceptable and therefore, not included in the analysis.

- Anger and sadness regulation scores are estimated by asking children to identify the emotions they would feel (e.g. calm, surprise, anger, sad) and with what intensity using a 4-point Likert scale (e.g. not sad at all=0, a little sad/angry=1; sad/angry=2; very sad/angry=3, extremely sad/angry=4). The final score represents an average of participants' answers across 5 scenarios. Scores below 1 can be interpreted as low levels of sadness/anger intensity, and scores above 3 can be interpreted as high levels of sadness/anger intensity.

• **Conflict resolution:** Three separate scores are estimated based on how children would respond to these negative situations across 5 scenarios: Aggression score (relational, verbal or physical), disengagement and prosocial problem-solving.

• **Choices** (Diazgranados & Selman, 2016): Four scenarios ask children to indicate their level of agreement/disagreement with how different witnesses' respond to situations of bullying they observe at school or the neighbourhood.

- Attitudes towards bullying: Children are asked to indicate their level of agreement/disagreement with how they witnesses respond to situations of bullying they observe at school: 1) Upstand against perpetrators: Level of agreement/disagreement with witnesses who express disapproval to perpetrators or befriend the victim, 2) Upstand-authority: Level of agreement with witnesses who tell teaches or parents, 3) Disengagement: Level of agreement with responses in which witnesses walk away or do nothing about the bullying, 4) Join perpetrators: Level of agreement with responses in which witnesses also start excluding, offending or assaulting a victim,

- Victimization: Children are asked to indicate how often in the last two weeks they have experienced similar situations in their schools, where they have been excluded, offended or physically assaulted by others in their school.

5) Creativity tool: The creativity tool includes two activities that measure creativity through fluency, originality, technical aesthetic/curiosity, and overall creativity. The first task is a verbal task in which children are invited to ask questions to identify a secret animal. The second task is drawing/coloring which allows children to decorate as many variations as possible of a template. The tool uses the Consensual Assessment Technique (CAT), to develop a rubric for scoring. The CAT technique involves a team of experts looking at products created by the children and rating them in relation to one another on a scale of 1 to 5 on fluency, originality, technical aesthetic/curiosity, and overall creativity. This tool is currently being piloted and is the first of its kind to be used in a conflict, crisis, and emergency setting.

6) Battery of wellbeing tools:
a) Kiddy-Kindle is a self-report questionnaire that measures health-related quality of life in children between 3 and 17 years of age (Bullinger et al., 1994). The version of this tool for this study has 24 items related to children's physical health, feelings, and relationships with family members and friends. All items are scored on a 5-point Likert Scale with 1 = never, 2 = seldom, 3 = sometimes, 4 = often, and 4 = all the time.

b) Moods and Feelings Questionnaire (Short version) (Angold et al., 1995): A survey that contains 13 statements aims to assess whether children are experiencing depression. For each statement participants indicate if this statement expresses how they feel in the past two weeks (0=not true, 1=sometimes, 2= True). Scores range from 0 to 26, where scores of 12 points or higher may indicating presence of depression

The descriptive statistics and alpha reliability coefficients for child-level instruments are provided in Table 8. We observe good reliabilities for EGRA, EGMA, KiddyKindl scales. Among the social-emotional scales we see more variability. While empathy and emotional attribution accuracy show good levels of reliability, in other subscales we see acceptable levels (close to .70). In witnesses' responses to bullying, three subscales (i.e. disengagement, reporting to authority) show unacceptable levels of reliability, and therefore, will not be included in the analysis.

Table 6. Descriptive Statistics and Reliability of Teacher Survey

Scale	No. of Items	Mean	SD	Min	Max	Cronbach Alpha
Literacy – EGRA						.735
Oral Vocabulary	15	11.59	2.62	0	15	
Letter Identification	100	84.31	19.67	0	100	.976
Oral Reading	56	45.82	13.24	0	56	.970
Reading Comprehension	5	4.25	1.29	0	5	.775
Numeracy - EGMA						
Number Identification	20	16.50	5.26	0	20	.950
Addition Combined	12	5.42	4.17	0	12	.918
Subtraction Combined	12	3.89	4.01	0	12	.920
Word Problems	3	1.77	.99	0	3	.528
Wellbeing						
KIDDY KINDLE	24	3.46	.573	1	5	.710
Moods & Feelings	13	.29	.461	0	2	.810
SEL						
Empathy	10	2.47	.152	1	3	.869
Emotional attribution accuracy	10	.66	.152	0	1	.650
Witnesses' Responses to Bullying	20	1.80	.433	0	3	.732
Victimization	4	.28	.032	1	4	.819
Emotional Regulation	15	6.93	2.86	0	15	.667
Conflict Resolution	10	.70	.202	0	10	.679

Note. Unacceptable reliability is Cronbach's alpha below .5. Poor reliability is Cronbach's alpha between .5 and .6. Questionable reliability is Cronbach's alpha between .6 and .7. Acceptable reliability are Cronbach's alpha above .70, Good Reliability is Cronbach's alpha above .80.

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Procedure

During the inception phase the research team: 1) developed a detailed plan of the research activities, 2) made any necessary adjustments to the tools, 3) obtained IRB approval from IRC's IRB, and the IRB of the College of Education and Behavioural Studies of Addis Ababa University. From October 16th to 24th 2023, 30 enumerators (14 in Jijiga and 16 in Melkadida) attended an 8-day training to learn how to administer the tools and spent one day in the field practicsing administration. From October 25th to November 2nd, 2023, 20 enumerators collected baseline data with students and teachers for up to one hour of their time, using tablets with Tangerine and CommCare, and observed classes for the duration of one lesson per observation.

This report focuses exclusively on baseline child data, head teacher survey, teacher survey, and classroom observation data collected during October 2023 from 18 schools in Jigjiga and Melkadida sites of the Somali region.

Analytic Strategy

To answer baseline research questions, we conducted descriptive statistical analysis of school-, teacher- and student-level data, such as average scores, and percentage of participants exhibiting different levels of performance for key outcomes of interest. For EGRA and EGMA, we estimate the percentage of children with zero scores, and those performing below and at/above existing Ethiopian benchmarks (i.e. the benchmark for a pass is 50% (MoE, 2023)). The data were also disaggregated for different subgroups of interest and the degree to which there were statistically significant differences estimated in key education outcomes for different subgroups of interest. Multilevel regressions models were conducted using literacy, numeracy, SEL, and mental health as outcomes, and several individual, teacher and school characteristics as predictors, while also accounting for schools and district level nesting. For the details of proposed data, instruments, and analytic strategy for each of the research questions see Annex 1.
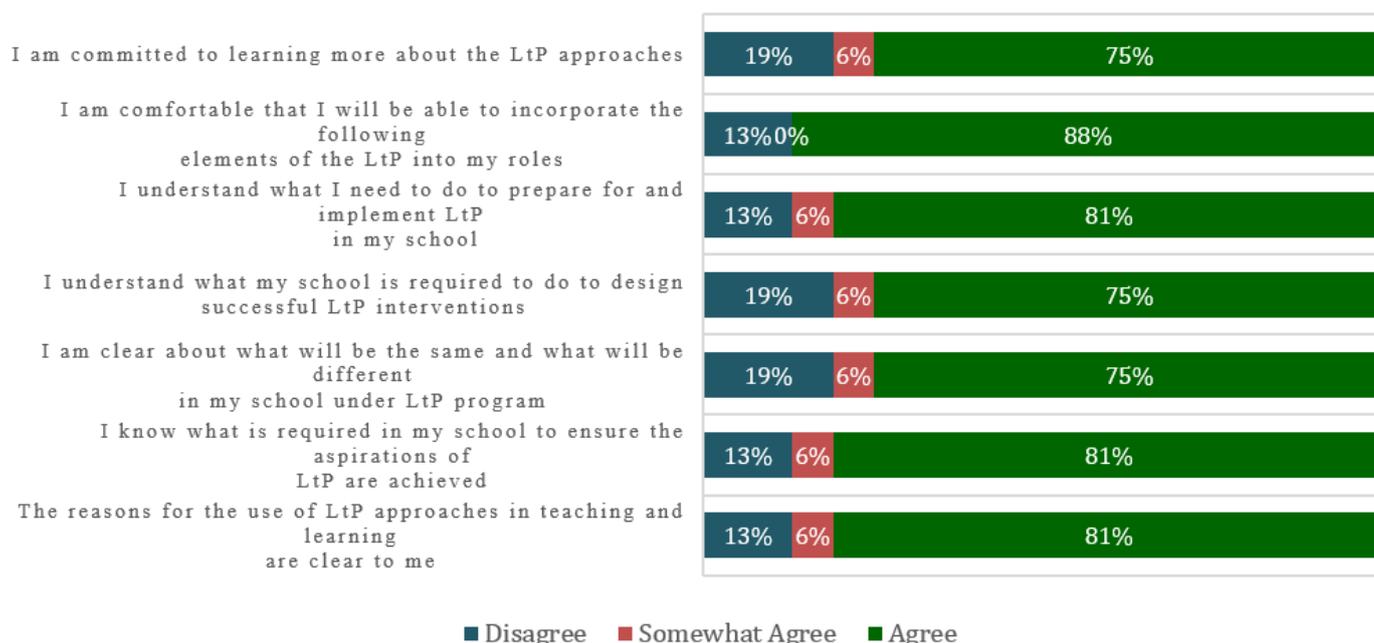
Results

Head-Teachers

Research Question

What are headteachers' baseline attitudes and beliefs about LtP and what supports do they provide for teachers to carry out their roles?

Headteachers were asked several questions to assess their attitudes and beliefs about play, their roles as headteachers, the frequency and type of supports they provide to teachers, and the difficulties they experience supporting them.

The understanding, support and commitment of headteachers towards learning through play are critical for the adequate implementation of the program and for the technical and motivational support that they will provide to teachers during the implementation of the program. Figure 3 show that a large majority of headteachers have positive attitudes towards learning through play. For example, 88% of headteacher feel comfortable with the idea of incorporating LtP in their schools, 81% understand the reasons why LtP approaches are important, and who also know what is required from them to implement LtP in a successful way. Still, there are still an important percentage of headteachers that do not express commitment (19%), do not feel comfortable (13%) and are not clear about what is required from the school to implement LtP (13%). It is expected that headteachers who currently express negative attitudes towards LtP will change their views after receiving supports and training.

Figure 3. Headteachers Attitudes about Learning through Play

Statement	Disagree	Somewhat Agree	Agree
I am committed to learning more about the LtP approaches	19%	6%	75%
I am comfortable that I will be able to incorporate the following elements of the LtP into my roles	13%	0%	88%
I understand what I need to do to prepare for and implement LtP in my school	13%	6%	81%
I understand what my school is required to do to design successful LtP interventions	19%	6%	75%
I am clear about what will be the same and what will be different in my school under LtP program	19%	6%	75%
I know what is required in my school to ensure the aspirations of LtP are achieved	13%	6%	81%
The reasons for the use of LtP approaches in teaching and learning are clear to me	13%	6%	81%

■ Disagree ■ Somewhat Agree ■ Agree

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Headteachers' beliefs about play are also critical for the adequate implementation of the program. In the present study, we examined headteachers beliefs about LtP by asking them to identify whether different statements are true or false. We find that 100% of headteachers consider that it's true that LtP play gives children opportunities to understand each other, and 93% consider that LtP can help children improve their memory, focus and academic performance. However,

56.3% of headteachers do not have inclusive attitudes towards girls, as they consider that it is more important for boys and that girls do not need to be included in the same play opportunities as boys. Similarly, a large majority of teachers do not have an inclusive attitude towards children with disabilities, as 81.3% of them consider that children with disabilities cannot benefit from the same types of play as children without disabilities (See Figure 4)

Figure 4. Headteachers' Beliefs about Play
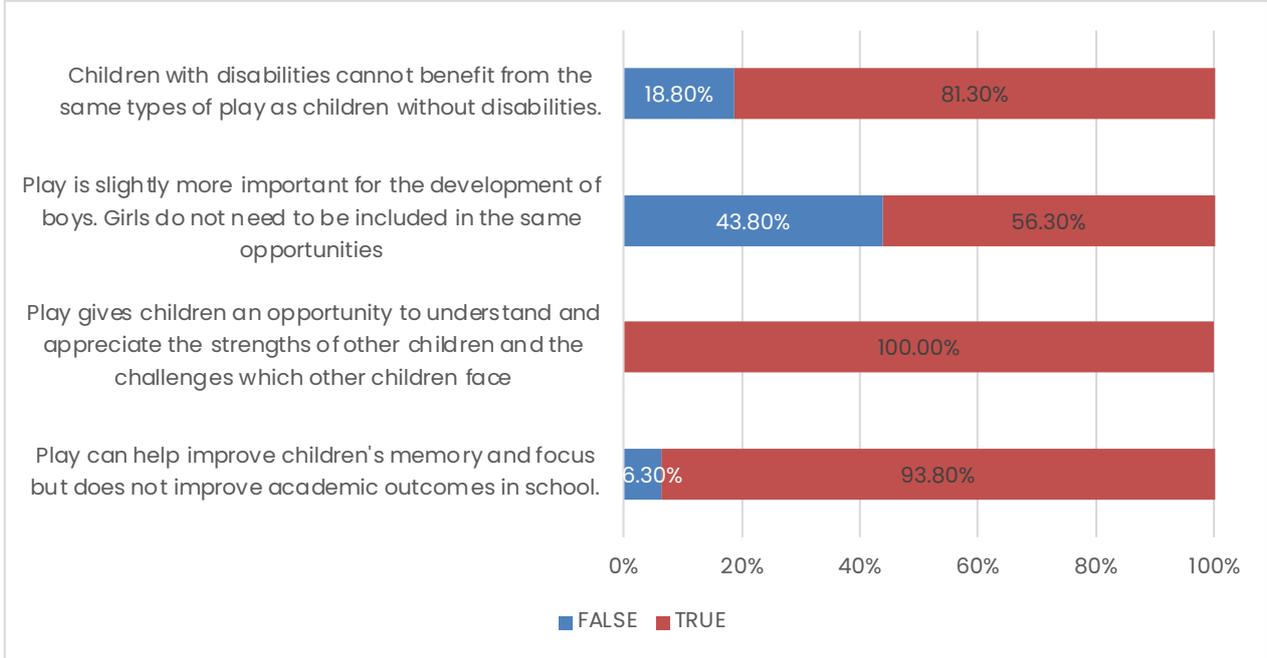
The roles headteachers play in schools are critical for the successful implementation of education programs that aim to support teachers in the process of improving the quality of their instructional practices. For this reason, headteachers were asked to indicate which school-based support practices they carry out in their school. Their responses show that most headteachers spend time providing supportive supervision to teachers (75%) followed by supporting teachers

in planning lessons (69%), supporting teachers to interpret the curriculum (63%), and observing lessons (50%). Less than 25% of headteachers spend time modelling lessons, enhancing teacher peer learning, organising seminars/workshops to address existing issues and gaps, or conferencing with teachers (See figure 5).

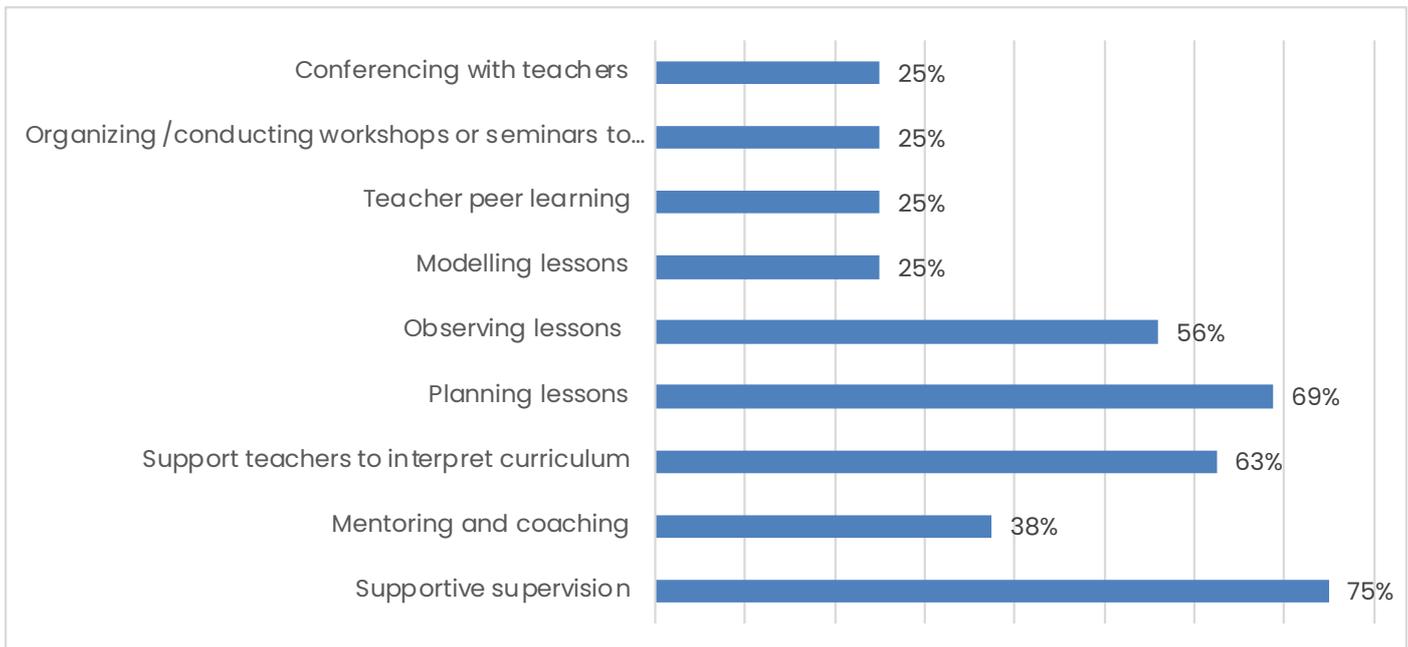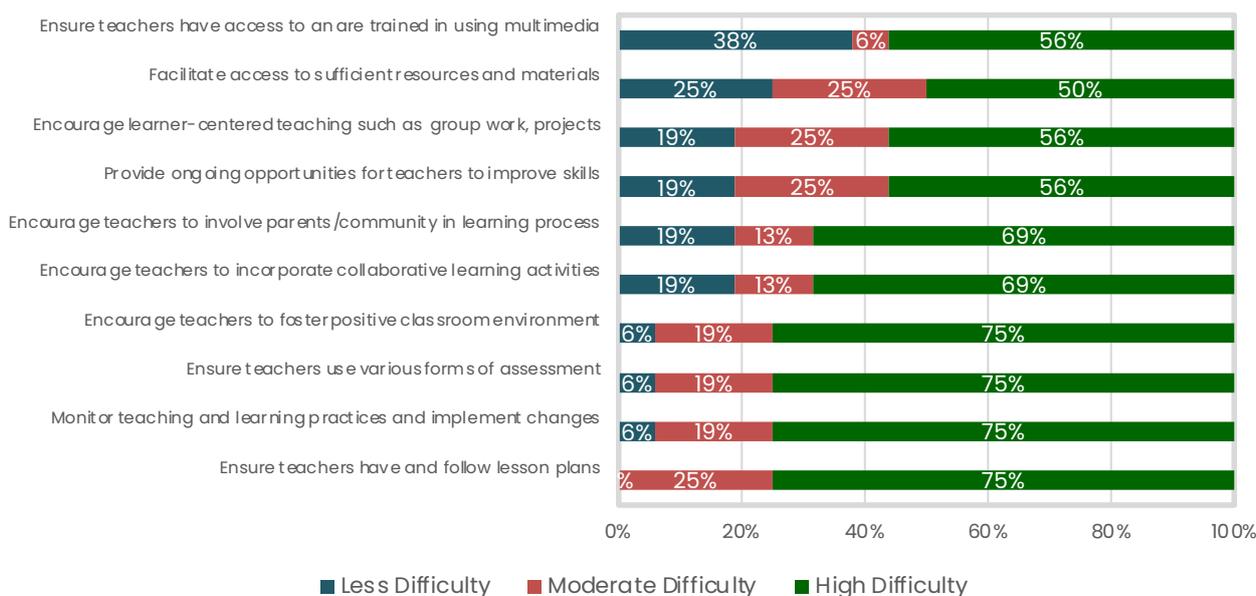*Figure 5. School-based Practices Supported by Headteachers*

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Figure 6. *Proportion of Headteachers Experiencing Different Levels of Difficulties With*

Proportion of Head-Teachers Experiencing Difficulties (n = 16)

Teachers

Research Question 2a

What professional development supports have teachers received in their schools?

Teachers were asked whether they have participated in professional development, which is key to impact improved learning outcomes. Figure 7 shows that 58.4% of teachers did not take any training as part of professional development. Among those who were involved in professional development/formal training in their current school, the common type of professional development they obtain is the support from supervisors (44.6%). Many teachers (90.4%) do not seem to be engaging with online courses for their professional development. Likewise, about 71.1% do not take in person courses.

**Figure 7.** *Involvement in Professional Development*
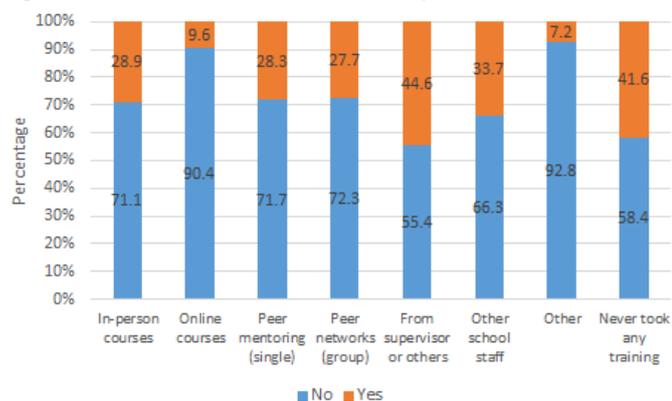
In addition, teachers were asked how they are supervised, evaluated, and provided feedback and 13.3% reported they were not formally evaluated in their school, but 86.7% of them were. Among those who reported to have been formally evaluated, 27.1% reported being evaluated by supervisors, 57.8% by head teachers, and 1.2% by coaches. With regard to frequency of evaluation, 47% of teachers reported being evaluated weekly, 15.1% monthly, 11.4% half-yearly, and 13.3% annually. With regards to mode of evaluation,

73.3% of them indicated that direct observation was used to evaluate their teaching, 27% indicated that feedback from parents was used to evaluate their work, 21.6% reported that student feedback was used to evaluate them, and 24% reported that their students' test scores/achievement was used as evaluation. 80.7% of teachers reported that the school had developed a plan to improve their performance, but 19.3% do not have development plan. Similarly, 69.9% of teachers reported that the school has appointed a mentor to help them improve their teaching, but 30.1% do not have one.

In addition, the teachers were asked about their engagement in continuous professional development activities in the two weeks prior to data collection, primarily teaching-learning circle, coaching/mentorship or other teacher training. The results show that about over half of the teachers had not engaged in continuous professional development activities in the past two weeks, with only 44% engaging in teaching learning circles, 52.4% engaging in coaching, and 47% in other types of training.

Figure 8. *Teachers' Engagement over two weeks of time interval from Data Collection Time*
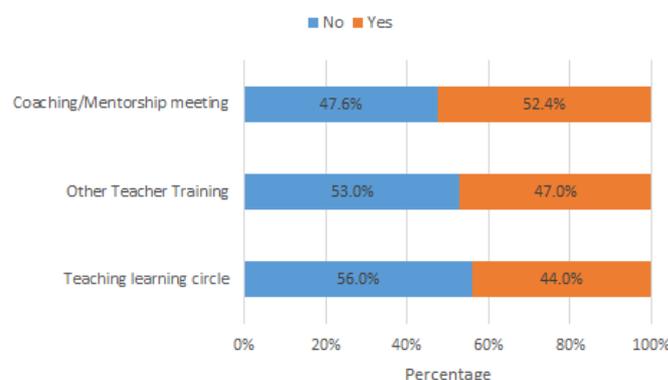
Research Question 2b

What are teachers' baseline instructional practices, attitudes and behaviours towards LtP?

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We asked teachers to report on report on their own abilities teaching, using a self-efficacy questionnaire with a four-point Likert scale ranging from "not at all" to "a great deal". Results are shown in Table 9, clustered into two categories: 1) "From not at all" – to "somewhat", representing lower levels of self-efficacy, and 2) from "quite a bit" to "a great deal", representing higher levels of self-efficacy. We observe that 88% of teachers reported high self-efficacy levels. Additionally, we asked teachers to indicate the frequency with which they apply learning through play strategies in the classroom, and 71% reported that they often implement LtP in the classroom.

Table 9. Percent of teachers and their self-efficacy on instructional strategy, classroom management, and student engagement, and extent o which they apply LtP strategies

Scale	No. of Items	From not at all to somewhat		From quite a bit to a great deal	
		Count	%	Count	%
Teacher Self-efficacy	12	20	12.0	146	88.0
Efficacy for Instructional Strategy	4	32	19.3	144	80.7
Efficacy for Classroom management	4	44	26.5	122	73.5
Efficacy for Student Engagement	4	34	20.5	132	79.5
Applying Learning through Play Strategies	11	48	28.9	118	71.1

Additional descriptive analyses with mean scores of self-efficacy measures were computed and disaggregated to determine how results related to self-efficacy of teacher data vary by teachers' age, gender, teacher displacement status, level of education, type of school and site (See Annex 2). The overall mean scores self-efficacy indicate that teachers tend to have positive self-efficacy for each of the teacher- related variables. Findings indicate that overall teacher self-efficacy and efficacy for classroom management are significantly higher for displaced teachers when compared to host community teachers. Teachers in Melkadida have significantly higher intrinsic motivation and sense of well-being as compared with their counterparts in Jigjiga. We did not find any other statistically significant differences between teachers by their gender or level of education.

Teachers were also asked questions about their motivation and wellbeing, and the conditions that enable them to perform their job well. Figure 9 shows the percentage of teachers who agree with statements that describe their wellbeing, motivation and preparation to teach, as well as statements that describe enabling conditions to perform their job, such as the support they receive from peers and the school administration. The results indicate that 94% of teachers report having a high sense of well-being. However, only 65.7% agree that they have the tools and resources to prepare their lessons and that they come to class prepared to teach, and 67.5% agree that they receive adequate support from school administration to perform their job.
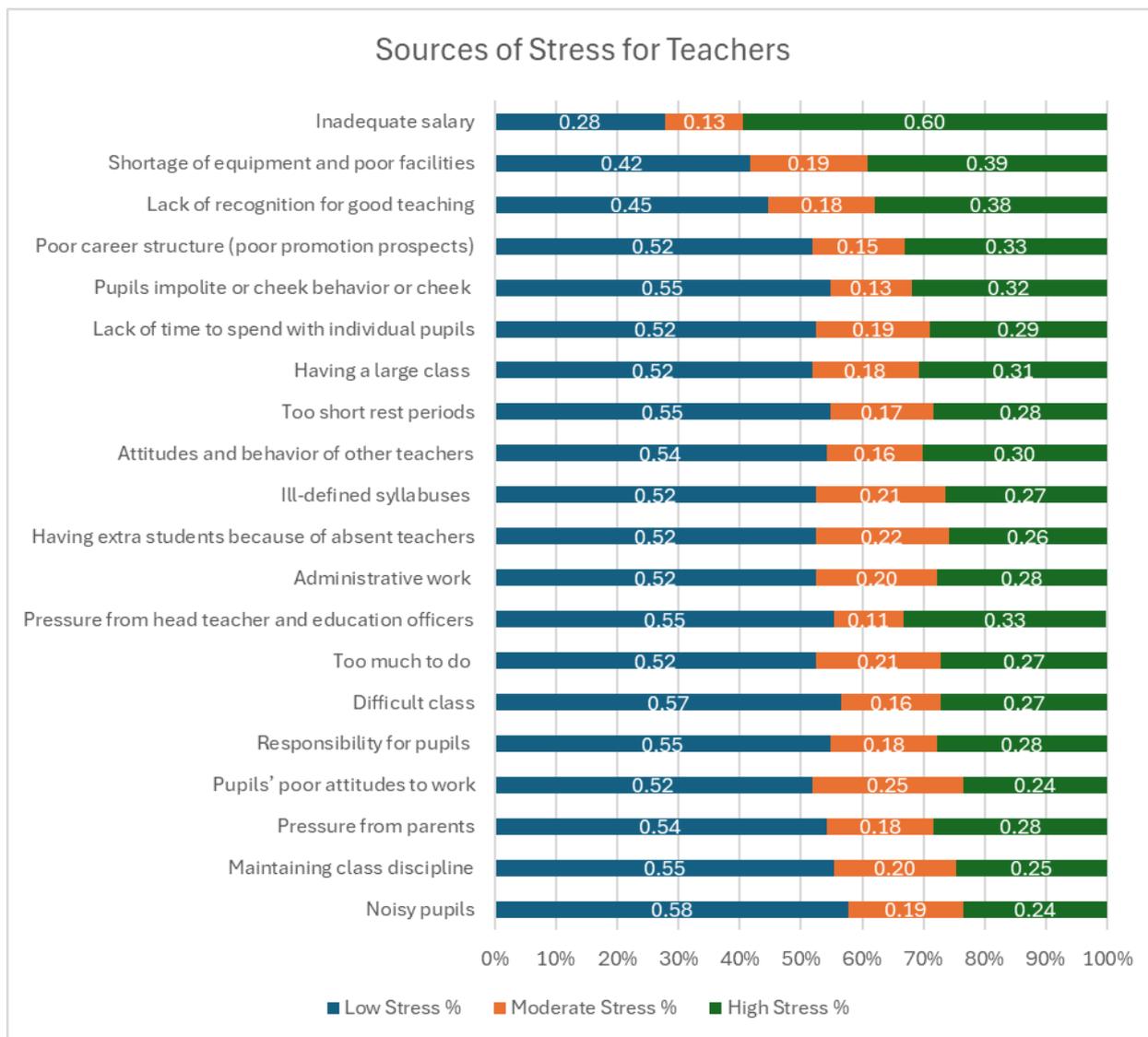
Figure 9. Teachers' Role and Wellbeing
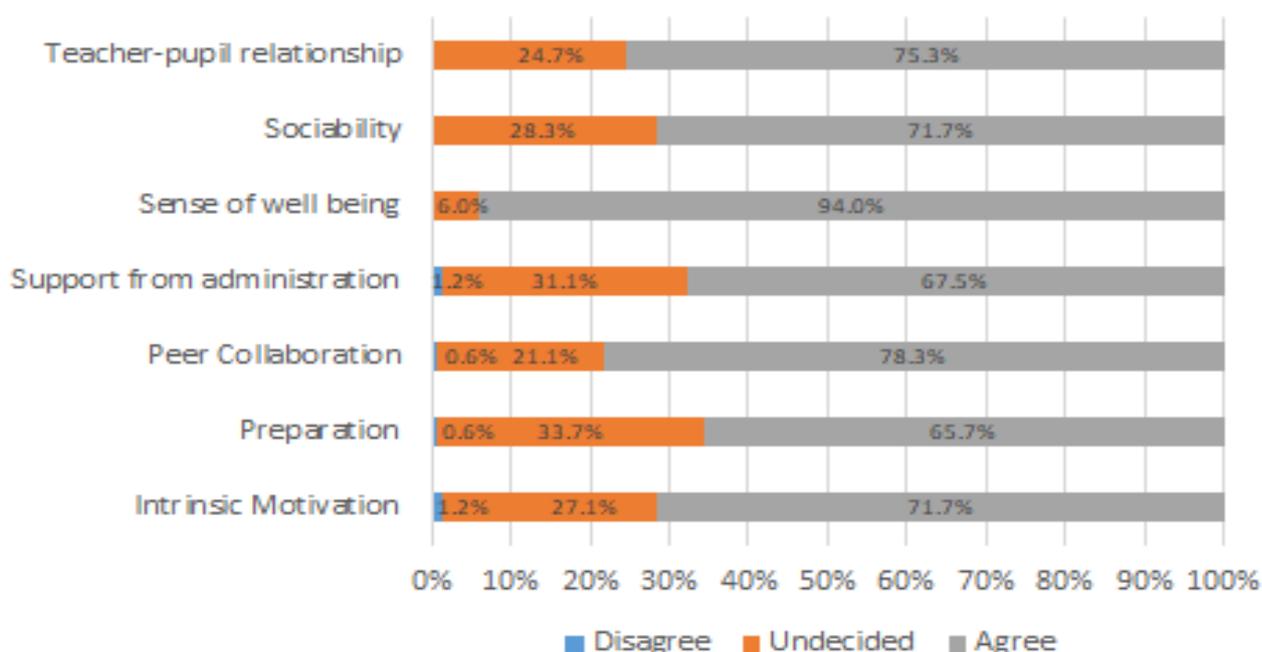
Teachers in crisis-affected contexts typically face a variety of sources of stress that can have negative consequences in their classroom practices, and ultimately in the learning outcomes of children. In this regard, we asked teachers to identify the amount of stress they experience associated with different stressors. Figure 10 shows teachers' sources of stress ranked from higher to lower. The results indicate that inadequate salary, shortage of equipment and poor facilities, lack of recognition, poor career structure and pupils' impolite or cheek behavior are the top 5 causes of stress for teachers in the Somali region.

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Figure 10. Sources of Stress for Teachers

Sources of Stress for Teachers

Source	Low Stress %	Moderate Stress %	High Stress %
Inadequate salary	0.28	0.13	0.60
Shortage of equipment and poor facilities	0.42	0.19	0.39
Lack of recognition for good teaching	0.45	0.18	0.38
Poor career structure (poor promotion prospects)	0.52	0.15	0.33
Pupils impolite or cheek behavior or cheek	0.55	0.13	0.32
Lack of time to spend with individual pupils	0.52	0.19	0.29
Having a large class	0.52	0.18	0.31
Too short rest periods	0.55	0.17	0.28
Attitudes and behavior of other teachers	0.54	0.16	0.30
Ill-defined syllabuses	0.52	0.21	0.27
Having extra students because of absent teachers	0.52	0.22	0.26
Administrative work	0.52	0.20	0.28
Pressure from head teacher and education officers	0.55	0.11	0.33
Too much to do	0.52	0.21	0.27
Difficult class	0.57	0.16	0.27
Responsibility for pupils	0.55	0.18	0.28
Pupils' poor attitudes to work	0.52	0.25	0.24
Pressure from parents	0.54	0.18	0.28
Maintaining class discipline	0.55	0.20	0.25
Noisy pupils	0.58	0.19	0.24

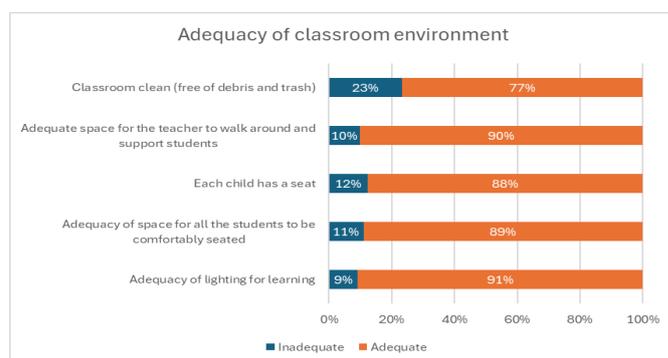## Classroom Observations

Research Question 3

**What is the baseline status of schools and classrooms' learning environment?
How do different dimensions of the learning environment vary by school type and site?**

With regards to the structure of the environment, we find that 50.9% of the observed classrooms in which students learn are covered with four walls, 33.1% are open/outdoor and 16% are covered but with open sides. We also observe that the seating arrangement of 75% of classrooms are group tables with chair, 18% with individual desks and chairs, 5% with mats on the floor and 3% with benches. Only 6% have a learning corner.

With regards to the adequacy of the learning environments (See Figure 11), we find that most of the classes are suitable for learning, despite some limitations. For example, approximately 10% of classrooms do not have a seat for each child, or adequate space for all students to seat comfortably. 9% of classroom do not have adequate light for learning. The cleanliness of the classrooms requires more attention, as 23% of the classrooms had inadequate cleanliness, with debris or trash. The results highlight areas where improvements may be needed,

such as ensuring cleanliness, availability of seats for each child, and sufficient space for both students and teachers.

Figure 11. Adequacy of Classroom Environment

Adequacy of classroom environment

|	Inadequate	Adequate
Classroom clean (free of debris and trash)	23%	77%
Adequate space for the teacher to walk around and support students	10%	90%
Each child has a seat	12%	88%
Adequacy of space for all the students to be comfortably seated	11%	89%
Adequacy of lighting for learning	9%	91%

With regard to how teachers spend classroom time, the classroom observations showed that 95.7% of the teachers start class on time with an average class duration of 40.34 minutes. Of the class duration, the average time on task –time that teachers and students spend focused on academic learning– is 27.42 minutes. Likewise, availability and use of teaching and learning materials were explored whose result is below.

In the observed classrooms, available materials are often observed to be in use in class. Two forms of indicators have been set for the visibility and use

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because with the basis that not all available materials arecan be used during instruction. With regards to teaching aids, we observe that in the majority of classrooms teachers have a chalkboard or whiteboard available (92%), but very few other teaching aids. With regards to hands-on materials for students, we observe that in 38% of the classrooms, children appear to have textbooks, in 29% they appears to have language workbooks, and there are very classrooms with materials for numeracy (12%) or science (6%). Only 3% of the classrooms seem to have local materials available or in use during the observations. Other materials included in the classroom observation, such as a projector, storage cabinet, posters, and visual aids, Art supplies, and six bricks were not visible in classrooms. (See Figure 12)

Figure 12. Classrooms and the Levels of Visibility and Usage of Materials
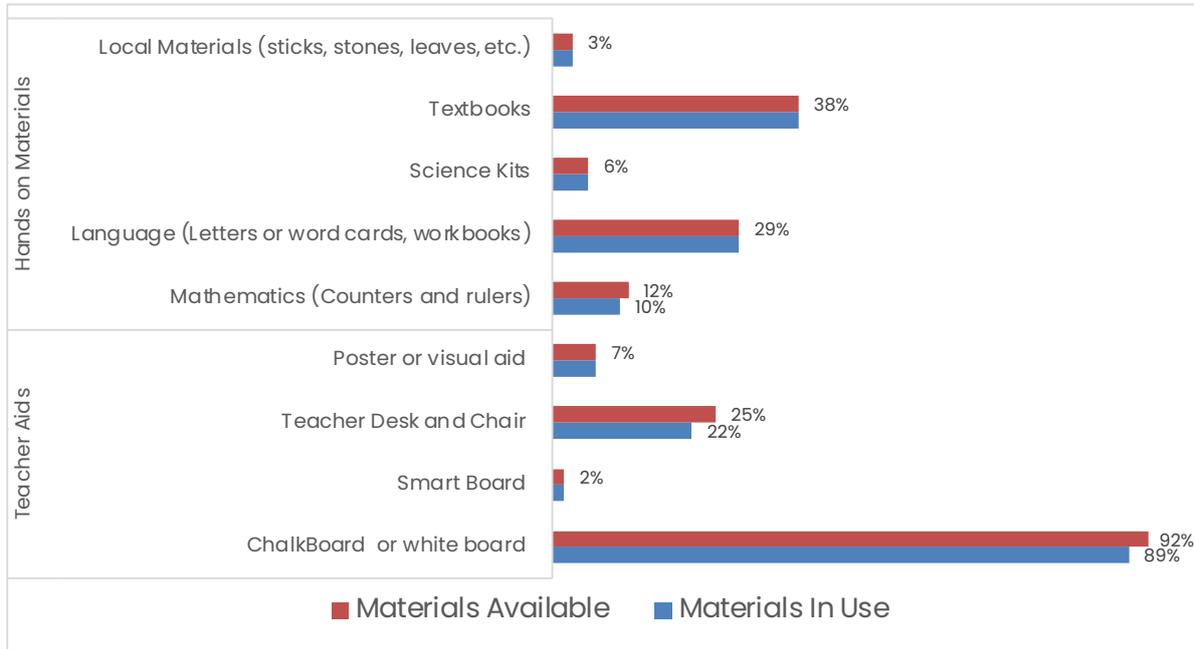
Based on these observations, we estimated the proportion of classrooms with different levels of materials available and in use (See Figure 13). Overall, we observe that over three fourths of classrooms have very low levels of teaching aids and hands-on materials available and in use.

Figure 13. Percentage of Classrooms with Higher, Average and Low Levels of Materials Visible and in -Use
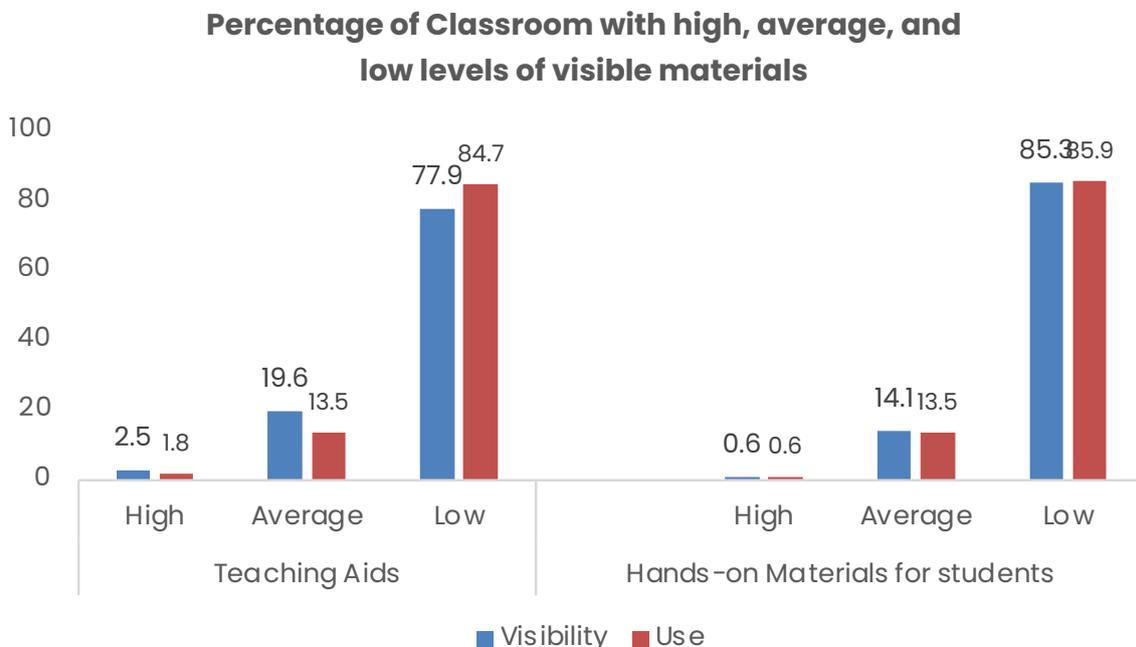
The classroom observation tool also assessed teachers' instructional practices in the classroom (e.g. lesson preparation, providing clear instructions, using active learning pedagogical strategies, providing students with opportunities for practice, using different types of questioning techniques, checking for understanding, providing feedback, helping students connect content with their prior knowledge), teachers' classroom management and positive discipline practices (using positive words, positive behavior management strategies, and inclusive and gender-sensitive learning environments), and student engagement (e.g. attention, participation, and enjoyment), using a 4-point scale (negative, emerging evidence, good evidence, excellent). (See Figure 13) Findings (See Figure 14) indicate that 1.2% of teachers show negative evidence of teaching practices and negative classroom management

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practices. A third of teachers show emerging evidence of quality instructional practices (38%), and classroom management practices (36.%), half of them show good evidence of use of quality instructional practices (52%), and classroom management practices (52.1%). Only a few teachers show excellent levels of performance in quality instruction (8.6%) and classroom management practices (9.8%).

Figure 14. *Teaching Practice, Classroom Management and Positive Discipline, and Student Engagement*
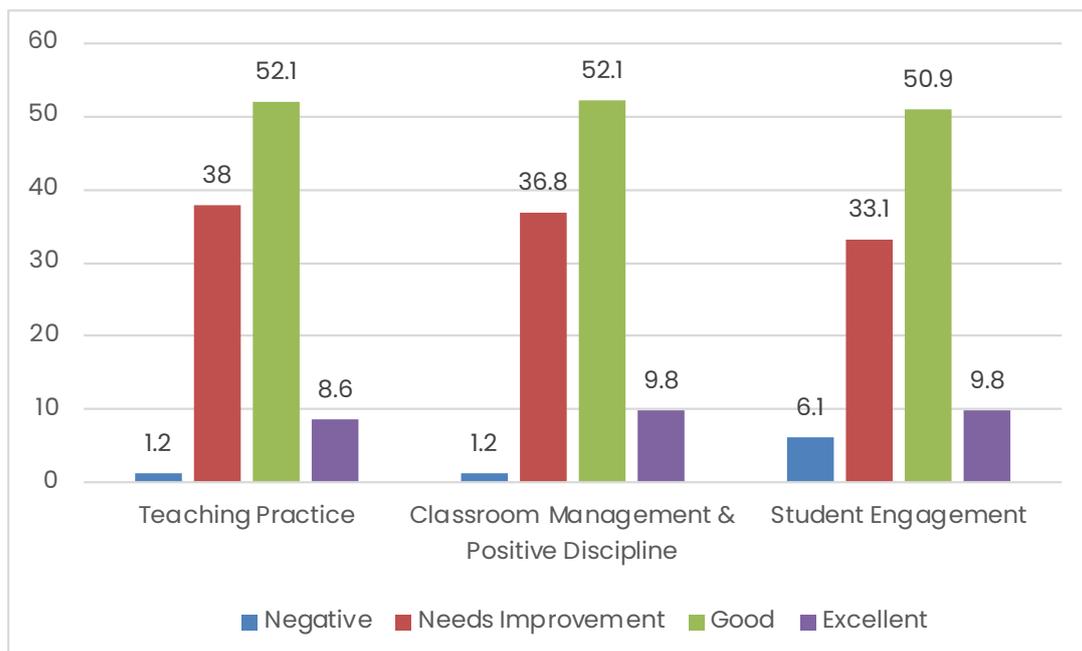

Figure 15 shows average scores for teachers by each item observed in the classroom observation as part of the three overall dimensions. On average, for all dimensions, we observe that teachers' performance appears to be in the range of needing improvement and good performance. Areas of instruction practice that appear to require more support include helping students connect content with prior knowledge and their own experiences, using active pedagogical strategies and explaining the lesson objective, and the areas where they currently appear to have the best performance -but still with much room for improvement- are providing clear explanations, and providing students with an opportunity to practice. With regard to classroom management and positive discipline, we observe that teachers's performance across all areas appear within the range of needing improvement but tending towards reaching good performance. Teachers appear to have the lowest levels of performance with regard to including and attending the needs of different types of children. Finally, we observe overall good levels of student engagement, but the lowest area of performance appears to be enjoyment of the lesson. This is an area which is expected to significantly improve with support from PlayMatters.

The results from classroom observations were further analyzed to identify if there are any significant differences in the teachers' practices, classroom management and positive discipline, and student engagement, with respect to gender of the teacher, level of education, displacement, grade, and site. No statistical significance was observed between teachers of different genders, level of education, displacement status, grade, school type or site for teacher practices, classroom management and positive discipline, and student engagement. (p > .05). However, teachers with different levels of education exhibited teaching practices that were marginally different, with levels close to significance at .05. Post-Hoc analysis indicated

that the teachers with a certificate were found to have significantly lower teaching practice than the Diploma holders (p = .044).

Children

Research Question 4a

What is the baseline status of children's literacy, numeracy, SEL, and creativity? What is the status of their mental health and wellbeing?
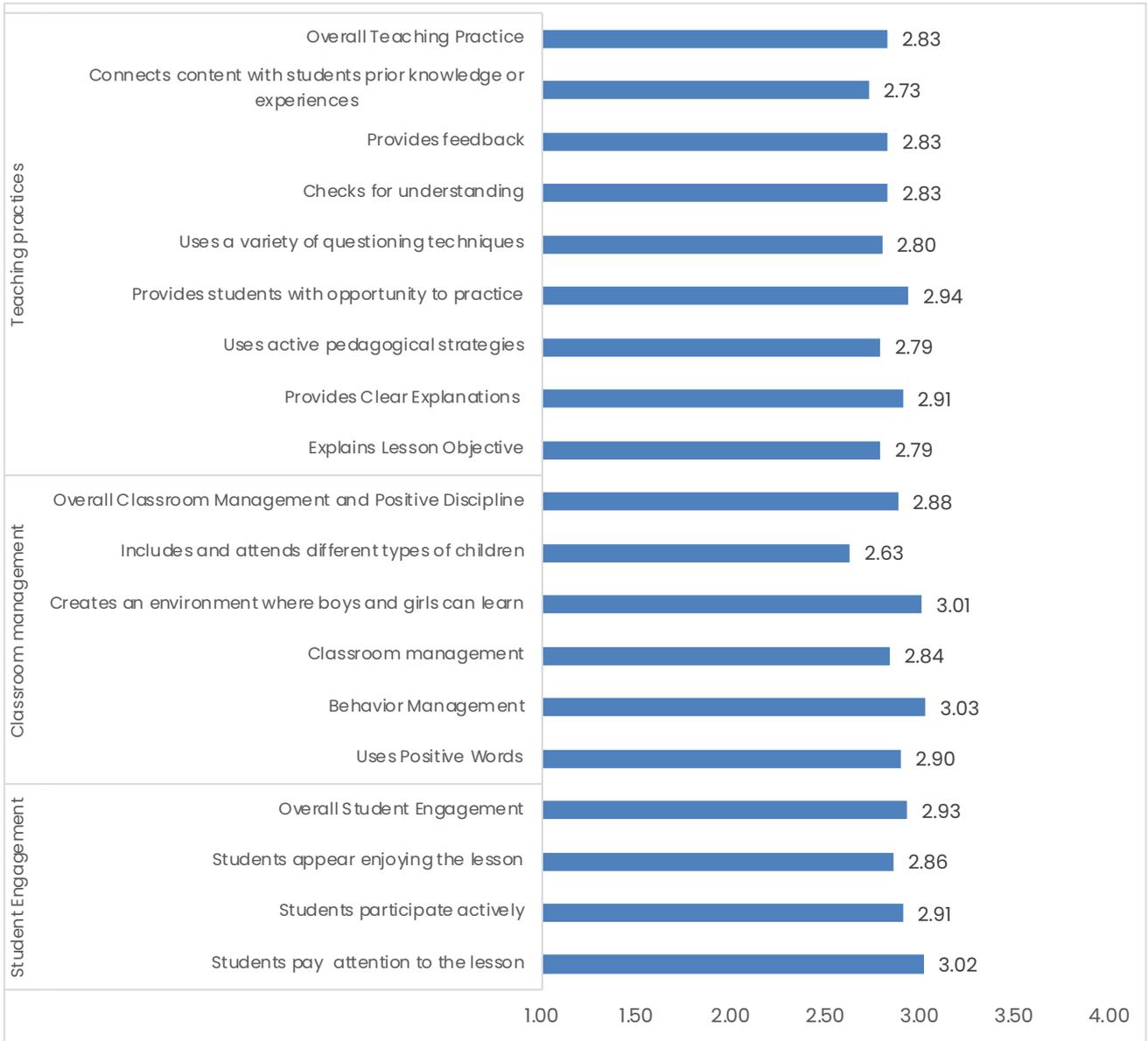
Literacy and Numeracy

Figure 16 shows children's performance levels in literacy and numeracy tasks, according to the percentage of children who obtain zero scorers, those who are performing below target (below 50% correct), and at or above the target (50% correct or more). In both literacy and numeracy, the proportion of students who score at or above 50% decreases as the level of difficulty increases. In general, we see high percentages of children meeting targets for low-level literacy such as vocabulary (91.3%) and letter identification (78.3%) , and low-level numeracy skills such as number identification (84.4%). However, we see low percentages of children meeting targets for higher-order literacy skills such as oral reading fluency (58.5%) and reading comprehension (10.8%), or higher-level numeracy skills such as addition (57.1%), subtraction (43.4%) and word problems (25.2%).

We also examined whether children's performance varies by gender, grade level, site, disability status, and community type. (See section on subgroups analysis and Table 9).

Social-Emotional Learning (SEL)

We used a battery of SEL scales to assess skills such as empathy, emotional attribution accuracy, witnesse

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Figure 15. Teaching Practice, Classroom Management and Positive Discipline, and Student Engagement

Teaching practices

Overall Teaching Practice	2.83
Connects content with students prior knowledge or experiences	2.73
Provides feedback	2.83
Checks for understanding	2.83
Uses a variety of questioning techniques	2.80
Provides students with opportunity to practice	2.94
Uses active pedagogical strategies	2.79
Provides Clear Explanations	2.91
Explains Lesson Objective	2.79

Classroom management

Overall Classroom Management and Positive Discipline	2.88
Includes and attends different types of children	2.63
Creates an environment where boys and girls can learn	3.01
Classroom management	2.84
Behavior Management	3.03
Uses Positive Words	2.90

Student Engagement

|	
Overall Student Engagement	2.93
Students appear enjoying the lesson	2.86
Students participate actively	2.91
Students pay attention to the lesson	3.02

Note. Scores of 1=Negative/No Evidence, 2= needs improvement, 3= Good, 4= Excellent.

Figure 16. EGRA and EGMA subtasks- Percentage of Children by Performance Categories

Subtask	Zero Scorers	Below Target (50%)	At Target (50%) or above
Oral Vocabulary	0.0%	8.7%	91.3%
Letter Identification	8.0%	13.7%	78.3%
Oral reading	24.5%	17.0%	58.5%
Reading Comprehension	61.3%	27.8%	10.8%
Number Identification	2.8%	12.7%	84.4%
Addition Combined	11.8%	31.1%	57.1%
Subtraction Combined	18.4%	38.2%	43.4%
Word Problems	13.9%	60.8%	25.2%

Legend: ■ Zero Scorers ■ Below Target (50%) ■ At Target (50%) or above

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s' responses to bullying (upstand, bystander, join perpetrators), emotional regulation, and conflict resolution (prosocial, disengagement, aggression). Empathy was measured in terms of students' responses to scenarios in which they are asked to imagine that another person is experiencing a difficult situation, and identify whether they think it's funny, they do not care, or they feel sad for the other person. The mean score for empathy is 2.50 with 53.3% of students demonstratingaining empathic responses towards others (See Figure 17).

Figure 17. *Percentage of children in their Witness's Response to Bullying*
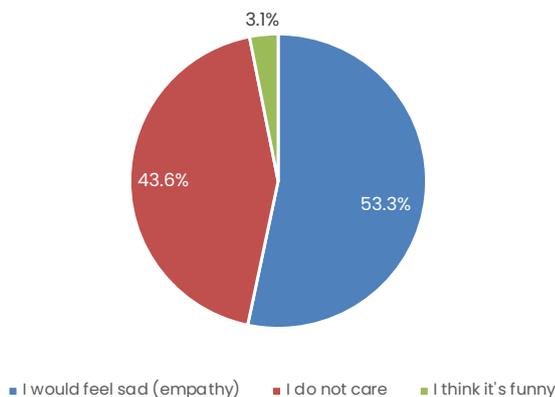
We assessed emotional attribution accuracy, or the ability to identify how others would feel, using scenarios where children were asked to imagine how they would feel in different situations. The assessment showed that 51.9% of children were able to accurately assess the emotions that others would feel.

Witnesses' attitudes towards bullying were assessed in terms of scenarios where children are asked to imagine situations in which a child is being bullied and witnesses of the situation respond in different ways. Some join the perpetrators, some do nothing, others help the victim by either confronting the perpetrators, expressing support, or reporting the situation to a teachers. Children are asked to use a four-point Likert scale, to express their level of agreement or disagreement with different responses. Figure 18 shows children's levels of agreement or disagreement with different responses to bullying. The results show that, 33.5% of the children agree with disengaging, and 28.3% agree with joining perpetrators. A larger percentage have prosocial attitudes, with 79% agreeing with upstanding perpetrators, 84.6% agree with befriend victims and 77.5% agree with reporting to an authority.

Figure 18. *Percentage of children in their Witness's Response to Bullying*
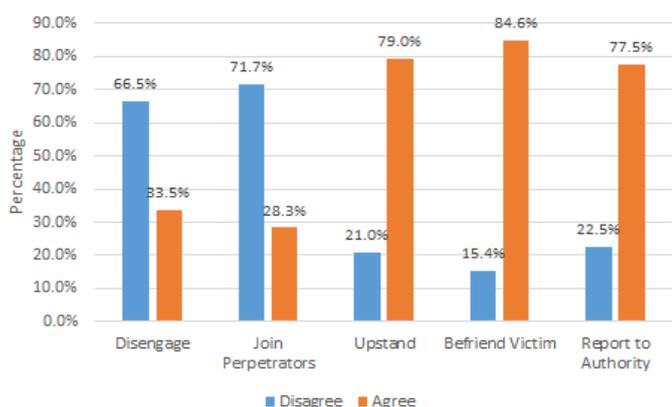
Emotional regulation and conflict resolution strategies were assessed through SERAIS, a scenario-based instrument where children were asked to imagine that a peer did something negative to them (e.g. spill water in their drawing), but without providing any information on why he/she acted in that way. Children are asked to imagine how they would feel and how they would respond, to assess their emotional regulation and conflict resolution strategies. Results indicate that 57.3% of children would feel calm, 13.4% would feel sad, and 29.2% would feel angry. With regard to their conflict resolution strategies, we results suggest that 28.8% of children would disengage, 62.0% would use prosocial skills to solve the problem, and 9.2% would use aggression (See Figure 19).

Figure 19. *Percentage of Children according to their Conflict Resolution Strategy*
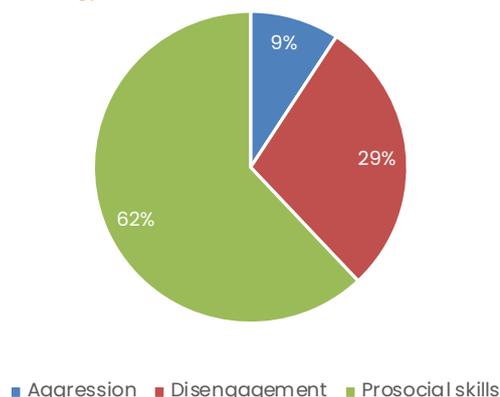

We also examined whether children's performance varies by gender, grade level, site, disability status, and community type. For findings, see section of subgroup disaggregations and Table 9 below.

Wellbeing

Wellbeing was assessed using the KiddyKindl scale, which asked how often in the past two weeks (1=never, 5= all the time) children felt good about their physical and emotional wellbeing, self-esteem, and relationships with family, friends and school, where higher scores reflect higher levels of wellbeing. The results indicate positive trends of wellbeing, with 68.% of children reporting somewhat good or good higher levels of wellbeing, with higher levels for their physical health and family relationships, and positive, but lower levels of wellbeing for their relationships with friends and their self-esteem. (See Figure 20).

Figure 20. *Percentage of Children according to Different Levels of wellbeing*

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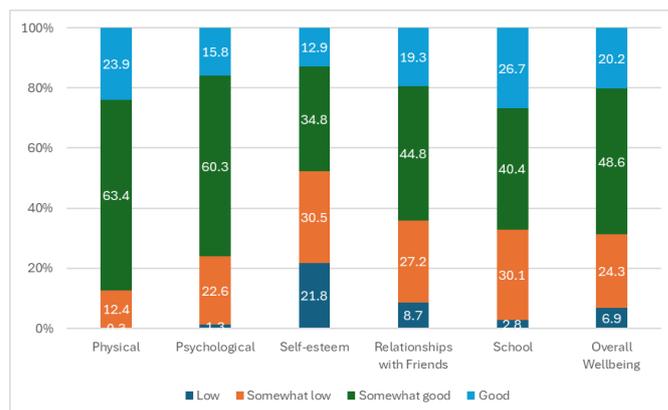
Depression was assessed using the Mood and Feelings questionnaire, which asked children to indicate how often they experienced symptoms of depression in the past two weeks. The results are presented in Figure 21.

Figure 21. Percent of Students who Experience Depression
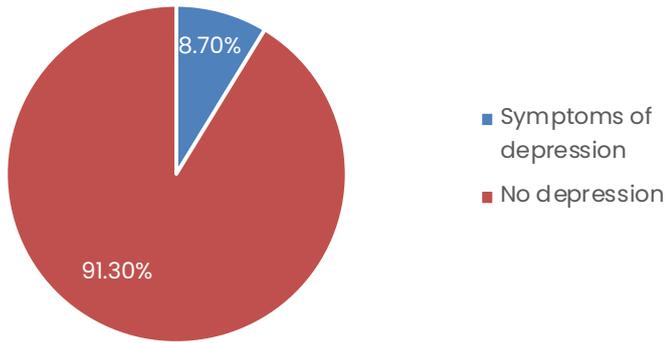
Victimization was assessed through a scale that asked children to identify how often over the past two weeks they have experienced bullying, with other children making fun of them, excluding them for games or activtities, insulting them, pushing them or hitting them. The results of these are presented in Figure 221. The chart indicates that 31.8% of children had witnessed situations of bullying in the past two weeks. Children also reported the frequency with which they had personally experienced bullying, and the results indicate that 63.9% of the children had never been victims of bullying, but 36.1% have been victims at least once.

Figure 22. Percent of Exposure and Victimization
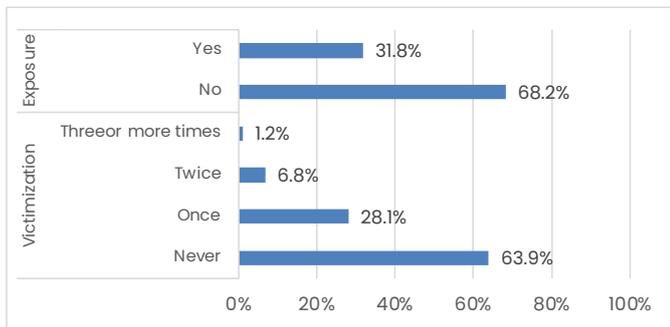
Research Question 4b

How do levels of performance in literacy, numeracy, SEL, and mental health vary for different subgroups of children?

In order to understand baseline equity gaps, we conducted subgroup analysis by grade, gender, disability status, displacement status and site. (See Table 9).

• **Gender:** Boys exhibit significantly higher levels of reading comprehension than girls. Girls who witness bullying report significantly higher orientation to report the bully to authorities than boys. We did not find other statistically significant differences between girls and boys regarding in other literacy, numeracy, SEL or mental health outcomes.

• **Disability:** Children with disabilities exhibit significantly higher levels of empathy and higher levels of emotional attribution accuracy than their non-disabled counterparts and they are less likely to endourse the use of aggression as a conflict resolution

strategy than non-disabled children. Additionally, children with disabilities express lower physical wellbeing than their non-disabled counterparts.

• **Displacement status:** Refugee children exhibit significantly higher reading comprehension than children in the host community. However, refugee children exhibit lower emotional attribution accuracy than host community children, higher orientation towards the use of disengagement as a conflict resolution strategy, and lower levels of wellbeing. Host community children exhibit higher levels of wellbeing than children in refugee settings and higher levels of emotional attribution accuracy. In situations where they witness bullying they significantly more likely to act as upstanders, by supporting the victim, conftronting perpetrators or reporting the situation to authorities.

• **Grade:** Children in higher grades exhibit significantly higher level of literacy and numeracy skills than their counterparts in lower grades.

• **Site:** Children in Jigjiga exhibit higher levels of wellbeing than children Melkadida, including higher levels of self-esteem, and better relationship with friends. They also exhibit better social-emotional skills, as reflected by higher levels of emotional attribution accuracy, higher orientation to use prosocial skills in response to conflict, and higher orientation to act as upstanders in situations of bullying, including defending victims, expressing disagreement with perpetrators, and reporting bullies to an authority.

However, they are also more likely to experience bullying themselves than children from Malkedida. Children in Malkedida, are more likely to respond to conflict with aggression and join perpetrators against a victim of bullying.
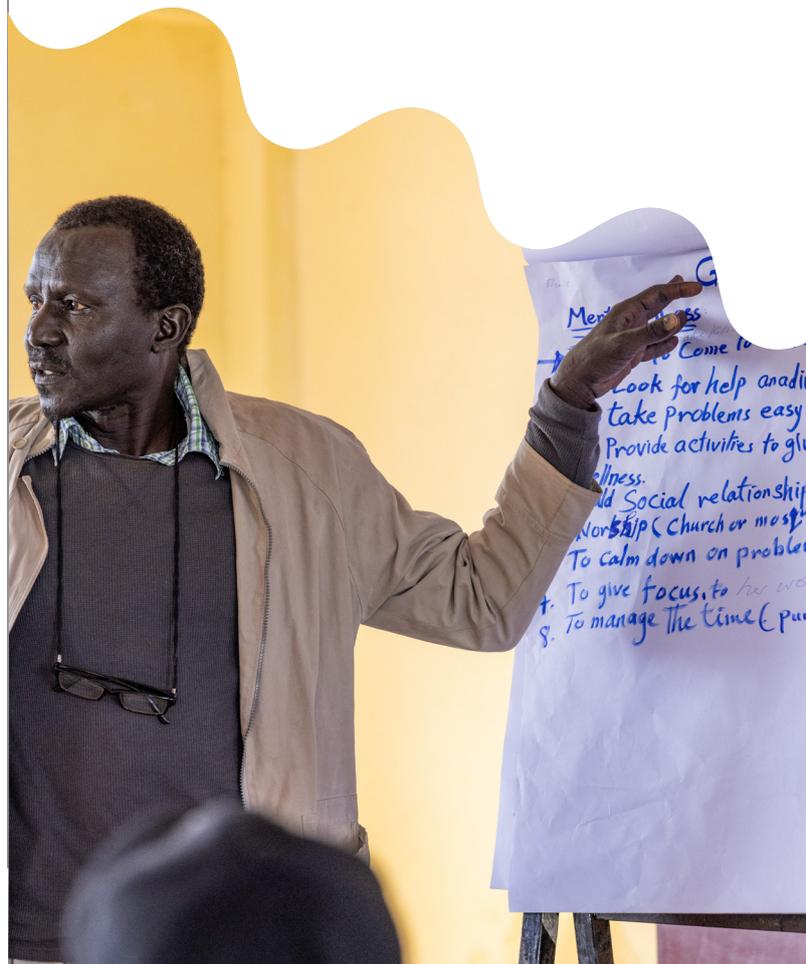
Table 10. Differences in Literacy and Numeracy by Gender, Displacement, Disability, Grade and Site

	Subtasks	Mean	S.D	Sex		Displacement		Disability		Class			Site	
				Girl	Boy	Refugee	Host	Y	N	2	3	4	Jijiga	Melkadida
EGRA	Oral vocabulary % correct	77.26	18.32	77.2	77.3	75.5	78.9	90.4*	76.7	75.35	77.86	78.57	84.28*	72.92
	Letter ident. % correct	70.01	31.38	67	72.5	74.1*	66.2	69.3	70	59.71	73.79	76.54**	64.79	73.25*
	Oral reading % correct	54.85	40.38	49.7	59.2	60.9*	49.1	55.1	54.8	41.76	57.13	65.53**	44.33	61.36*
	Oral Reading Fluency	21.24	22.75	19.7	22.5	20.9	21.6	19.9	21.3	15.7	19.95	27.91**	21.41	21.14
	Reading comp. % correct	15.71	24.12	14.3	16.8*	13.8	17.5	21.5	15.5	9.15	14.6	23.17**	16.05	15.49
EGMA	Number ident. % correct	72.68	81.09	75.8	79.6	82.4	73.5	85.1	77.6	66.7	82.03	84.92**	70.62	78.93
	Number identification cpm	22.93	13.97	21.4	24.2	24.3	21.7	22.2	22.9	17.92	22.77	28.01**	21.87	23.59
	Addition % correct	51.73	31.91	49.3	53.8	56.1	47.6	59.9	51.4	42.22	54.36	58.57**	45.91	55.34
	Addition cpm	5.39	3.96	5.1	5.6	5.4	5.3	6.2	5.3	4.37	5.45	6.35**	5.57	5.29
	Subtraction % correct	40.17	31.34	40.9	39.5	43.2	37.3	49.9	39.8	32.1	39.73	48.49**	35.31	43.04
	Subtraction Combined cpm	3.76	3.25	4	4	4	4	5.1	4	3.18	3.99	4.93**	4.15	3.97
	Word problems % correct	40.71	30.2	39.7	41.7	43	38.5	52.5	40.2	35.92	41.46	44.69**	35.31	44.05

Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.

Table 11. Differences in Literacy and Numeracy by Gender, Displacement, Disability, Grade and Site

	Measure/Construct	Overall		Gender		Displacement		Disability		Class			Site	
		Mean	S.D	Boy	Girl	Host	Ref	N	Y	2	3	4	Jijiga	Melk
Mental Health and wellbeing	Overall Wellbeing	3.59	0.56	3.59	3.59	3.62	3.56	3.60	3.38	3.58	3.59	3.60	3.69**	3.53
	Physical Wellbeing	3.97	0.68	3.94	4.00	3.97	3.96	3.98**	3.63	3.98	3.99	3.93	3.99	3.95
	Emotional Wellbeing	3.73	0.70	3.72	3.74	3.76	3.69	3.73	3.69	3.71	3.69	3.78	3.75	3.71
	Self Esteem	3.12	1.05	3.12	3.12	3.17	3.07	3.14	2.75	3.04	3.15	3.18	3.30**	3.01
	Family Relationships	3.85	0.87	3.85	3.84	3.79	3.91	3.85	3.81	3.76	3.89	3.90	3.88	3.83
	Friends Relationships	3.51	0.89	3.55	3.47	3.61**	3.41	3.52	3.38	3.46	3.48	3.58	3.81**	3.33
	School Relationships	3.64	0.85	3.62	3.66	3.67	3.60	3.65	3.31	3.61	3.63	3.68	3.71	3.6
	MFQ - Depression	4.3	4.48	4.48	4.08	4.63	3.94	4.23	6.13	4.21	4.23	4.44	5.54**	3.53
Social-emotional Learning	Empathy	2.50	0.56	2.50	2.51	2.48	2.52	2.49	2.81**	2.56	2.47	2.48	2.51	2.50
	Emotional Attrib. Accuracy	1.77	20.02	0.80	0.79	0.85**	0.74	0.79	1.00**	0.81	0.76	3.66	0.89**	0.74
	Conflict Res - Disengagement	0.27	0.29	0.27	0.27	0.24	0.31**	0.27	0.38**	0.27	0.28	0.26	0.26	0.28
	Conflict Res - Prosocial Skills	0.11	0.18	0.11	0.10	0.12	0.09	0.11	0.08	0.09	0.12	0.11	0.15**	0.08
	Conflict Res-Aggression	0.51	0.32	0.51	0.51	0.51	0.51	0.52**	0.26	0.53	0.48	0.52	0.39	0.58**
	Att. Bullying - Disengagement	1.10	0.59	1.10	1.09	1.13	1.06	1.09	1.24	1.13	1.06	1.10	1.18	1.04
	Att. Bullyg - Joining Perpetrators	1.07	0.63	1.06	1.08	1.02	1.12	1.07	1.03	1.03	1.12	1.06	0.99	1.12**
	Att. Bullyg - Upstand Perp	1.89	0.61	1.89	1.89	2.04	1.73	1.89	1.81	1.89	1.86	1.91	2.1**	1.76
	Att. Bullyg - Befriend victim	2.03	0.64	2.02	2.03	2.17	1.87	2.03	2.05	2.06	1.97	2.05	2.3**	1.86
	Att. Bullyg - Report authority	1.84	0.65	1.77	1.92**	1.93	1.74	1.84	1.88	1.80	1.86	1.86	2**	1.74
	Victimization	5.63	2.32	5.73	5.51	5.56	5.70	5.60	6.31	5.37	5.58	5.92	5.96**	5.42

Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.

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Associated Factors

Research Question 5

What individual, teacher, classroom, and school characteristics are associated with students' literacy, numeracy, SEL, mental health?

We examined the individual, teacher, classroom, and school characteristics that are associated with students' literacy, numeracy, SEL, and wellbeing. We first conducted regression analyses with covariates for individual characteristics, to which we then added teacher characteristics, and lastly, classroom characteristics.

Model 1 includes the individual child characteristics of sex, displacement status, age, grade level, and disability as predictor variables for EGRA, EGMA, Kiddy-Kindle, MFQ and Empathy. (See Annex 5). Model 2 includes covariates for individual child characteristics of gender, age, grade level, disability, and those of teacher characteristics of teacher gender, teacher level of education, teacher displacement status, teacher wellbeing, and teacher sources of stress. (See Annex 6). Model 3 (See Table 12) includes children´s characteristics, teachers' characteristics, and classroom characteristics (i.e. classroom size, teaching and learning materials available and use, pedagogical practices, classroom management, and student participation to the previous variables). The third model also accounts for clustering at the school and region level.

Table 12. Regression Model and Unstandardized Coefficients for EGRA, EGMA, Kiddy-Kindle, MFQ, and Empathy Outcomes with Child, teacher, and Classroom-level Covariates

Adjusted R Square Regression Model	EGRA .136 P = .000	EGMA .162 P = .000	Kiddy-Kindle .045 P = .063	MFQ .119 P=.000	Empathy .091 P=.003
(Constant)	18.503	2.567	50.326	1.026	1.681
Sex of child (M)	−2.278	1.351	1.588	−.392	.019
Child Displacement Status (host)	4.941	3.320*	−4.825	−.961**	−.043
Grade of child (Grade1)	10.867**	4.614**	.978	−.263	−.108*
Age of Child	−.129	.887*	.506	.060	.059**
Child Disability (No)	3.072	7.656	3.386	3.928**	.398
Teacher Gender (M)	8.678*	4.341*	3.265	−1.139*	.031
Teacher Level of Education (cert)	2.466	.085	−.031	.032	−.024
Teacher Displacement Status (No)	1.442	−.574	7.961	.721	.324*
Teacher Wellbeing	1.133	−.650	2.208	.274	.006
Class size	.063	.034	−.026	.018*	−.003
Hands-on materials used in class	−2.892	−1.435	1.237	−.488*	.052
Teaching aids used	.285	.184	−2.597	−.145	.127*
Time on task	−.054	−.094	−.083	−.006	−.005
Teaching practice	1.320	3.694	3.916	.015	−.044
Classroom management	1.574	−1.893	−.892	.048	.009
Student engagement	−4.068	−1.027	−2.303	.213	.235*

Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.

The models suggests that, after controlling for different characteristics:
• Children in higher grades and older ages exhibit higher levels of academic performance in literacy and numeracy, but also lower levels of empathy (p>.01)
• Children's displacement status is associated with higher levels of depression. On average, refugee children show .961 more points in the MFQ scale than host community children (p>.01). Consistently, we also observe among refugee children a tendency toward lower levels of wellbeing, but the differences are not statistically significant.
• Having a refugee teacher is associated with higher levels of empathy for children. On average, children with a refugee teacher show levels of empathy that are .324 points higher than children with host community teachers (p>.05)
• Having a male teacher is associated with higher levels of literacy and numeracy competencies among children, and is also associated with significantly lower levels of depression among children. (p>.05). On average, children who have a male teacher exhibit 8.67 more points in the oral reading fluency EGRA scale

and 4.34 more points in the additional EGMA scale than children with a female teacher (p>.05)
• Larger classroom sizes are associated with significantly higher levels of depression among children. Specifically, for each additional child in the class, we observed an increase of .18 units in depression levels, as assessed by the Moods and Feelings Questionnaire (p>.05)
• The use of teaching aids in the classroom is associated with significantly higher levels of empathy among children. On average, every additional point in the number of teaching aids used in the classroom, is associated with an increase of .05 in children's level of empathy (p>.05)
• The use of hands-on materials in class is associated with lower levels of depression among children. Specifically, for every additional point in observations of use of hands-on materials in the classroom, we see a decrease of .48 points in depression levels, as observed by the classroom observation tool.
• Student levels of engagement in the classroom is associated with significantly higher levels of child-level empathy. Specifically, on average, an increase

of 1 point in observations of children's level of engagement in the classroom observation tool is associated with an increase of .235 points in children's empathy.

Discussion and Conclusions

PlayMatters designed an intervention that considers that in order to support the development of children's holistic learning outcomes it is critical to improve: 1) Teachers' skills and practices for LtP, 2) the availability of tools and materials for LtP, and 3) the enabling environment for LtP. The present baseline report is part of a larger implementation research study that aims to assess the degree to which the PlayMatters intervention is implemented as intended in the Somali region of Ethiopia. As such, the baseline report focuses on obtaining evidence about the baseline status of different components of the theory of change of the program, with a focus on understanding 1) the attitudes and beliefs of headteachers who will be part of the program have towards LtP and the role they play in supporting teachers in their schools, 2) the professional development supports that teachers who will be part of the intervention have received before PlayMatters, as well as their knowledge, motivation and attitudes towards learning through play, 3) the quality of the learning environment observed in classrooms that will receive the interventions -including structure, use of time, teaching and classroom management practices, and student engagement, before PlayMatters, and 4) the status of children´s holistic learning outcomes, before the intervention. We discuss each of these categories below.

A. The theory of change of PlayMatters indicates that school leadership and management structures that support and incentive inclusive LtP methods can contribute to improve holistic learning among children.

To set the foundation for the implementation of LtP and the PlayMatters program, we assessed the attitudes and beliefs that headteachers have about LtP. The study found positive **headteacher attitudes towards LtP** with over 75% expressing high levels of commitment and 100% report understanding the importance of LtP. Still, there are 19% of headteachers who do not express commitment and 13% who do not feel comfortable and do not fully understand what is required from the school to implement LtP in their schools. With regard to their **beliefs about LtP,** we find that 100% of headteachers believe that play provides children with an opportunity to understand and appreciate the strengths and challenges of other children, and 93.8% believe that play can help improve children's memory and focus. However, there are important issues about their attitudes towards inclusion because 56.3% of them believe that play benefits boys more than girls, and that girls do not need to be included in the same play opportunities as boys. This could be associated with the Somali culture and is an area that PlayMatters can support to clear their misconceptions for smooth implementation of the intervention. In this regard, PlayMatters uses a gender lens approach to implement the intervention, which is expected to result in improve the attitudes and beliefs that teachers and headteachers have towards marginalized groups such as girls and children with disabilities in the implementation of LtP methodologies.

The role headteachers play in the school influences teachers' performance and ultimately children's learning outcomes (Shen et al., 2020). The study found that at baseline, 75% of headteachers spend time providing supportive supervision to teachers, 68.8% support teachers in planning lessons, and 62.5% support teachers to interpret curriculum. However, only 25% have engaged in enhancing teacher peer learning, organizing seminars/workshops, and conferencing with teachers. At baseline, more than 75% of headteachers reported that they experience challenges conducting monitoring of teaching and learning practices, ensuring that teachers have and follow lesson plans, implementing changes in the school, ensuring that teachers use various forms of assessment, and encouraging them to foster a positive classroom environment. Finally, only 62.5% of the headteachers have received training to support teachers.

We conclude that PlayMatters can play a significant role in the Somali region of Ethiopia in the improvement of children's holistic learning outcomes if 1) the intervention changes headteachers' attitudes towards inclusion of girls and children with disabilities into LtP activities, 2) the intervention is able to improve the quality of the supportive supervision that 75% of headteachers are already providing to teachers, and is able to help the remaining 25% of headteachers to set up consistent and quality structures and routines of supportive supervision for teachers. To this end, it will be critical that PlayMatters deliver quality trainings for headteachers and sets up quality monitoring to ensure headteachers successfully adopt a supportive role.

B. The Theory of Change of PlayMatters hypothesizes that the use of inclusive LtP methods emphasizing psychosocial wellbeing that are integrated into teacher professional development models and systems can ultimately result in improved holistic learning outcomes for children.

The study shows that at baseline, 80.7% of teachers reported that the school had developed a professional development plan to help teachers improve their performance, but 19.3% hadn't. Additionally, 69.9% of teachers reported that the school has appointed a mentor to help them improve their teaching, but 30.1% do not have one. In this regard, 73.3% of teachers indicated that they are evaluated and receive feedback after direct observation. With regard to frequency of evaluation, 47% of teachers reported being evaluated weekly, 15.1% monthly and over 25% twice a year or less. Despite these encouraging results, more than half of teachers indicated that they have not been involved in any continuous professional development activities such as teaching-learning circles, teacher training, and coaching/mentorship meetings in the past two weeks. At baseline, 88% of teachers reported high teaching self-efficacy levels but only 71% reported that they often implement LtP strategies in the classroom. In this regard, PlayMatters will provide continuous professional development supports related to inclusive LtP methods, through

PlayMatters

face to face trainings, teacher learning circles, and supportive supervision, which are expected to either build and further strengthen existing supports, or create them for those teachers who do not have them.

Teachers' wellbeing is associated with success in teaching and learning. Findings from our study indicate that in the Somali region of Ethiopia, 94% of teachers report a high sense of wellbeing, with teachers in Melkadida having significantly higher intrinsic motivation and sense of well-being than teachers in Jigjiga. Teachers also report that their primary sources of stress are inadequate salary, shortage of equipment, poor facilities, and lack of recognition. In this regard, PlayMatters's plans to rehabilitate schools and make them safer and friendlier may contribute to improving levels of wellbeing among teachers concerned with poor facilities. PlayMatters is also planning to provide teachers with a certificate of recognition for their participation in the program, which may help improve wellbeing for teachers who are concerned about lack of recognition. At this stage, the program is considering identifying Champion Teachers, as a way to recognize excellent work, which can further address the lack of recognition as a source of stress. However, the intervention is not able to address issues related to inadequate payment or formal certification, which are unfortunately prevalent in conflict-affected settings.

We conclude that PlayMatters may be able to have an impact on children's holistic learning outcomes if the intervention 1) increases access to professional development supports for teachers who do not have them, as 20% of teachers reported that the school does not have plans to help them improve their teacher practices and 30% of them do not have a mentor, 2) improves the quality and consistency of supports for teachers that already receive professional development supports, as over 25% of teachers who receive supports are never provided with feedback after direct observation. Finally, the intervention may also result in improved outcomes if it successfully contributes to further increase teachers' wellbeing and address existing sources of stress.

C. The Theory of Change of PlayMatters hypothesizes that having teaching and learning materials that support inclusive LtP methods available in the classroom can ultimately result in improved holistic learning outcomes.

Using classroom observations, we determined that at baseline, schools have very few teaching and learning materials. We observed that in 92% of classrooms, teachers have a chalkboard or whiteboard available, but almost no other teaching aids. We also found low availability of hands-on materials for students: Only in 38% of classrooms children appear to have textbooks, and only in 3% of the classrooms we observed local materials available or in use. None of the classrooms had a projector, storage cabinet, posters and visual aids, art supplies, or other materials. Importantly, in the classrooms, available materials are typically observed to be in use in class.

We conclude that improving the availability of teaching and learning materials is an area that can drive changes in learning outcomes if PlayMatters succeeds in both providing teaching and learning materials, and helping teachers increase the use of

local materials available in the community to ensure that all children can learn using active methods.

D. The Theory of Change of PlayMatters posits that school environments that meet minimum quality and inclusion standards are necessary to support children's learning and development.

The study found that at baseline, 23% of the classrooms exhibit inadequate levels of cleanliness, which research shows may negatively affect teaching and learning activities, and children's ability to learn and succeed academically (Chinaza, 2020). Other issues include the lack of adequate seats for each child in 10% of classrooms and the lack of adequate light for learning in 9% of classrooms. PlayMatters is investing in school rehabilitation to ensure that schools are safe places that are conducive to learning. However, an important area of intervention will be training and awareness on the importance of cleanliness to support learning.

We conclude that PlayMatters can increase the quality of learning environments by changing cleanliness practices through teacher trainings. The program has already identified and included this aspect in teacher trainings, so we expect that there will be changes in this dimension of the learning environment after trainings are conducted.

E. The Theory of Change of PlayMatters posits that when educators' skills, motivations and resources are harnessed to implement inclusive LtP activities, children's holistic learning outcomes improve.

The study used self-report measures to evaluate teachers´ confidence in their teaching abilities, motivation and attitudes toward LtP, and classroom observations to evaluate their teaching and classroom management skills. At baseline, we find that 88% of teachers reported high levels of self-efficacy related to their teaching abilities, but a lower number (71%) reported higher levels of self-efficacy related to their ability to implement learning through play methodologies. Through continuous professional development activities, PlayMatters can further boost teachers' confidence in their ability to implement learning through play, and which may result in higher levels of implementation of LtP practices in the classroom. Through classroom observations, we also assessed teachers' baseline instructional practices.

• Time management: While the great majority of teachers (95.7%) started their classes on time, many of them can improve time on task as there are 13 minutes which are not spent on learning. The PlayMatters intervention is expected to help teachers improve their classroom management skills, and potentially increase the amount of time spent on task.
• Teachers' instructional and classroom management practices. Overall, we observe that across the majority of dimensions, teachers' performance requires improvement, with a tendency towards good performance. While all areas require attention, dimensions that need particular improvement are explaining the objective of each lesson, using active learning methods, and including and providing attention to the needs of different types of children.

We conclude that there is room for growth in teachers' competencies across all areas of instructional and

PlayMatters

classroom management practices, but special attention will be required to improve teachers' use and implementation of active learning pedagogies, and inclusive teaching and classroom management practices. Through quality continuous professional development supports, PlayMatters will aim to improve these practices, and ultimately impact children's holistic learning outcomes.

F. The Theory of Change of PlayMatters hypothesizes that if the intervention is successfully able to improve the components described above, then we will observe improvements in children's holistic learning outcomes. To help set the baseline, we assessed children´s literacy, numeracy skills and SEL skills, along with their wellbeing outcomes.

• Academic skills. At baseline, we observe acceptable levels of performance in low-level literacy skills such as vocabulary or number identification, but low levels in higher-level literacy and numeracy tasks such as reading comprehension (where only 10% were able to achieve minimum performance targets and where 61% obtained zero scores) or word problems (where only 25% meet minimum performance targets and 13% have zero scores). While PlayMatters does not provide subject matter support for academic matters such as literacy and numeracy, the program hypothesizes that if teachers increase the use of hands-on materials and improve children's engagement through active learning and inclusive pedagogical and classroom management practices, we will observe changes in academic outcomes.
• SEL: The results indicate the need for supporting children in developing social-emotional learning skills as only 53.3% of children demonstrate empathy for others who are going through a difficult situation, only

52% are able to accurately identify how others would feel in different situations. Additionally, we also found that 9% of children support engaging in aggression as a way to solve problems, and 28% indicate that they would join perpetrators to make fun of victims of bullying.
• Mental Health and wellbeing: Baseline results suggest that 8.7% of students are experiencing symptoms of depression, and over 36% of children report having been victims of bullying in the past two weeks, which demands monitoring and support. Additionally, overall areas of wellbeing that appear lower include self-esteem and relationships with friends.
• Equity: While gender is a dimension where PlayMatters is paying great attention, other equity gaps also demand attention. Specifically, the baseline assessments found that children with disabilities have better SEL skills than non-disabled children, but also exhibit higher levels of depression. We observed important differences by region, with children in Malkdedida showing significantly lower levels of SEL and wellbeing levels than children in Jigjiga. Interestingly, subgroup analysis show that children in the host community exhibit better SEL skills than refugees, but lower academic outcomes. It is clear that both groups of children require support to improve their learning and development.

We conclude that low levels of baseline performance in academic and social-emotional learning outcomes provide PlayMatters with an opportunity to significantly improve children's holistic learning outcomes and their ability to succeed in life through the intervention. Given existing equity gaps, the intervention will need to fulfil its promise to increase inclusive practices for marginalized children.

Limitations

The study presents a baseline of children's learning outcomes and the school-, teacher- and learning environment factors that may hinder or support their development, which the PlayMatters intervention aims to change. At midline and endline the study will aim to document the degree to which the intervention was implemented as intended, and will establish associations with changes in learning outcomes to test the relationships that the program hypothesizes are related to children's learning and development. Importantly, the study will not aim to document impact, as changes in learning outcomes caused by the intervention will be documented during a future phase of research, where the program will conduct a randomized control trial. The study has some caveats that are worth noting. The sample used represents the status of education in refugee camps and host community schools in the Somali region of Ethiopia, but is not representative of the Somali region.

PlayMatters

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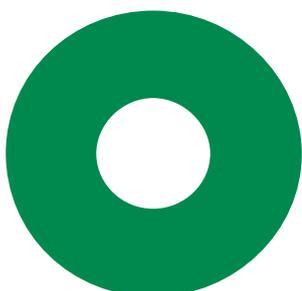
Annexes

Proposed Data, Instruments and Analytic Strategy for Research Questions

Research Type	Research Question	Data	Instruments	Analysis
Baseline outcome level questions	What are teachers' baseline instructional practices, and knowledge, attitudes and behaviours towards LtP? What are their levels of wellbeing? How do they vary by teachers' gender, level of education and teaching experience?	Quantitative teacher level sample	TCO, ASSET, TSES, Teacher background questionnaire	Descriptive statistics: Averages, percentages of participants with zero score, below and at/ above targets. Disaggregation of data for subgroup Regression Analysis
	What are Head-Teachers' baseline views on LtP and support they provide for teachers?	Quantitative	HT Questionnaire	
	What is the status of the quality of the enabling environment? How does it vary by type of school and location?	Quantitative	TCO	
	What are students' baseline cognitive, social, emotional, creative skills and levels of wellbeing? How do they vary by age, gender, SES, disability and displacement status?	Quantitative student level sample	EGRA, EGMA, battery of SEL and wellbeing	

Comparisons of Teacher Variables with Characteristic Categories

Scale	Overall Mean	Sex		Displacement		Level of Education			School Type		Site	
		M	F	D	Host	Cert	Diploma	Degree	Host	Refugee	Jijiga	Melk
Teacher Self-efficacy	3.15	3.12	3.23	3.12	3.38**	3.13	3.16	3.12	3.14	3.15	3.15	3.15
Efficacy for Instructional Strategy	3.16	3.14	3.23	3.13	3.46	3.11	3.20	3.08	3.17	3.15	3.14	3.17
Efficacy for Classroom Management	3.10	3.05	3.24	3.06	3.47**	3.04	3.14	3.05	3.10	3.09	3.16	3.06
Efficacy for Student Engagement	3.19	3.18	3.20	3.18	3.23	3.22	3.15	3.23	3.15	3.23	3.16	3.20
Application of LtP Strategies	3.00	2.99	3.03	2.96	3.30	2.89	3.06	2.93	3.01	2.98	2.89	3.05
Teachers' Role and Wellbeing												
Intrinsic Motivation	4.04	4.03	4.05	4.04	3.97	3.95	4.03	4.14	3.98	4.10	3.83	4.15**
Preparation	3.97	4.00	3.85	3.96	4.02	3.86	3.96	4.13	3.96	3.98	3.89	4.01
Teachers' Support within School												
Peer Collaboration	4.14	4.18	4.03	4.15	4.09	4.22	4.08	4.21	4.13	4.15	4.14	4.14
Support from Administration	3.95	3.93	4.00	3.92	4.20	3.93	3.96	3.89	3.98	3.91	3.97	3.93
Sense of Well Being	4.56	4.58	4.47	4.57	4.41	4.65	4.49	4.64	4.53	4.59	4.44	4.62**
Sociability	4.05	4.07	4.00	4.05	4.10	4.06	4.03	4.11	4.07	4.03	3.98	4.09
Teacher-Pupil Relationship	4.04	4.06	3.97	4.03	4.07	4.09	4.01	4.08	4.05	4.02	4.07	4.02
Sources of Teachers' Stress	1.60	1.60	1.62	1.60	1.58	1.61	1.55	1.71	1.50	1.72	1.62	1.59

Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.

PlayMatters

Descriptive Statistic for Kiddy-Kindle (Scale 1 – 5)

	Category	Overall	Physical	Emotional	Self-Esteem	Family	Friends	Schools
Aggregate	Mean (SD)	3.59 (0.56)	3.97 (0.68)	3.73 (0.70)	3.12 (1.05)	3.85 (0.87)	3.51 (0.89)	3.64 (0.85)
Sex	Boy	3.60 (.53)	.05 (.69)	3.72 (.70)	3.12 (1.03)	3.85 (.86)	3.56 (.93)	3.64 (.86)
	Girl	3.60 (.60)	4.01 (.68)	3.74 (.71)	3.14 (1.06)	3.85 (.88)	3.47 (.83)	3.67 (.82)
Community Type	Host	3.63 (.51)*	3.97 (.74)	3.77 (.68)	3.17 (.99)	3.80 (.87)	3.62 (.91)*	3.69 (.86)
	Refugee	3.56 (.61)	3.97 (.62)	3.69 (.72)	3.09 (1.10)	3.91 (.87)	3.41 (.86)	3.61 (.82)
Class	2	3.59 (.52)	3.97 (.63)	3.71 (.66)	3.04 (1.04)	3.77 (.83)	3.48 (.84)	3.63 (.81)
	3	3.60 (.55)	4.00 (.61)	3.69 (.76)	3.17 (1.00)	3.90 (.87)	3.49 (.91)	3.64 (.84)
	4	3.61 (.62)	3.93 (.78)	3.80 (.68)	3.18 (1.09)	3.89 (.91)	3.59 (.91)	3.69 (.87)
Disability	No	3.61 (.57)	3.98 (.68)*	3.73 (.71)	3.14 (1.03)	3.85 (.87)	3.52 (.89)	3.67 (.84)
	Yes	3.38 (.50)	3.63 (.72)	3.69 (.48)	2.75 (1.24)	3.81 (.91)	3.38 (.81)	3.31 (.79)
Site	JigJiga	3.70 (.50)*	3.98 (.79)	3.76 (.73)	3.31 (.94)*	3.89 (.81)	3.82 (.78)*	3.74 (.84)
	Melkadida	3.54 (.59)	3.96 (.61)	3.71 (.68)	3.02 (1.09)	3.83 (.91)	3.33 (.90)	3.60 (.84)

*Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.*

Percentage of Students by Witness Responses to Bullying

		Gender		Status		Class			Disability		Site	
		M	F	Host	Refugee	2	3	4	N	Y	JJ	MD
Disengagement	Disagree	64.9%	68.4.%	64.2%	68.9%	66.2%	67.9%	65.5%	66.9%	56.3%	61.7%	69.5%
	Agree	35.1%	31.6.%	35.8%	31.1%	33.8%	32.1%	34.5%	33.1%	43.7%	38.3%	30.5%
Join Perpetrators	Disagree	58.9%	61.3%	58.9%	52.1%	57.5%	57.1%	72.4%	92.7%	98.2%	46.4%	40.4%
	Agree	41.1%	38.7%	41.1%	47.9%	42.5%	42.9%	27.6%	7.3%	1.8%	53.6%	59.6%
Upstand	Disagree	37.9%	42.8%	23.1%	45.3%	33.3%	46.2%	20.1%	48.9%	94.7%	0.0%	36.1%
	Agree	62.1%	57.2%	76.9%	54.7%	66.7%	53.8%	79.9%	51.1%	5.3%	100.0%	63.9%
Befriend	Disagree	25.3%	43.9%	17.6%	42.2%	24.7%	42.1%	15.2%	35.1%	93.3%	3.9%	31.9%
	Agree	74.7%	56.1%	82.4%	57.8%	75.3%	57.9%	84.8%	64.9%	6.7%	96.1%	68.1%
Authority	Disagree	43.2%	46.9%	28.5%	45.7%	40.5%	44.8%	21.5%	51.7%	95.6%	16.8%	35.4%
	Agree	56.8%	53.1%	71.5%	54.3%	59.5%	55.2%	78.5%	48.3%	4.4%	83.2%	64.6%

Regression model 1 with Unstandardized Coefficients of regression for EGRA, EGMA, Kiddy-Kindle, MFQ, and Empathy
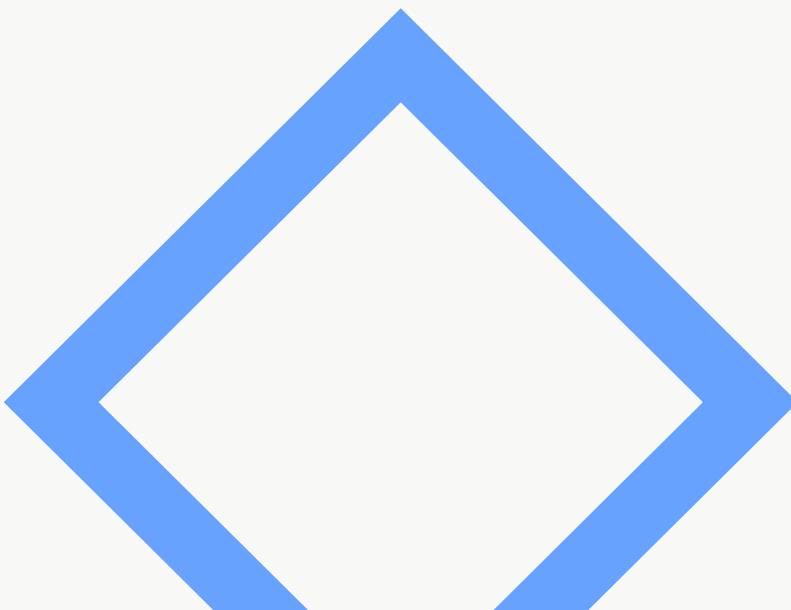
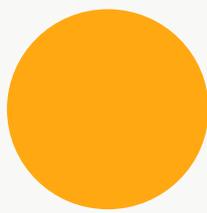|	EGRA	EGMA	Kiddy-Kindle	MFQ	Empathy
Adjusted R Square	.084	.105	.008	.006	.022
Regression Model	P = .000	P = .000	P = .141	P = .178	P = .014
(Constant)	29.103**	10.379	56.762**	3.501**	21.033**
Gender of child (M)	−4.264*	−1.687	.555	−.306	.083
Child Displacement Status (host)	3.143	5.564*	−1.721	−.812	.858
Grade of child (Grade1)	6.740**	5.603**	.316	−.021	−.477
Age of Child	.497	2.132**	.571	.121	.206
Child Disability (No)	2.621	7.374	−4.458	2.105	3.669**

*Note. Statistical significance is marked as *p<.05 **p<.01 *** p<.001.*

PlayMatters

Regression model 2 with Unstandardized Coefficients of regression for EGRA, EGMA, Kiddy-Kindle, MFQ, and Empathy with (Child and teacher-level covariates characteristics combined)
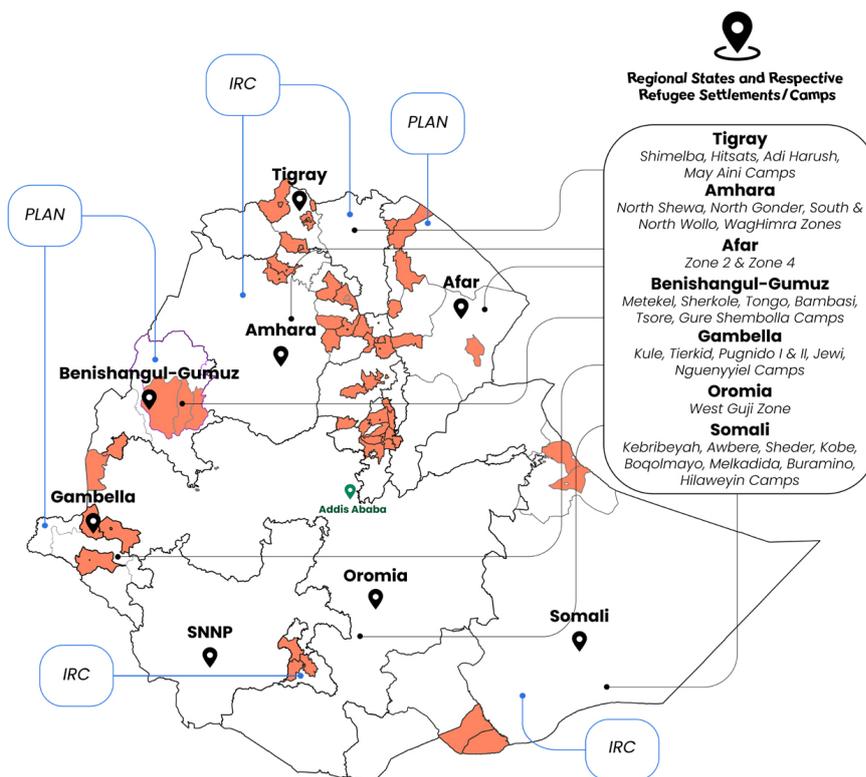
	EGRA	EGMA	Kiddy-Kindle	MFQ	Empathy
Adjusted R Square	.158	.177	.008	.036	.021
Regression Model	P = .000	P = .000	P = .252	P = .015	P = .078
(Constant)	20.789	2.680	3.143	1.467	1.992
Sex of child (M)	–3.006	.127	.014	–.279	.002
Child Displacement Status (host)	3.890	2.182	–.145	–.797	–.072
Grade of child (Grade1)	9.605**	4.459**	–.020	–.323	–.075
Age of Child	2.597	2.822**	–.104	2.773	.447
Child Disability (No)	.303	1.014	.027	.164*	.047
Teacher Gender (M)	8.586*	4.087*	.009	–.133*	–.001
Teacher Level of Education (Cert)	3.226	1.222	–.014	.902	–.034
Teacher Displacement Status (No)	1.351	–.510	.255	2.415*	.139
Teacher Wellbeing	–.696	–.928	.062	.268	.054

*Note. Statistical significance markes as *p<.05, ** p < .01*

Where We are Working

Regional States and Respective Refugee Settlements/Camps

Tigray
Shimelba, Hitsats, Adi Harush, May Aini Camps

Amhara
North Shewa, North Gonder, South & North Wollo, WagHimra Zones

Afar
Zone 2 & Zone 4

Benishangul-Gumuz
Metekel, Sherkole, Tongo, Bambasi, Tsore, Gure Shembolla Camps

Gambella
Kule, Tierkid, Pugnido I & II, Jewi, Nguenyyiel Camps

Oromia
West Guji Zone

Somali
Kebribeyah, Awbere, Sheder, Kobe, Boqolmayo, Melkadida, Buramino, Hilaweyin Camps

Ethiopia

Map labels: IRC, PLAN, PLAN, Tigray, Afar, Amhara, Benishangul-Gumuz, Gambella, Addis Ababa, Oromia, SNNP, IRC, Somali, IRC

PlayMatters

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