PlayMatters

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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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

Acronyms/Abbreviations

GER	Gross Enrolment Rate
PM	PlayMatters
IRB	Institutional Review Board
IRC	International Rescue Committee
LtP	Learning through Play
MoE	Ministry of Education
NGO	Non-Governmental Organization
PHRP	Protecting Human Research Participants
PI	Principal Investigator
SEL	Socio-Emotional Learning
TPD	Teacher Professional Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations Human Rights Council

Executive Summary

Learning through Play (LtP) is built on the premise that play allows children to set goals, ignore obstacles, and strive for outcomes. There is growing evidence that play enhances child holistic development defined by cognitive, social, physical, emotional, and creative aspects.

PlayMatters (PM) is a LEGO Foundation funded teacher professional development (TPD) program that works through existing education systems to provide Early Childhood Development (ECD) and primary teachers in Tanzania, Ethiopia and Uganda with the skills, motivation, and resources to integrate contextually relevant play-based methods into their teaching practice, which is understood and referred to as Learning through Play (LtP) approaches.

The main objective of this implementation research study is to closely study the implementation of PM activities with educators in ECD and primary schools in the Nyarugusu Refugee camp in the western province of Kigoma, Tanzania. In 2022, PM in Tanzania intended to define initial characteristics of children and educators in PlayMatters intervention refugee and host community. For the years 2023-2024, the PlayMatters project in Tanzania will conduct and a complete round of project implementation, subject of the present implementation research study. The results will inform program implementers with insights related to the implementation successes and challenges, PM's core package, and program's design and reach (especially relevant after a program redesign in 2022, before the 2023-2024 round of implementation).

The **overall implementation research study** objectives, include:

- Examining how trainers and educators implement the PM package with a focus on the quality and fidelity of implementation at different levels.
- Examining whether and how the PM Theory of Change (ToC) for educators and school leaders works as expected, with a focus on examining pathways of change. For Tanzania, the implementation research primarily focuses on educators and will not assess TOC components related to children's final outcomes or impact (specifically on learning and holistic skills).
- Examining trainers, educators' and pupils' perceptions of the functionality of the PlayMatters package in terms of systems, content, relationships, techniques, motivations, and contextual relevance across schools and settings.
- Examining baseline-endline changes in educators' key outcomes, particularly instructional practices.

Outcome Reports

The baseline, the study responds to the following questions:
1. What are educators' and trainers' knowledge, motivation, perceptions, and understanding of LtP?
2. What are educator's levels of occupational wellbeing (measured by intrinsic motivation, peer collaboration, preparation, support from administration, and sense of wellbeing) and self-efficacy?
3. What is the baseline quality of the enabling environment (schools and classrooms)?
4. What are educators' baseline instructional practices (use of teaching and learning materials and child-centered pedagogical practices)? How do they vary by teachers' age, gender, level of education and teaching experience?

At endline, the study will respond to the following questions:
1. What was the change in educators' knowledge, beliefs, and perception of LtP after the intervention?
2. How did differential levels of implementation fidelity affect PlayMatters educator's intervention outcomes?
3. What educators' differential characteristics affect differential levels of implementation fidelity of PlayMatters?

The aim for this baseline study, is to account on the initial characteristics of educators engaged in PM in the years 2023-2024. During this period, PlayMatters in Tanzania tested a full round of intervention both in refugee and host communities. This mixed-methods study includes the results from surveys and assessments conducted with teachers, trainers of trainees (ToTs), and head teachers within the framework of our implementation research.

Major Findings

Findings indicate the initial 2024 PM LtP training workshop was successful, with positive, though moderate, increases in educators' understanding of and confidence in applying LtP and with Training of Teachers (ToTs) reporting satisfaction and confidence with conducting the teacher trainings. Interviews suggest that educators identify and used games and songs in their teaching, but they faced difficulty in distinguishing these from free play via having specific and appropriate learning purposes. Educators identified that games, play, and active learning enhance competencies of creativity and memory, with student collaboration aiding in the enhancement of social skills like confidence and cooperation. In terms of self-efficacy, educators felt competent in instructional practices but less so in classroom management. High levels of stress were reported due to inadequate salaries and poor facilities, while the general absence of materials highlighted the impoverished learning environments.

Baseline classroom observations, conducted one month after initial training, indicate generally strong and positive results overall. The total score and each of the tool subscores (Teaching Practices, Classroom Behavior and Discipline, and Student Engagement) were 2.38 in a scale from 0 to 3, and 87%, 86%, 83% and 91% of the observed classrooms met with the set performance category (a mean score at or above 2). However, while educators displayed high-quality instructional practices, traditional methods still prevail. Noteworthy is the strength in student engagement and areas for growth in behavior management and creating inclusive environments.

Conclusions and Recommendations

Conclusions and recommendations from the study emphasize areas off opportunity for program and implementation teams to tailor refresher trainings both in terms of planning (considers time allocations, recent restrictions, and varied schedules of educators) and content (making more explicit links between LtP activities, providing educators with more support in terms of classroom management). Given that there was limited availability of materials for students' hands-on activities, findings advocate for an emphasis on increased teacher's awareness on the provision and effective use of materials or manipulatives to facilitate LtP. The study recommends a continued focus on the development of student-centered and active pedagogical practices and an emphasis on creating inclusive educational environments. To boost student active participation, strategies that promote interactive learning should be prioritized.

Further, it is recommended that building on the strong and positive educators' peer collaboration at schools and other school-based activities. Additionally, there is a call for strengthening support networks within schools, particularly between educators and administration staff, to empower the implementation of LtP activities. Recommendations also highlight the importance of further exploring the interplay of wellbeing, stress, and relationships within schools to support the implementation of LtP. At endline findings from the present and future research will focus on potential adjusting of PlayMatters Theory of Change (TOC) to reflect the continuously changing and challenging context of the educators' experiences. Monitoring and evaluation should be ongoing to inform the delivery, access, and tracking of the different PM Core Package contents as they continue to be implemented and revisited this year.

Background

PlayMatters (2020-2026) is an education initiative funded through a $100 million grant from the LEGO Foundation. The program reimagines childhood for 800,000+ refugee and host-community children across Ethiopia, Tanzania, and Uganda. 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+.

Learning through Play (LtP) is an active teaching and learning method in which children learn through guided, hands-on, meaningful, play-based interactions in safe and inclusive environments. LtP capitalizes on a child's natural desire to engage in play and core elements include:

- The adult facilitator (a teacher or community volunteer) intentionally plans and delivers 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 future.
- The facilitator deliberately creates and maintains a positive, safe, and inclusive environment for children, allowing children to feel comfortable and joyful.

LtP is based on the premise that play is not purposeless but a process that improves brain structure and function and facilitates the process of learning by helping children to pursue goals, ignore distractions, and build resilience (Frost at al., 2012). Evidence supports that LtP can improve holistic outcomes for children more effectively than either traditional instruction or free play (Yogman et al, 2018), as it enhances cognitive, social, physical and emotional aspects of children for it improves the level of engagement and motivation. While playing, children practice self-regulation when they take turns, accepting losses and managing conflicting interests (Vygotsky, 1978).
Children also practice persistence and self-perception when they, for example, compete for better performance to win (Gaffar & Campbell, 2021).

There is evidence, though very limited in volume, that LtP approaches improve children's holistic outcomes more effectively than traditional instruction or free play (Yogman et al., 2018). Yet, such evidence is from a low-income but non-crisis context. It is unknown if this evidence is applicable in humanitarian contexts where challenges around education tend to be starker. For instance, educators in conflict-affected refugee settings have to handle multifaceted challenges, often confounded by overcrowded classrooms, scarce instructional materials, and outdated curricula. These problems can add greater difficulties for educators implementing LtP in the classroom. The novelty of LtP among educators can be another barrier. All these circumstances render an opportunity to test how educators in conflict-affected settings can adopt LtP and how their LtP practices can support children's holistic learning, expanding the current evidence-based around LtP to this region.

Learning through Play in Conflict and Crises: Tanzania

Conflict and crises affect both children and adults, but their effects have further-reaching adverse effects on children than on adults. First, children lack the physical and emotional readiness to cope with the consequences of the crisis as they are still in a developing stage. Second, children and their wellbeing depend on their caregivers, who are themselves affected by the crisis. Studies on children exposed to war and separated from familiar environments and relationships, for example, show that children experience emotional stress, and the consequences become more severe when children are separated from their parents due to a crisis (Osofsky, 1999).
In recent years, LtP has emerged as a relevant and affordable pedagogical approach and/or intervention for children in crisis-affected settings as it helps them discharge emotions and develop coping mechanisms and hope. In times of crisis or difficulty, play develops hope and helps children not to jettison the problem but to develop the ability to cope (Yohani & Larsen, 2009).

Though play is universal and LtP enhances holistic learning, the challenges facing educators in refugee settings are extreme (INEE, 2019). Currently, there is little evidence from low-resource contexts on how to assist educators in overcoming the challenges they face implementing LtP in humanitarian settings.

Currently, Tanzania hosts approximately 250,000 refugees and asylum-seekers, primarily from Burundi and the Democratic Republic of the Congo, residing in Nduta and Nyarugusu camps in the northwest region. Of the refugee population, over 55% are children under 17 years old, nearly 20% are under 4 years old, and 20% fall between the ages of 5 and 11. Refugees are confined to camps, with almost half living in overcrowded emergency shelters and facing restrictions on attending school in the host community. The coordination of education within the refugee camps falls under the responsibility of the UNHCR, which provides funding to NGO partners to deliver formal schooling directly. In line with the principle of education for repatriation, refugee schools within the camps employ the curriculum of the refugees' home countries rather than Tanzania's curriculum. The language of instruction for early childhood care and development (ECCD) and up to Grade 4 is Swahili for Congolese refugees and Kirundi for Burundian refugees. From Grade 5 onwards, French becomes the medium of instruction for both populations, while Kiswahili and English are subjects across all ECCD and primary grades.

The Global Education Monitoring Report (UNESCO, 2019) reveals that at the end of 2017, only 56.07% of refugee children under 17 years old were enrolled in school. The report further illustrates that teachers regularly report high student absenteeism and drop-out rates. An interagency Joint Education Needs Assessment (JENA) conducted at the end of 2017 found other challenges, such as a shortage of teaching and learning materials, a lack of access to updated curricula content, and a shortage of qualified teachers. Other challenges included a shortage of classrooms to accommodate all learners as many lessons take place outside under trees. In our literature review of studies conducted in Nyarugusu camp, we found limited studies focusing on teaching and learning methods used by teachers. Notably, no single study focused on play-based pedagogies and LtP activities for improving children's learning.

PlayMatters Implementation 2023-2024 Tanzania Activities

Based on the definition of LtP for PlayMatters, the project supports schools, educators, school leaders, community facilitators, and education system actors on: 1) Skills & Practices for LtP, 2) Tools & Materials for LtP, and 3) Enabling Environment for LtP within its Theory of Change (See Figure 1).

In 2023-2024 PlayMatters Tanzania is planning to implement at least the following components of PlayMatters Core Package including the implementation of TIE co-created teacher training rolled out with Cohort 1 in September/October 2023,[1] a training of trainers for school leaders in November 2023 with SMC/PTA meetings to follow, Teaching Learning Circles, and the provision of teaching and learning materials.[2]

Objectives

Research Aims and Questions

The present baseline for the Implementation Research Study took place in November 2023. This study aim was to conduct a baseline assessment of the initial characteristics and LtP practices of educators engaged in PlayMatters activities in Nyarugusu refugee camp. Results intend to inform program implementation and provide insights to improve and refine the PlayMatters package and implementation within refugee camps.

Ethical Considerations

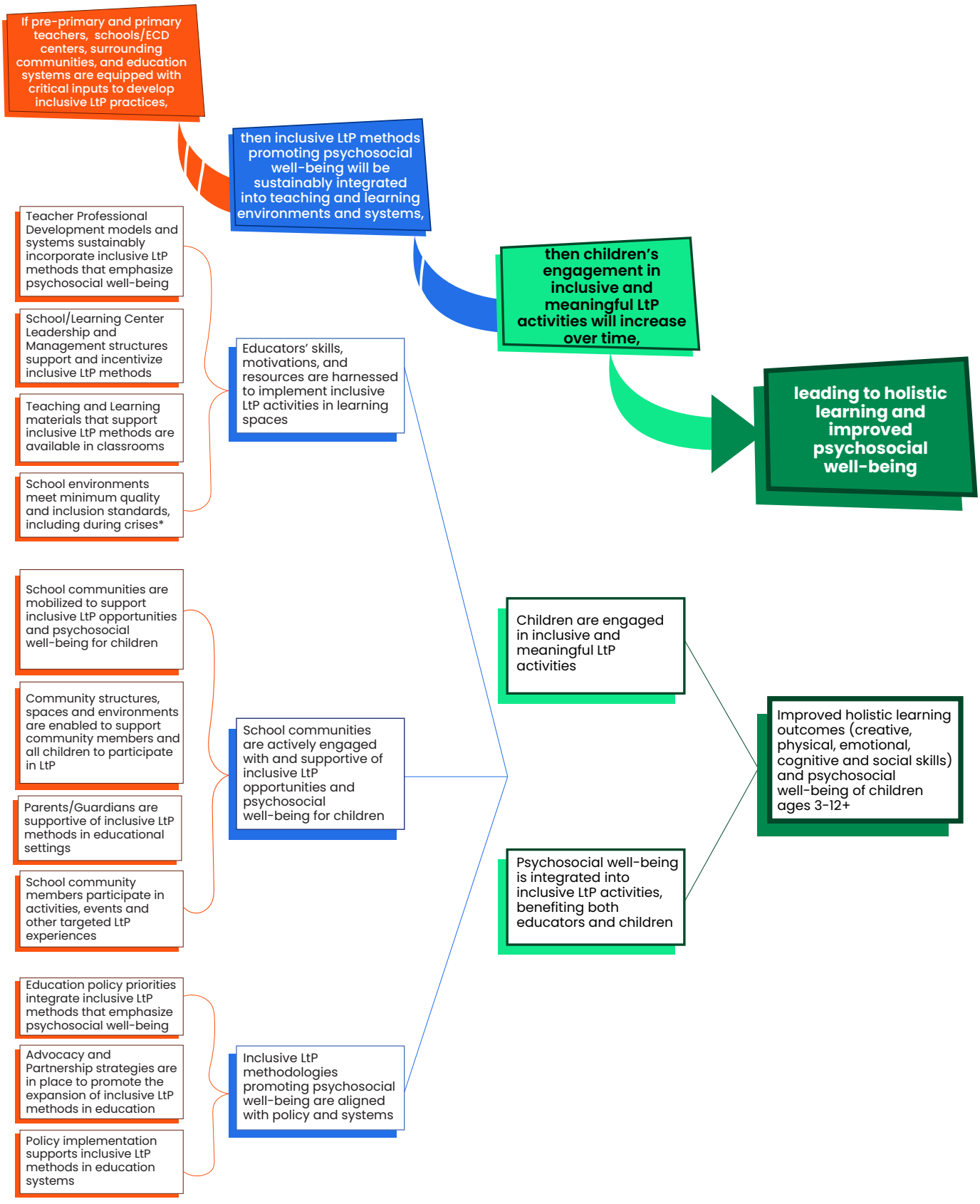
This study received ethical clearance from the International Rescue Committee's institutional review board (IRB) and from the University of Dodoma on behalf of the Tanzania Commission for Science and Technology (COSTECH). This enabled to secure a research permit from the Ministry of home affairs headquarters and the regional office of home affairs, Kigoma region. Such a research permit was used to reach refugee camp management that allowed the researchers to access teachers and parents.

All the Principal Investigators (PIs) and co-PIs involved in the study completed a web-based course on protecting human research participants' online training provided by Protecting Human Research Participants (PHRP). Before collecting any data, all research participants were informed about the purpose of the research, assured on how their responses would be treated and managed to ensure anonymity and confidentiality, and the voluntary nature of their participation. While collecting data, consent from all participants was obtained, anonymity was kept, and the use of the data collected was limited to the purpose of the study only. The researchers and the research teams observed respect for human and moral values and sought informed consent from the HTs and participants. Data has since been stored in password-protected cloud services of the IRC and only accessible to the PM team.

[1] Cohort 1 in Tanzania with refugee schools corresponds to the school year from October 2023 to September 2024. For refugee schools, TIE co-created, adapted, and translated the teacher training content. Refresher trainings are expected in April 2024.
[2] Including markers, pens, flipcharts, manila paper, glue, scissors and painting colors. The provision of additional ludic materials of Six Bricks was canceled for Tanzania.

Figure 1. PlayMatters Theory of Change

PlayMatters Theory of Change



* 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.

Methods

Participants

This study was conducted in six primary schools located in Nyarugusu ward specifically, Nyarugusu refugee camps in Kigoma region. The Nyarugusu refugee camp is dominated by two communities: the Congolese, the population of this study, and Burundians. The study intended to access a total number of 196 teachers registered at all schools, however, the study managed to access 163 teachers at the time of data collection.
On the other hand a total of 18 teachers were involved in FGD. Convenient sampling guided the selection of teachers to be involved in the FGD. This means that teachers who were available and ready to be involved in the interview were involved. Further, the study ensured that qualitative data were collected to ensure no more codes are emerging from participants. Thus it adhered to the saturation of data.

Table 1. Summary of Qualitative and Quantitative Samples

	Teacher Survey			Classroom Observation			FGD and Interviews		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
School 1	22	7	**29**	4	5	**9**	4	2	**6**
School 2	21	10	**31**	4	8	**12**	4	4	**8**
School 3	17	7	**24**	4	7	**11**	3	2	**5**
School 4	11	8	**19**	3	7	**10**	3	3	**6**
School 5	17	7	**24**	4	6	**10**	4	2	**6**
School 6	29	7	**36**	2	10	**12**	4	2	**6**
Total	**117**	**46**	**163**	**21**	**43**	**64**	**22**	**15**	**37**

Instruments

The instruments for study were selected after a careful review of the study objectives, population, and alignment with PlayMatters intended outcomes and proposed Theory of Change. Data collection included both quantitative and qualitative measures. The use of two sources of collecting data enabled the triangulation and complementation data (Flick, 2018).

Educators

I. Educator Survey: A questionnaire to gather demographic information, such as age, displacement status, educational background, and professional development received.
II. Pre-Training Educators FGD Guide: Conducted before the teacher trainings, a FGD with educators included questions exploring the ways teachers define and understand LtP and Self-Efficacy and how do they apply such practices in their daily teaching practices. One FGI was conducted per school to teachers who were found at school at that time of data collection.
III. Applying Learning through Play Strategies Pre-Post Training Survey: Assessed before and after the teacher's training activities, a 14-item self-report which teachers use to identify the degree to which they feel able and motivated to implement LtP 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 1.0 phase and showed good evidence of reliability. The survey was applied before and after with all the educators' who attended PM's training workshop.
IV. Wellbeing Assessment of Skills and Supports that Enable Teachers to Succeed (ASSETS): Assessed at baseline and endline, the instrument explores how teachers feel and function in their jobs; it is context-specific and includes teachers' affections, attitudes, and evaluations of their work. The tool has been validated in Uganda, Colombia, and the Philippines (DSa et al, 2022). For the present study, we included 5 subscales:

- Peer Collaboration: 12 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: 12 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 deliver content effectively.
- Support from Administration: 12 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: 11 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: 9 items to assess teachers' general sense of safety in the school and community, and the presence of strong relationships inside and outside the school.

V. Self-Efficacy Scale (TSES): Assessed at baseline and endline, a self-report questionnaire to measure 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 (Tschannen-Moran and Woolfolk Hoy, 2001). The scale consists of 12 items that measure the educator's self-efficacy in the ECD settings using a five-point Likert-type scale (with scale values ranging from 0 = Not at all applicable to 4 = Very strongly applicable). A mean score close to 4 indicates high self-efficacy and a mean score close to 0 shows low self-efficacy.
VI. Stress inventory: Assessed at baseline and endline, the instrument includes 20 items assessing sources of occupational stress for teachers in the classroom (Fimian, 1984), using a 5-point Likert scale from no stress (0) to extreme stress (5). The scale has been used in different contexts, with good evidence of validity and reliability (Kourmousi et al, 2015).

Classroom Observation

VII. Teacher Classroom Observation (TCO): Conducted at baseline and endline, this tool contains 22 items to measure to assess the quality of classroom instructional practices through direct observation of teachers (Lee & Brown, 2020). 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 scale aims to measure: 1) Time on Task, 2) Availability and use of Materials, 3) Teacher instructional practices, 4) Classroom management and positive discipline, and 5) Student engagement.

Trainers

VIII. Trainers FGD Guide: FDG with trainers will inquiry on their values and attitudes towards LtP, their experiences during the trainings and what worked, what didn't work and why. We will utilize a semi-structured interview protocol based on the PlayMatters training guide, with two sections: first, a fidelity of implementation component, which asks trainers to note how the implementation of each activity compares to the designed activity in the training guide, including noting whether and how the trainers deviated from the training guide (timing, adherence, and deviations), and second, a qualitative section focusing on the quality of implementation.
Validity was sought through the selection of previously validated measures to the extent possible and after incorporating measurement learnings from PlayMatters activities and previous years. As in PlayMatters 1.0, before to data collection, all the instruments were translated by in-country translators with the support of PlayMatters research team. Once translated, instruments were cognitively pretested with a sample of comparable respondents. Reliability was tested with Cronbach's Alpha, which estimates the internal consistency reliability of an instrument, indicating the extent to which subtasks or items deliver consistent scores. The range for Cronbach's alpha is 0.00 to 1.00, with higher values indicating better (or more desirable) reliability. We calculated Cronbach's alpha separately for each instrument and language, for each of the study groups (ECD and Primary children and educators). Unless noted otherwise, the estimates included in the reporting throughout have reliability coefficients that range between acceptable (0.7-0.8) to excellent (≥ 0.9) for instrument-level reporting. For reporting analyses results, we mostly omit on reporting sub-scales that did not comply with the threshold unless they are considered critical to be reported (and noted as interpreted with caution).

Analytical Strategy

This study employed a mixed-methods research approach (Creswell, 2009) to collect and analyze data on teachers' understanding of LtP and the way they applied it in primary school classes. The mixed-methods approach was adopted with the use of multi-method data collection and triangulation of quantitative and qualitative analysis (Clark et al., 2008; Fàbregues et al., 2021).

To answer RQ1 regarding educators' and trainers' knowledge, motivation, perceptions, and understanding of LtP we draw from the qualitative analyses of FGD with educators before the trainings and from descriptive statistics and using a paired sample T-test of the Pre- and Post-teacher trainings survey Applying Learning through Play Strategies.
To answer RQ2 regarding educator's wellbeing and self-efficacy, we draw from the descriptive analyses of ASSETS by subscale (intrinsic motivation, peer collaboration, preparation, support from administration, and sense of wellbeing) and TSES.

To answer RQ 3 regarding the status of schools and classrooms materials and RQ4 regarding the educators' instructional practices, we draw from descriptive statistics from the baseline classroom observation (TCO), disaggregating analyses by teachers' age, gender, level of education and teaching experience.

To answer RQ5 on educators' baseline instructional practices, we present summary statistics of both mean scores and % of classrooms observation by performance categories for the TCO Classroom Observation Aggregate score and for each of the Sub-Domain Scores (use of teaching and learning materials and child-centered pedagogical practices). To answer how these practices vary by teachers' age, gender, level of education and teaching experience, we present inferential analyses of models using TCO scores as dependent variables in models controlling for educators' individual characteristics to isolate the effects of individual teacher traits on educational outcomes. For all regressions, we use either mean scores or "Meeting Performance Category", defined as classrooms scoring between 2 -3, i.e., falling under the "Good" to "Excellent" categories as dependent variables. Statistical analyses were conducted using Stata software, following methods outlined by Hosmer, Lemeshow, and Sturdivant (2013), ensuring robust model fitting and reliable inference. The regression models were adjusted for potential confounders, and multicollinearity checks were performed to validate the independence of predictors.

Qualitative data from focus group discussions and interviews were analyzed through content analysis, aimed at identifying manifest and latent themes and patterns beyond mere word counts (Zhang & Wildemuth, 2009). The data collection process involved systematic recording and documenting of responses using digital voice recorders and notebooks. Transcription and translation of the audio recordings

were performed, converting them from Kiswahili into text, which was then organized into a word template aligned with research questions. Coding was applied inductively and deductively (De Wever et al., 2006), with each text unit—from words to entire documents—assigned a specific code (Minichiello et al., 1990). Inter-coder reliability was ensured through consistent agreement between two coders, followed by a rigorous review process to maintain coding integrity (Schilling, 2006). Data were then transferred to Microsoft Excel for further categorization and analysis. The local co-principal investigator (co-PI) performed systematic comparisons and integration of categories, developing interpretive memos for a deeper theoretical understanding. The qualitative findings were reported with comprehensive descriptions to elucidate the derived meanings (Denzin, 1989).

Scope and Limitations

This descriptive study focuses on documenting the instructional practices of educators in Nyarugusu refugee camp; thus, any inferences do not apply to PlayMatters' host population. The PlayMatters project implementation uses the whole school approach. Therefore, the scope of implementation involved all the schools and all classes serving the Congolese refugee community in Nyarugusu camp in Kasulu district. In terms of analysis and claims, the presented results are predominantly descriptive and do not explore relationships among variables (unless specified), nor do they imply causality.

During the implementation of the study, some limitations were experienced that affected the initial scope of the study and break by respondents. First, the scheduling of the classroom observation was one month after. Further, the classroom observation had to be scheduled during the rainy seasons, and due to heavy rain, a bridge connecting the camp and host community was flooded thus, limiting researchers and the PlayMatters project staff from reaching the schools in time causing delays in data collection.

Interpretation of classroom observation data should be interpreted accordingly for this and the baseline-endline study. Second, qualitative interviews did not cover questions related to the Six Bricks component of PlayMatters, due to delays in obtaining approval of the six bricks by the MoEST and their suggestions on changing the color composition of the bricks. [3]Delays in the process have permanently delayed Six Bricks implementation in Tanzania. Third, students' interview was interfered with by the terminal examinations. Thus, conducting them was difficult despite its importance in providing data for follow-up during implementation to learn about the progress made by the project to students and teachers.

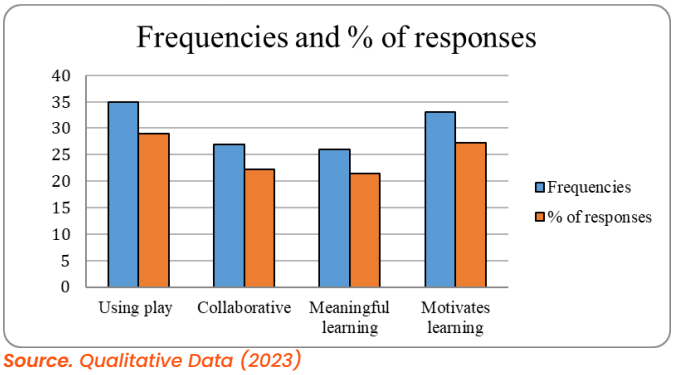
Results

What are educators' and trainers' knowledge, motivation, perceptions, and understanding of LtP?

The qualitative component of RQ1 used a total of six FGD, one per each school, conducted by the research team led by the local-PI, with 37 teachers at the schools at that time of data collection. FGDs were conducted before the workshop to gain firsthand information free from the influence of the learning experience. The data collection process involved systematic recording and documenting of responses using digital voice recorders and notebooks. Qualitative analysis depicts that teachers had various understanding regarding the meaning of play based learning.

Educators had various understanding of what constitutes LtP

Figure 2. Qualitative: Teachers' Understanding of learning through Play before the training



Source. Qualitative Data (2023)

Activities Using Play: A good proportion of teachers viewed LtP as the learning that engages students and the teachers in the planned task (s) to the point that parties involved in the activity tend to be motivated by the experience they are going through. LtP was understood by teachers before the training as a teaching and learning that motivates learning in children and promotes easy understanding of the lesson. Participants' views about the use of LtP before and after the training reveal a change of teachers' experience in the use of a variety of play activities. For example, while games and songs were used for building learners' attention, the FGD after training found teachers were eager to use LtP to facilitate achievement of the lesson objectives. Their responses illustrated opportunities to use traditional games for improving instruction and successful learning.

Motivates Learning: Participants' views reveal that students were motivated in different ways when learning through play-based lessons. After the training, teachers found that using the LtP approach could motivate students to contribute to the lesson and create a sense of togetherness while learning. This is because most children feel safe and confident while learning with others through play. Likewise, play-based lessons seem to create a good atmosphere for learning, hence, children are excited to continue with the lessons. One of the participants revealed, ***"This method inspires learners to contribute to the lesson"*** another participant said ***"It creates a good atmosphere for learning which also raises the interest of learners to the subject".***

[3] There was a suggestion that. The government of Tanzania through the officers from the PoRALG and those from the Commissioner for Education, suggested to the PlayMatters project to consider replacing the current composition of the six bricks and include blue and black as students in Tanzania have been learning it since when they were at home and through pre-primary class. Such suggestion had unexpected budget and timing implications.

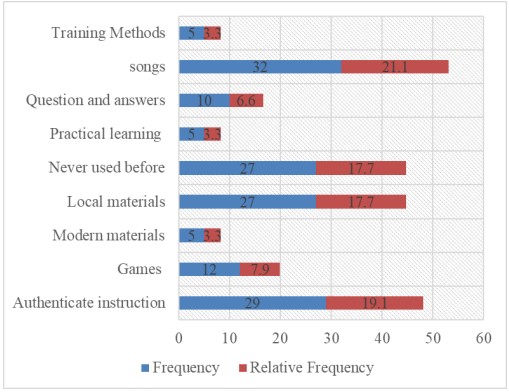
Collaborative: Other responses on the meaning of the play-based lessons were extended to its inclusivity. Findings revealed that this learning approach was able to involve children of different sex and abilities in learning which managed to foster collaborative learning. One of the participants said, ***"This method involves all learners in the lesson regardless of their gender"*** Another one replied, ***"Play-based lessons enhance unity and cooperation among children ''.*** On this basis, play-based learning is essential for enhancing inclusivity and collaborative learning.

Meaningful Learning: Others understood LtP as the learning that actively and meaningly engages children in the lesson. Unlike other methods, participants viewed play-based lessons as actively engaging children in the lesson. Responses further revealed that, as children like to play, they were automatically involving themselves in the lesson without being pushed by their teachers. One of the participants reported that ***"LtP method helps teachers to primarily involve learners."*** Another participant said, ***"Despite being a well-engaging method, it motivates school attendance too".*** The important thing to note is that this learning approach promoted meaningful learning, as teachers were not in trouble of repeating the lesson to those who missed it.

There's area of opportunity for educators to learn and use active LtP pedagogies

When asked how educators used play-based teaching methods, FGD results (Figure 3) revealed that they understand as LtP various activities, such engaging children in games and activities, integrating play into instruction, and utilizing play-based teaching aids (materials both local and modern). However, data also indicated that some teachers did not integrate any play-based learning into their daily teaching practices and only two teachers emphasized the use of specific strategies for promoting practical learning or related to specific teaching methods. These results suggest educators' potential limitations in their understanding of LtP methodologies with active and playful strategies.

Figure 3. Qualitative: Educators' examples on ways they use LtP



Source. Qualitative Data 2023

Several reasons were cited for teachers to have not used LtP, especially a limited understanding of the method itself. Another factor was the lack of skills in implementing LtP in teaching and learning, as highlighted by teachers who acknowledged their unfamiliarity with play as a method before receiving training. However, after the training, teachers expressed newfound confidence and readiness to employ play-based learning. For instance, one teacher stated, **"We didn't use them before, but because we have received the training, we will start using this method."**

The teachers' perspectives suggest that, initially, many were unaware of play-based learning and how to implement it but exhibited a positive and receptive attitude toward its adoption after receiving training.

Games and songs were the two main play activities used by educator's when using LtP

Concerning games, teachers were of the view that they use different games in facilitating academic content such as counting. For instance, one respondent cited the use of counting pebbles as one of the play strategies used in facilitating counting. However, upon analysis of the data, it became apparent that teachers exhibited a limited understanding of specific game activities that can foster learning. This was evident as many did not specify the particular play games incorporated into their daily teaching. For instance, one teacher mentioned, **"Therefore, we have been using that method to teach through games without providing specific details about the games employed".**

In addition to games, another frequently employed activity was the use of songs. Teachers indicated that they incorporated songs as a play activity in their teaching. In this context, teachers integrated songs into their instructional processes, considering them as a form of play. It was observed that teachers utilized songs in various activities, such as identifying alphabets or naming different parts of the body. For example, one teacher mentioned, **"Also, having a song to count the alphabet makes it easier for the child to understand''.** Another teacher shared an example, stating, **"Through songs, for learning body parts for instance, The teacher can demonstrate by placing the ball at a respective body part and require students to mention it. This activity is called 'latete, lesenue, lepol, leme".** Despite teachers reporting the integration of songs as a play-based technique, there was a certain ambiguity in how they distinguished between songs as a form of play and songs as a method of teaching and learning.

Educators also report using LtP for demonstration and to support question-answer activities

Teaching and learning methods such as demonstrations, and question and answers were used to support LtP. With the demonstration, teachers stated that they demonstrate the procedures for funnily doing certain activities and require learners to do them back. This meant that the demonstration was conducted in a friendly and enjoyable manner. Through that, learners could learn funnily and enjoyably. For instance, one teacher noted, **"For example, if the teacher is teaching eating, he has to show in actions what should be done before eating, you start washing your hands, then we start eating food in actions".** The expression by the teacher entails that if teachers apply integrated play within teaching and learning methods, children may develop meaningful learning.

Questions and answers were reported by teachers as the method they used during LtP. However, the responses by the teacher did not depict the way questions and answers are used as play for fostering learning. For instance, one teacher said, **"You tell them that it is a tree, you show them the parts of the tree, they name it, and then you direct them; they answer themselves, you continue to ask them questions little by little so that they can discover for themselves what you are going to do".** This entails that teachers were not able to distinguish the way teaching and methods can be used for teaching normal content and how they can be integrated in play-based teaching.

Educators reported using of materials to facilitate learning in general

It was noted that during the preparation of teaching and learning aids, teachers ensured the use of play-based activities. For instance, teachers used the locally available materials to engage children in playing while learning. In this aspect, teachers guided children to collect and use playing materials around the environment. This was used to facilitate learning in general. For example, one teacher noted that: **"Relief features, children will collect clay and make those shapes, or children are learning to draw a river, they will fetch water and make a river so that the lesson brings reality".** In relationship with available local materials, teachers said that they engaged children in playing with real objects in learning. For instance, teachers reported that they could take children outside the classroom to allow them to interact and play with nature. By doing so children develop the concept required. For example, one teacher noted, **"By using real objects during the teaching of the lesson, such as a tree, the teacher takes the students outside to see the real tree, it becomes easier to understand".** In addition, it was said that teachers could bring real objects and require children to observe, interact with and name the features or uses of that object depending on the need of the lesson. By doing so children find it engaging, fun, enjoyable and at the same time learning.

One participant said, **"We use real objects such as pebbles to involve them in counting games; this strengthens their counting ability".** Based on participants' responses, counting games using locally available materials enhance children's abilities to count numbers. Other participants viewed teaching aids as one of the play-based activities enhancing effective learning for children. For instance, they mentioned playing with pictures as an activity for enhancing effective reading. One of the participants said, **"We teach them through teaching aids such as pictures".** This finding is not enough to reveal how teaching aids can be used in a play-based activity to enhance effective learning for children. It therefore indicates that teachers were aware of the teaching aids to be used in a play-based activity but were not aware of how well they could be used in a play-based activity to enhance learning.

The most reported competences developed by LtP was creativity and memory, as a result of drawing, singing, and use of aides

Table 2. Qualitative: Competences developed through LtP

Competencies Developed	Frequencies	Relative Frequency
Creativity	31	15.5
Quick understanding	28	14
Permanent memory	26	13
Cooperation	27	13.5
Counting	24	12
Confidence	23	11.4
Singing	24	12
Self-expression	18	8.6
Total	**199**	**100**

Source. Qualitative Data 2023

Teachers reported that drawing is very funny to young children. Thus, when children engage in drawing, they feel happy and learn effortlessly. For instance, teachers reported engaging children in drawing activities such as cars or other materials available in the environment. One of the teachers substantiated that, **"through children drawing pictures, they feel happy and see the reality of the relevant subject in case those things are available or not available in the relevant environment."** Therefore, through drawing pictures, children are playing at the same time learning and developing different skills such as cognitive skills (creativity), artistic skills and fine motor skills.

Singing as one of the play-based activities was used to instill in children a strong memory of learned content. While singing, other responses revealed that children were touching the objects mentioned in the song, which finally strengthened their memorization abilities. This is evident from one of the participants' quotations, **"Through songs, children are given singing-based tasks that strengthen their memory."** Another participant said, **"They show and touch objects mentioned in songs while learning".**

Individual and group activities were reported as fostering understanding

Engaging children in teaching and learning activities was noted to be of paramount importance for their overall development and educational success. For, example, children's engagement in teaching and learning activities was enhanced by a quick understanding of the learned content. Findings further revealed that children engaged in teaching and learning activities in whichever learning session outperformed those who were not, which automatically accelerated their academic progress. This was noted in one of the participants' quotations that **"quick understanding is noted out of their engagement, which improves their academic performances too".** However, a collaborative spirit was also built out of the engagement process. Participants reported that engaging children in multitasking through diverse groups of learning instils in them the spirit of mutual learning and helping each other, which fosters effective learning. One of the participants revealed that **"Children are encouraged to help each other when engaged in group-based activities of learning".** However, the study findings are silent on how these groups should be monitored to ensure meaningful learning such as by tracking children's progress, identifying areas for improvement, and making informed instructional decisions that support their effective learning in group settings. Other cognitive skills that emerged from the analysis was, again, memory. One teacher remarked: **"Play-based learning helps a child to have a good memory".** On the same argument, another teacher expressed: "**It enables students' ability to remember and distinguish tools used in that play".** Regarding the aspect of quick understanding, one teacher posited: **"The child will grow to have a quick understanding because it is something that he sees, and he cannot forget it".**

Use of student collaboration as LtP method was reported to help with social skills, like confidence and cooperation

Engaging children in learning was noted to have a significant impact on their confidence levels too. Individually, children could develop a sense of active participation which fostered the development of hands-on experiences and mastery of various learned skills. For instance, one teacher posited that; **"Play-based learning makes students have company with their**

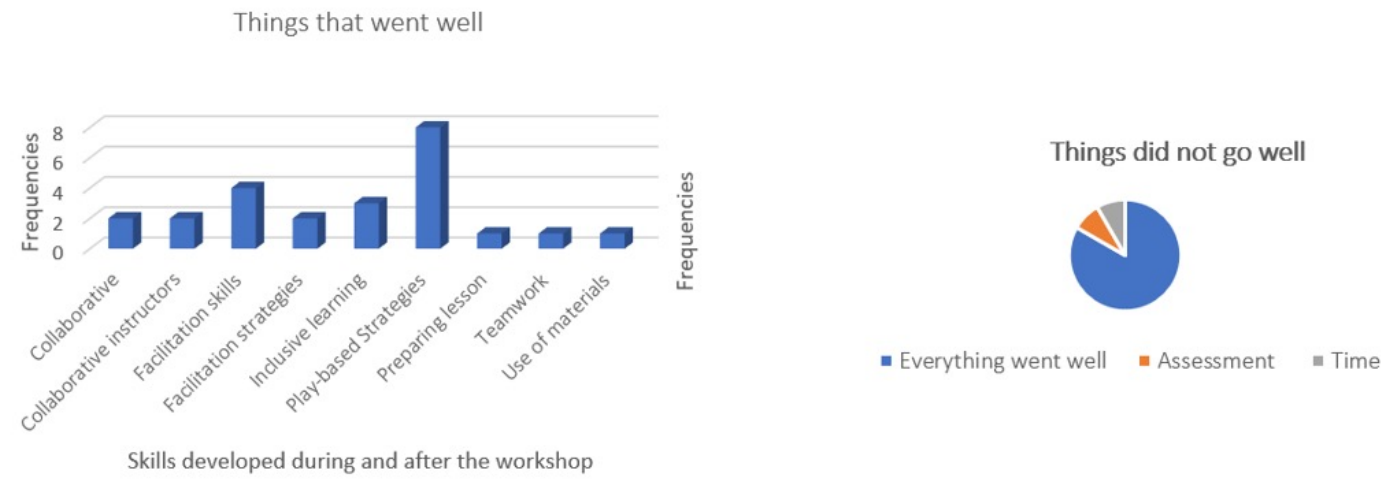
colleagues and not isolate themselves. For example, putting students in discussion groups". One of the participants revealed that "Anxiety and fear were eliminated when engaged in learning". Regarding the aspect of confidence, one teacher from a focus group discussion commented; **"It builds confidence among children".** The statements portrayed by teachers show that although social skills promote cooperation and confidence among students, teachers had limited knowledge of how to use play-based learning to develop cooperation and self-confidence skills.

Likewise, the findings noted intensive collaboration of children out of the engagement process. Findings noted that engaging learning often involves collaboration and peer interaction, such as group projects or discussions. As such, working together with peers allows children to learn from and support each other, share ideas, and build social connections. This was supported by one of the participants' views, **"they manage to trust their teachers, and help one another in their learning groups".** Findings indicate that when children feel valued and respected within a collaborative learning environment, it enhances their confidence in their abilities to contribute and collaborate effectively. Similarly, another teacher adds; **"It helps to build the child's cooperation with his peers".**

Training of Trainers (ToTs) reported satisfaction and confidence with conducting the teacher trainings

For the PlayMatters project, the training workshops were an insightful activity. In the interviews with ToTs, they explained the training workshops supported them professionally, and felt confident on cascading the training to teachers. The major reason for the ToTs confidence rested on the fact that they were interactively engaged in training sessions due to the proper deployment of training. Some shared that they do not have direct or practical experience in using play as a teaching and learning approach. However, they thanked PlayMatters for the workshop as they have developed an understanding that LtP can be used for implementing lessons. On the topics that went well, the most common response was learning about play-based strategies, followed by facilitation skills, and inclusive methodologies in classrooms. On the topics that did not go well, few commented on the need for more time, i.e. a longer training, and on exploring assessment more broadly.

Figure 4. Trainer of Trainee's Opinions on the Workshop Training



Source. Qualitative Data 2023

Educators' understanding of LtP moderately increased after PM trainings

Quantitative analysis of the Applying LtP Strategies Survey applied Pre- and Post- the teacher trainings, shows that educators had moderate understanding on the meaning of play based learning and that their understanding increased after the training (Table 2).

What are educator's levels of self-efficacy and occupational wellbeing?

Educators had good understanding of Self-Efficacy in terms of instructional practices, but less so in terms of classroom management

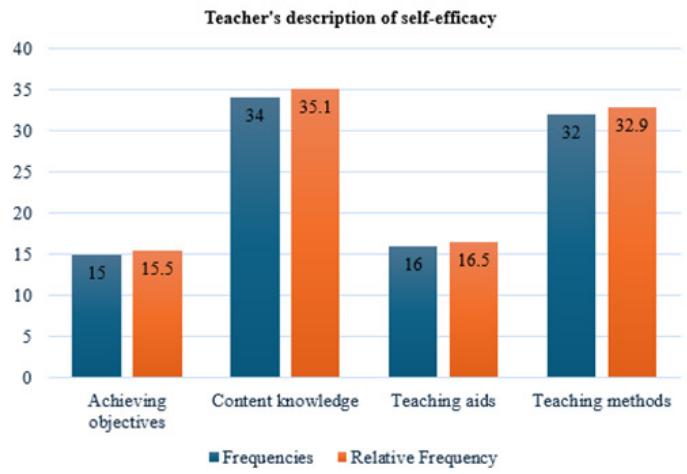
Responses from FDG with educators reveal they have relevant understanding and varied perspectives on what constitutes teacher's Self-Efficacy. Key to their responses suggest (Figure 5) that educators most relate Self-Efficacy with mastering Content Knowledge and being proficient teaching methods that can enable students' learning. When educators were asked about the top characteristics of a teacher with Self-Efficacy, however, they also mentioned having confidence to teach, as well as using teaching aides Some of the less mentioned topics on Self-Efficacy was around classroom management and achieving lesson objectives. The Cronbach alpha for the quantitative Self-Efficacy tool was not reliable either at the overall level or any of the subscores (details in Annex 1) so we exclude its reporting.

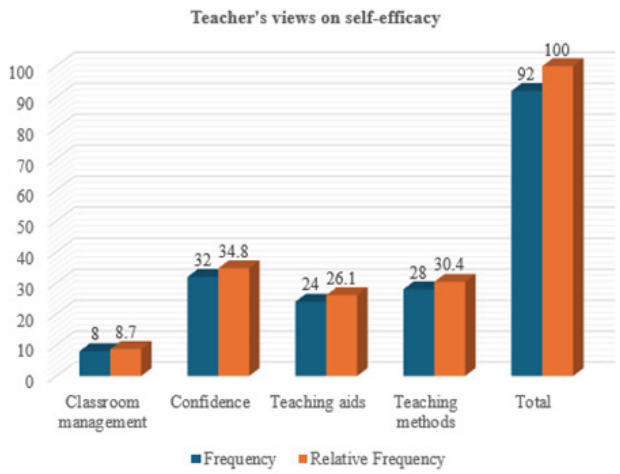
Table 3. Applying LtP Strategies Survey: Conceptual Understanding of Play-based Learning

		Mean	N	Std. Deviation	Std. Error Mean
I have clear understanding which teaching strategies are considered in the Learning through Play approach.	Post	3.2283	92	.71258	.07429
	Pre	2.717	92	.9530	.0994
I still have questions on how exactly to implement the Learning through Play strategies in my classroom.	Post	2.3956	91	.91747	.09618
	Pre	2.549	91	.9100	.0954
I am confident I can do what was asked of me in the Learning through Play approach.	Post	3.4333	90	.68777	.07250
	Pre	3.267	90	.8585	.0905
I believe I can be successful when applying the Learning through Play approach in my classroom.	Post	3.6593	91	.60037	.06294
	Pre	3.505	91	.7207	.0756
I know that I can effectively put into practice the things presented in the Learning through Play approach.	Post	3.2273	88	.67342	.07179
	Pre	3.170	88	.7911	.0843
I am excited to put the Learning through Play approach into practice.	Post	3.2360	89	.82603	.08756
	Pre	3.056	89	.7592	.0805
Participating in this Learning through Play training will help me in my job.	Post	3.7191	89	.52199	.05533
	Pre	3.652	89	.5661	.0600
It is important to me to use and apply what I learned about the Learning through Play.	Post	3.5506	89	.65732	.06968
	Pre	3.472	89	.6047	.0641
Applying the Learning through Play approach in my classroom teaching will be easy to do.	Post	3.2874	87	.64534	.06919
	Pre	3.391	87	.6534	.0700
Applying the Learning through Play approach will require a lot of effort and include some challenges.	Post	3.0674	89	.90199	.09561
	Pre	2.966	89	.8719	.0924
I have specific strategies in mind on how to apply Learning through Play approaches using materials in my teaching.	Post	3.1379	87	.82367	.08831
	Pre	2.862	87	.8915	.0956
If I applied Learning through Play in the classroom, my colleagues would support those practices.	Post	3.4930	71	.60647	.07197
	Pre	3.465	71	.7715	.0916
If I applied Learning through Play in the classroom, my Head Teacher would support those practices.	Post	3.5000	72	.76912	.09064
	Pre	3.514	72	.6919	.0815
If I applied Learning through Play in the classroom, the parents of my pupils would support those practices.	Post	3.4722	72	.67076	.07905
	Pre	3.347	72	.8250	.0972

Source. Field Data (2023) on the effect of the Pre-Post Training on Applying Learning through Play Strategies

Figure 5. Educators' understanding and characterization of self-efficacy





Source. Qualitative Data 2023

Educators generally report high levels of preparation and peer support, while struggling more in terms of wellbeing and feeling supported by the administration

Overall, results from the ASSETS tool are high (Table 4). The total ASSETS score, on a scale of 0-4, was 3.04, suggesting moderately high levels of overall wellbeing. The ASSETS subscales scores, between 2.87 and 3.25, indicating a generally positive assessment in areas like Motivation, Preparation, Peer Support, Wellbeing, Support from Administration, with Preparation scoring the highest and Support from Administration scoring the lowest. The standard deviations for these scores are relatively low, ranging from 0.29 to 0.51, which implies limited variation in responses. The minimum ASSETS scores are higher than those for self-efficacy, ranging from 1.2 to 2.6, while the maximum scores vary from 1.9 to 4, with Peer Support recording the highest maximum score.

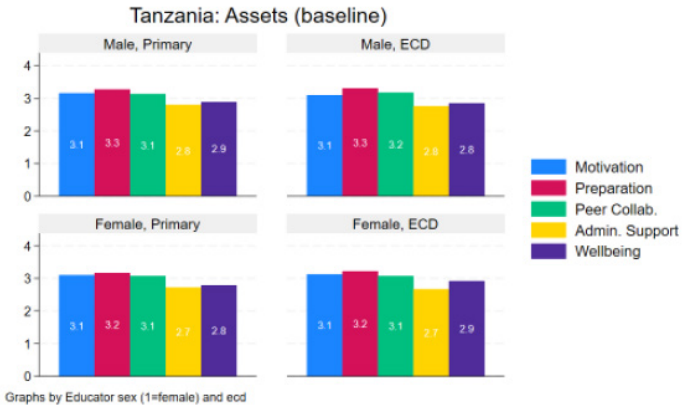
Cronbach's alpha for ASSETS total (a=0.89) and subscores (ranging from a=0.58 to a=0.82) suggest reliability ranging from high to acceptable, and only the Motivation subscale had low reliability. We do not find any statistically significant differences by educators' sex (Annex 2) or ECD (Figure 6) at either at the total score or subscores, and overall differences were small, and data displayed limited variability. However, looking into item-level differences (Annex 3), we find that compared with females, more male educators strongly agree they "prepare for lessons with my pupils' needs in mind",
their peer educators "are respectful to each other" and "show support for each other's personal life". A higher percentage of male educators reported loving the teaching profession (53% of male educators strongly agreed with the statement compared with 37% female educators) than female educators.

Table 4. Educator's wellbeing, and stress summary results

Score/Subscore	Count	Mean	S.D	Min	Max	C. Alpha
ASSETS (0-4)	163	3.04	0.29	2.28	3.74	0.89
ASSETS: Motivation	163	3.13	0.33	2.33	3.89	0.58
ASSETS: Preparation	163	3.25	0.31	2.6	3.9	0.70
ASSETS: Peer Support	163	3.11	0.35	1.9	4	0.73
ASSETS: Admin Support	163	2.76	0.51	1.2	3.7	0.82
ASSETS: Wellbeing	163	2.87	0.43	1.71	3.71	0.66
Stress Score (0-4)	163	1.79	0.58	0.35	3.15	0.84

Source. Pre-Post III. Applying Learning through Play Strategies

Figure 6. Quantitative: Educator Stress, all items



Source. Qualitative Data 2023

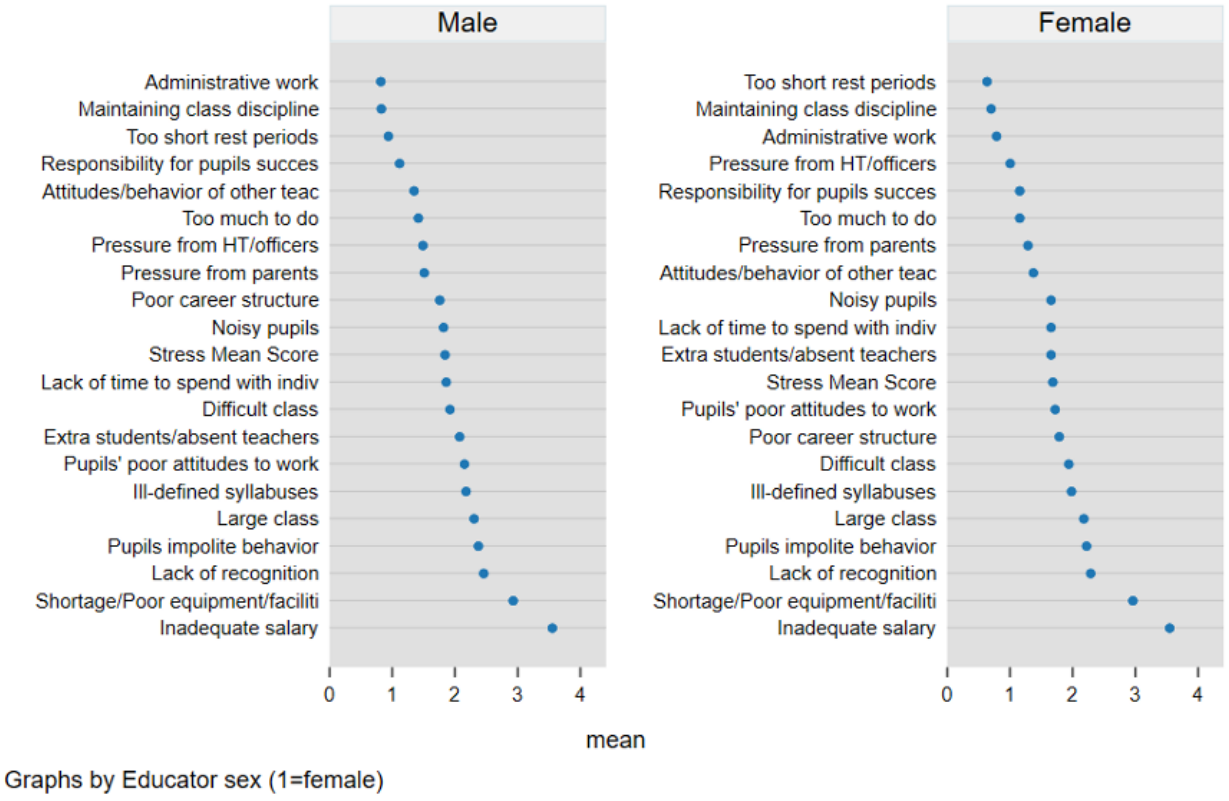
Though educators display moderate stress overall, "Inadequate salary" and "Shortage of equipment and Poor facilities" are high stressors

The Stress Score (Table 4), also on a scale of 0-4, has a mean of 1.79 with a standard deviation of 0.58, reflecting relatively low stress but with a broad distribution of stress levels among participants. The stress levels reported have a minimum score of 0.35 and a maximum of 3.15. Of all the stress sources (Figure 7 and Annex 4), "Inadequate salary" and "Shortage of equipment and Poor facilities" had considerably higher mean scores than the rest of the items.

The Cronbach's alpha for the Stress tool is high at a=0.84. We do not find any statistically significant differences by educators' sex at the total score,

however, compared with females, more male educators report 'much' and 'extreme' stress from "Pressure from headteacher and education officers" and from "Having extra students because of absent teachers" (Annex 5). Compared with females, more male educators report 'much stress' from "pupils' poor attitudes to work" (36% vs 22%).

Figure 7. Quantitative: Educator Stress, all items



Source. Qualitative Data 2023

What is the baseline quality of the enabling environment (schools and classrooms)?

Educators were generally on time, made efficient use of time on task and stated the lesson objective

The other components for improved learning outcome were punctuality of teachers and their time on task. In starting class on time 81% of the teachers were found to be punctual, the class duration varied between 30 to 45 minutes (mean= 43 minutes), as most 86% classes (86%) had a length of 45 min. The average time on task i.e. time spent in learning was about 95% across classrooms, with 84% of classrooms spending at least 80% of the class time on tasks related to learning. About 65% of educators excellently constructed and stated lesson objectives before the implementation of the planned lesson. In providing the lesson objective, 62% of the observed teachers demonstrated awareness of the importance of providing clear instruction to students.

Schools' infrastructure is relatively adequate, though results indicate an overall scarcity of hands-on materials in classrooms, and even when available, they are underutilized

Classroom structure was observed and 97% of the classes in which students learn are covered with four walls, only one school was in the open/outdoor and another one was covered but with open sides both of which may not be comfortable for children's learning. Of the classrooms almost 90% had adequate lighting, and about 98% had adequate space for the teacher to walk around and 95% were clean (Table 5). Though 100% of the classrooms had space for all the students to be comfortably seated, only in 60% of classrooms each student had an individual seat.

Table 5. Environmental Scan

Criteria for Adequacy	Mean	S.D	Count (No)	%	Count (Yes)	%
Lighting for learning?	0.891	0.315	7	10.9	57	89.1
Space for all the students to be comfortably seated	1.000	0.000			64	100.0
Each child has a seat	0.609	0.492	25	39.1	39	60.9
Space for the teacher to walk around and support students	0.984	0.125	3	4.7	61	95.3
Classroom clean (free of debris and trash)	0.953	0.213	3	4.7	61	95.3
Total	0.953	0.213	64	100.00%	64	100.00%

Source. Quantitative TCO Data 2023

Despite these structures, suitability of the classes for learning was a matter of interest, and the results for the suitability are as shown below. Almost all classrooms observed had a chalkboard (98%), most had a teacher desk and chair (83%), and about a third had poster or visuals (31%), all which were used in similar percentages (Table 7). About half of the classrooms had individual or group desks and chairs (44 and 47%), and 18% had mats on the floor. In terms of materials for students, almost half (45%) did not have any visible hands-on materials and had local materials (Table 6) and around 90% did not have any Math materials (like counters and rulers), language materials (like letters or word cards, workbooks), or art supplies. While almost half of the classrooms had materials for students made by local materials, only a few classrooms had had visible and/or used child-friendly posters/artworks (9%), textbooks (13%), or games (5%) like dice, playing cards, etc.

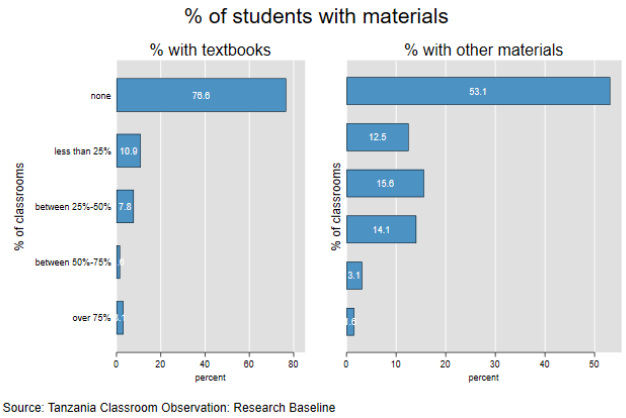
Table 7. Materials visible and used in the lesson

	Visible				Used			
	No		Yes		No		Yes	
	Count	%	Count	%	Count	%	Count	%
Teacher Aids								
Chalk Board/white board	1	1.6	63	98.4	1	1.6	63	98.4
Smart Board			64	100.0			64	100.0
Projector			64	100.0			64	100.0
Storage Cabinet	62	96.9	2	3.1	62	96.9	2	3.1
Teacher Desk and Chair	11	17.2	53	82.8	19	29.7	45	70.3
Poster or visual aids	44	68.8	20	31.2	45	70.3	19	29.7
None	64	100			63	98.44	1	1.56
Seating/Areas for Students								
Individual desk and chairs	36	56.2	28	43.8	35	54.7	29	45.3
Group tables with chairs	34	53.1	30	46.9	36	56.2	28	43.8
Benches	56	87.5	8	12.5	56	87.5	8	12.5
Mats on the floor	52	81.2	12	18.8	53	82.8	11	17.2
Learning centers or corners			64	100.0			64	100.0
Hands-on Materials for Students								
Mathematics (Counters and rulers)	59	92.2	5	7.8	58	90.6	5	7.8
Language (Letters or word cards, workbooks)	58	90.6	6	9.4	61	95.3	3	4.7
Art Supplies (crayons, markers, glue)	58	90.6	6	9.4	59	92.2	5	7.8
Six Bricks			64	100.0			64	100.0
Science Kits			64	100.0			64	100.0
Child-friendly posters/artworks	58	90.6	6	9.4	59	92.2	5	7.8
Textbooks	56	87.5	8	12.5	55	85.9	8	12.5
Games (dice, playing cards, etc.)	61	95.3	3	4.7	62	96.9	2	3.1
Local Materials (sticks, stones, leaves, etc.)	35	54.7	29	45.3	37	57.8	27	42.2
None	35	54.69	29	45.31	35	54.69	29	45.31

Source. Quantitative TCO Data 2023

Figure 8 presents the distribution of educational resources in classrooms by showing the percentage of students with textbooks and other materials. A significant majority of classrooms, 76.8%, have no textbooks at all, indicating a considerable scarcity of this basic educational resource. A smaller segment of classrooms have textbooks for less than 25% of students (10.9%), between 25%-50% (7.8%), and between 50%-75% (5%), which cumulatively suggests that fewer than a quarter of classrooms have textbooks for more than a quarter of their students. Only a negligible 0.5% of classrooms have textbooks for over 75% of their students. When it comes to other educational materials, the lack is less severe but still notable, with 53.1% of classrooms having none. For classrooms that have other materials, the distribution is more even: 12.5% have materials for less than 25% of students, 15.6% for between 25%-50% of students, 14.1% for between 50%-75%, and a small 3.1% for over 75% of students. These statistics highlight a critical need for improved resource provision within classrooms, as the lack of textbooks and other learning materials can significantly impede the learning process. The distribution also underscores the challenge of uneven resource availability, with a minority of classrooms being better equipped than the majority. This disparity points to the potential for inequality in student learning experiences and outcomes.

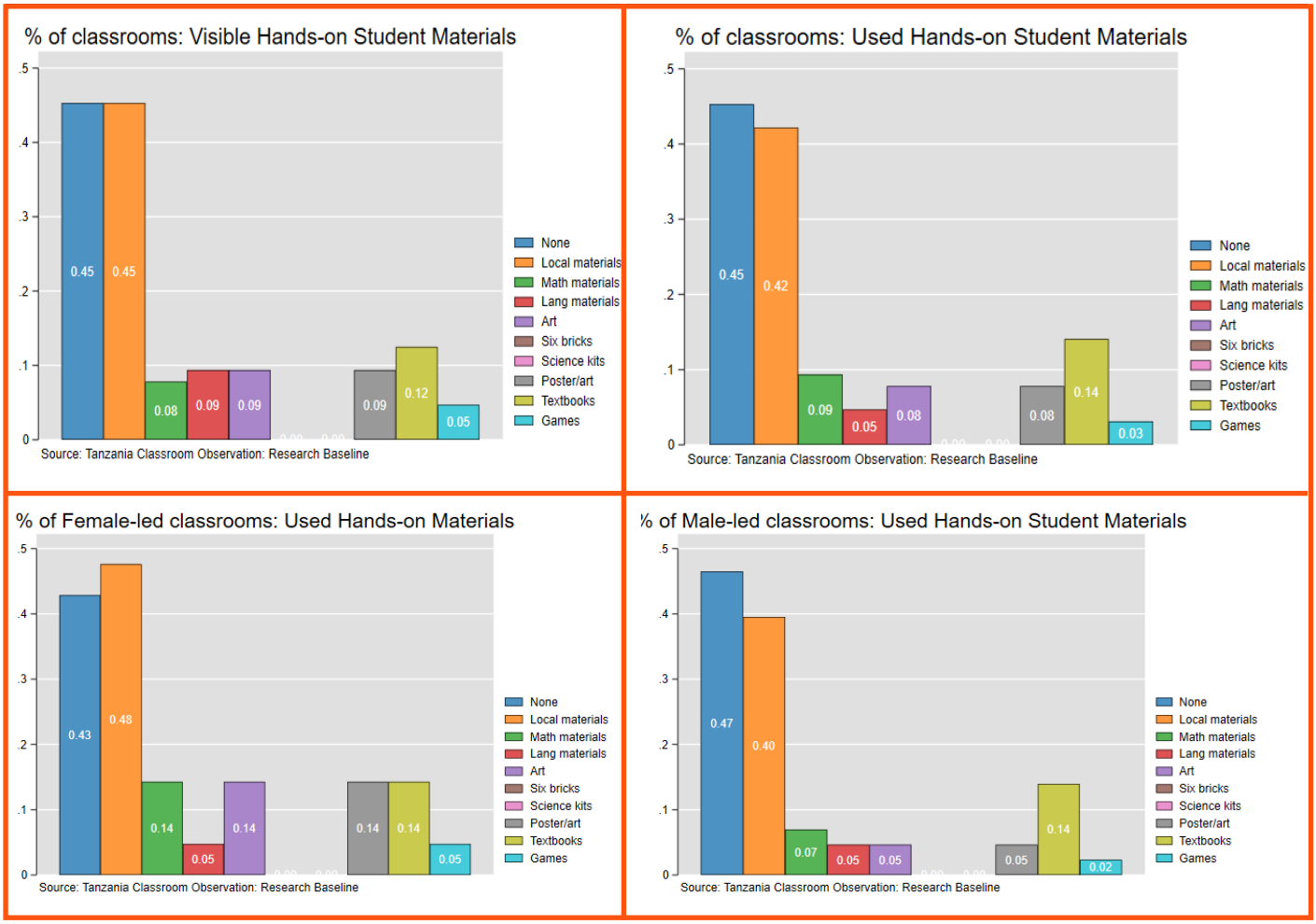
Figure 8. Percentage of students with hands-on learning materials



Source: Tanzania Classroom Observation: Research Baseline

Teaching and learning were dominated by the chalk/whiteboard, followed by the use of local materials observed in almost half of classrooms. In terms of visible hands-on student materials, a substantial majority of (almost half, 45%) of classrooms displayed none, while almost half had visible local materials (Figure 9). Locally made materials, math materials, language materials, art blocks, science kits, textbooks, and games were minimally visible, each category observed in less than 10% of classrooms. When it comes to the actual usage of these materials, similar percentages between visible and used materials overall, with math materials were slightly more used than language materials. Disaggregating the data by the gender of the classroom leader shows that the percentage of female-led classrooms using hands-on materials ranges from 5% to 14% across the categories. These statistics indicate an overall scarcity of hands-on materials in classrooms, and even when available, they are underutilized. This state of teaching aids and student materials for learning is a drawback to the provision of a quality learning environment that would serve the role of the classroom teacher when s/he is absent.

Figure 9. Percentage of students with hands-on learning materials



***Source.** Quantitative TCO Data 2023*

What are educators' baseline instructional practices? How do they vary by teachers' age, gender, level of education and teaching experience?

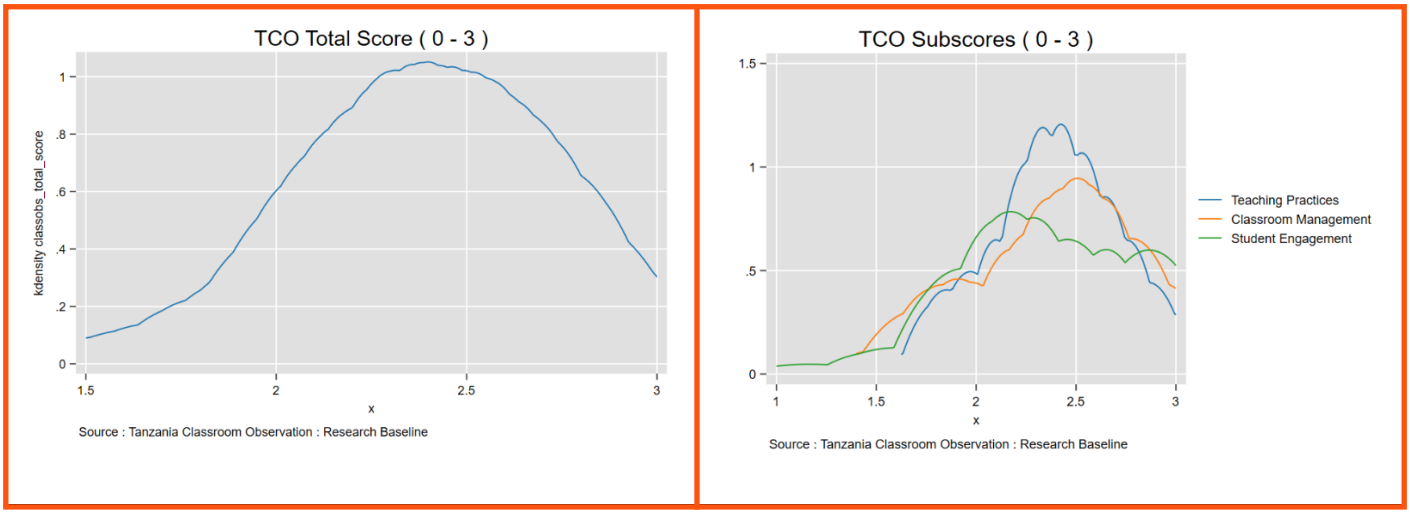
Observed classrooms show generally high levels of quality (both in terms of high mean TCO total scores and subscores, and in the percentage of classes meeting the stablished quality performance category)

The TCO Aggregate Score (on a scale from 0 to 3) has a mean of 2.38 with a standard deviation (SD) of 0.34, indicating a relatively high score and narrow spread around the central value. The subscores, of Teaching Practices, Classroom Behavior/Discipline, and Student Engagement, all share the same mean of 2.38, pointing to consistency in performance across these domains. However, they differ in their variability: Teaching Practices have an SD of 0.33, Classroom Behavior/ Discipline has an SD of 0.42, and Student Engagement has the highest SD of 0.47, suggesting a slightly wider range of observations for engagement. The minimum scores range from 1 to 2, and all the maximum scores are at 3.

The density distribution graphs of the TCO Total Score and subscores (Figure 10) reflect these statistics visually, with all showing a unimodal distribution with a peak density at a score of approximately 2. All distributions exhibit a decline as scores approach the lower and upper extremes of the scale, which is consistent with a typical density distribution in educational assessment data. The TCO Total Score graph displays a single peak, indicating most scores cluster around the mean of 2.38. Both the TCO Total Score and all subscores, taper towards the higher score range, suggesting very limited occurrences of low scores and a relatively high occurrence of high scores.

The TCO subscores graph reveals different distributions for each domain, with each subscore peaking around the shared mean, but with varying densities and spreads. Student Engagement, while maintaining the same mean, shows a broader distribution, confirming the higher standard deviation observed in the table. The congruence between the density graphs and the table suggests that while there is overall consistency in the competencies observed, suggest some limited room for increased engagement in classrooms, as scores are already relatively high.

Figure 10. Density of TCO scores (total and by domain)



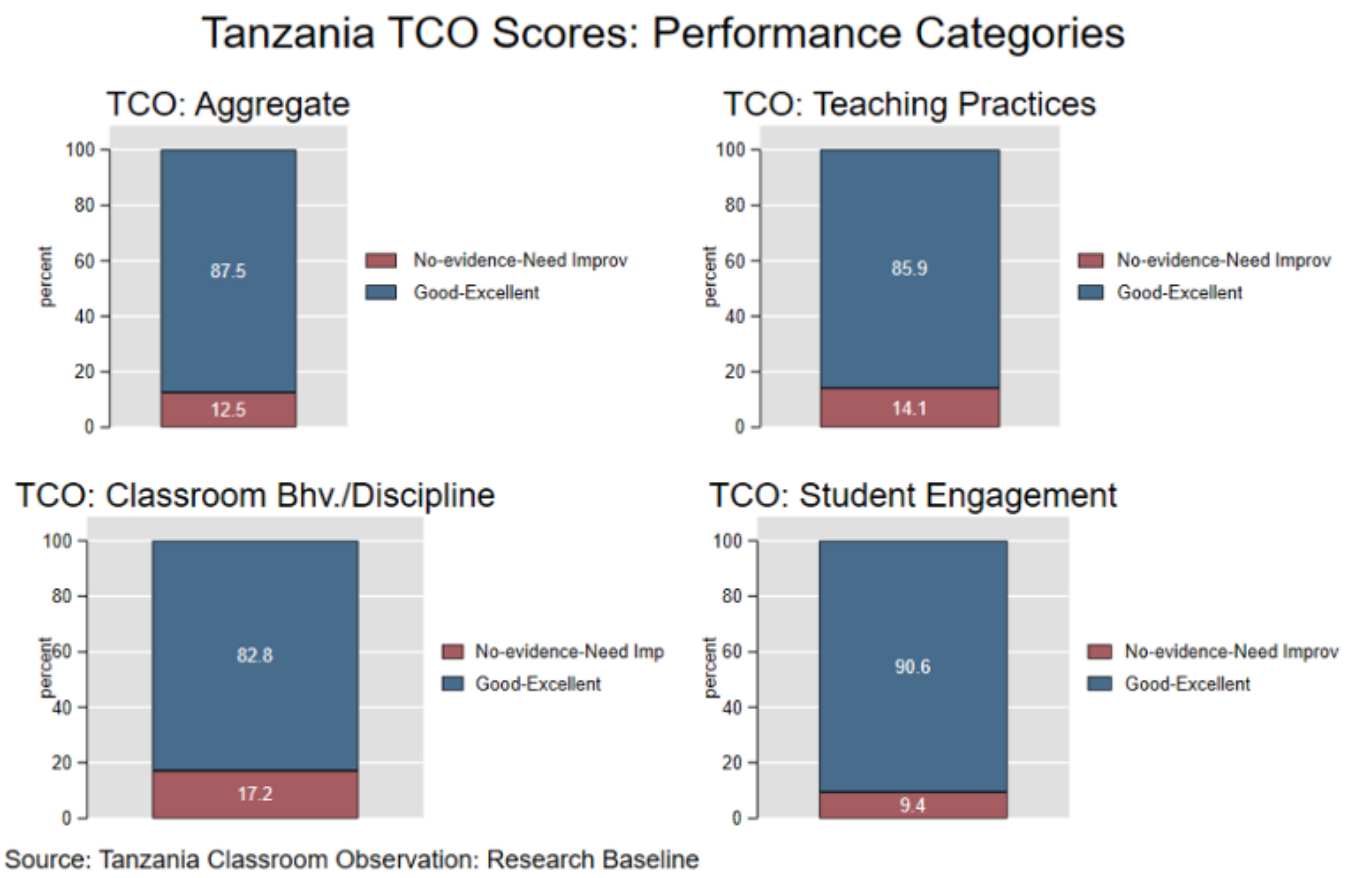
Classroom observation scores suggest a positive outlook for the majority of educators in all categories, with particular strengths in Student Engagement and a greater area of opportunity in terms of classroom behavior and positive discipline

Looking into the Total TCO Score and each of the Subscores segmented into Performance categories of "No evidence/Needs Improvement" and "Good/ Excellent" across different competencies suggest a positive outlook for the majority of educators in all categories, with particular strengths in Student Engagement (Figure 11).

For the Total TCO Score, 87.5% of educators fall into the "Good/Excellent" category, while only 12.5% are in the "No evidence/Needs Improvement" category. This trend continues with Teaching Practices, where 85.9% of educators are rated as "Good/Excellent" and 14.1% require improvement. In the domain of Student Engagement, a high percentage of 90.6% of educators are seen as doing well, categorized as "Good/Excellent". Only a small fraction of 9.4% fall under the "No evidence/Needs Improvement" section, indicating that the majority of educators are particularly effective in engaging students.

The TCO for Classroom Behavior/Discipline shows a slightly different distribution: 82.8% of educators are considered "Good/Excellent", leaving a larger portion, 17.2%, in the "No evidence/Needs Improvement" category. This suggests that while the majority of educators manage classroom behavior and discipline well, there is a notable segment that could benefit from further development.

Figure 11. TCO Aggregate and Domain Scores: Performance Categories



Source: Tanzania Classroom Observation: Research Baseline

While certain teaching practices like setting clear objectives and instructions are consistently well-implemented, there is a need for improvement in LtP practices like providing feedback, give students opportunity to practice, and the use of varied questioning techniques

Across all the items of Teaching Practices Subscore (Table 8), the minimum scores are 1, and the maximum scores are 3, again highlighting the absence of teachers categorized as "No evidence/negative". "Lesson Objectives" and "Clear Instructions" both have the highest mean scores of 2.61, indicating that these areas are strong points for most teachers. They also have similar levels of variability, with standard deviations of 0.58 and 0.52, respectively. "Student Opportunity to Practice" has a slightly lower mean score of 2.55 but exhibits the highest standard deviation of 0.69, suggesting more variability in this practice among teachers. "Questioning Techniques" and "Checking for Understanding" have mean scores of 2.23 and 2.39, respectively, both with a standard deviation of 0.58, pointing to moderate implementation with some variability.

The lowest mean score is observed in "Providing Feedback" at 2.12, which also has the highest standard deviation of 0.70, indicating this is the area with the most room for improvement and the greatest inconsistency among teachers. "Connecting with Students' Lives of Prior Knowledge" scores a mean of 2.36 with a standard deviation of 0.63, suggesting that while teachers are somewhat effective at making connections to students' prior experiences, there is still variability in how well this is being achieved.

Across the board (male and female educators), the most common questioning strategies observed were asking the whole class and calling students individually (Figure 12). In addition, posing questions to group work, and open-ended questions for the class were strategies more commonly observed in male-led classrooms.

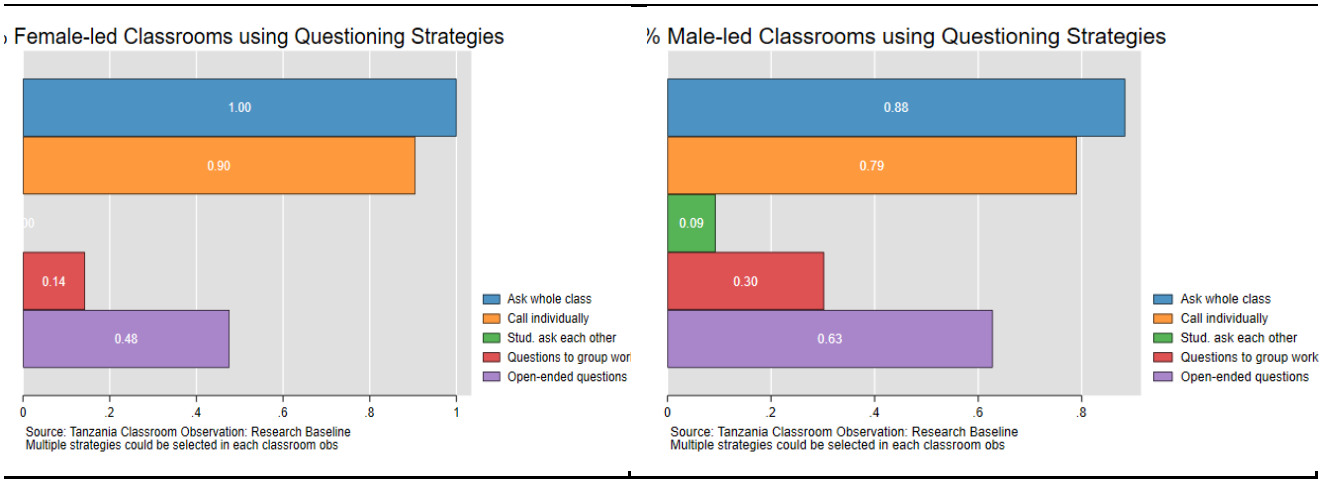
Overall, the data suggests that while certain teaching practices like setting clear objectives and instructions are consistently well-implemented, other LtP activities (providing feedback, give students opportunity to practice, connecting teaching with learners' prior their existing knowledge and experiences, and the use of varied questioning techniques) show ample areas for strengthening. The variability in scores also indicates that while some teachers may excel in these areas, others may struggle, highlighting potential areas for professional development.

Table 8. TCO Descriptive Summary Mean Scores

TCO/Domains	Count	Mean	S.D	Min	Max	C. Alpha
TCO Aggregate Score	64	2.38	0.34	2	3	0.843
Teaching Practices	64	2.38	0.33	2	3	0.661
Classroom Behavior/Discipline	64	2.38	0.42	1	3	0.662
Student Engagement	64	2.38	0.47	1	3	0.762
Teaching Practices						
Lesson Objective	64	2.61	0.58	1	3	
Clear Instructions	64	2.61	0.52	1	3	
Active Pedagogical Strategies	64	2.48	0.59	1	3	
Student Opportunity to Practice	64	2.25	0.69	1	3	
Questioning Techniques	64	2.23	0.58	1	3	
Checking for Understanding	64	2.39	0.58	1	3	
Providing feedback	64	2.12	0.7	1	3	
Connecting with Students' Lives of Prior Knowledge	64	2.36	0.63	1	3	
Classroom management and Positive Discipline						
Positive words	64	2.34	0.6	1	3	
Behaviour Management	64	2.44	0.53	1	3	
Classroom Management	64	2.41	0.61	1	3	
Gender Inclusive Environment	64	2.39	0.58	1	3	
Broader Inclusive Environment	64	2.34	0.84	0	3	
Student Engagement						
Student Attention	64	2.41	0.56	1	3	
Student Active Participation	64	2.27	0.6	1	3	
Student Enjoyment	64	2.47	0.56	1	3	

Source. Quantitative TCO Data 2023

Figure 12. Pupils' Opportunity to Practice

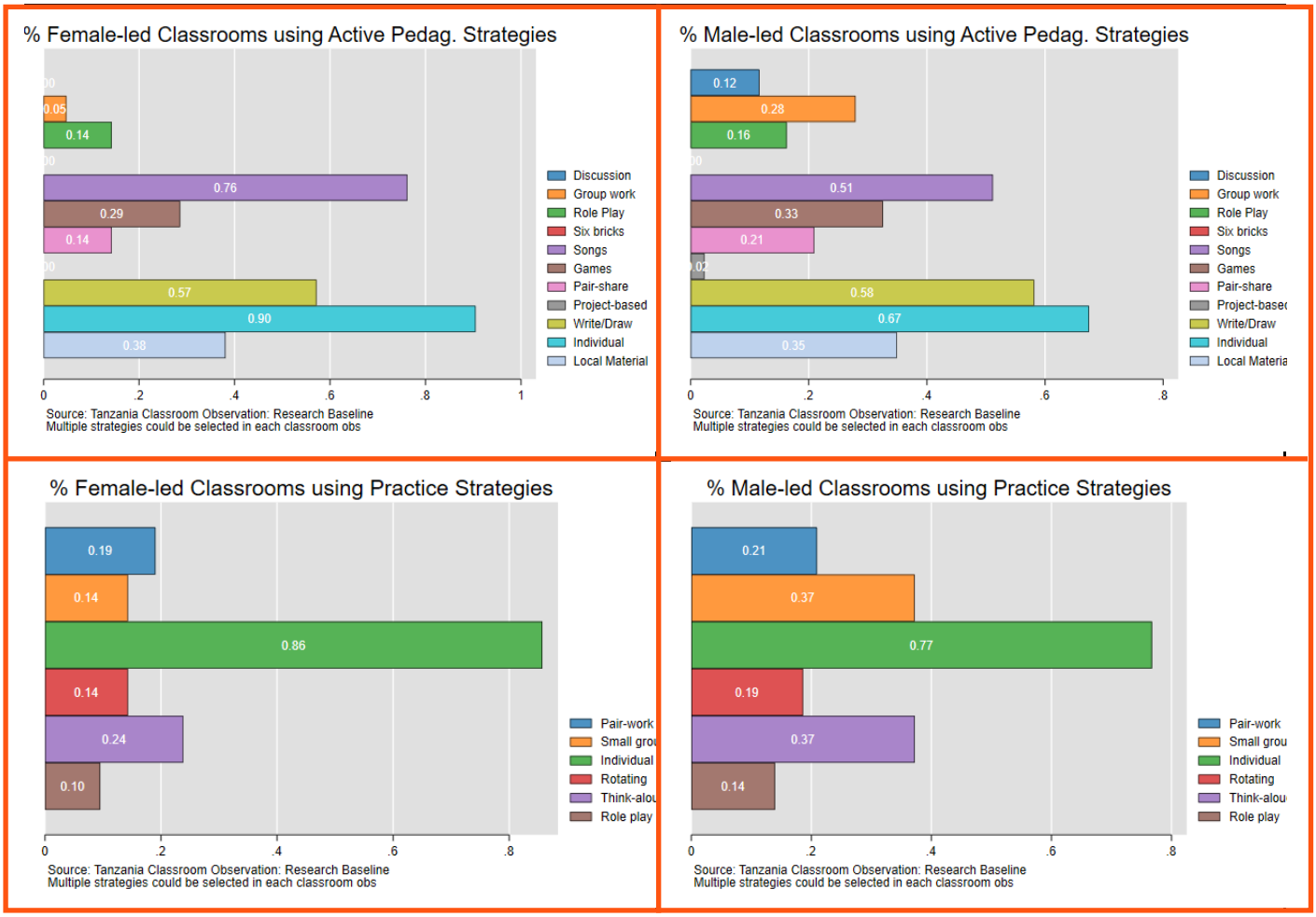


Results indicate promising implementation of active teaching strategies, though the most commonly observed active teaching and practice strategies are still individual work.

The mean score of active pedagogical strategy item was 2.48, indicating promising implementation of active teaching strategies. When noting into the different list of active strategies, however, the most common strategy observed was individual work (75% total; 90% of female-led classrooms and 67% of male-led classrooms), followed by songs, and writing/drawing (Figure 13). Disaggregation by gender notes slight differences between female and male educators with more female-led classrooms were observed using individual work and songs than male-led classrooms, and more male-led classrooms used discussion, pair-share, and group work than female-led classrooms.

Finally, the most common strategy for students to practice observed was individual work (80% total; 86% female-led and 77% male-led).

Figure 13. Pedagogical Strategies: Active Teaching and Practice Strategies



Classroom management and positive discipline are generally upheld in the classrooms observed, but there are areas, particularly in creating an inclusive environment, that display significant variability and room for improvement.

Across all the items of the Classroom Management and Positive Discipline Subscore (Table 8), "Behavior Management" has the highest average score of 2.44, with a relatively low standard deviation 0.53, indicating that most observations fall close to this average, with consistent application across classrooms. The "Classroom Management" component follows closely with an average score of 2.41 and a SD of 0.61, suggesting a slightly wider spread in scores.

"Positive Words" and "Broader Inclusive Environment" both have an average score of 2.34. However, "Broader Inclusive Environment" shows the greatest variability among the components, with a SD of 0.84, which indicates a more diverse set of responses in how educators attend to the needs children with disabilities, children whose mother tongue is different than the language of instruction, displaced children, etc. across classrooms. In comparison, the component "Gender Inclusive Environment" has a marginally lower mean score of 2.39 and a SD of 0.58, signifying moderate consistency among educators in promoting gender inclusivity.

Student engagement in the observed classrooms was fairly high, with room of further improvement particularly in student active participation.

Across all the items of the Student Engagement subscore (Table 8), "Student Attention" and "Student Enjoyment" both show average scores above the midpoint of the scale with 2.41 and 2.47 respectively, and identical standard deviations of 0.56. This suggests a moderate consistency in these aspects of student engagement across the observations, with most classrooms showing positive levels of attention and enjoyment. "Student Active Participation" has a slightly lower average score of 2.27 and a standard deviation of 0.6, indicating that while active participation is generally positive, there is slightly more variability in this subscore compared to the others.

This could imply that students are more variable in how actively they participate during class, which may be influenced by a variety of classroom dynamics and teaching styles. For all the items, the minimum score recorded is 1 and the maximum is 3, which indicates that no classroom categorized under "No evidence/ Negative", i..e none of the observed classrooms had completely disengaged students, and some instances of maximum engagement were noted.

Conclusions and Recommendations

Training and Trainers

The Trainers of Trainees (ToTs) and Educators' Training Workshops on LtP were successful with areas of opportunity being allotted time and considering time and distance to and from schools. Consider the variables that affected the implementation and effectiveness of the workshops for future planning.

The successful execution of the Training of Trainers (ToTs) and Educators' Training Workshops signifies a positive implementation milestone. However, attention should be noted to feedback points to issues with scheduling, such as insufficient time allocated during the ToT sessions and the suboptimal timing of teacher training workshops. Such challenges can affect the depth and retention of training content, as well as the ability of participants to implement new strategies effectively. To optimize future training sessions, it is recommended that program coordinators modify schedules, as possible, for the different activities for teachers or educators to successfully participate in the training. This includes incorporating feedback from participants to identify ideal durations for sessions and the most effective times of day for conducting workshops. For trainers, this may involve ensuring that ToT sessions are long enough to cover material comprehensively without overwhelming participants. For educators, workshops should be scheduled at times that minimize conflicts with school responsibilities, particularly considering the needs of those teaching in afternoon shifts. Another recommendation is to incorporate flexible and possibly segmented training sessions that accommodate educators' varied schedules, especially for schools operating in shifts. Additionally, having a buffer time built into schedules can mitigate the impact of unforeseen delays. Monitoring and evaluation should also be incorporated to assess the impact of these adjustments on the effectiveness of the training. Finally, future planning should account for and address the variables that affected the implementation and effectiveness of the previous workshops. This includes analyzing logistical challenges, participant engagement levels, and the context of the schools' operational hours. By proactively considering these factors to strengthen the interactions and teamwork of program and research teams can enhance the quality of PlayMatters TPD activities.

Educators and Classrooms

Educators reported high levels of wellbeing in terms of preparation and peer support and low levels of wellbeing in terms of personal aspects (feeling safe, being in good health, and have strong relationships). Specific high-stress sources included inadequate salary and poor facilities. Recommendations include: 1) Continue the delivery and availability of materials, 2) Consider these results for potential PlayMatters TOC revisions, and 3) Continue exploring the different components and interactions of wellbeing, stress, and educators' relationships at schools.

The findings suggest a dichotomy in educators' wellbeing, where high levels of preparedness and peer support contrast with concerns about personal wellbeing, including safety, health, and relationships within schools. Additionally, specific stressors like inadequate salaries and poor facilities contribute to the overall stress levels among educators. While the biggest stressor (inadequate salary) is outside the scope of PlayMatters implementation and theory, the provision of learning materials, continues to represent a significant area of opportunity for PlayMatters implementation. Given that the main stressors are clear, these might need to be more explicitly included and fleshed out in PlayMatters' TOC assumptions and contextual framing. Further, these will have to be considered controlling variables in endline analyses. Simultaneously, it is crucial to continue exploring the interactions between wellbeing, stress, and relationships at schools. The mixed-methods longitudinal design for the implementation research should inform to this purpose to capture the nuanced experiences of educators. Understanding these components and their interplay could render essential supporting systems and schools that support the implementation of LtP. Finally, with educators generally displaying high levels of preparation and peer support, changes at endline might be harder to achieve, so continued triangulation with qualitative data and appropriate endline data collection timing will be necessary.

Educators' lowest wellbeing indicator was in terms of feeling supported by the administration, suggesting potential areas of opportunities in strengthening in-school LtP activities that integrate both educators and school administration staff.

One of the lowest wellbeing indicator was educators' feeling supported by the school administration, an area of concern as administrative support is critical for a positive school climate and effective teaching practices. This perception of insufficient support could hinder not only teacher morale but also the effectiveness of the implementation of LtP activities. Refresher trainings and future activities could include components aimed at building stronger relationships between educators and administrative staff. Initiatives such as joint professional development workshops, shared goal-setting sessions, and collaborative school improvement projects could be valuable. These efforts would not only enhance mutual understanding and respect but also align the objectives and practices of both teachers and administrators. Furthermore, establishing regular communication channels and feedback mechanisms between educators and administration can ensure that teachers' are heard. Encouraging the administration to recognize and celebrate teaching achievements can also contribute to a more supportive atmosphere. By strengthening the collaboration and support networks within schools, educators could feel more empowered and supported to effectively implement LtP activities.

The learning environment is still impoverished in terms of materials. To foster more meaningful LtP learning experiences, there is a clear need for 1) the continuous provision, delivery, and monitoring of the availability of materials and 2) continue implementing activities that foster educators' knowledge and hands-on applications of educational material use.

Approximately half of the observed classes either

lacked or possessed hands-on materials for students. In instances where materials were present, they typically consisted of locally sourced items such as sticks, stones, and leaves, but there was still very limited evidence on creation or construction of educational materials. This signals a lack of initiative among teachers in creating or providing materials to enhance lesson delivery. Additionally, these findings continue to emphasize the shortcomings and limitations of the educational environments in which the intervention takes place. Learning environments lacking enriching educational resources potentially jeopardize learning outcomes by limiting students' interaction with tangible learning aids. In stark contrast to the paucity of hands-on materials, every observed classroom utilized chalkboards for teaching and choral strategies. The widespread use of chalkboards may indicate a deficiency in either the ability or willingness of teachers to incorporate the limited available hands-on materials into their teaching. Teachers must be, first, equipped and, second, motivated and able to integrate these materials effectively in the planning, execution, and assessment of their lessons.

Educators displayed high levels of baseline instructional practices, though most classrooms still mostly use more traditional instructional practices. Educators show strengths in areas such as "Lesson Objectives" and "Clear Instructions,", and have the biggest areas of opportunity in other relevant and more advanced LtP activities, like "Providing Feedback" and "Connecting with students prior knowledge". Refresher trainings could be revised accordingly.

The baseline results for teaching practices indicate strengths in areas such as "Lesson Objectives" and "Clear Instructions," with educators showing proficiency in setting out clear learning goals and communicating them effectively. However, the lower average scores in "Providing Feedback", exhibit lower mean scores and higher variability, suggesting these are less consistently applied practices. In light of these findings, it is recommended that refresher trainings and workshops focus more explicitly in strengthening student-centered LtP activities, like enhancing teachers' skills in providing quality feedback, tailoring it to individual student needs and learning stages, as well as in exploring different feedback techniques. In this regard, activities could include modeling effective feedback strategies, peer observations with a feedback focus, and reflective practice sessions where teachers can assess and improve their feedback methods. Additionally, ensuring that professional development includes components on active learning strategies could further bolster areas like "Student Opportunity to Practice," enhancing overall teaching efficacy. Given that effective feedback is crucial for student learning, this area stands out as a key opportunity for professional development. Additionally, while "Connecting with Students' Lives" shows moderate implementation, the variability indicates that not all educators are equally adept at integrating students' experiences into learning, which is vital for meaningful and relevant education, especially noting the gender differences.

While general classroom management and behavior management are rated positively, there is room for improvement in creating inclusive environments.

The baseline data for classroom management and positive discipline show generally positive performance yet highlight a need for improvement in creating a "Broader Inclusive Environment." Given the significant variability observed in this area, it is essential to understand the specific challenges teachers face in this area and to offer targeted support that promotes inclusivity at every level. This should involve strategies for fostering an environment that is welcoming and supportive for all students, regardless of their diverse backgrounds. To address the specific needs in behavior management and gender inclusivity, PlayMatters activities could offer targeted sessions on gender-sensitive pedagogy and effective classroom management techniques that promote positive behavior without resorting to punitive measures. By equipping teachers with these skills, the aim would be to improve the consistency and effectiveness of classroom management and to foster a positive and inclusive learning atmosphere. Additionally, the mentorship and coaching activities could focus on providing teachers with the support needed to implement and sustain positive discipline strategies effectively.

Results show positive trends in learners' enjoyment, while ample opportunity to strengthen learners' active participation.

Results related to student engagement are encouraging, particularly in the domains of "Student Attention" and "Student Enjoyment." Nonetheless, "Student Active Participation" lags slightly behind, suggesting that while students are generally attentive and enjoy their lessons, they may not be consistently and actively engaged in LtP activities. To address this, refresher activities could focus on and/or prioritize engagement strategies that encourage active participation, such as cooperative learning, discussion-based activities, and problem-based learning approaches. Training can also incorporate classroom management skills that facilitate a dynamic and interactive learning environment, allowing for greater student involvement. By focusing on these areas, the program can aim to raise the level of active participation to that of attention and enjoyment, thereby promoting a more holistic engagement across all aspects of learning.

Measurement and Further Research

The generally skewedly positive results of the classroom observation should be examined in the light of the data collection timeline and considering the appropriate caveats. Reflect on measurement and continue triangulating qualitative and quantitative data for endline analysis.

Considering the baseline took place right after teacher workshops, i. e., the baseline was not a completely "clean" data snapshot, the high percentages of teachers in the Good and Excellent categories for most of the classroom observation items, results could suggest teachers have started to implement some LtP practices. However, it is also difficult to argue that behavior changes can be observed after such a short

amount of time. First, research and implementation teams should continue reflecting on possibly positivity biases that could be affecting the mostly positive results. Second, comparability of baseline and endline data collection in terms of tools and processes) is thus key to explore baseline-to-endline changes. Third, endline discussions should explore potential changes to the tool (and tool's response categories and descriptors) in case a tool that allows for further scores variability is warranted.

Review the Educators' Self-Efficacy Tool

During PlayMatters 1.0, at a stage in which tools were tested, the TSES tool was found reliable overall at total and subscales level. However, for this baseline study iteration, the tool rendered too low reliability, results are not reported and we primarily draw from qualitative findings to explore Self-Efficacy.

Annexes

Educator's Self-Efficacy Summary Results

Score /Subscore	Count	Mean	S.D	Min	Max	C. Alpha
Self-Efficacy (0-3)	163	2.2	0.34	1.25	3	0.52
Self-Efficacy: Instructional Practices	163	2.35	0.43	1	3	0.48
Self-Efficacy: Management	163	2.04	0.51	1	3	0.20
Self-Efficacy: Engagement	163	2.2	0.53	1	3	0.30

Educator's Self-Efficacy, Wellbeing and Stress by Sex

Score /Subscore	N	(1) Male Mean/SE	N	(2) Female Mean/SE	(1)-(2)
Self-Efficacy	117	2.185 [0.032]	46	2.221 [0.049]	-0.036
Self-Efficacy: Instructional Practices	117	2.370 [0.036]	46	2.293 [0.078]	0.076
Self-Efficacy: Management	117	2.009 [0.048]	46	2.118 [0.073]	-0.108
Self-Efficacy: Engagement	117	2.177 [0.051]	46	2.250 [0.074]	-0.073
ASSETS	117	3.053 [0.027]	46	2.991 [0.041]	0.062
ASSETS: Motivation	117	3.143 [0.032]	46	3.114 [0.046]	0.030
ASSETS: Preparation	117	3.272 [0.029]	46	3.189 [0.043]	0.083
ASSETS: Peer Support	117	3.130 [0.033]	46	3.072 [0.051]	0.058
ASSETS: Admin Support	117	2.791 [0.048]	46	2.696 [0.074]	0.095
ASSETS: Wellbeing	117	2.882 [0.039]	46	2.848 [0.063]	0.034
Stress Score	117	1.836 [0.056]	46	1.680 [0.074]	0.156

Notes. The value displayed for t-tests are the differences in the means across the groups, sample permitting.
**** p<0.01, ** p<0.05, * p<0.1*

Educator's ASSETS (Wellbeing) Items, by Sex

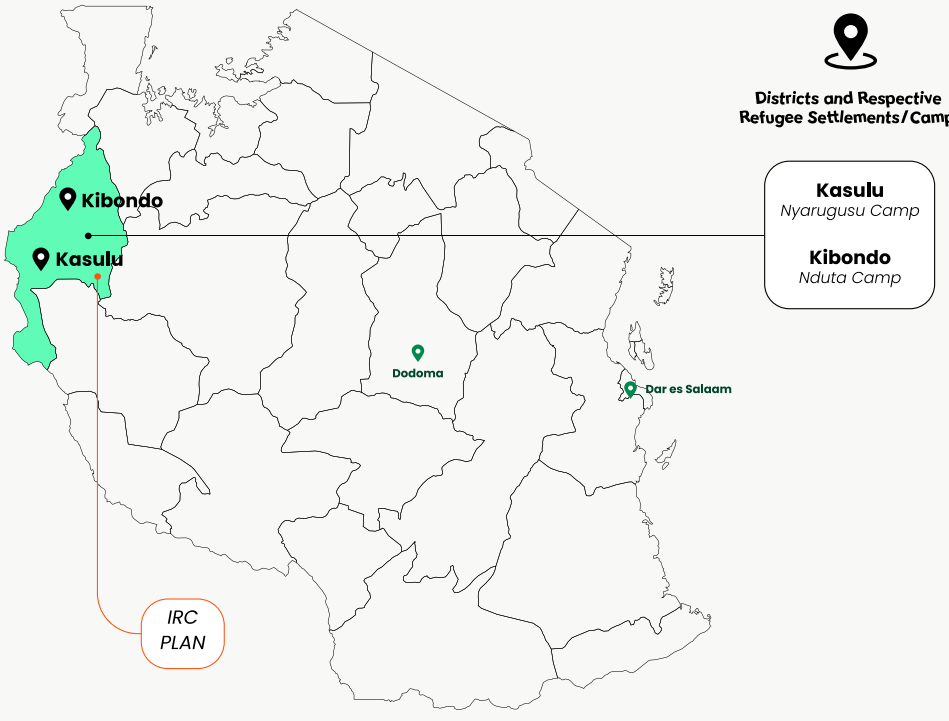
ASSETS Item	N	(1) Male Mean/SE	N	(2) Female Mean/SE	(1)-(2)
I like learning new content to teach my pupils	117	3.513 [0.048]	46	3.391 [0.091]	0.122
I love the teaching profession	117	3.521 [0.048]	46	3.326 [0.083]	0.195**
I love the school that I currently work at	117	3.402 [0.056]	46	3.304 [0.093]	0.097
I am able to complete my work without reminders	117	3.274 [0.071]	46	3.348 [0.125]	-0.074
I create extra learning opportunities for learners who need them	117	3.291 [0.062]	46	3.283 [0.106]	0.008
I go out of my way to communicate with parents about their pupils' progres	117	3.316 [0.055]	46	3.391 [0.079]	-0.075
I go above and beyond the scope of my work as a teacher	117	3.333 [0.068]	46	3.261 [0.114]	0.072
I have teaching tools and materials ready before I start teaching most of my classes	117	3.504 [0.049]	46	3.370 [0.100]	0.135
Before I start a class, I prepare multiple plans to allow for flexibility	117	3.547 [0.060]	46	3.565 [0.086]	-0.018
I prepare for lessons with my pupils' needs in mind	117	3.444 [0.051]	46	3.217 [0.098]	0.227**
I am able to complete the syllabus if there are no interruptions	117	3.231 [0.064]	46	3.152 [0.116]	0.079
I do research on the topic I am teaching before I enter the class	117	3.590 [0.046]	46	3.500 [0.081]	0.090
I ask colleagues for help when the content is complex	117	3.504 [0.046]	46	3.370 [0.084]	0.135
The training I received before I became a teacher prepared me for teaching	117	3.521 [0.056]	46	3.478 [0.074]	0.043
The training I received after I became a teacher helped me improve my teaching	117	3.556 [0.049]	46	3.565 [0.080]	-0.010
...help each other solve problems at school	117	3.376 [0.058]	46	3.370 [0.090]	0.007
...help each other develop professionally	117	3.436 [0.053]	46	3.370 [0.084]	0.066
...share assessment or evaluation responsibilities	117	3.231 [0.067]	46	3.217 [0.093]	0.013
...support each other with pupils' behavior challenges	117	3.385 [0.048]	46	3.326 [0.070]	0.059
...work together to meet the learning objectives of the syllabus	117	3.342 [0.064]	46	3.196 [0.115]	0.146
...are respectful to each other	117	3.487 [0.052]	46	3.196 [0.119]	0.292***
...are friendly with each other	117	3.308 [0.066]	46	3.152 [0.103]	0.156
...show support for each other's personal life	117	3.333 [0.063]	46	3.087 [0.120]	0.246*
... provides teachers with the required materials and learning aids	117	2.872 [0.094]	46	2.783 [0.142]	0.089
... rewards teachers for positive work	117	2.829 [0.100]	46	2.891 [0.129]	-0.062
... gives teachers constructive feedback and supervision	117	3.222 [0.060]	46	3.065 [0.114]	0.157
... allocates enough time and resources for collaboration between teachers	117	2.897 [0.085]	46	2.739 [0.157]	0.158
... allocates enough time and resources for professional development	117	2.923 [0.082]	46	2.804 [0.141]	0.119
... supports teachers in solving personal problems	117	3.017 [0.092]	46	2.761 [0.140]	0.256
... supports teachers in solving professional problems	102	3.157 [0.065]	42	3.095 [0.101]	0.062
... supports teachers in taking time off for personal issues or if they are sick	117	3.094 [0.085]	46	3.109 [0.104]	-0.015
I am in good health	117	2.872 [0.088]	46	2.804 [0.160]	0.067
I feel safe in my school	117	3.171 [0.070]	46	3.109 [0.099]	0.062
I feel safe in my community	117	3.188 [0.069]	46	3.043 [0.103]	0.145
I have strong relationships in my school	117	3.402 [0.053]	46	3.413 [0.073]	-0.011
I have strong relationships in my community	117	3.402 [0.052]	46	3.348 [0.089]	0.054

Notes. The value displayed for t-tests are the differences in the means across the groups, sample permitting.
**** p<0.01, ** p<0.05, * p<0.1*

Educators' Stress Summary Results Items

As a teacher, how great a source of stress are these factors to you?	Rank Score	Count	Mean	S.D	Min	Max
8. Inadequate salary	1st	163	3.5	0.9	0	4
16. Shortage of equipment and poor facilities	2nd	163	2.9	1.0	0	4
3. Lack of recognition for good teaching	3rd	163	2.4	1.2	0	4
18. Pupils impolite behavior or cheek	4th	163	2.3	1.1	0	4
10. Having a large class (i.e. many pupils)	5th	163	2.3	1.3	0	4
14. Ill-defined syllabuses (e.g. not detailed enough)	6th	163	2.1	1.2	0	4
7. Pupils' poor attitudes to work	7th	163	2.0	1.1	0	4
20. Having extra students because of absent teachers	8th	163	2.0	1.4	0	4
2. Difficult class	9th	163	1.9	1.2	0	4
15. Lack of time to spend with individual pupils	10th	163	1.8	1.2	0	4
5. Noisy pupils	11th	163	1.8	1.2	0	4
1. Poor career structure (poor promotion prospects)	12th	163	1.8	1.1	0	4
13. Pressure from parents	12th	163	1.4	1.3	0	4
17. Attitudes and behavior of other teachers	14th	163	1.3	1.1	0	4
19. Pressure from head teacher and education officers	15th	160	1.3	1.3	0	4
9. Too much to do (e.g. lesson preparation and marking)	16th	163	1.3	1.2	0	4
4. Responsibility for pupils (e.g., exam success)	17th	163	1.1	1.3	0	4
6. Too short rest periods (mid-morning break, mid-day break)	18th	163	0.8	1.1	0	4
12. Administrative work (e.g. filling in forms)	19th	163	0.8	1.0	0	4
11. Maintaining class discipline	20th	163	0.8	1.0	0	4

Where We are Working



International Rescue Committee (IRC)
Plan International (PLAN)

Tanzania

Educators' Stress Items, by Sex

As a teacher, how great a source of stress are these factors to you?	N	(1) Male Mean/SE	N	(2) Female Mean/SE	(1)-(2)
1. Poor career structure (poor promotion prospects)	117	1.752 [0.101]	46	1.783 [0.152]	-0.030
2. Difficult class	117	1.915 [0.107]	46	1.935 [0.171]	-0.020
3. Lack of recognition for good teaching	117	2.453 [0.112]	46	2.283 [0.169]	0.170
4. Responsibility for pupils (e.g., exam success)	117	1.111 [0.121]	46	1.152 [0.178]	-0.041
5. Noisy pupils	117	1.812 [0.108]	46	1.652 [0.168]	0.160
6. Too short rest periods (mid-morning break, mid-day break)	117	0.932 [0.104]	46	0.630 [0.130]	0.301
7. Pupils' poor attitudes to work	117	2.145 [0.109]	46	1.717 [0.145]	0.428**
8. Inadequate salary	117	3.547 [0.087]	46	3.543 [0.131]	0.004
9. Too much to do (e.g. lesson preparation and marking)	117	1.410 [0.115]	46	1.152 [0.184]	0.258
10. Having a large class (i.e. many pupils)	117	2.299 [0.118]	46	2.174 [0.195]	0.125
11. Maintaining class discipline	117	0.821 [0.098]	46	0.696 [0.135]	0.125
12. Administrative work (e.g. filling in forms)	117	0.812 [0.097]	46	0.783 [0.152]	0.029
13. Pressure from parents	117	1.504 [0.117]	46	1.283 [0.183]	0.222
14. Ill-defined syllabuses (e.g. not detailed enough)	117	2.171 [0.105]	46	1.978 [0.193]	0.193
15. Lack of time to spend with individual pupils	117	1.855 [0.114]	46	1.652 [0.174]	0.203
16. Shortage of equipment and poor facilities	117	2.923 [0.096]	46	2.957 [0.152]	-0.033
17. Attitudes and behavior of other teachers	117	1.342 [0.102]	46	1.370 [0.144]	-0.028
18. Pupils impolite behavior or cheek	117	2.368 [0.103]	46	2.217 [0.170]	0.150
19. Pressure from head teacher and education officers	114	1.482 [0.126]	46	1.000 [0.162]	0.482**
20. Having extra students because of absent teachers	117	2.068 [0.129]	46	1.652 [0.179]	0.416*
Total Stress Score	117	1.836 [0.056]	46	1.680 [0.074]	0.156

Notes. The value displayed for t-tests are the differences in the means across the groups, sample permitting.
**** p<0.01, ** p<0.05, * p<0.1*

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