



RIGHT TO PLAY
PROTECT. EDUCATE. EMPOWER.

Findings from the baseline evaluation of Right to Play's E-certification course

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Executive Summary

Right To Play and the Rwanda Ministry of Education are implementing a Learning through Play E-learning and Certification programme to support play-based learning in the classroom. Play has been identified as an essential element to support holistic skills development in children, but practical play pedagogy is lacking, partly because of a lack of quality training for teachers. The E-Training and Certification programme will train, certify and mentor lower primary teachers in Rwanda, first piloting a small pre-alpha cohort and then expanding to 3,343 lower primary teachers. This evaluation study is the third (and main) study in a monitoring, evaluation and learning plan that included a context and a pilot design study and will include a deep dive study and endline evaluation.

The goal of this evaluation is to capture data that estimates the impact from the E-certification course, establishing causality through the use of a control group and comparisons between an endline and baseline study. This baseline study has the objective of understanding the current state of intermediate outcomes outlined in the project's Theory of Change: teachers' and school leaders' knowledge, attitudes and behavior with respect to Learning through Play in the classroom, support from school leadership, and children's classroom experience. It also has the objective of collecting data about the enabling conditions for Learning through Play to be applied in classrooms: teachers' and school leaders' demographics, access to devices, previous training, and resources available for learning. For each outcome, the baseline evaluation aims to assess any differences between the treatment and the control group.

The baseline evaluation collected qualitative and quantitative data through five data collection activities: a teacher survey, a school leader survey, classroom observations, Focus Group Discussions with teachers, and Focus Group Discussions with students. Quantitative data collection took place in the 170 schools and involved three components: a teacher survey, a school leader survey, and classroom observations. Data collection took place in 85 schools from the treatment group and 85 schools from the control group, achieving a total sample of 849 teachers, 170 school leaders, and 340 classroom observations. Treatment group schools were randomly sampled from the E-certification planned first cohort, which covers three districts. Control group schools were selected in neighboring districts through propensity score matching to be as similar as possible to treatment schools. Sampling was clustered at the school level and stratified at the district level. Qualitative data collection took place in 6 treatment schools and involved 6 Focus Group Discussions with teachers and 6 Focus Group Discussions with students. Data was analyzed descriptively for quantitative surveys, and classroom observations were analyzed by Oxford MeasurEd, resulting in a score that quantifies the extent to which Learning through Play is taking place in the classroom, based on five constructs. Qualitative studies were summarized descriptively after identifying main trends. Limitations to the analysis methodology

include partial exposure to the E-certification course (which started roll-out when classes resumed on September 25th) by the treatment group, the presence of the RwandaEQUIP program in almost a quarter of schools, and possible self-selection by teachers for classroom observations. Baseline findings cannot determine causality, i.e. they cannot estimate the impact of the program, and are not representative of the districts that schools were sampled from.

We found that teachers are mostly female and school leaders mostly male, that access to smartphones is widespread, that a minority has experience with online or Learning through Play training, and that the most common resources for teacher learning are through in-person interactions. The majority of teachers are female, aged between 26 and 45, and have completed secondary studies. School leaders are on average older (between 36 and 50 in age) and more educated. The vast majority of teachers have access to smartphones, while access to computers is less common and higher in the treatment group. Virtually all school leaders have access to smartphones and computers. Around a quarter of teachers have experience with online training in both groups, while experience with Learning through Play training is higher in the treatment group, driven by the E-certification course. Most school leaders have experience with online training, with a higher share in the treatment group. Around a third have experience with training on Learning through Play. To learn about new methods, teachers use a variety of resources, but the most common ones involve in-person interactions, such as discussions with other teachers or Communities of Practice. Most teachers have at least occasional time available to prepare activities and try out new methods. Teachers have higher access to outdoor play spaces than indoor play spaces, and slightly higher access to physical resources than online play resources. Most school leaders think that teachers are interested in learning new methods, and that Communities of Practice (COPs) and School-Based Mentors (SBMs) are effective support systems, but there is disagreement among them about how much time teachers have to learn. Most school leaders are members of Professional Learning Communities and agree on their effectiveness as support systems.

Findings on knowledge outcomes show that teachers have some knowledge about Learning through Play, but there is a lot of room for improvement in teachers' beliefs. School leaders have better overall scores on knowledge of Learning through Play. Teachers seem to have a general knowledge of Learning through Play but know less about best practices. While there are no differences between treatment and control for the overall knowledge score on Learning through Play, beliefs on how children learn are more aligned with Learning through Play in the treatment group. Moreover, self-reported knowledge of Learning through Play is higher in the treatment group. Regression analysis shows that holding all else constant, knowledge scores increase with teachers' education level and decrease with teachers' age. Overall knowledge is higher in schools without an active RwandaEQUIP program. Focus Group Discussions confirmed teachers' familiarity with Learning through Play and their belief that it improves student learning and engagement. Teachers mainly reported challenges around a lack of knowledge of lesson planning and how to adapt teaching for less proficient learners when using a Learning through Play approach. Quantitative findings for school leaders show that they fare better on knowledge about Learning through Play, with a higher average score than teachers.

Overall teacher and school leader motivation is high and slightly higher for those who know about Learning through Play. The overall teacher attitude score is high with little room for improvement at endline, showing that teachers report being motivated to use Learning through Play in the classroom. Teacher confidence in Learning through Play practices is very high, while overall motivation is lower due to incorrect beliefs, such as thinking that Learning through Play can be used to keep classrooms quiet or ensure that children follow what the teacher is saying. There are no clear patterns between teacher attitudes toward Learning through Play and baseline characteristics. Findings from Focus Group Discussions confirm high teacher confidence and report that a decrease in motivation is typically caused by a lack of resources or by physical constraints. School leader attitudes towards Learning through Play are generally good, but lower for female school leaders.

Implementation of Learning through Play in the classroom is generally low, both from self-reports and classroom observations. Teachers' self-reported and LtP scores from classroom observations scores are generally low with little variation, while the self-reported scores for inclusive practices are very high. The LtP classroom score is slightly higher for the treatment group, but the difference is only weakly significant. Regression analysis shows no correlation between observed and self-reported practices, but a strong correlation between observed practices and knowledge scores. Both self-reported and observed practices scores are lower for schools with an active RwandaEQUIP program.

Teachers reported receiving a good level of support for Learning through Play in both treatment and control groups. School leaders reported that some resources are lacking. Communities of Practice and School-Based Mentors are widespread and used by most teachers. Perceived support from them and from headteachers is generally high across all teachers. Teachers reported receiving consistent support from headteachers for professional development and adopting new methods. School leaders' scores on support for learning and inclusive environment are positive but leave room for improvement.

During Focus Group Discussions, students did not mention Learning through Play and rarely mentioned any kind of child-led activities. Children's favorite activities are usually led by teachers, with the exception of working in groups. Students reported not liking their classes when the content is difficult to understand, or when the teacher is disengaged, careless, or punishes pupils.

From the main findings we draw the following conclusions, detailed in Section 5:

1. The treatment and control groups are generally balanced, with some key differences in baseline characteristics.
2. The levels of most outcome indicators are relatively low, which means we will be able to capture any improvements at endline.

3. Differences in outcomes across treatment groups are minimal and limited to teacher knowledge and observed practices.
4. Teachers' understanding of Learning through Play is limited, although motivation to apply it in the classroom is high.
5. School leaders have a better understanding of what Learning through Play is, and the same positive attitude towards it as teachers.
6. Observed practices are not correlated with self-reported practices and show different patterns across treatment groups.
7. Baseline data provides useful information on which indicators should be prioritized for use for baseline/endline comparisons.
8. Teachers in schools with an active RwandaEQUIP program have on average lower knowledge and classroom implementation of Learning through Play.
9. Teachers' self-reported inclusion indicators are a good level, which might reflect limitations of the indicators themselves.
10. Students did not mention modalities of teaching specifically related to Learning through Play. This might reflect limited or poor exposure so far.

1. Project Background

Ninety-two percent of children in low-income countries are predicted to reach adulthood without the skills they need to thrive (International Commission on Financing Global Education Opportunity, 2016). In light of this, holistic skills development has become a priority in education to ensure improved academic performance, socio-emotional skills and outcomes in physical and psychosocial wellbeing.

This is partly due to a lack of quality training for teachers on how to implement play-based learning in the classroom. Right To Play, the LEGO Foundation, the Government of Rwanda and the University of Cambridge are attempting to address this through a comprehensive blended e-training program for teachers in Rwanda, relying on the scalability, accessibility, cost-effectiveness and impact of online training. Rwanda has been identified as an optimal location to test this approach given its efforts in becoming a leader in the technology and education spaces.

This Learning through Play E-training and Certification project is implemented through a blended Continuous Professional Development (CPD) approach. It trains, certifies, and mentors lower primary teachers (P1-P3) in Rwanda to deliver the Competence-based Curriculum (CBC) through Learning through Play, inspiring them to facilitate more collaborative, engaging, and playful learning classrooms. The Learning through Play training is accredited by the University of Rwanda's College of Education (UR-CE) and hosted on Rwanda Basic Education Board's Learning Management System. UR-CE lecturers facilitate the course both face to face and online. The project was piloted first with a small "pre-alpha" cohort of 30 lower primary teachers (approximately 25% male, 75% female, reflecting the predominance of female teachers at lower primary level), before eventually expanding to a total of seven districts in Rwanda (Burera, Muhanga, Musanze, Ngoma, Ngororero, Nyanza, and Rwamagana), reaching 304 public and government aided schools and up to 3,343 lower primary teachers (25% male, 75% female), who will in turn reach up to 158,837 lower primary learners. The project adopts a user-centred design and co-creation approach, giving teachers a central role in the design process of the e-learning platform and blended training approach from the very beginning.

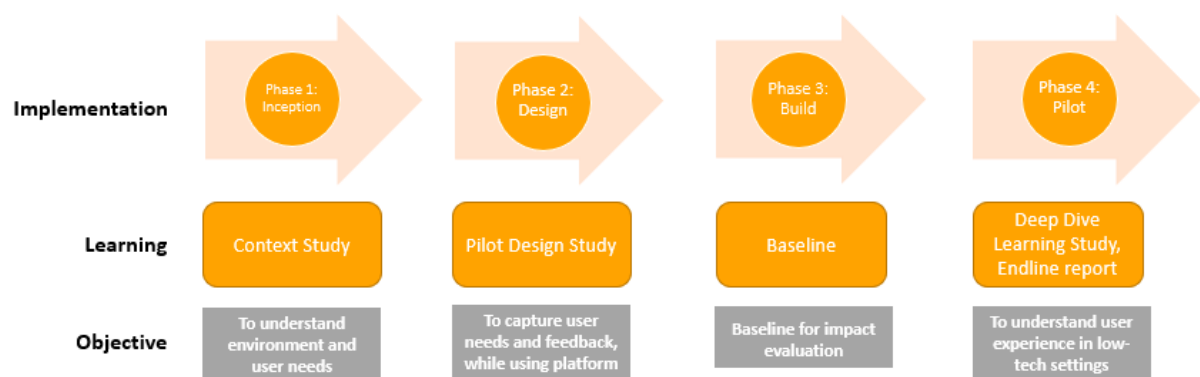
The project aims to achieve impact by addressing two long-term outcomes:

1. Improve teacher classroom practice in delivering the CBC through the implementation of Learning through Play in lower primary classrooms.
2. Increase Right To Play's ability to develop and deliver scalable and playful online Teacher Professional Development.

To answer research questions around these and any related outcomes, the monitoring, evaluation and learning plan developed by Right To Play, Laterite and Oxford MeasurEd includes (see Figure 1):

- A **context learning study** to inform the design of the Learning through Play e-course based on educators' needs.
- A **pilot design study** to improve the e-learning and certification course prototype through user insights.
- A **deep dive study** into opportunities and challenges surrounding scalability of the Learning through Play e-course.
- A **baseline and endline evaluation** to assess whether teachers' participation in the Learning through Play e-course results in changes in their knowledge and improved perceptions and behaviors of Learning through Play.

Figure 1. Overview of learning studies in relation to Right To Play implementation stages



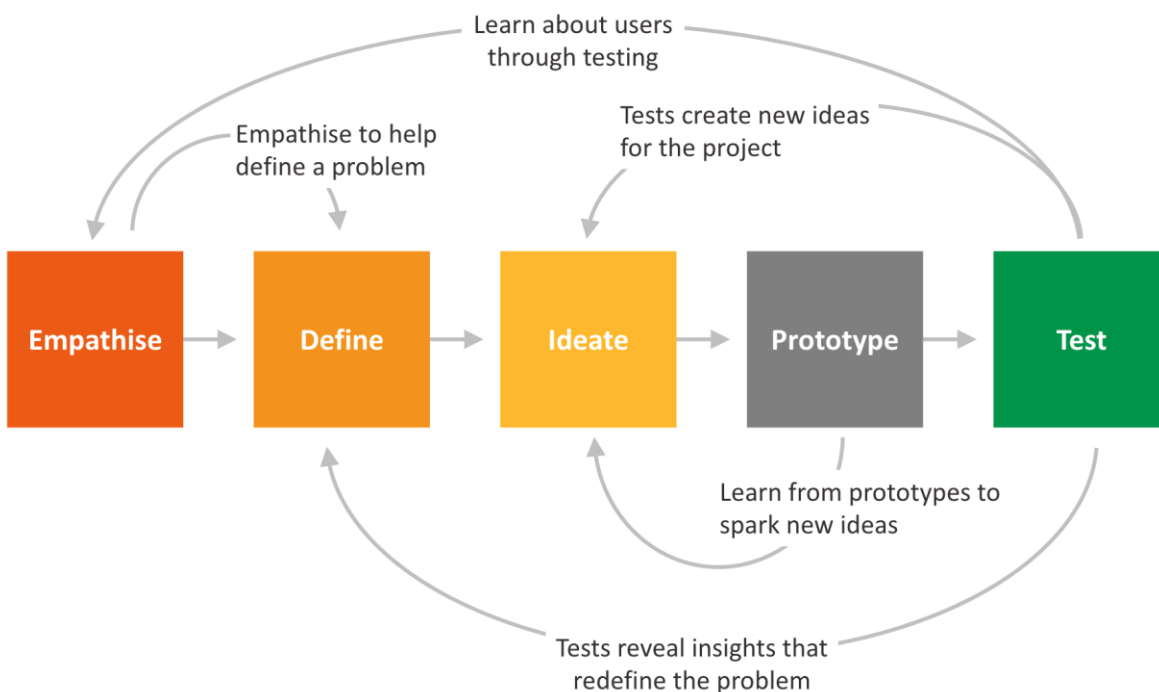
2. Study Purpose, Objective and Questions

Situating the Evaluation Study in the innovation pathway

During October 2022, Laterite and Oxford MeasurEd conducted a workshop with the Right To Play team to discuss design thinking processes and the role that evidence plays at each stage of the process of moving to scale with EdTech innovations. This baseline evaluation study represents the third step for us as learning partners to collect and analyse data to support progress along this pathway, after the context study that was conducted in November 2022 and the pilot design study that was conducted in July 2023.

When we look at **Figure 2** below, we can see a process for design thinking. This is an iterative and cyclical process which begins with a focus on understanding the users and context for innovation before solutions are ideated, prototyped and tested.

Figure 2. Overview of Design Process¹

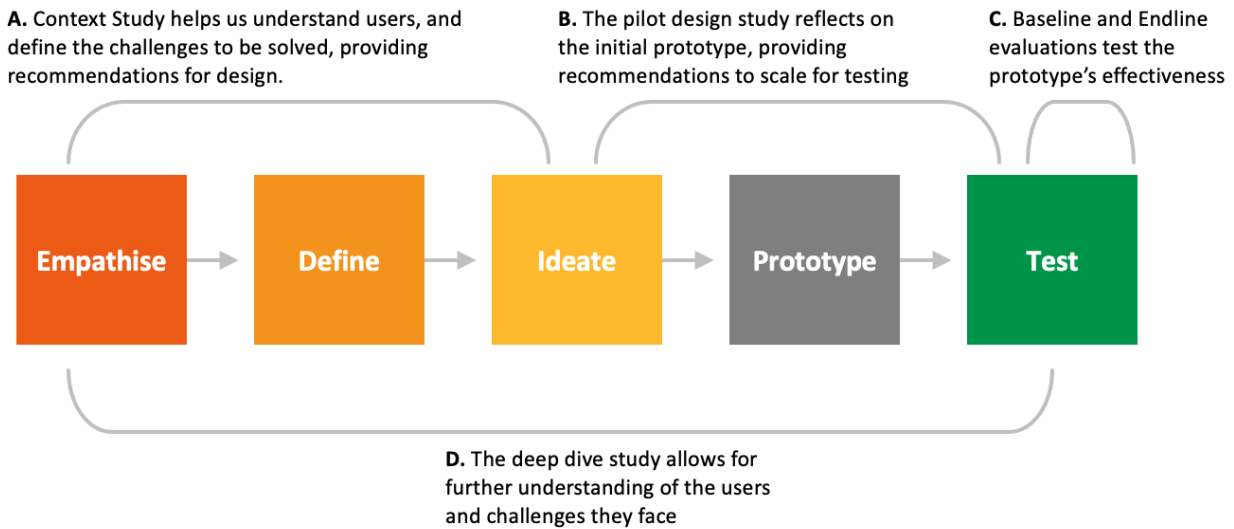


For the purpose of planning our learning partnership, we can overlay this pathway with the studies and design activities that will take place over the next two years. In the overlay shown in **Figure 3**, we can see that the pilot design plays a key role in the **test** process. We will use the data from this evaluation to understand the E-certification's effectiveness on relevant outcomes. This

¹ This model was first proposed by the Stanford Design School (Stanford d.school), but is now commonly used by a range of organisations working in design thinking.

understanding will allow us, as learning partners, to make evidence-based recommendations to support Right To Play in improving the E-certification course and proceeding to scale-up.

Figure 3. Role of Learning Partnership in Design Process

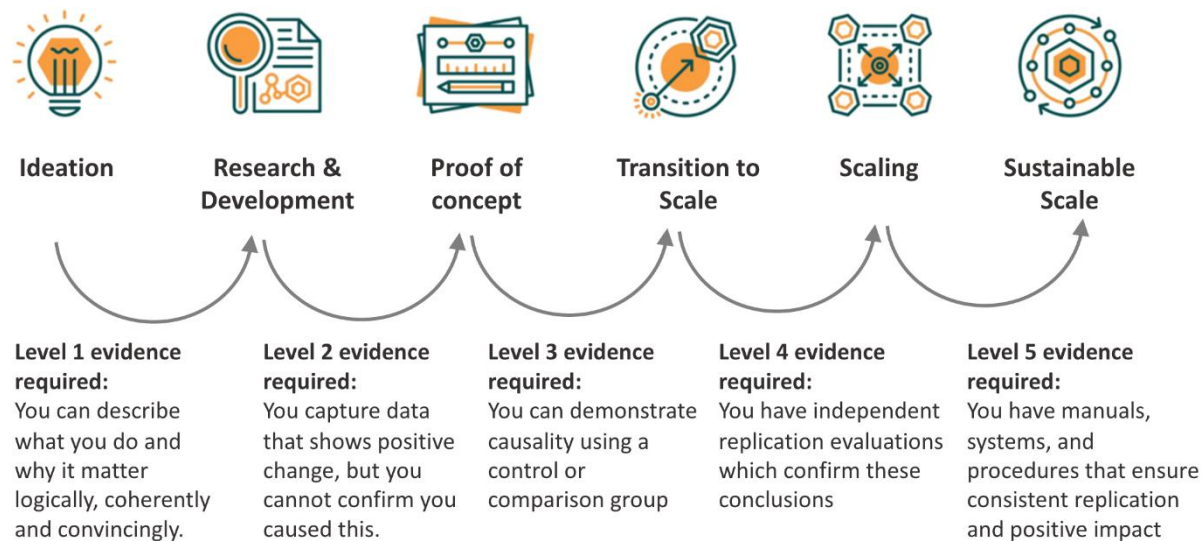


Standards of Evidence

Another key framework guiding our work as learning partners is an understanding of the levels and types of evidence needed to move an innovation to scale. Presented in **Figure 4**, this framework presents six levels of evidence which move from ideation to sustainable scale. For each of these levels, the model outlines what level and types of evidence are sufficient to allow an innovation to move to the next stage. Following this pathway ensures that an innovation has enough evidence to support scaling, but also ensures that unnecessary data is not being collected too early in the process.

As presented above, we aim to support the ideation process with the pilot design study. This means we are looking to reach **level three** in this evidence pathway. The outputs of this evaluation should therefore allow us to **capture data that shows a positive change from the E-certification course, establishing causality through the use of a control group.**

Figure 4. Levels of evidence to move from ideation to scale²



Situating the study in Learning through Play

Learning through Play is about the quality of the process of learning itself, which leads to improved retention of learning as an outcome. It is the set of adult-child interactions in the household or the classroom that support child agency, connection to experience, exploration and problem-solving. Necessary but not sufficient elements of Learning through Play are Social Connectedness and a Positive Emotional Climate. Learning through Play is joyful, meaningful, actively engaging, iterative and socially interactive. It is theorized to result in greater social-emotional development, language and numeracy outcomes, cognitive and executive function and engagement with the community.³

Figure 5. The Kindergarten Continuum⁴

² This model is adapted by Oxford MeasurEd from UNICEF's scaling innovation strategy. For more information see: <https://www.unicef.org/innovation/media/4551/file/Scaling%20Innovation%20for%20Every%20Child%20v2.pdf>

³ <https://cms.learningthroughplay.com/media/3qcajhg1/play-1-0-full-report-december-2022.pdf>

⁴ Miller, E., & Almon, J. (2009). Crisis in the kindergarten: Why children need to play in school. *Alliance for Childhood (NJ3a)*.



Misconceptions regarding what Learning through Play actually is are ever-present. It is relatively common knowledge that highly structured classrooms with scripted teaching or other forms of teacher-led instruction with little or no play is not Learning through Play. However, loosely structured classrooms with ample play but little active adult support are also not spaces of Learning through Play, yet are often described as such. Misconceptions regarding what Learning through Play actually is can result in poor implementation, and create barriers to uptake at the classroom, school and systems levels.

Study Objectives

The overall aim of the E-certification project is to lead to an improved learning experience for lower primary students through the improved use of Learning through Play in the classroom. However, as the course will take place between the baseline and endline study, it is unlikely that we would be able to detect a significant change in student outcomes in less than a year. Therefore, the evaluation will mainly focus on intermediate outcomes at the teacher and school leader level, such as attitudes towards and use of Learning through Play, which are assumed to lead to the longer-term outcome of improved student outcomes. Further studies should explore the long-term relationship between teacher practices and student outcomes to test this fundamental assumption.

This baseline report has the following research objectives related to **enabling conditions** for Learning through Play to be applied in school classrooms. For each of the outcomes analyzed at baseline, we also assess any statistically significant differences between treatment and control group:

1. What are teachers' and school leaders' baseline demographic characteristics?
2. What are teachers' and school leaders' types and modalities of access to electronic devices?
3. Have teachers and school leaders received previous online training and training on Learning through Play?
4. Which resources are available to teachers and school leaders for learning?

This baseline report has the following research objectives related to intermediate outcomes for learning through play to be applied in school classrooms:

1. What is the current state of teachers' and school leaders' knowledge towards Learning through Play?
2. What are lower primary teachers' and school leaders' current attitudes towards Learning through Play?
3. What are lower primary teachers' classroom current practices in delivering the Competence-based Curriculum (CBC)?
4. What support do school leaders and lower primary teachers get from their school to implement Learning through Play in the classroom?
5. What are the current learning experiences of lower primary school students in relation to Learning through Play?

The endline report will seek to address the following research questions:

1. What is the change in lower primary teachers' and school leaders' knowledge towards Learning through Play as a result of the E-learning course?
2. What is the change in lower primary teachers' and school leaders' attitudes towards Learning through Play as a result of the E-learning course?
3. Does the E-learning course lead to increases in lower primary teachers' classroom practice in delivering the CBC through the implementation of Learning through Play in the classroom?
4. What is the change in support from school leadership to implement Learning through Play in the classroom as a result of the E-learning course?
5. Does the E-learning course lead to improvements in the learning experience of lower primary school students through the use of Learning through Play?

These questions will be answered by quantitative interviews with teachers and school leaders, Focus Group Discussions with teachers and students, and classroom observations of teacher practices and their use of Learning through Play, conducted both at baseline and endline.

3. Methodology and Limitations

Overview of data collection

The evaluation collected both qualitative and quantitative data through five data collection activities, three of which are quantitative and two are qualitative.

Quantitative data collection took place in a total of 170 schools (85 from the treatment group, 85 from the control group):

- Teacher Survey: A face-to-face survey with 850 teachers (5 per school)
- School Leader Survey: A face-to-face survey with 170 school leaders (1 per school)
- Classroom observations: An observation of in-class teaching practices of a subset of 340 surveyed teachers (2 per school)

Qualitative data collection took place in the three treatment districts:

- Student FGDs: Six Focus Groups Discussions, two in each district, with a total of 48 P3 students aged 8-10
- Teacher FGDs: Six Focus Groups Discussions, two in each district, with a total of 48 teachers

Prior to data collection, the Laterite team collected local approvals (at the district and sector level) from September 21st to September 22nd and conducted listing activities from September 25th to September 29th. After a pilot study conducted on October 3rd, data for quantitative data was collected between October 9th and November 3rd; and Focus Group Discussions were conducted in the same timeframe. All data collection targets were met, apart from one school that only had four lower primary school teachers, which meant we were only able to survey 849 teachers. More details on data collection procedures and statistics can be found in the annex.

Sampling strategy

The sampling strategy employed in this study was:

- To stratify at the district level: we selected approximately the same number of schools for each district.
- To cluster at the school level: we sampled schools instead of individual teachers, since the E-certification course is offered at the school level. Then for each school, we randomly sampled respondents to be interviewed.

However, schools are not selected randomly from each district but according to a quasi-experimental matching approach. The objective of our school sampling approach is to select control group schools that are as similar as possible to a set of treatment group schools that are receiving Right to Play's E-certification course (the treatment).

On geographical coverage:

- The treatment group is composed of schools from the districts of Muhanga, Nyanza, and Ngororero that are receiving the treatment.
- The control group, which must consist of schools that are as similar as possible to those in the treatment group, was selected from a comparison group of schools in the eight neighboring districts that will not be exposed to the course in the second cohort (January 2024) and that have not been exposed to any interventions on Learning through Play by Right to Play in the past. These eight districts are Gakenke, Gisagara, Huye, Kamonyi, Karongi, Nyamagabe, Nyabihu, Rutsiro. All are neighboring the treatment group districts. Some districts were excluded from control group selection because they were either targeted by other Learning through Play interventions from Right to Play in the past, or because they were part of the cohort that will receive the E-certification course in January 2024.

Table 1. Distribution of sampled schools in the study's districts

District Name	Arm of the study	
	Control	Treatment
Gakenke	10	0
Gisagara	9	0
Huye	18	0
Kamonyi	19	0
Karongi	3	0
Muhanga	0	30
Ngororero	0	23
Nyabihu	7	0
Nyamagabe	12	0
Nyanza	0	32
Rutsiro	7	0
Total	85	85

For the treatment group, the sampling frame (the list of schools from which we randomly sampled), consists of the set of 118 primary schools in the three districts targeted by Right to Play as the first cohort to attend the course in September 2023. From this set of 118 schools, 85 schools were randomly selected. These schools are listed in the Ministry of Education's Education Management Information System dataset, which provides further information about school resources and characteristics.

For the control group, the sampling frame consisted of all primary schools listed in the Ministry of Education's Education Management Information System dataset that are in the districts listed above.

Right to Play has already established eligibility criteria for schools to be included in the treatment group receiving the E-certification course. These criteria include being connected to electricity and to the internet, availability of computers and smart classrooms, and availability of primary school teachers with previous training in English. All schools in the selected districts that met the inclusion criteria received the treatment.

Control group schools were selected according to the same eligibility criteria used for treatment schools, using **propensity score matching**. Propensity score matching is a methodology that considers a set of characteristics (such as availability of computers and electricity at the school level, or number of teachers per school) to build a unidimensional score (from 0 to 1) that is used to summarize the probability of a school of being in the treatment group. After building the scores, each school from the treatment group is matched to a control group school with the most similar score possible, so that the schools are comparable.

Propensity score matching was done by using information from the Education Management Information System (EMIS) database which was provided to Laterite by the Rwanda Basic Education Board. We used EMIS' detailed information on schools' characteristics and resources, combined with geospatial information (such as proximity to cities and elevation) on each school from Laterite's geospatial database. The extensive amount of data available in the EMIS database, and the additional geospatial data from Laterite's database, ensured that enough information is used to ensure that the control group acts as a good counterfactual. The information about schools was confirmed prior to data collection through short interviews with school leaders. In addition, the balance between treatment and control schools is reviewed at baseline and is reported on in Annex 2. More information about propensity score matching and the variables used in the process can be found in the annex.

Research instruments

All instruments for this study had gone through an extensive tool development or adaptation and review process including:

- Review of research and pre-existing instruments
- For classroom observations, adaptation by Oxford MeasurEd with input from Right to Play and Laterite
- For all other instruments, development of draft versions with input provided by Right to Play and Oxford MeasurEd
- Final tool translation, back-translation, and instrument testing to ensure clarity in meaning and accuracy of translations.

We administered five main tools:

School leader survey: This survey seeks to understand and track changes in school leader knowledge and attitudes towards Learning through Play, and in their support for the use of

Learning through Play in the classroom. To achieve this, the survey collects data on areas including:

- Current work status and qualification
- School development, leadership and mentoring
- Existing support systems for teacher learning (e.g., Communities of Practice, School-Based Mentors) and perceived effectiveness
- Knowledge of Learning through Play practices
- Attitudes and beliefs towards Learning through Play

This survey was fully administered to one headteacher for each sampled school.

Teacher survey: This survey seeks to understand and track changes in teacher knowledge and attitudes towards Learning through Play (including their motivation and confidence to use it in the classroom), self-reported teaching practices with respect to Learning through Play, and access to support to implement Learning through Play in the classroom. To achieve this, the survey collects data on areas including:

- Current teaching status and qualifications
- Access to electronic devices
- Experiences with previous online training or training on Learning through Play
- Access to support for learning at the school level (e.g., Communities of Practice, School-Based Mentors) and perceived effectiveness
- Teacher knowledge and beliefs towards Learning through Play
- Teacher attitudes towards Learning through Play, including confidence and motivation to implement it in the classroom
- Self-reported teacher practices in the classroom, with a focus on Learning through Play

This survey was fully administered to all sampled teachers (five for each sampled school).

Classroom Observation Tool: This seeks to understand and track increases in the implementation of Learning through Play into teaching practices. It covers domains of teaching practices aligned with the constructs at the basis of the E-certification course and Learning through Play:

- Support for connection to experience
- Support for problem solving
- Support for exploration
- Support for agency
- Support for social connectedness

- Active participation
- Positive emotional climate

The study employed the PLAY tool developed by the Lego Foundation and adapted to the Rwandan context by Oxford MeasurEd. This tool has also been adapted and validated by Oxford MeasurEd in neighboring countries (Uganda and Kenya). Classroom observations were conducted with two teachers for each sampled school.

Focus Group Discussions with Teachers: This discussion had the objective of better understanding teachers' perceptions and attitudes towards Learning through Play, as well as their motivation and confidence to implement it in the classroom. Although this is already measured in the quantitative teacher survey, the qualitative discussion gathered more detailed feedback on the perceived effectiveness and feasibility of Learning through Play and child-centered approaches in the classroom.

Two teacher Focus Group Discussions were conducted in each of the three treatment districts, for a total of 6 discussions.

Focus Group Discussions with Students: This discussion had the aim of understanding students' experiences with their classes and their interactions with teachers. By employing a participatory approach, i.e., a drawing exercise, students were asked about positive and negative experiences in the classroom and with their teachers, and what makes a good experience in the classroom for them.

Two student Focus Group Discussions were conducted in each of the three treatment districts, for a total of 6 discussions. For each district, one discussion only included male students and one discussion only included female students.

For the school leader and teacher survey, Laterite programmed the survey into SurveyCTO and collected the data electronically. The student and teacher Focus Group Discussions were administered on paper, with recordings being transcribed and translated later. For classroom observations, the results were entered into SurveyCTO after the observation.

Table 2 presents a summary of the instruments to be used in this study.

Table 2. Summary of the instruments to be used in the Right to Play E-certification evaluation

Instrument	Focus	Description of Sample	Duration

1) School leader Survey (electronic)	School leadership support for learning, knowledge and attitudes towards Learning through Play	1 head teacher per sampled school	1 hr
2) Teacher Survey (electronic)	Teacher knowledge and attitudes towards Learning through Play; Teacher practices with respect to Learning through Play; access to support for learning and to implement Learning through Play	5 teachers per sampled school	1 hr
3) Classroom observation	Integration of Learning through Play into teaching practices	2 teachers per sampled school	40 minutes
4) FGDs with teachers (paper)	Teacher perceptions and attitudes towards Learning through Play; teacher motivation and confidence to use Learning through Play in the classroom	Two discussions for each treatment district	1 hr 30 minutes
5) FGDs with students (paper)	Students' experiences in the classroom; students' interactions with teachers	Two discussions for each treatment district	1 hr

Analysis

Teacher and school leader surveys

Data from quantitative surveys was analyzed through descriptive statistics that summarized the mean and distribution of each variable and assessed any statistically significant differences between treatment and control groups. Any variables found to be significantly different across groups will be controlled for in the endline analysis to account for potential bias. The goal of this descriptive analysis is to understand the state of the outcomes of interest at baseline before the program is rolled out, to establish a benchmark against which to evaluate the outcomes at endline, after respondents have gone through the E-certification course.

When analyzing data following the main research objectives outlined in Section 2, we produced

scores that summarize agreement or disagreement by respondents on a series of statements. For instance, the teacher knowledge section presented teachers with a series of statements about Learning through Play and classroom environments to which teachers could strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree. Statements could be of two types: positively framed (agreement with those meant positive knowledge of Learning through Play) and negatively framed (disagreement with those meant positive knowledge of Learning through Play). The scores of all statements for one indicator were then averaged (with negatively framed items reverse scored) to build a score, for instance a “Knowledge score”, which served as primary indicator, along with sub-scores or secondary scores that served as secondary indicators. A list of the scores that were built and which statements they contain can be found in the annex. Each primary and secondary score was analyzed descriptively, summarizing their mean and distribution and assessing any differences between treatment and control group. In some cases, regression analysis was used to assess associations between main scores and a set of control variables, such as demographic characteristics, treatment status, and previous training.

Focus Group Discussions

After transcribing and translating qualitative discussions with teachers and children, transcripts were analyzed by identifying main trends and summarizing their content descriptively. The main trends were identified following the research objectives of this evaluation study and the Focus Group Discussion guides.

Classroom observations

Data from classroom observations was analyzed by Oxford MeasurEd using Item Response Theory. The ability of each item to discriminate between classrooms with higher and lower levels of play based learning was calculated and the reliability of the tool assessed. Items that did not discriminate well and were not essential elements of Learning through Play were removed. The overall scores from the seven constructs underlying Learning through Play were summarised: support for connection to experience, support for problem solving, support for exploration, support for agency, support for social connectedness, active participation, and positive emotional climate. However, further analysis showed that items for two of the constructs, active participation and positive emotional climate, were not discriminating well between high- and low-performing teachers. This meant they were not performing well in distinguishing between low- and high-performing teachers, as measured by their overall Play-based Learning score. Moreover, the Principal Components Analysis found that the data appeared to be multi-dimensional – capturing more than one factor. We resolved this by excluding those two constructs from the Play-based Learning scores and by analyzing them separately. As for quantitative surveys, scores were then summarized descriptively and any differences across groups were assessed. More detailed information about the classroom observation data

methodology can be found in the technical note developed by Oxford MeasurEd (attached separately).

Limitations

Statistics are not representative of the population of districts of interest. Since the treatment group was selected following a non-random process (following the eligibility criteria outlined above), the sample of this study is not representative of the population of districts it was drawn from. This implies that findings can only be generalized to the schools eligible for the E-certification course.

Baseline findings cannot determine causality. Since this baseline study has the aim of assessing the state of outcomes before the course is rolled out, findings can only be interpreted descriptively and any relationship between variables can only be read as correlation. Causality will only be inferred at the endline analysis stage.

The treatment group was partially exposed to the E-certification course. To ensure a good comparison between treatment and control groups at baseline, the study should be conducted before the intervention is rolled out. However, due to logistical limitations following the timelines of the school year, the E-certification course was offered before data collection started on October 9th through to November 3rd. This implies that some teachers in the treatment group were exposed to the E-certification course, which might explain some differences in outcomes at the baseline stage. However, teachers are likely to have attended only the first units of the course, which should not impact outcomes (especially when it comes to practices) in a significant way. In addition, if we were to observe a bias, this would reduce the impact estimates, implying that what we observe at endline is an underestimation of the real impact of the program.

The treatment sample for classroom observation might have been biased by self-selection. During data collection, the field team reported the impression that some teachers in the treatment group were refusing to take part in classroom observations if they did not feel prepared enough to implement Learning through Play, given the initial knowledge acquired through exposure to the course. In those cases, other sampled teachers would step in to be observed if they felt more prepared to show their proficiency. If this was correct, it would imply that the treatment group sample for classroom observation suffers from self-selection bias to some extent. However, findings from classroom observations do not seem to report large differences in teacher practices across groups. This implies that the effect of self-selection is likely to be negligible.

Impact estimates at endline might be influenced by the use of RwandaEQUIP in some schools. Reports from baseline data collection revealed that some of the schools in the sample were part of the RwandaEQUIP program run by the Government of Rwanda. Since the program involves

the use of detailed, structured lesson plans that do not leave teachers room to implement Learning through Play, a possibility to consider is that schools under this program might not see a change in teacher practices as a result of the E-certification course. Thanks to collaboration with the RwandaEQUIP team, we were able to obtain a full dataset of the schools where they operate and to investigate the distribution and prevalence of RwandaEQUIP in the sampled schools. We found that RwandaEQUIP operates in 40 schools present in the study's sample (19 in the control group, 21 in the treatment group) and out of 849 teachers, 197 (23%) are from a school where the program is active. There are no statistically significant differences between treatment and control group, which implies that the main consequence for the endline analysis will be a loss in statistical power of the impact estimates, as part of the sample is not likely to see a change in some outcomes. During the baseline analysis, we will report any statistically significant differences in primary outcomes between schools with and without an active RwandaEQUIP program. However, it is important to note that, as for the rest of the analysis, such differences only indicate correlation and cannot point to any causality, i.e., they cannot imply that the RwandaEQUIP program has an effect on teacher outcomes. It is also important to underline that the RwandaEQUIP schools present in our sample are not representative of the program itself, which is present in over 700 schools in all districts in Rwanda. This means that any findings regarding RwandaEQUIP in sampled schools cannot be generalized to all schools in Rwanda with an active RwandaEQUIP program; and they cannot be generalized to all schools in their districts with an active RwandaEQUIP program.

4. Findings

Sample characteristics and enabling factors for Learning through Play

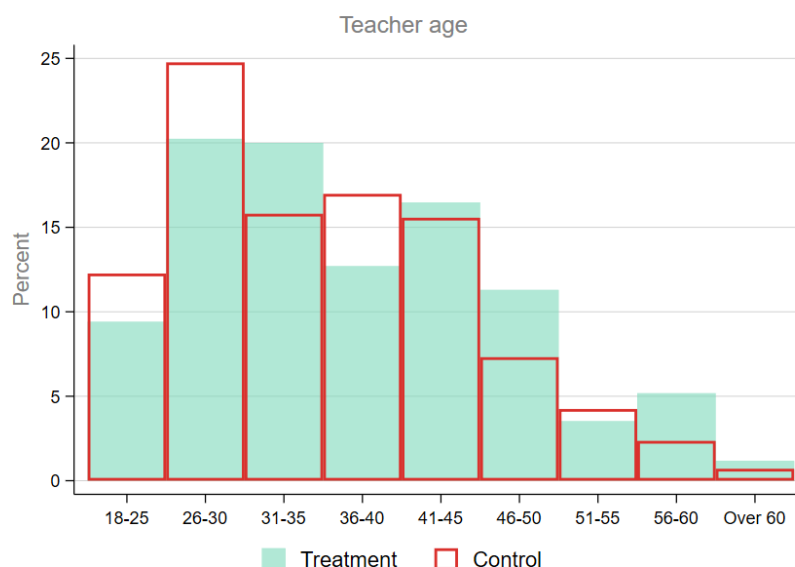
In this section we present descriptive statistics for the baseline sample. Detailed summary statistics tables can be found in the annex.

Demographics

Teachers

The majority of teachers are female and aged between 26 and 45. Teachers in the sample are 77% female and from all ages, but most of them are between 26 and 45 years old. There is no statistically significant difference in gender between treatment and control groups. The age distribution is significantly different; however, as shown in Figure 6, no pattern stands out and the average age is still the same in both groups, between 31 and 35 years old. Only 2% of teachers in the sample have a type of disability.

Figure 6. Age distribution of teachers, by treatment group



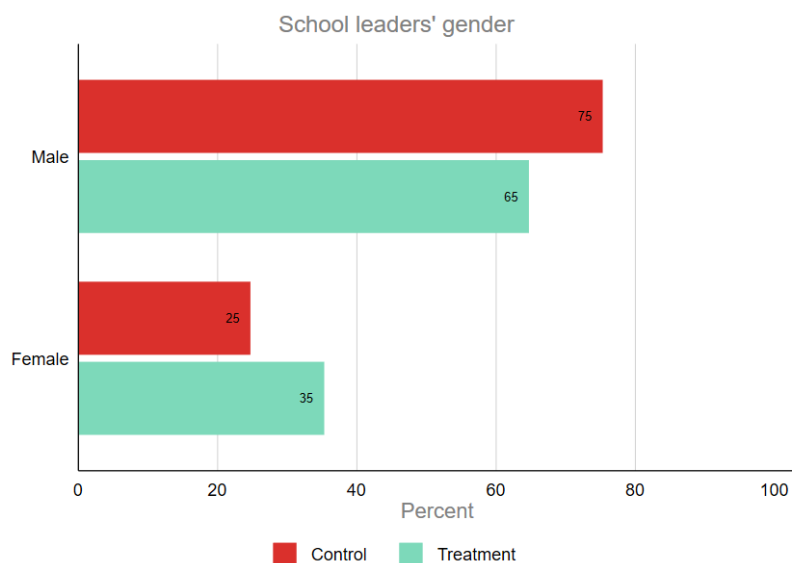
The majority of teachers completed secondary studies, while more than half hold a Teacher Training Certificate. More than 73% completed secondary studies, while 16% also have a Bachelor's degree. In addition, 58% of teachers reported holding a Teacher Training Certificate: this is significantly higher in the treatment group (63%) than in the control group (55%). When asked about their teaching qualifications, the majority of teachers reported having a certificate in teacher training (A2, primary), while more than a quarter of teachers (28%) reported not holding any teaching qualifications. Teachers have on average 11 years of experience overall and

7 years of experience working in their school. This is significantly higher in the treatment group: treatment group teachers reported a mean of 12 years of experience and 10 years in their school, while those in the control group reported 10 years of experience and 6 in their school.

School leaders

The majority of school leaders are male and between 36 and 50 years old. While 70% of school leaders are male, this is slightly higher in the control group (75%) compared to the treatment group (65%) (see Figure 7). The difference is not statistically significant. The age distribution of school leaders is comparable across groups, with most school leaders aged between 36 and 50 years old, and an average age of 41 to 45 years old. Less than 2% of school leaders reported having a disability.

Figure 7. School leaders' gender, by treatment group



Most school leaders hold a Bachelor's degree and have been in their role for an average of 11 years. Around 63% of school leaders have completed a Bachelor's degree, while only 17% have only completed upper secondary education. The most common teaching qualification held is a Bachelor's in Education (A0) (58%), followed by the certificate in teacher training (primary, A1) (26%). The average number of years of experience as school leaders is around 11 years, with around a quarter (26%) of school leaders having been in their role for 4 years or less; while the average number of years of experience in their school is between 5 and 6 years. There are no differences across treatment groups in school leaders' education or background.

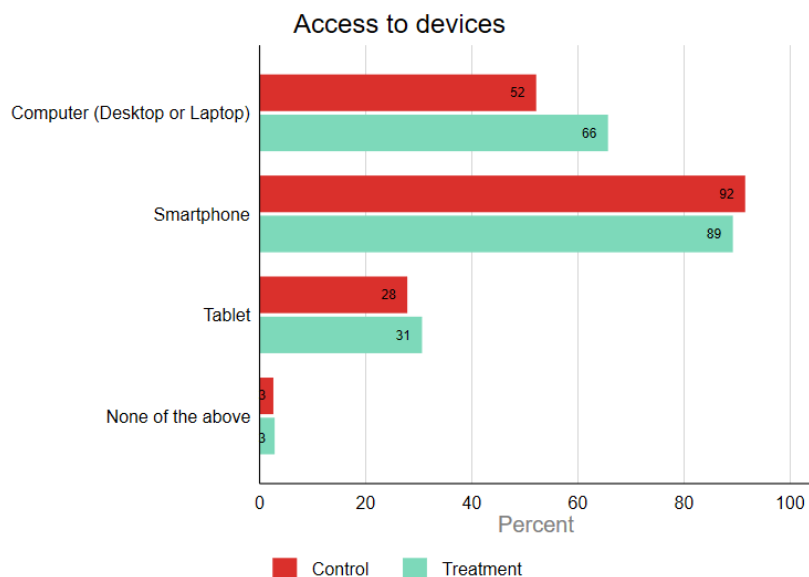
Access to devices

Teachers

The vast majority of teachers have regular access to smartphones. Around 90% of teachers have regular access to a smartphone, with no differences across treatment groups (see Figure 8). The vast majority (93%) own the device, and most teachers access their smartphone for more than two hours each time they do so (52%) or between one and two hours (35%). Around 30% of teachers have regular access to tablets, with no differences between treatment and control group and 87% of teachers accessing them from their school. However, teachers from schools with an active RwandaEQUIP program have significantly higher access to tablets (77% of teachers), as opposed to those from schools without an active RwandaEQUIP program (15% of teachers).

Access to computers is higher in the treatment group. While 59% of teachers have regular access to computers, this is significantly higher in the treatment group (66%) compared to the control group (52%) (see Figure 8). This difference is driven by access at the school level, since the majority of teachers with access to computers in both groups (88%) do it from their school. Only 4% of teachers in both treatment groups reported owning a computer. On duration of access, the majority of teachers (57%) reported accessing their computers for one or two hours each time.

Figure 8. Teachers' access to devices, by treatment group

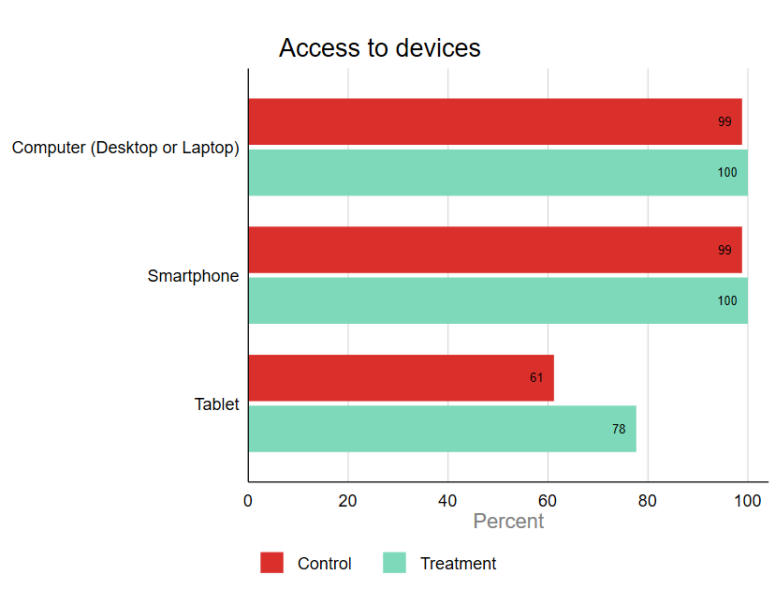


School leaders

Virtually all school leaders have access to computers and smartphones. As shown in Figure 9, 99% of school leaders have regular access to computers and smartphones, with no differences across treatment groups. A minority (13%) of school leaders access their smartphone through their school, and most (94%) own one. As for computers, 21% of school leaders own one, and 86% access it from their school. Most school leaders access their smartphone for more than two hours each time (86%) and the same is true for access to computers (79%).

Access to tablets for school leaders is higher in the treatment group. While 61% of school leaders have regular access to tablets, this is 78% for school leaders in the treatment group (see Figure 9). The difference is statistically significant and driven by access at the school level: virtually all school leaders with access to tablets, in both groups, access them through their school (94%). Duration of access is typically more than two hours (40%) or between one and two hours (39%).

Figure 9. School leaders' access to devices, by treatment group



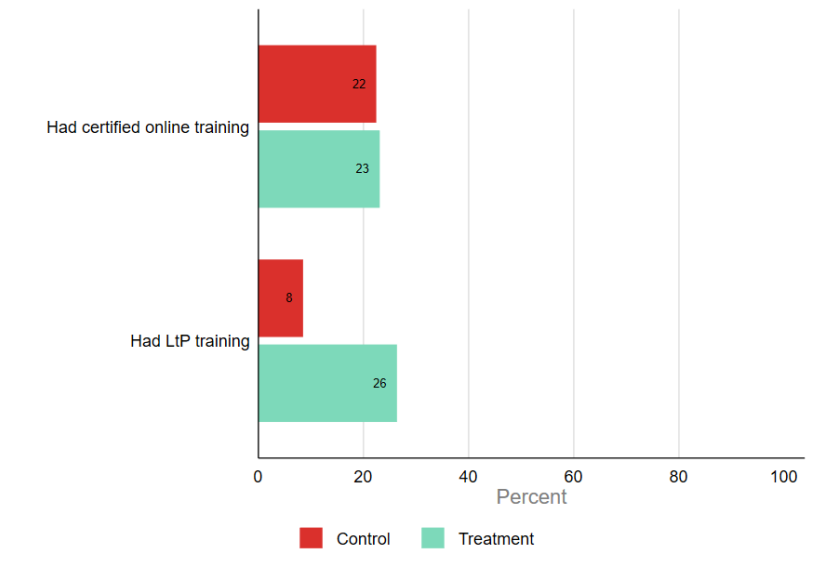
Previous training

Teachers

Around a quarter of teachers have experience with online training. Experience with Learning through Play training is higher in the treatment group because of the E-certification course. Around a quarter (23%) of teachers have done an accredited or certified online training course before, with most of them having completed their last online course in 2022 or 2023. There are no differences across treatment groups. As for experience with training on Learning through Play, while 8% of teachers in the control group reported attending one, this is 26% in the treatment group (see Figure 10). The difference is driven by training delivered by Right to Play, most likely

through the initial rollout of the E-certification course. 70% of treatment teachers who received Learning through Play training reported Right to Play as provider, while no teachers in the control group reported this. This broadly aligns with the 69% of treatment teachers who reported attending the E-certification course face-to-face session in their school. The vast majority (95%) of teachers who received Learning through Play training received it in person.

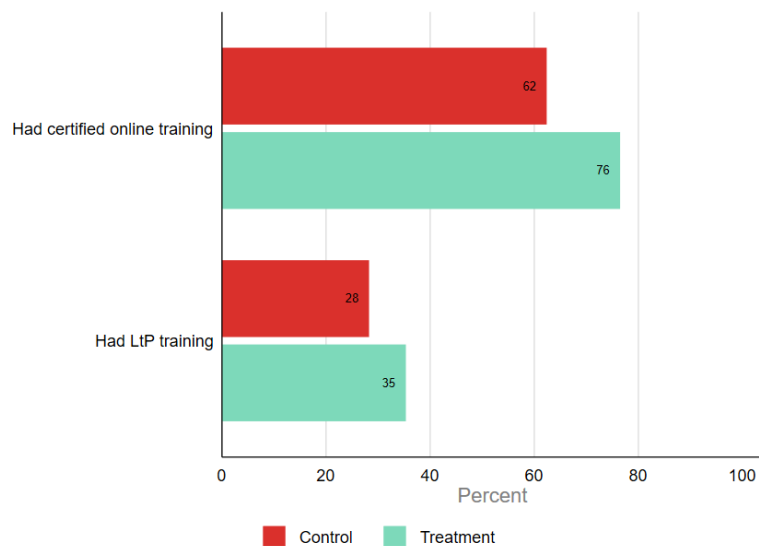
Figure 10. Teachers' experience with online and LtP training, by treatment group



School leaders

Most school leaders have experience with online training, with a higher share in the treatment group. Around a third have experience with training on Learning through Play. While 69% of school leaders have done an accredited or certified online training course before, this is significantly higher in the treatment group (76%) than in the control group (62%) (see Figure 11). The most recent course they completed, across both groups, was between 2021 and 2023 in most cases. When asked about training that included Learning through Play, 32% of school leaders reported attending one. This is the same across treatment groups. In almost all cases (96%) the training was delivered in person, usually by Right to Play (35%) or Voluntary Service Overseas (15%).

Figure 11. School leaders' experience with online and LtP training, by treatment group

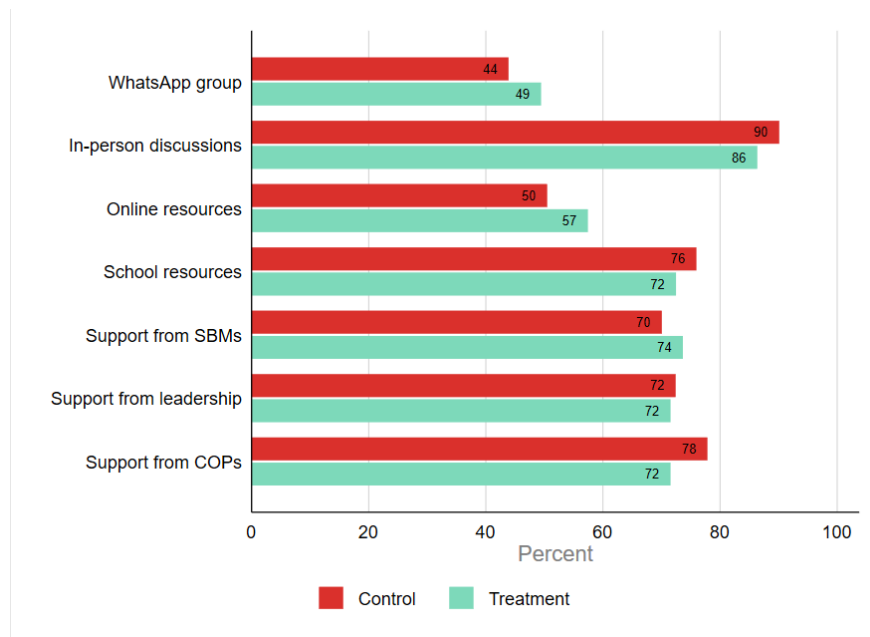


Resources

Teachers

Teachers use a variety of support systems to learn about new methods, but the most common ones are through in-person interactions. When asked about the systems they use to seek support on new methods, all teachers mentioned a combination of different options. As shown in Figure 12, the most common systems mentioned are in-person discussions (88%), Communities of Practice (COPs) (75%), school resources (74%), school leadership (72%) and School-Based Mentors (SBMs) (72%). Remote methods, such as online resources (54%) and WhatsApp groups (47%), are less common but still widespread across both treatment and control group. There is a significantly higher share of teachers in the treatment group using online resources (57%, against 50% in the control group); on the other hand, there is a significantly higher share of teachers in the control group using support from COPs (78%, against 72% in the treatment group). Most resources are found to be either effective or very effective, however there is a higher share of teachers reporting the online resources as only “somewhat effective” (31% for WhatsApp groups, 23% for online resources).

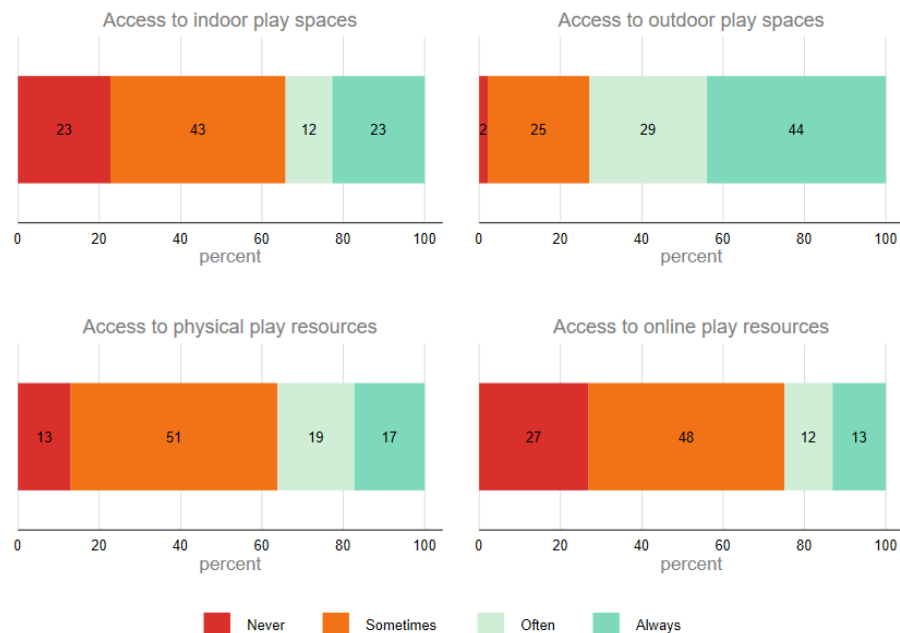
Figure 12. Support systems used by teachers to learn new methods, by treatment group



Most teachers have at least occasional time available to prepare activities and try out new methods. When asked about their available time after classes to prepare activities, around half of all teachers (47%) reported that they sometimes have time, while 33% answered “always” and 17% “often”. When asked about their available time during classes to try out new teaching methods, answers were more positive: 42% of teachers reported that they always have time, 27% that they often have time, and 29% reported that they sometimes have time to do so. There are no differences across treatment groups.

Teachers have higher access to outdoor than indoor play spaces, and slightly higher access to physical than online play resources. As shown in Figure 13, when teachers were asked about frequency of access to play spaces, they reported being able to access outdoor play spaces much more often: 73% of teachers are able to access outdoor spaces often or always, while 23% of teachers are never able to access indoor play spaces, and 43% are only able to do so sometimes. On access to play resources, most teachers are able to access them only sometimes: this is 51% for physical play resources and 48% for online play resources. However, there is a higher share of teachers who are never able to access online play resources (27%) compared to physical resources (13%). There are no significant differences in access to physical resources by treatment group.

Figure 13. Teachers' access to resources for play

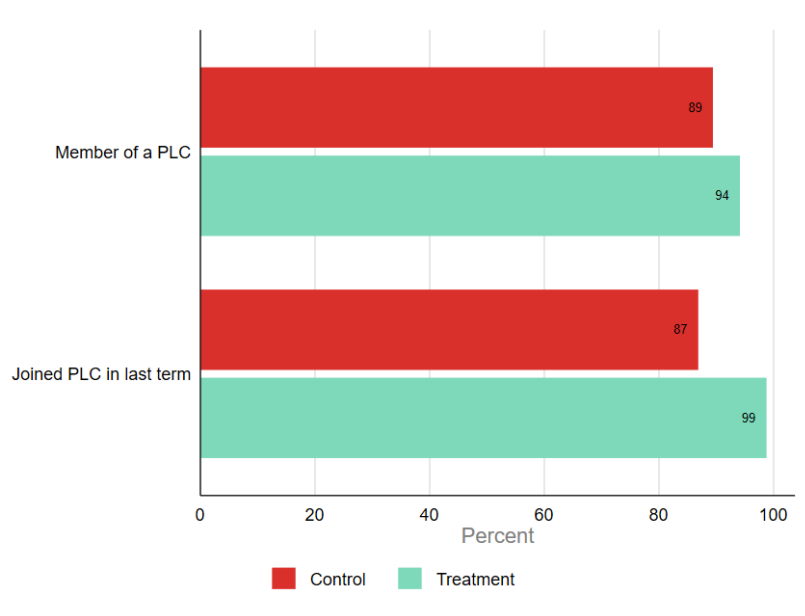


School leaders

Most school leaders think that teachers are interested in learning new methods, and that COPs and SBMs are effective support systems, but there is disagreement about how much time teachers have to learn. Virtually all school leaders (98%) reported that teachers are interested in new methodologies, and 66% reported that teachers have experience with play-based methodologies. However, 42% of school leaders reported that teachers do not have time to learn after school. On support systems for teachers, virtually all teachers agreed on the effectiveness of COPs and SBMs for student learning and to support the professional development of teachers.

Most school leaders are members of Professional Learning Communities and agree on their effectiveness as support systems. Around 92% of school leaders are members of a Professional Learning Community (PLC), which functions as a Community of Practice for headteachers. Among them, 87% of school leaders in the control group and 99% of those in the treatment group attended PLC meetings in the past term. The difference is statistically significant. In most cases (84%), PLCs were held once a month. When asked about the effectiveness of PLCs, almost all school leaders seem to agree: 93% agree that PLCs focus on helping teachers integrate new methodologies, and 84% agree that during PLCs, school leaders exchange ideas on how to improve teaching quality. Most school leaders (76%) also reported that they are not too busy to dedicate time to PLCs, with 20% reporting that they do not have enough time.

Figure 14. School leaders' membership of Professional Learning Communities (PLCs), by treatment group



Main outcomes and indicators

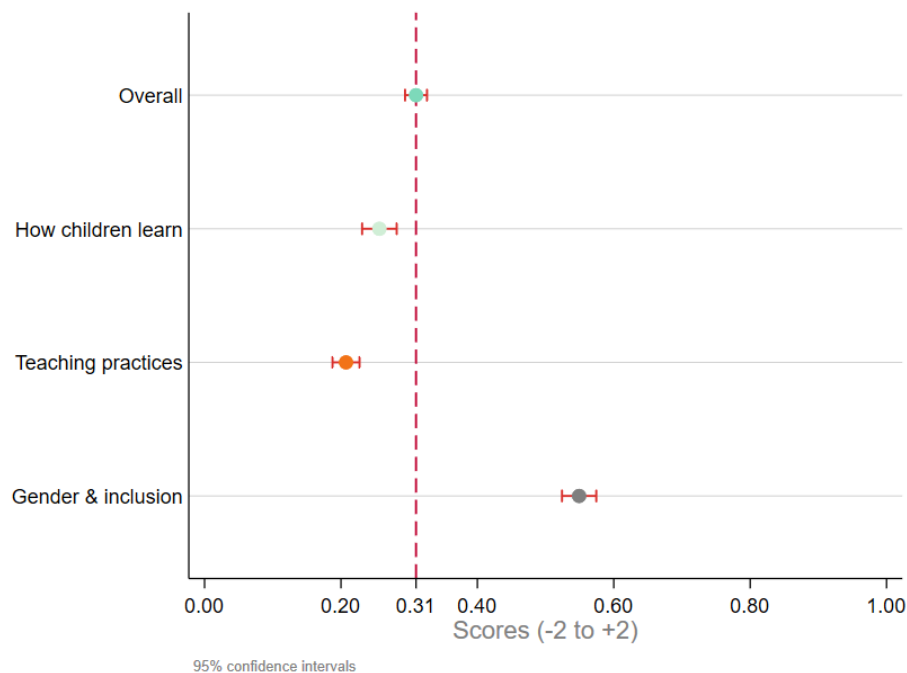
In this section we present baseline outcomes and indicators following the main research questions outlined in Section 2. Detailed summary statistics and regression tables can be found in the annex.

1. What is the current state of teachers' and school leaders' knowledge towards Learning through Play?

Teachers – quantitative findings

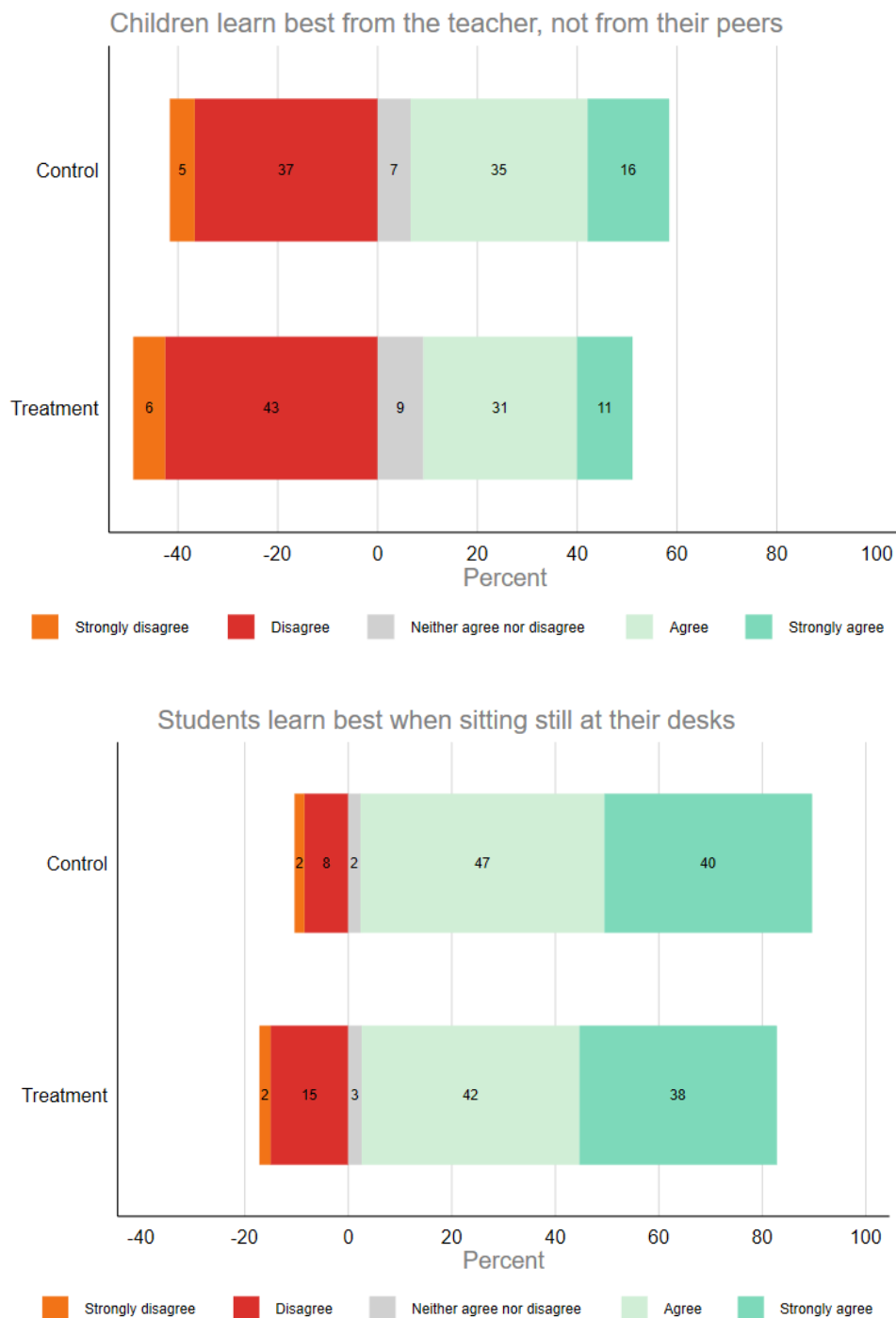
Teachers have some knowledge about Learning through Play, but there is a lot of room for improvement. On a scale from -2 to +2, teachers scored an average of 0.31 in terms of knowledge, which approximately indicates decent knowledge of concepts underlying Learning through Play (see Figure 15). Teachers seem to know less about teaching practices for Learning through Play: for instance, 56% of all teachers think that their role is ensuring that students are all doing the same during class, and 68% of teachers think that they should give students the answer when they do not get the correct result. On the other hand, knowledge of inclusive practices is relatively high, with an average score of 0.55.

Figure 15. Teacher knowledge scores



While there are no differences between treatment and control for the overall knowledge score, beliefs on how children learn are more aligned with Learning through Play in the treatment group. The overall knowledge score is comparable across treatment and control group: the treatment group fares slightly better, with a score of 0.33 against 0.29 in the control group, but the difference is small in magnitude and only significant at the 10% level. This is mainly driven by a statistically significant difference for the sub-indicator on how children learn, which reflects general beliefs of how Learning through Play impacts students' learning. For that indicator, the treatment group shows an average score of 0.3, against the control group average of 0.22. The difference is not very large in magnitude, but highly significant at the 1% level. As shown in Figure 16, what drives this is mainly larger disagreement in the treatment group on the need for students to sit still at their desk to learn better (10% disagreement in the control group; 17% disagreement in the treatment group); and on the belief that students learn better from their teachers, not from their peers (42% disagreement in the control group; 49% disagreement in the treatment group). When comparing the overall knowledge score across male and female teachers, we observed no significant differences.

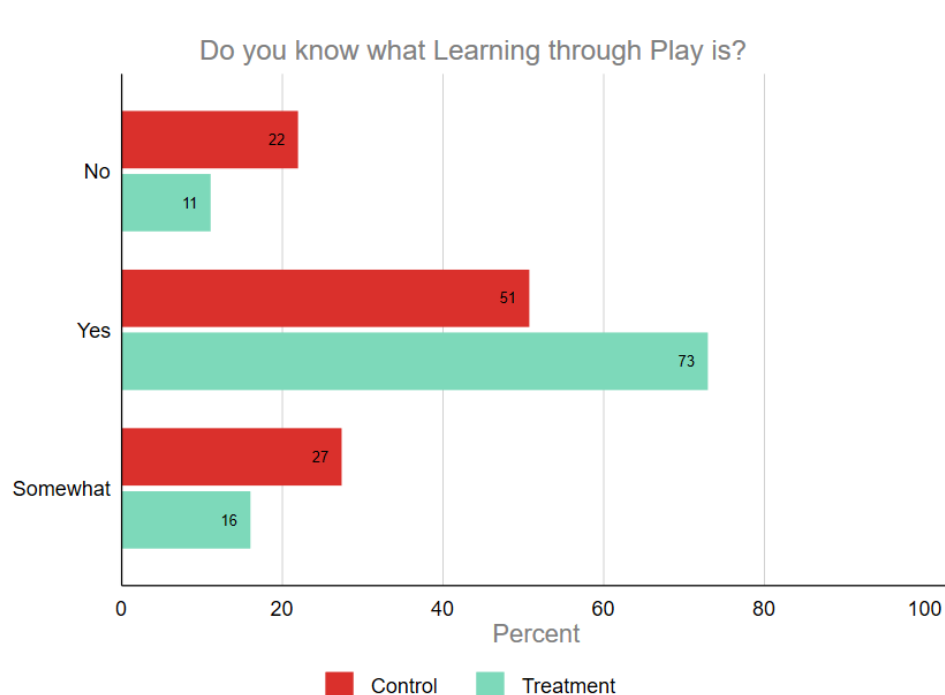
Figure 16. Agreement scales on selected questions on knowledge of Learning through Play



Self-reported knowledge of Learning through Play is higher in the treatment group. When asked whether they knew what Learning through Play was, 22% of teachers in the control group reported not knowing, while only 11% of teachers in the treatment group did so (see Figure 17).

In addition, a higher share of teachers in the treatment group answered “yes” (73% in treatment group; 51% in control group) as opposed to “somewhat” (16% in treatment group; 27% in control group).

Figure 17. Self-reported knowledge of LtP, by treatment group



Regression analysis shows that knowledge scores increase with teachers’ education level and decrease with teachers’ age. Overall knowledge scores are higher in schools without an active RwandaEQUIP program. When estimating correlation between overall knowledge scores and teacher characteristics, we observe that knowledge of Learning through Play is positively correlated with education level. The minority of teachers (10%) with a bachelor’s degree and advanced diplomas have, on average, higher knowledge scores. The same is true for teachers who completed a Teacher Training College in Rwanda, although their scores are only slightly larger than others’. Moreover, knowledge scores decrease as teachers get older, with the lowest scores being associated with teachers aged 46 years or older. Finally, when looking at the overall knowledge score across schools with and without an active RwandaEQUIP program, we note that the score is significantly higher for schools where the program is not active, with an average of 0.32 against 0.26 in schools where the program is active.

Teachers – qualitative findings

Teachers were familiar with Learning through Play, expressing support for increased child agency in the classroom. Teachers reported a high level of familiarity with Learning through Play. While this might have been caused by partial exposure to the E-certification course⁵, there were few mentions of the course and a general change of views around teaching methods following the introduction of the Competence-Based Curriculum, which encourages students to demonstrate and build concrete and flexible competencies. This aligns with some of the general principles underlying Learning through Play. In general, most teachers expressed support for a more child-directed approach to teaching, starting from what children know and letting them grow and explore from there. Many saw a completely teacher-centered approach as ineffective and outdated. However, these positive views rarely reflected a full understanding of Learning through Play and the role of adults in guiding learning with rich, experimental activities. This misconception of the role of adults in guiding learning was reflected in some participate responses, when they opposed Learning through Play by arguing that there is a role for the teacher as a leader in the classroom to set the lesson agenda and guide students.

“I don’t think a teacher-directed approach can be better. They once called it lecturing, where a teacher could go in front of the class and teach without students’ participation. However, the current curriculum does not support that; they realized that with that approach students cannot get anything. On the contrary, when students have competencies, they should demonstrate them.”

Teacher

The main reported outcomes of Learning through Play are around improved engagement and motivation, reduced dropout, and better support for slow learners. When discussing the outcomes of Learning through Play, many teachers mentioned improved engagement and motivation, reporting that since students have a more enjoyable learning experience, they are able to learn better and faster. Some also mentioned the indirect effect of this on reducing dropout rates. Moreover, some participants remarked on how Learning through Play can not only ensure that “slow” learners are helped by “fast” learners: it can also help teachers identify which learners are slower and understand how to support them.

Teachers mainly reported challenges around lack of knowledge of lesson planning and how to adapt teaching for lower-attaining learners. Other reported challenges stem from misconceptions around Learning through Play. The main reported challenges in implementing Learning through Play in the classroom have to do with lack of knowledge on some teaching practices. Teachers often mentioned the need for lesson “models” and lesson plans that they can use as inspiration to integrate a playful approach in their methods. In addition, many participants reported their lack of knowledge around how to adapt lessons to different learning needs, and more specifically around students with disabilities. Lastly, some of the challenges reported by teachers around

⁵ All teachers in Focus Group Discussions were from the treatment group.

Learning through Play have to do with misconceptions about what Learning through Play actually is. For instance, one teacher expressed concern over a child-directed approach, seeing it as eliminating the role of the teacher entirely and posing a risk to teachers' jobs across the country. Another teacher reported their worry that planning and executing games can take valuable time from the class that could be used to improve student literacy, implying that they do not believe Learning through Play can be used to teach reading and writing skills. These misconceptions reflect a view that the Laissez-Faire, Loosely Structured Classroom on the Kindergarten Continuum (Figure 5) is Learning through Play. They also reflect a misconception regarding the role of adults in Learning through Play, perceiving it as primarily child-driven.

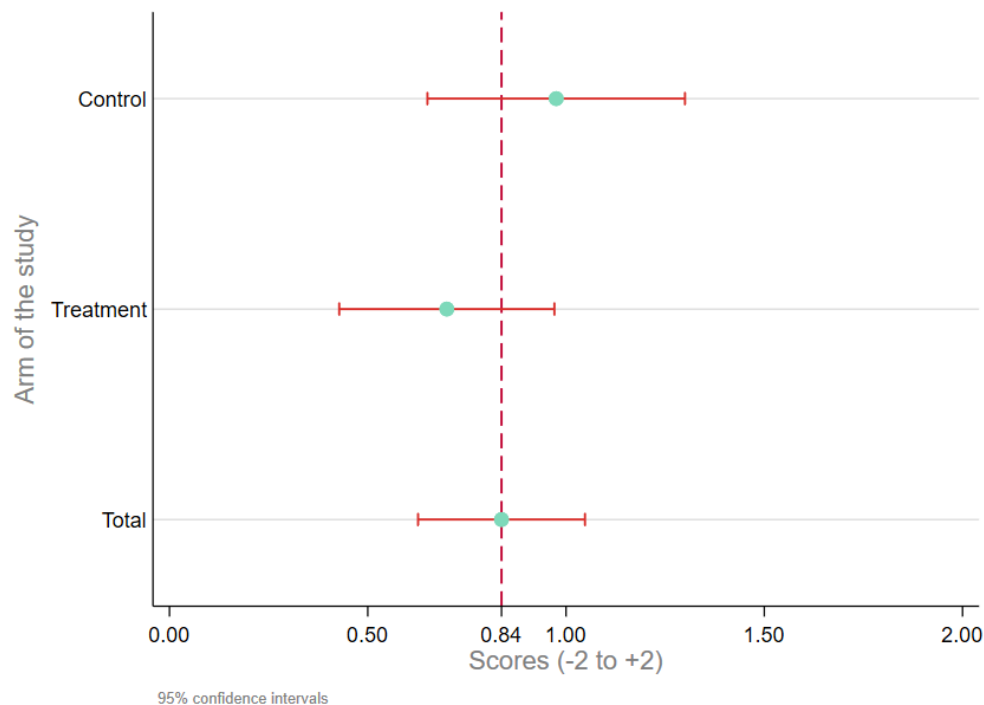
"I wanted to ask when will they write since everything should be taught through play? I think they should go together for plays and writing, as my colleague said, the same as I said earlier, its disadvantage is there is no writing involved, they play which is good, and the lesson goes quicker, and it gets easier for the teacher but when will they write? And children get promoted without even knowing how to take a pen."

Teacher

School leaders – quantitative findings

School leaders show relatively good knowledge of Learning through Play. With an average overall knowledge score of 0.84, school leaders seem to know about Learning through Play better than teachers (see Figure 18). Their overall score has much larger variation because of smaller sample size (170 school leaders), but regardless we found no significant differences between treatment and control group. When asked if they knew what Learning through Play is, 14% of school leaders in the control group reported not knowing, while only 5% of those in the treatment group did so. The difference is not statistically significant.

Figure 18. School leader knowledge score, by treatment group

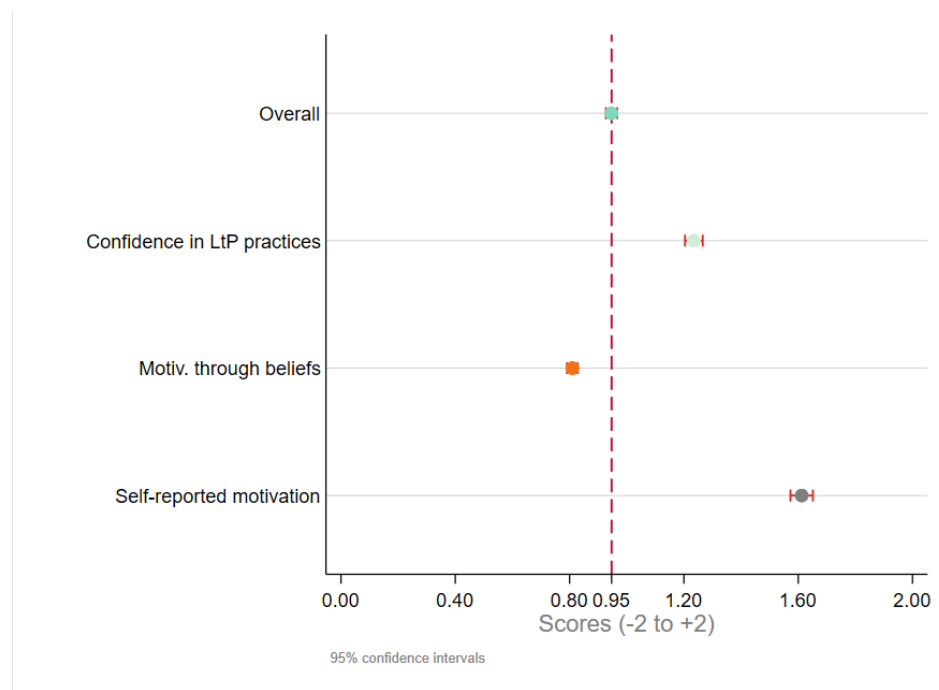


2. What are lower primary teachers' and school leaders' current attitudes towards Learning through Play?

Teachers – quantitative findings

Overall teacher motivation is high and slightly higher for those who know about Learning through Play, however these findings need to be interpreted carefully, given misconceptions regarding what Learning through Play actually is. The overall teacher motivation score is built for a subset of teachers who reported that they know, or “somewhat” know, what Learning through Play is. This sample is slightly skewed towards the treatment group, as it consists of 378 treatment teachers and 331 control teachers. Nevertheless, as shown in Figure 19, the motivation score is the same across groups, with an average of 0.95 (scale -2 to +2), which indicates good attitudes with room for improvement at endline. Teachers were also asked about self-reported motivation to implement Learning through Play in the classroom. For that indicator, the average is much higher at 1.65. When looking at the two scores (overall and self-reported motivation) against self-reported knowledge of Learning through Play, we see that teachers that “somewhat” know what Learning through Play is have on average slightly but significantly lower scores than those who answered “yes”. The overall motivation score is lower by 0.07 points, and the self-reported motivation score is lower by 0.11 points. When looking at the overall and self-reported scores across male and female teachers, there are no statistically significant differences.

Figure 19. Teacher attitudes scores



Teacher confidence in Learning through Play practices is very high, while overall motivation is lower (also due to incorrect beliefs). The secondary indicator on teacher confidence in Learning through Play practices is calculated for all teachers in the sample, as in the survey it does not require direct knowledge of Learning through Play. For that indicator, the score is relatively high, with an average of 1.2 across the sample and no differences between treatment and control group. These findings need to be interpreted with caution due to misconceptions of what Learning through Play is. The other secondary indicator, motivation through beliefs, requires previous knowledge of Learning through Play and has a much lower average of 0.8. This is mainly due to beliefs misaligned with Learning through Play constructs: 84% of teachers stated that Learning through Play can help them keep the classroom quiet, 95% stated that it can help them explain to children what to do when encountering a challenge, and 98% stated that it ensures that children follow what the teacher is telling them. There are no significant differences across treatment groups and across male and female teachers.

There are no clear patterns between teacher attitudes toward Learning through Play and baseline characteristics. Regression analysis shows no strong correlation between teacher attitude scores and baseline characteristics such as age, education, years of experience and previous training. The model has very low predictive power, which implies that these characteristics are not useful to predict the level of teacher's motivation and confidence to use Learning through Play in the classroom. Moreover, there is no statistically significant difference in teacher attitudes across schools with and without an active RwandaEQUIP program.

Teachers – qualitative findings

Teachers reported high confidence in Learning through Play, mainly because of its positive effects on students’ and teachers’ experience in the classroom. When asked about their confidence to use Learning through Play in the classroom, most groups tended to answer by reporting a percentage, which varied between 80 and 100%, indicating high confidence in Learning through Play. This was motivated as coming from the better learning and teaching experience coming from the new teaching approach outlined in the CBC that aligns with Learning through Play, which reportedly improved teachers’ experience in the classroom and their relationships with students. Many teachers reported building a more trusting relationship with their students, which allows them to better identify and address issues that can prevent learning.

The main factors that decrease motivation have to do with physical barriers, namely lack of teaching aids, overcrowded classrooms, and short lesson periods. When reporting the factors that decrease their motivation to use Learning through Play, most teachers mentioned a lack of physical teaching aids to support them in the classroom. Participants reported that without appropriate resources to implement games, such as footballs, jump ropes, and drawing materials, students can lose interest in the class and the effectiveness of Learning through Play can be undermined. Again, these responses reflect a focus on the physical aspects of Learning through Play, with little reflection on using problem-based learning approaches, using exploration of ideas and connecting content to students’ previous knowledge and their lives outside of the classroom. The other main reported barrier to motivation around Learning through Play has to do with external constraints, namely overcrowded classrooms and short lesson periods. Many teachers reported having challenges organizing games with classes of up to 60 children, especially in a lesson period of 40 minutes. This prevents them from engaging with all students, with the risk of some being left behind, and creates additional physical challenges in terms of space available for playing.

“The time is not enough and as my colleague said, it depends on the large number of students in class. However, it can be enough if there are 20 students in the class. For instance, there is a class with 57 or 60 students, when we give exercises to them, the time ends without providing the answer to the questions”.

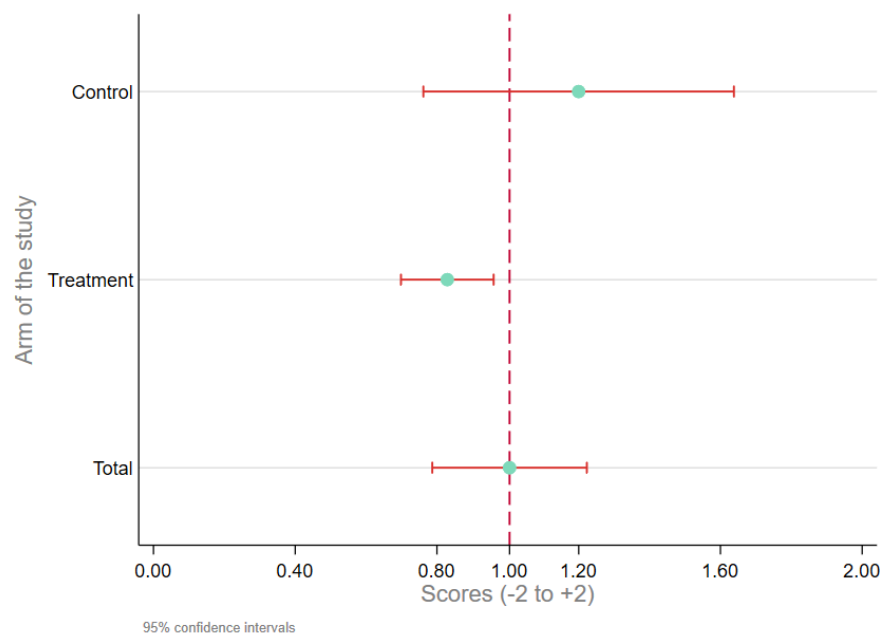
Teacher

School leaders – quantitative findings

School leader attitudes towards Learning through Play are generally good, but lower for female school leaders. The school leader attitudes score, which is built from a different set of statements than teachers’ and therefore not comparable, is at an average of 1 (scale -2 to +2), which indicates good attitudes towards Learning through Play, with some room for improvement at endline. The

control group has a slightly larger attitudes score than the treatment group, 1.2 against 0.83, but the difference is only significant at the 10% level, which is not considered very reliable (see Figure 20). It should also be noted that the control group score is much more dispersed, with very large standard error, while the treatment group score is more concentrated around its mean of 0.83. Moreover, regression analysis shows that the overall score is strongly correlated with gender: female school leaders, who make up 30% of the sample, have a lower average score by 0.43 points.

Figure 20. School leader attitude score, by treatment group



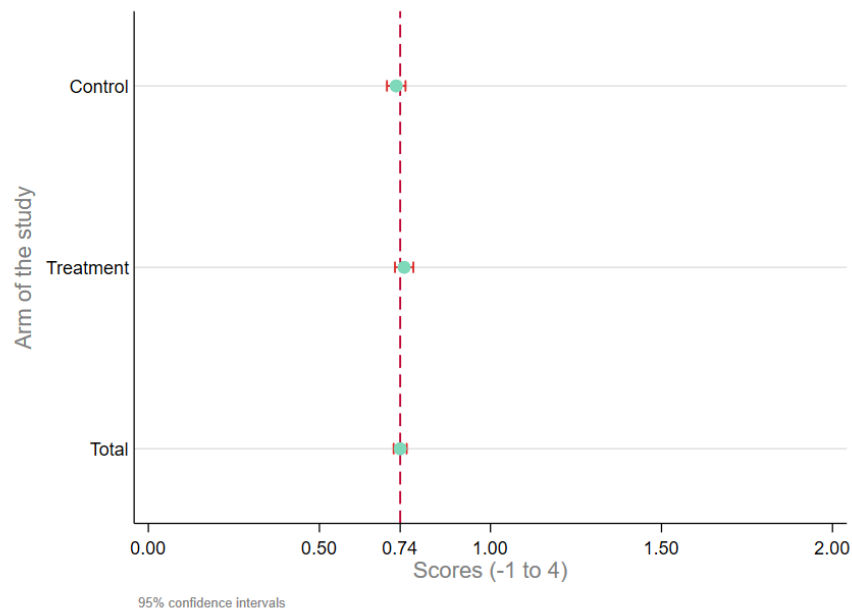
3. What are lower primary teachers' classroom current practices in delivering the Competence-based Curriculum (CBC)?

Findings from the teacher survey

Teachers' self-reported practices scores are low with little variation, while the ones for inclusive practices are very high. When reporting the frequency of Learning through Play practices in the past term (score from -1 to 4), teachers scored an average of 0.74, which is quite low and shows a lot of room for improvement at endline (see Figure 21). The score is mainly driven by a teacher-centered approach, by a focus on fostering competition among children and by a lack of support for children reflection in class. On the other hand, on the secondary indicator on inclusive practices (score from -2 to +2), teachers scored an average of 1.45, which indicates very good self-reported inclusive practices for both female and male students and students with disabilities. For both the primary and secondary indicator, we detected no significant differences

between treatment and control group. However, when looking at the indicators across gender, we note that the primary indicator on self-reported Learning through Play practices has a significantly higher score for male teachers, with an average score of 0.79 against the average of 0.72 for female teachers. On the other hand, there are no statistically significant differences for the secondary indicator on inclusive practices.

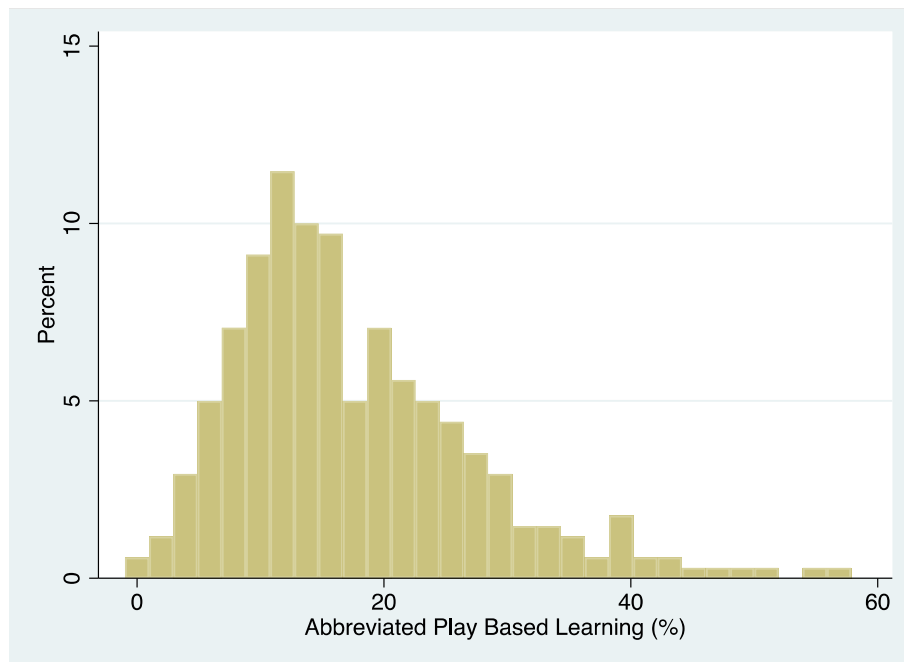
Figure 21. Teacher self-reported practices score, by treatment group



Findings from classroom observations

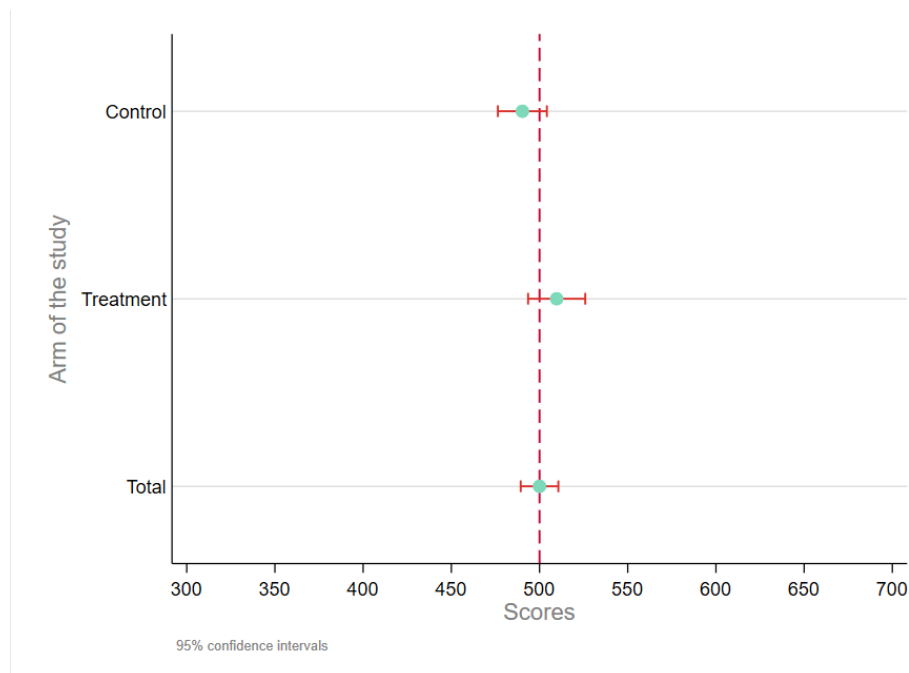
Teacher Play-based Learning practice scores from classroom observations are generally low and with little variation. The general score for applying Learning through Play in the classroom was constructed out of teachers' performance in five constructs: support for connection to experience, support for problem-solving, support for exploration, support for agency and social connectedness. As shown in Figure 22, teachers' raw scores are low and quite concentrated, with an average of 17% of the maximum possible score, which shows potential for improvement after the E-certification course has been rolled out in treatment schools. The constructs on which teachers had the lowest mean scores are support for agency (6% of total score), social connectedness (10% of total score), and support for problem-solving (18% of total score). The construct where they scored best is support for connection to experience, where teachers had a mean score of 34% of the total. On the two constructs excluded from the general score, support for participation and for positive emotional climate, teachers had relatively low and high mean scores, respectively: the mean score for participation is 14% of the total, while the mean score for positive emotional climate is 54% of the total.

Figure 22. Distribution of raw observed practices scores, as % of max. possible score



The teacher practices score is slightly higher for the treatment group, but the difference is only weakly significant. In addition to reporting raw scores, we created a scaled Learning through Play score. This score is scaled to have a mean of 500 and a standard deviation of 100. Scale scores “weigh” items by difficulty. The average score is slightly higher for the treatment group (see Figure 23), with an average of 510 against the 490 of the treatment group, but the difference is only significant at the 10% level, which might indicate random variation or might be due to the smaller sample size of classroom observations. When looking at differences in the five constructs, we note that the treatment group has higher scores in three of them (significant at the 10% level): support for connection to experience, support for exploration, and support for social connectedness. The treatment group also has a significantly higher (10% level) score for positive emotional climate compared to the control group. When looking at differences in the overall score across male and female teachers, we observed no statistically significant differences.

Figure 23. Teacher observed practices score, by treatment group



Regression analysis shows no correlation between observed and self-reported practices, but strong correlation between observed practices and knowledge scores. When running a regression to estimate the correlation between the PLAY score and indicators from the teacher survey, we saw no significant correlation between the PLAY score and the self-reported practices score. However, there is a strong positive correlation between teacher knowledge and the PLAY score, and a weaker positive correlation between teacher motivation and the PLAY score. There is also a negative correlation between the PLAY score and the teacher score for support by their headteacher. When looking at the relationship between the PLAY score and teacher characteristics, we note that the PLAY score increases significantly with the teachers' years of experience, and is significantly higher for teachers who have obtained a certificate, such as from a Teacher Training College (TTC).

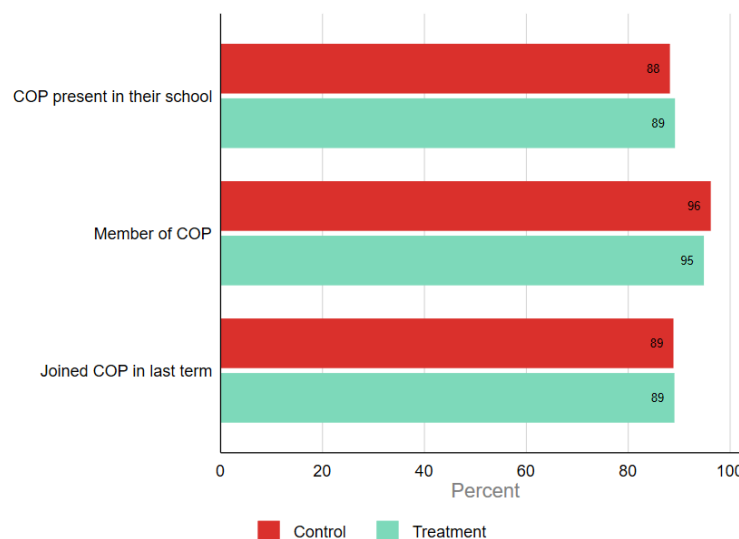
Both self-reported and observed practices scores are lower for schools with an active RwandaEQUIP program. When looking at the average self-reported and observed practice score by schools with and without an active RwandaEQUIP program, we observe small but significant differences. Schools with an active RwandaEQUIP program have an average self-reported practices score and an average observed score of 0.68 and 482 respectively, while the average scores are 0.76 and 506 in schools without an active program. The difference is relatively small in magnitude, but highly significant in both cases.

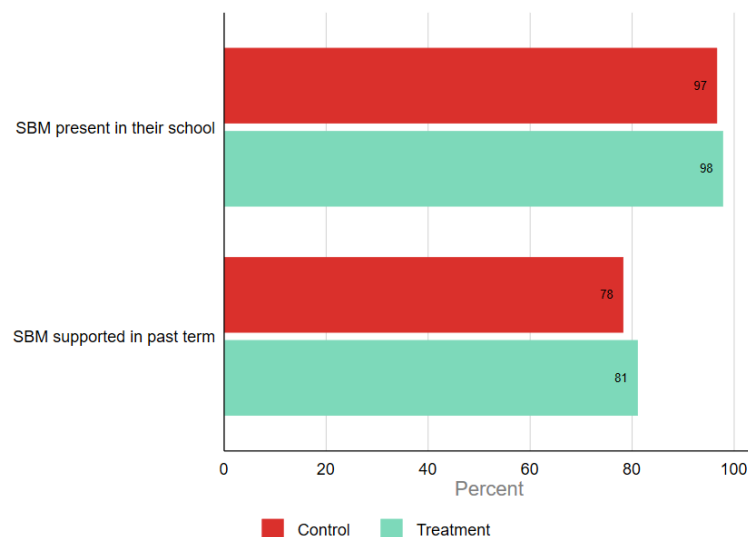
4. What support do school leaders and lower primary teachers get from their school to implement Learning through Play in the classroom?

Teachers – quantitative findings

Communities of Practice and School-Based Mentors are widespread and used by most teachers. The vast majority (89%) of teachers reported a Community of Practice (COP) being regularly held in their school, and 96% reported being a member of a COP. Most COPs are held once a week (62%), while 21% are held once every two weeks and 16% are held once every month. As for School-Based Mentors (SBMs), 97% of teachers reported being able to refer to an appointed SBM in their school, and 80% received support from an SBM in the past term. There are no differences in COPs and SBMs prevalence or frequency across treatment groups (see Figure 24).

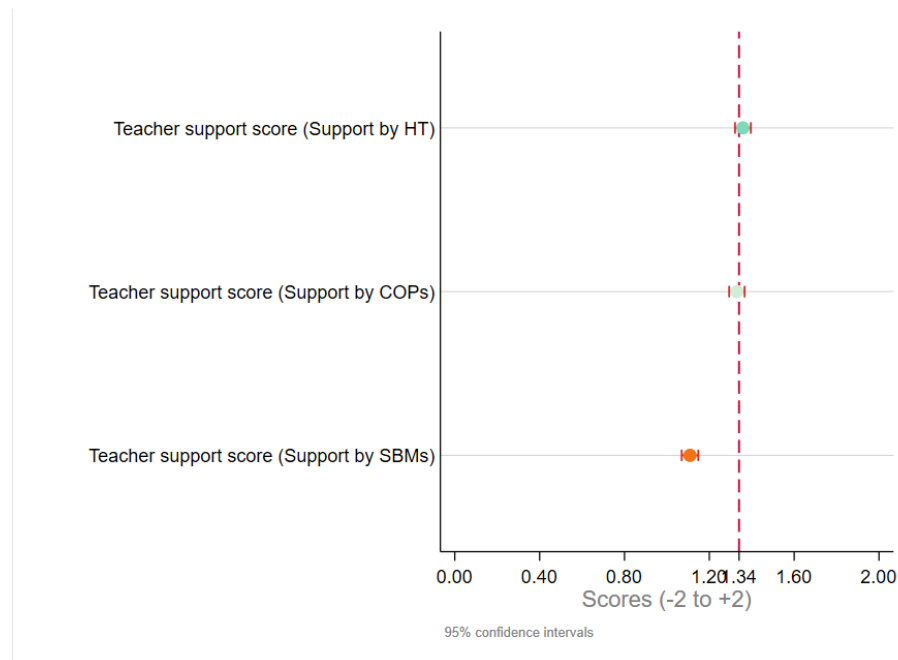
Figure 24. Prevalence of COPs and SBMs, by treatment group





Perceived support from headteachers, COPs and SBMs is generally high across all teachers. The primary score for teacher-reported support has to do with support from their headteacher. The average score is high at 1.34 (score of -2 to +2), with no difference across treatment groups. However, when looking at differences across gender, we note that the score is significantly higher for female teachers (1.37) than for male teachers (1.25), indicating that female teachers report receiving on average better support by their headteachers. In general, most teachers report that headteachers support their professional development, that they support the use of inclusive practices, and that they regularly conduct classroom observations. Secondary self-reported scores from COPs and SBMs are also high, with a mean of 1.33 and 1.07 respectively (see Figure 25), and no differences between treatment and control group. Teachers report that support from COPs and SBMs informed their teaching practices, that they focus on professional development, and that they helped them overcome challenges. A relatively higher proportion of teachers (35%) reported that the support they received from an SBM was not helpful to overcome the challenge they were facing.

Figure 25. Teacher support scores



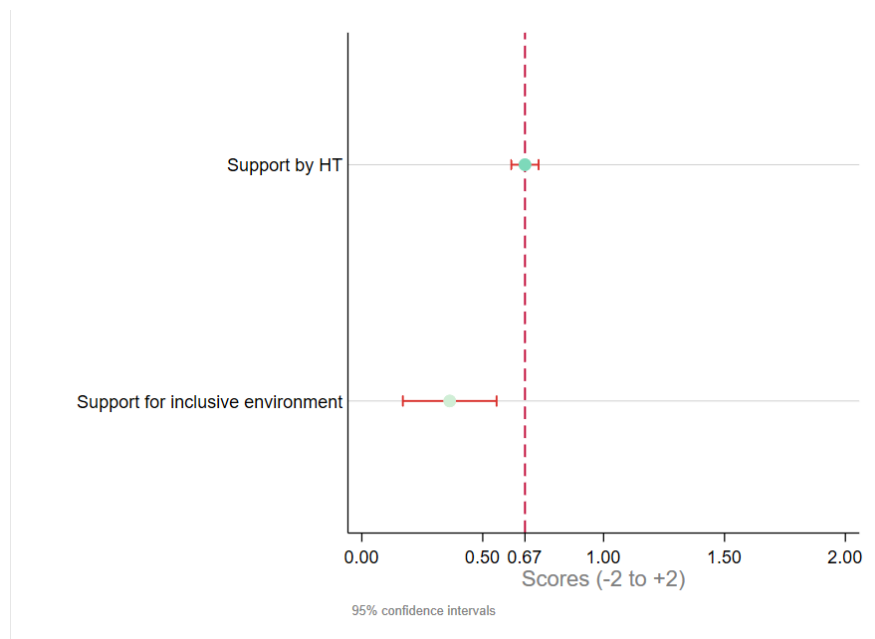
Teachers reported receiving consistent support from headteachers for professional development and adopting new methods. When asked about their past term, 78% of teachers reported their headteacher allowing at least one hour per week every week to complete professional development or participate in COPs; 18% reported them allowing one hour per week, but only in some weeks. When asked around the encouragement received by headteachers to adopt new teaching methods, only 11% reported not receiving any encouragement. 63% reported receiving consistent encouragement, and 25% reported occasional encouragement. There are no differences across treatment groups in support received by headteachers.

School leaders – quantitative findings

School leaders' scores on support for learning and inclusive environment are positive but leave room for improvement. The indicators on support from the school from school leaders' reports focused on availability of resources at the school level, school leaders' practices in supporting teachers, and availability of knowledge and resources for inclusive environments. As shown in Figure 26, the primary indicator on support from school and headteachers has an average score of 0.67 (score from -2 to +2), which indicates good support with room for improvement at endline. The statements that lower the score are around lack of resources and school leaders' attitudes: for instance, 73% of school leaders reported that schools don't have enough ICT resources to serve all teachers, and 85% of school leaders agree that they should prioritize the curriculum over new methodologies. The secondary indicator on support for inclusive environment has a lower mean of 0.32, led by a majority of school leaders reporting lack of resources and knowledge to support gender-inclusive environments, and especially inclusive

environments for students with disabilities. There are no significant differences in support scores for school leaders between treatment and control group.

Figure 26. School leader support scores



5. What are the current learning experiences of lower primary school students in relation to Learning through Play?

Students – qualitative findings

Children’s favorite activities are usually led by teachers, with the exception of working in groups. In general, most students reported having good interactions and relationships with their teachers, without elaborating on why that is the case. When asked to draw their favorite class, children portrayed and mentioned drawing, reading, writing notes and learning about consonant clusters (ibihekane). When explaining the reasoning behind this, and when explaining their motivation to go to school, students focused on the outcome, i.e., learning about a new concept, rather than the modality of instruction. An exception to this was the frequent mention of working in groups by students in different FGDs. Many children mentioned groupwork as an activity they enjoyed in class, reporting that it is often

Interviewer: What is your favorite thing in the SET class?

Student: Drawing.

Interviewer: So, your favorite thing in the SET class is drawing? Can you tell us more about an activity you really liked in the class?

Student: The teacher teaches us very well. Also, anyone who makes a mistake, they are corrected by others.

Interviewer: Do you work alone or in groups during this drawing activity?

Student: We work in groups.

teacher-directed with no decision-making by students, and it revolves around activities such as drawing. There were no mentions of any specific games or playful activities conducted in class. In addition, there were no specific mentions of modalities of teaching that could be reconducted to Learning through Play.

Students reported not liking their classes when the content is difficult to understand, or when the teacher is disengaged, careless, or uses punishment on pupils. When asked about a class they did not like, some students mentioned subjects that they find difficult to understand because of their content, such as Science and Elementary Technology (SET), Social Studies, English and French. Others mentioned classes with disengaged or careless behavior by teachers: for instance, some children mentioned instances of teachers looking at their phone during the class, or of the teacher writing on the board and erasing the content too quickly for them to read it. Finally, some students mentioned a negative use of punishment (including physical punishment) in school. In one case, a student mentioned that the teacher would punish students without correcting their mistake, which prevented them from understanding what they did wrong.

5. Conclusions and recommendations

In this section we present the main conclusions following the findings outlined in the previous section. Recommendations for the E-certification course will be done once findings from the endline analysis are available.

Conclusion 1. The treatment and control groups are generally balanced, with some key differences in baseline characteristics.

Although the treatment and control groups have a similar distribution of most characteristics such as gender, age, and access to resources, some key differences have been observed. First of all, the age distribution across treatment group shows significant differences. Although there is no clear pattern and the mean age remains similar, we will control for age during the analysis at endline to capture this difference. More importantly, when looking at enabling factors for Learning through Play, we observed that regular access to computers is significantly higher in the treatment group due to access at the school level. This could reflect more frequent access due to attendance of the E-certification course by the treatment group: teachers in the control group might access computers at school less often because, without the exposure to the course, they do not have a reason to do so. The difference could also reflect imperfections arising from the sampling process: since propensity score matching is derived from aggregating a variety of indicators, including availability of computers for each school, it is possible that differences in a small number of those indicators are observed.

Conclusion 2. The levels of most outcome indicators are relatively low, which means we will be able to capture any improvements at endline.

Most primary and secondary indicators used to answer the main research questions have relatively low means on the interval scale that they were measured on. This implies that the indicators are well-suited to capture any improvements in the outcomes following the roll-out of the E-certification course in the treatment group. If the course has any significant impact on teacher outcomes, we should be able to detect it during the endline analysis. In particular, outcomes in terms of teacher knowledge, motivation through beliefs, and teacher practices (but not self-reported inclusive practices) showed the lowest levels and therefore the highest potential for capturing an effect at endline. On the other hand, indicators capturing support from the school, especially from teachers' report, are already quite high, so it is unlikely that we will be able to observe large differences as a consequence of the program. Exploring them through a qualitative study at the endline stage could serve as a good complement to the impact estimates.

Conclusion 3. Differences in outcomes across treatment groups are minimal and limited to teacher knowledge and observed practices.

There are only two indicators for which a statistically significant difference across treatment groups was observed: the sub-indicator on teacher knowledge about how children learn, and observed classroom practices. On teacher knowledge, the difference is most likely due to previous exposure of treatment teachers to the E-certification course: reports about previous training on Learning through Play confirmed that part of the treatment group had already gone through the first units of the course as the baseline data was collected. This aligns with the finding that the main difference is found in general beliefs about how children learn, which is the main content of the first units of the course. The absence of any differences in other knowledge indicators, such as knowledge on teacher practices, is confirmation that for most outcomes, early exposure to the E-certification course has not produced an impact in the treatment group yet. As for the difference in observed classroom practices, this might reflect both early exposure to the course and the possible self-selection process in the treatment group mentioned in the limitations in the methodology section. However, it should be noted that the difference in that indicator is only significant at the 10% level, which might be due to random variation or the small sample size for classroom observations.

Conclusion 4. Teachers’ understanding of Learning through Play is limited, although motivation to apply it in the classroom is high.

Indicators for teacher knowledge and practices, along with reports from Focus Group Discussions, confirm that teachers have a limited view of what Learning through Play consists of. Teachers seem to conceptualize Learning through Play as the use of specific games and activities, and not as a general atmosphere or teaching methodology. This is in line with findings from the context study and pilot design study conducted as part of the E-certification learning partnership. Self-reports from teachers also suggest that teachers are still retaining a teacher-centered approach to managing a classroom, with a focus on encouraging comparison and competition across students. This is reinforced by the low scores observed in the agency and social connectedness constructs during classroom observations. On the other hand, reports from teacher surveys show a relatively high motivation to implement Learning through Play, with the lowest scores determined by incorrect beliefs about what Learning through Play consists of. This suggests that improvements to the teacher motivation score will most likely happen through an improvement in knowledge about Learning through Play as a consequence of the E-certification course.

Conclusion 5. School leaders have a better understanding of what Learning through Play is, and the same positive attitude towards it as teachers.

School leaders scored substantially higher than teachers when it comes to overall knowledge about Learning through Play. This might reflect their background and experience, which includes a higher prevalence of training on Learning through Play, higher education levels and higher attendance of teacher training in the past. The higher score could also explain why teachers generally report being supported and motivated by their school leaders on Learning through Play.

School leaders' attitudes on the use of Learning through Play in the classroom are also relatively high, with similar scores to what was observed in teachers.

Conclusion 6. Observed practices are not correlated with self-reported practices and show different patterns across treatment groups.

The observed practices score from classroom observations showed no correlation with the self-reported practices score from the teacher survey. In addition, we observed a weakly significant difference across treatment groups in observed practices, but no significant difference across groups in self-reported practices. This discrepancy might be explained by a number of factors. First of all, given the limited time to measure self-reported practices against the 40 minutes used for classroom observations, the latter are likely to capture the same constructs with greater detail and depth. e . Secondly, self-reported practices in the survey have to do with what teachers did *in the past term*, when the E-certification course had not been rolled out yet, while classroom observations capture practices across groups in October 2023, when the treatment group had already been exposed to the course. A third factor to consider is some degree of self-selection in classroom observations (mentioned in the limitations of the methodology section). It is possible that the “best performing” teachers in the treatment group were observed instead of a more representative sample. Nonetheless, it should be noted that the differences observed across treatment groups in classroom observations are not large in magnitude, and only significant at the 10% level, which might also be due to random variation and small sample size.

In general, this reiterates the findings presented across this report that misconceptions regarding what Play-based Learning actually is are ever-present. It also further emphasizes prioritizing the Learning through Play observation scores and Knowledge scores in the evaluation, over self-reported practices. In addition, comparisons with baseline data will need to take into consideration the phenomena that as teachers become more knowledgeable about what Learning through Play actually is, their self-reported practices may decrease, even though in practice, their use of Play-based Learning may have increased. For this reason, using the objective measure of the extent to which Play-based Learning is happening in classrooms (the classroom observation) will be a more important indicator for baseline/endline comparative purposes.

Conclusion 7. Baseline data provides useful information on which indicators should be prioritized for use for baseline/endline comparisons.

The baseline report finds that teachers' knowledge of Play-based Learning is shallow, narrow and for some, incorrect. The findings evidence that teacher self-reports on the extent to which they use Play-based Learning in their classrooms does not reflect what was objectively observed through our Play-based Learning classroom observations and knowledge scores were better predictors of what takes place in classrooms.

Conclusion 8. Teachers in schools with an active RwandaEQUIP program have on average lower knowledge and classroom implementation of Learning through Play.

Analysis of primary outcomes across schools with and without an active RwandaEQUIP program shows that teachers fare worse in terms of Learning through Play knowledge and practices in schools where the program is active. This is an important outcome to be kept in mind as the endline analysis is conducted: the 40 schools (with 200 teachers) where the RwandaEQUIP program is present might see a change in outcomes of smaller magnitude, or not to see a significant change at all. If this is the case, this will limit the statistical power of the study, although the equal distribution of RwandaEQUIP across treatment and control groups implies that impact estimates will not be subject to bias.

Conclusion 9. Teachers' self-reported inclusion indicators are at a good level, which might reflect limitations of the indicators themselves.

Teacher scores for both knowledge of inclusive practices and self-reported inclusive practices are generally high. This might not reflect good inclusive practices, but rather the fact that those secondary indicators were built from a small set of general questions that only capture overall awareness of what inclusivity consists of. On the other hand, scores from classroom observations on the construct of active participation, which also partially captures inclusion, are relatively low; while scores for the positive emotional climate construct are relatively high but still leave room for improvement. An analysis of these constructs at endline will provide useful insights on the matter. However, this pattern also suggests that a more detailed analysis of inclusive practices should be conducted, which could be done through the qualitative component of the endline study or through further, more targeted studies around Learning through Play and inclusion.

Conclusion 10. Students did not mention modalities of teaching specifically related to Learning through Play. This might reflect limited or poor exposure so far.

When asked about their favorite class, students focused on the outcome of learning a subject and traditional, teacher-led activities such as writing and reading. Even when mentioning working in groups, which was reported positively by most, children did not mention play-based activities and still reported traditional teacher-guided group activities such as drawing. This might indicate that students in the FGDs had not been exposed to Learning through Play at the time. It might also imply that teachers implemented Learning through Play but faced some challenges, either due to limited knowledge on the matter or due to the major constraints they face, such as overcrowded classrooms, limited resources and short period times. Conducting this FGD at endline, after the course has been completed, will be essential to understand the role that Learning through Play plays in improving students' classroom experience in resource-constrained environments.

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Annex A: Outcome indicators

The following tables detail how each outcome indicator score was built, i.e., from which survey questions and what is the framing of each question. Negatively framed questions were counted with negative sign towards the total score. Green indicates primary indicator, while yellow indicates secondary indicators.

Indicator		Question	Framing
Teacher knowledge	How children learn	Play is only important for learning for preschool aged children.	Negative
		Students learn better when they have opportunities to be involved actively in learning activities.	Positive
		If children don't understand, they should try to find the answer independently before asking the teacher.	Positive
		Working in small groups is important for children's learning.	Positive
		It is important for classrooms to be quiet for learning to take place.	Negative
		Students learn best when they are sitting still at their desks.	Negative
		Children learn best from the teacher, not from their peers.	Negative
		Children should be able to choose their own learning activities in the classroom.	Positive
		Parents welcome more play-based approaches to learning in the classroom	Positive
	Teaching practices	Teachers need to ensure that all students are doing the same things in order to get the same results.	Negative
		Students should do hands-on activities after they have learned the related concepts.	Positive
		When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.	Negative
		Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.	Negative
		Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.	Positive
		Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.	Negative

		Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.	Positive
	Gender and inclusion	The needs of students with disabilities can be best served in special, separate classes or schools.	Negative
		Girls and boys have the same needs in the classroom.	Negative
		Teachers must adapt their teaching practices to ensure their lessons are accessible to both girls and boys.	Positive
		Girls and boys must have equal opportunity to lead group discussions activities in my class.	Positive
		Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.	Positive

Indicator		Question	Framing
Teacher motivation	Confidence in practices (all teachers)	I have trouble adapting classroom activities to the different ability levels of different groups of students.	Negative
		I feel confident I can integrate participatory approaches, such as role-play or drawing, into my lessons.	Positive
		I do not feel confident I can integrate playful activities into my lessons.	Negative
		I feel confident I have a large repertoire of playful activities to choose from for my lessons.	Positive
		I am able to develop lesson plans that include playful activities.	Positive
		If students stop working, I am able to put them back on track.	Positive
		I am always able to clearly communicate my expectations to my students.	Positive
		There are some students whose behaviour I cannot manage.	Negative
		When the lesson begins, I have to wait quite a long time for students to be quiet down.	Negative
		I am able to gain students' active participation and interest in the content of my lessons.	Positive
	Motivation through beliefs (requires knowing what LtP is)	I am motivated to use Learning through Play in the classroom to improve my teaching practices. (Self-reported motivation indicator)	Positive
		Learning through play activities enable me to use a variety of assessment strategies to assess children's learning.	Positive
		Learning through play activities enable me to respond to difficult questions from learners.	Positive

		Learning through play activities enable me to assess children's understanding of basic concepts.	Positive
		Learning through play activities enable me to adjust lessons to the appropriate level of children.	Positive
		Learning through play activities enable me to provide alternative paths to learning when children are confused or do not understand.	Positive
		Learning through play activities enable me to keep the classroom quiet when I am teaching	Negative
		Learning through play activities enable me to provide equal learning chances for boys and girls.	Positive
		Learning through play activities enable me to provide better learning chances for students with disabilities.	Positive
		Learning through play activities enable me to explain to children what to do when they encounter a challenge.	Negative
		Learning through Play activities enable me to motivate children who show low interest in learning.	Positive
		Learning through Play activities enable me to help children to believe or think they can do well in class activities.	Positive
		Learning through Play activities enable me to help children to memorize the lesson content better.	Negative
		Learning through Play activities enable me to help children to value learning.	Positive
		Learning through Play activities enable me to help children follow what the teacher is telling them to do.	Negative
		Learning through Play activities enable me to help children think critically.	Positive
		Learning through Play activities enable me to help children develop creativity.	Positive
		Learning through Play activities enable me to identify children who are struggling with their learning or falling behind in class.	Positive
		Learning through Play activities enable me to identify children that disrupt the class so that they can be punished.	Negative
		Learning through Play activities enable me to help improve children's reading skills.	Positive
		Learning through Play activities enable me to help improve children's numeracy skills.	Positive

Indicator	Question	Framing
Teacher practices	I let students work in small groups to come up with a joint solution to a problem or task.	Positive
	I let students present their project or findings to the class.	Positive
	I tell students who plays each role in a group activity.	Negative
	I let students decide what to do in a group activity	Positive
	I encourage students to compare themselves to their peers to understand who did a better job.	Negative
	I use students' background and interests in developing lessons and learning objectives.	Positive
	I focus on theoretical concepts when teaching.	Negative
	I connect my lessons to students' lives outside school.	Positive
	I tell students the right answer and ask them to repeat it to make sure they learn well.	Negative
	I let students try multiple ways to reach an answer even though it would be faster for me to tell them.	Positive
	I evaluate students' performance and tell them what to do to improve it.	Negative
	I let students evaluate and reflect upon their own work in class.	Positive
	I examine students work and assessments to inform my teaching.	Positive
	I use questions directed to specific students to monitor their understanding and learning during a lesson.	Positive
	I assess students' understanding only at the end of the lesson.	Negative
	I help students build on each other's ideas to solve problems.	Positive
	I encourage children to compete with others to motivate them to solve problems.	Negative
	I encourage children to have discussions with each other without my involvement.	Positive
	I facilitate a lesson where different children are working on different things.	Positive
	I facilitate a lesson where children are all doing the same thing at the same time.	Negative
	I try to include children that are not participating in the lesson.	Positive
Inclusive practices	I assign school chores mostly to girls	Negative
	I discipline girls and boys in different ways	Negative
	I usually let boys answer difficult questions in class.	Negative
	I develop adapt my lesson plans to the different needs of boys and girls.	Positive
	I design playful activities in a way that ensures equal and comfortable participation of boys and girls.	Positive
	I design playful activities in a way that ensures equal and comfortable participation of students with disabilities.	Positive
	I assign roles to students even if they are considered non-traditional, for example a girl playing a carpenter role.	Positive

Indicator	Question	Framing
Support from headteacher and school	The headteacher in my school is committed to supporting the continuous professional development of teachers.	Positive
	The headteacher in my school is not interested in supporting teachers to adopt new learning methods in the classroom.	Negative
	The headteacher in my school supports me to integrate gender-responsive learning in my lessons.	Positive
	The headteacher in my school does not support me to work with students who experience disabilities.	Negative
	The headteacher in my school regularly conducts classroom observations to monitor teachers' instructional practices.	Positive
Support from COPs	Communities of Practice do not focus enough on supporting the continuous professional development of teachers	Negative
	Communities of Practice are committed to help teachers to overcome challenges when applying new learning methods in the classroom	Positive
	Communities of Practice are not helpful to integrate gender-responsive learning in my lessons	Negative
	The support I received from the Community of Practice helped me to overcome a challenge.	Positive
	The support I received from the Community of practice informed my teaching practices.	Positive
Support from SBMs	School-Based Mentors do not focus enough on supporting the continuous professional development of teachers	Negative
	School-Based Mentors are committed to help teachers to overcome challenges when applying new learning methods in the classroom	Positive
	School-Based Mentors are helpful to integrate gender-responsive learning in my lessons	Positive
	The support I received from a School-Based Mentor was not helpful for me to overcome the challenge I was facing.	Negative
	The support I received from a School-Based Mentor informed my teaching practices	Positive

Indicator	Question	Framing
School leader knowledge	Play is only important for learning for preschool aged children.	Negative
	Students learn better when they have opportunities to be involved actively in learning activities.	Positive

	If children don't understand, they should try to find the answer independently before asking the teacher.	Positive
	Working in small groups is important for children's learning.	Positive
	It is important for classrooms to be quiet for learning to take place.	Negative
	Students learn best when they are sitting still at their desks.	Negative
	Children learn best from the teacher, not from their peers.	Negative
	Children should be able to choose their own learning activities in the classroom.	Positive
	Parents welcome more play-based approaches to learning in the classroom	Positive
	Teachers need to ensure that all students are doing the same things in order to get the same results.	Negative
	Students should do hands-on activities after they have learned the related concepts.	Positive
	When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.	Negative
	Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.	Negative
	Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.	Positive
	Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.	Negative
	Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.	Positive
	The needs of students with disabilities can be best served in special, separate classes or schools.	Negative
	Girls and boys have the same needs in the classroom.	Negative
	Teachers must adapt their teaching practices to ensure their lessons are accessible to both girls and boys.	Positive
	Girls and boys must have equal opportunity to lead group discussions activities in my class.	Positive
	Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.	Positive

Indicator	Question	Framing
School leader motivation	Teachers in my school should adopt Learning through Play methodologies in their classes.	Positive
	Learning through Play approaches are fun but do not result in improvements in learning outcomes.	Negative
	Learning through Play approaches distract students from curriculum content.	Negative

	As a school leader, I am committed to help teachers with integrating Learning through Play in their classroom.	Positive
	As a school leader, I have the resources needed to support teachers with integrating Learning through Play in their classroom.	Positive
	As a school leader, I have the knowledge needed to support teachers with integrating Learning through Play in their classroom.	Positive
	Learning through Play activities enable teachers to use a variety of assessment strategies to assess children's learning.	Positive
	Learning through Play activities enable teachers to respond to difficult questions from learners.	Positive
	Learning through Play activities enable teachers to assess children's understanding of basic concepts.	Positive
	Learning through Play activities enable teachers to adjust lessons to the appropriate level of children.	Positive
	Learning through Play activities enable teachers to provide alternative paths to learning when children are confused or do not understand.	Positive
	Learning through Play activities enable teachers to keep the classroom quiet when they are teaching.	Negative
	Learning through Play activities enable teachers to provide equal learning chances for boys and girls.	Positive
	Learning through Play activities enable teachers to provide better learning chances for students with disabilities.	Positive
	Learning through Play activities enable teachers to explain to children what to do when they encounter a challenge.	Negative
	Learning through Play activities enable teachers to motivate children who show low interest in learning.	Positive
	Learning through Play activities enable teachers to help children to believe or think they can do well in class activities.	Positive
	Learning through Play activities enable teachers to help children to memorize the lesson content better.	Negative
	Learning through Play activities enable teachers to help children to value learning.	Positive
	Learning through Play activities enable teachers to help children follow what the teacher is telling them to do.	Negative
	Learning through Play activities enable teachers to help children think critically.	Positive
	Learning through Play activities enable teachers to help children develop creativity.	Positive
	Learning through Play activities enable teachers to identify children who are struggling with their learning or falling behind in class.	Positive

	Learning through Play activities enable teachers to identify children that disrupt the class so that they can be punished.	Negative
	Learning through Play activities enable teachers to help improve children's reading skills.	Positive
	Learning through Play activities enable teachers to help improve children's numeracy skills.	Positive

Indicator	Question	Framing
Support from headteachers and school	I have sufficient support from the District Director of Education (DDE) to improve teaching quality.	Positive
	As a school leader, I should ensure that teachers complete the curriculum without wasting time on trying out new methodologies.	Negative
	I do not have enough time to support teachers with learning new methodologies.	Negative
	I frequently attend courses about new teaching methods that I can support teachers with.	Positive
	I conduct lesson observations to monitor teachers' instructional practices.	Positive
	In my school, I tell teachers to reach out for my help only if it is a very urgent issue.	Negative
	My school does not have enough ICT devices to serve all teachers that need them.	Negative
	In each school term, I make sure that as many teachers as possible have access to ICT devices (smartphones, computers, laptops, tablets) through my school.	Positive
	In each school term, I make sure that teachers have at least one hour per week to dedicate to continuous professional development.	Positive
	In each school term, I make sure that teachers have at least one hour per week to participate to Communities of Practice.	Positive
Support for inclusive learning environment	My school needs to make improvements to school infrastructure and facilities to be child-friendly for boys and girls.	Positive
	My school needs to make improvements to the teaching and learning environment to make it child-friendly for boys and girls.	Positive
	My school does not have the resources to make infrastructure and facilities child-friendly for boys and girls.	Negative
	My school does not have the technical knowledge make the teaching and learning environment child-friendly for boys and girls	Negative
	My school does not need to make improvements to school infrastructure and facilities accessible to children who experience disabilities.	Negative

	My school does not need to make improvements to the teaching and learning environment to better include children who experience disabilities.	Negative
	My school has the resources to support children with disabilities.	Positive
	Teachers in my school have the technical knowledge to support children with disabilities.	Positive
	I have the technical knowledge to support children with disabilities in my school.	Positive

Annex B: Tables

The following tables provide more detailed information on the findings presented in Sections 3 and 4. First, we present tables with means of primary and secondary outcome scores by group, with the p-value of a t-test for difference in means across treatment groups. Then, we present a table with the main teacher outcome scores by gender (male and female teachers). Then, we present tabulated proportions for most variables collected in the teacher and school leader surveys. In cases where tests, such as the Chi2 test for difference in proportions across groups, are conducted, we report the p-value.

Outcomes by treatment group

	All			Control			Treatment			
	Mean(all)	Se.(all)	N(all)	Mean(C)	Se.(C)	N(C)	Mean(T)	Se.(T)	N(T)	T-test
Knowledge(all)	0.31	0.008	849	0.29	0.011	424	0.33	0.012	425	0.061
Knowledge (how children learn)	0.26	0.013	849	0.22	0.016	424	0.3	0.019	425	0.002
Knowledge(practices)	0.21	0.01	849	0.21	0.014	424	0.2	0.014	425	0.609
Knowledge(inclusion)	0.55	0.013	849	0.55	0.019	424	0.55	0.018	425	0.967
Knowledge(SL)	0.84	0.107	170	0.98	0.163	85	0.7	0.136	85	0.197

	All			Control			Treatment			
	Mean(all)	Se.(all)	N(all)	Mean(C)	Se.(C)	N(C)	Mean(T)	Se.(T)	N(T)	T-test
Motivation(all)	0.95	0.01	709	0.94	0.016	331	0.96	0.013	378	0.386
Confidence in practices	1.2	0.014	849	1.18	0.02	424	1.21	0.02	425	0.299
Motivation (self-report. - 0 to 2)	1.61	0.019	709	1.6	0.031	331	1.62	0.024	378	0.609
Motivation through beliefs	0.81	0.01	709	0.8	0.016	331	0.82	0.013	378	0.309
SL motivation	1	0.11	154	1.2	0.219	73	0.83	0.066	81	0.094

	All			Control			Treatment			
	Mean(all)	Se.(all)	N(all)	Mean(C)	Se.(C)	N(C)	Mean(T)	Se.(T)	N(T)	T-test
Self-report. Practices (-1 to 4)	0.74	0.012	839	0.72	0.017	419	0.75	0.016	420	0.234

	All			Control			Treatment			
	Mean(all)	Se.(all)	N(all)	Mean(C)	Se.(C)	N(C)	Mean(T)	Se.(T)	N(T)	T-test
Incl. Practices (-2 to 2)	1.45	0.015	849	1.43	0.023	424	1.47	0.02	425	0.194
PLAY score	500	6.465	340	490.28	8.595	170	509.72	9.543	170	0.073
Participation score (0 to 9)	1.28	0.06	340	1.28	0.082	170	1.27	0.088	170	0.915
Positive emot. climate score(0 to 13)	6.97	0.167	340	6.69	0.239	170	7.25	0.23	170	0.065
Connect. to experience (part of PLAY)	3.79	0.152	340	3.54	0.217	170	4.05	0.208	170	0.068
Problem-solving (part of PLAY)	1.26	0.108	340	1.31	0.137	170	1.21	0.168	170	0.561
Exploration (part of PLAY)	1.76	0.068	340	1.65	0.093	170	1.87	0.099	170	0.078
Agency (part of PLAY)	0.94	0.091	340	0.9	0.128	170	0.98	0.13	170	0.619
Soc connectedness (part of PLAY)	1.11	0.091	340	0.98	0.109	170	1.25	0.143	170	0.088

	All			Control			Treatment			
	Mean(all)	Se.(all)	N(all)	Mean(C)	Se.(C)	N(C)	Mean(T)	Se.(T)	N(T)	T-test
Support from school (teachers)	1.34	0.02	849	1.34	0.03	424	1.34	0.025	425	0.963
Support from COPs (teachers)	1.33	0.02	734	1.34	0.029	366	1.31	0.027	368	0.385
Support from SBMs (teachers)	1.07	0.02	818	1.03	0.029	405	1.1	0.026	413	0.088
Support from school (SL)	0.67	0.029	170	0.65	0.037	85	0.7	0.043	85	0.472
Support on inclusion (SL)	0.36	0.098	170	0.22	0.048	85	0.51	0.189	85	0.144

Outcomes by gender

		All			Male			Female			
	Scale	Mean(all)	Se.(all)	N(all)	Mean(M)	Se.(M)	N(M)	Mean(F)	Se.(F)	N(F)	T-test
Knowledge	-2 to +2	0.31	0.008	849	0.29	0.018	199	0.31	0.009	650	0.294
Motivation(overall)	-2 to +2	0.95	0.010	709	0.93	0.020	170	0.95	0.012	539	0.262

Motivation(self-report)	-2 to +2	1.61	0.019	709	1.58	0.041	170	1.62	0.023	539	0.316
Confidence in LtP	-2 to +2	1.20	0.014	849	1.17	0.030	199	1.21	0.017	650	0.216
LtP practices (self-report)	-1 to 4	0.74	0.012	839	0.79	0.020	199	0.72	0.014	640	0.004
Incl. practices (self-report)	-2 to +2	1.45	0.015	849	1.43	0.028	199	1.46	0.018	650	0.357
LtP practices (PLAY score)	Mean of 500	500	6	340	503	13	68	499	7	272	0.816
Support by HT	-2 to +2	1.34	0.020	849	1.25	0.033	199	1.37	0.021	650	0.004

Main variables distribution

	Teachers				School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig	Control(%)	Treatment(%)	Total(%)	Chi2 sig
Gender								
Male	24.1	22.8	23.4	0.672	75.3	64.7	70.0	0.132
Female	75.9	77.2	76.6		24.7	35.3	30.0	
Age (categories)								
18-25	12.3	9.4	10.8	0.028	0.0	0.0	0.0	0.118
26-30	24.8	20.2	22.5		2.4	0.0	1.2	
31-35	15.8	20.0	17.9		8.2	10.6	9.4	
36-40	17.0	12.7	14.8		31.8	16.5	24.1	
41-45	15.6	16.5	16.0		20.0	15.3	17.7	
46-50	7.3	11.3	9.3		24.7	34.1	29.4	
51-55	4.3	3.5	3.9		8.2	11.8	10.0	
56-60	2.4	5.2	3.8		3.5	7.1	5.3	
Over 60	0.7	1.2	0.9		1.2	4.7	2.9	
What language do you speak at home most regularly?								
Kinyarwanda	99.8	99.8	99.8	0.368	100.0	98.8	99.4	0.316
English	0.0	0.2	0.1		0.0	0.0	0.0	
French	0.2	0.0	0.1		0.0	1.2	0.6	

	Teachers				School leaders			
Gender	Control(%)	Treatment(%)	Total(%)	Chi2 sig	Control(%)	Treatment(%)	Total(%)	Chi2 sig
Do you have a disability?								
No	98.1	97.4	97.8	0.49	97.7	98.8	98.2	0.56
Yes	1.9	2.6	2.2		2.4	1.2	1.8	

	School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
What is the highest level of education you have completed?				
Upper Secondary	12.9	21.2	17.1	0.639
Certificate (e.g. WDA, TTC)	1.2	0.0	0.6	
Bachelors Degree (BA, BSc)	65.9	60.0	62.9	
Masters (MA, Msc)	5.9	5.9	5.9	
Advanced Diploma	7.1	8.2	7.7	
Postgraduate diploma	7.1	4.7	5.9	
Which teaching qualifications do you hold?				
I do not hold any qualification for teaching	0.0	2.4	1.2	0.719
Postgraduate Diploma in Education	8.2	5.9	7.1	
Advanced Diploma in Education	7.1	5.9	6.5	
Certificate in Teacher Training (Primary, A2)	23.5	28.2	25.9	
Bachelors of Education (A0)	60.0	56.5	58.2	
Other (specify)	1.2	1.2	1.2	
In total, how many years of work experience do you have working as a school leader?				
0-5	31.8	28.2	30.0	0.221
6- 10	15.3	15.3	15.3	
11- 15	32.9	34.1	33.5	
16-20	9.4	12.9	11.2	
21-25	7.1	4.7	5.9	
26-30	1.2	0.0	0.6	
31-35	2.4	1.2	1.8	
36-40	0.0	1.2	0.6	
41-45	0.0	2.4	1.2	

In total, how many years of work experience do you have working as a teacher, or in other education related roles?				
0-5	32.9	24.7	28.8	0.719
6- 10	23.5	22.4	22.9	
11- 15	21.2	27.1	24.1	
16-20	15.3	15.3	15.3	
21-25	3.5	8.2	5.9	
26-30	0.0	2.4	1.2	
31-35	3.5	0.0	1.8	
How many years of work experience do you have working as a school leader in this school?				
0-5	63.5	68.2	65.9	
6- 10	16.5	17.7	17.1	
11- 15	12.9	7.1	10.0	
16-20	4.7	5.9	5.3	
21-25	2.4	1.2	1.8	

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
Years of work experience in education role				
0-5	48.4	42.4	45.4	0.019
6- 10	9.7	8.9	9.3	
11- 15	16.8	13.4	15.1	
16-20	10.1	11.5	10.8	
21-25	10.1	14.4	12.3	
26-30	2.6	4.0	3.3	
31-35	0.2	2.8	1.5	

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
36-40	0.9	1.7	1.3	
41-45	1.2	0.9	1.1	
Years of work experience working in this school				
0-5	64.6	54.6	59.6	0.022
6- 10	11.8	12.9	12.4	
11- 15	13.0	15.3	14.1	
16-20	6.8	8.0	7.4	
21-25	2.4	6.4	4.4	
26-30	0.9	1.7	1.3	
31-35	0.0	0.7	0.4	
36-40	0.5	0.2	0.4	
41-45	0.0	0.2	0.1	
Highest level of education completed				
Lower Secondary	0.2	0.0	0.1	0.682
Upper Secondary	73.5	72.9	73.2	
Certificate (e.g. WDA, TTC)	4.3	4.1	4.2	
Bachelors Degree (BA, BSc)	16.5	15.5	16.0	
Masters (MA, Msc)	1.0	1.0	1.0	
Advanced Diploma	3.3	5.5	4.4	
Postgraduate diploma	1.2	1.0	1.1	
Teaching qualifications held				
I do not hold any qualification for teaching	29.1	26.8	27.9	0.824
Postgraduate Diploma in Education	1.4	1.2	1.3	
Advanced Diploma in Education	2.0	3.0	2.5	

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
Certificate in Teacher Training (Primary, A2)	55.0	57.7	56.3	
Bachelors of Education (A0)	12.4	11.2	11.8	
Other (specify)	0.2	0.2	0.2	
Have you ever attended a Teacher Training College (TTC) in Rwanda?				
No	45.1	37.4	41.2	0.024
Yes	55.0	62.6	58.8	

	Teachers				School leaders			
	Control (%)	Treatment(%)	Total(%)	Chi2	Control(%)	Treatment(%)	Total(%)	Chi2
Access to computer (Laptop or Desktop)								
No	47.9	34.4	41.1	0.000	1.2	0	0.6	0.316
Yes	52.1	65.7	58.9		98.8	100	99.4	
Access to smartphone								
No	8.5	10.8	9.7	0.250	1.2	0	0.6	0.316
Yes	91.5	89.2	90.3		98.8	100	99.4	
Access to tablet								
No	72.2	69.4	70.8	0.377	38.8	22.4	30.6	0.020
Yes	27.8	30.6	29.2		61.2	77.7	69.4	
Have no access to any device								
No	97.4	97.2	97.3	0.837	100	100	100	.
Yes	2.6	2.8	2.7		0	0	0	

	Teachers			School leaders		
	Control(%)	Treatment(%)	Chi2 sig	Control(%)	Treatment(%)	Chi2 sig
Ways to access computer						
Owned	3.9	5.7	0.679	18.5	20.7	0.514
Shared with spouse	4.3	5.7		0	0	
Shared with other family members	2.2	2.2		1.1	0	
At school	84.3	107.4		78.3	80.4	
From neighbors/friends/relatives not in household	5.2	6.5		2.2	0.0	
Other	0	0.4		0	1.1	
Frequency to access computer						

	Teachers			School leaders		
	Control(%)	Treatment(%)	Chi2 sig	Control(%)	Treatment(%)	Chi2 sig
Less than once a week	23.6	25.3	0.554	1.3	0	0.572
Once or twice a week	40.2	48.9		4.0	4.0	
Three or four times a week	13.7	17.8		9.4	5.4	
Almost daily	11.6	19.0		84.6	91.3	
Duration accessing computer						
Less than one hour	23.2	21.2	0.143	2.4	1.2	0.738
One or two hours	47.7	67.7		17.8	21.3	
More than two hours	17.6	22.4		79.3	78.1	

	Teachers			School leaders		
	Control(%)	Treatment(%)	Chi2 sig	Control(%)	Treatment(%)	Chi2 sig
Ways to access smartphone						
Owned	92.1	92.1	0.695	85.7	90.1	0.538
Shared with spouse	4.4	3.1		0	0	
Shared with other family members	1.0	0.3		0	0	
At school	1.8	1.3		14.3	9.9	
From neighbors/friends/relatives not in household	0.8	0.8		0	0	
Other	0	0		0	0	
Frequency to access smartphone						
Less than once a week	7.8	7.8	0.729	0	9.1	0.342
Once or twice a week	19.6	15.7		9.1	0	
Three or four times a week	39.2	15.7		109.1	72.7	
Almost daily	51.0	43.1		0	0	
Duration accessing computer						
Less than one hour	12.5	14.3	0.123	1.2	3.6	0.051

	Teachers			School leaders		
	Control(%)	Treatment(%)	Chi2 sig	Control(%)	Treatment(%)	Chi2 sig
One or two hours	32.6	37.0		5.9	16.6	
More than two hours	56.1	47.5		92.3	80.5	

	Teachers			School leaders		
	Control(%)	Treatment(%)	Chi2 Sig	Control(%)	Treatment(%)	Chi2 Sig
Ways to access tablet						
Shared with spouse	1.8	1.8	0.235	0.0	0.0	0.457
Shared with other family members	0.9	0.0		0.0	2.0	
At school	93.7	100.9		98.0	128.6	
From neighbors/friends/relatives not in household	2.7	2.7		0.0	0.0	
Other	0.9	6.3		2.0	0.0	
Frequency to access tablet						
Less than once a week	4.3	12.0	0.216	10.6	12.4	0.065
Once or twice a week	18.0	17.2		14.2	44.2	
Three or four times a week	9.4	6.9		17.7	14.2	
Almost daily	61.8	70.4		44.2	42.5	
Duration accessing tablet						
Less than one hour	8.1	16.9	0.189	20.3	22.0	0.686
One or two hours	19.4	19.4		30.5	47.5	
More than two hours	67.7	68.5		37.3	42.4	

	Teachers				School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 Sig	Control(%)	Treatment(%)	Total(%)	Chi2 Sig
Have you done an accredited or certified online training course for teacher professional development before?								
No	77.6	76.9	77.3	0.820	37.7	23.5	30.6	0.046
Yes	22.4	23.1	22.7		62.4	76.5	69.4	
Have you done a training course that includes Learning through Play or play-based learning before?								
No	91.5	73.7	82.6	0.000	71.8	64.7	68.2	0.323
Yes	8.5	26.4	17.4		28.2	35.3	31.8	

	Teachers				School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig	Control(%)	Treatment(%)	Total(%)	Chi2 sig
In which year did you last do an accredited or certified online training course for teacher professional development?								
Never	77.6	76.9	77.3	0.818	37.7	23.5	30.6	0.218
2010-2015	0.0	0.2	0.1		0.0	0.0	0.0	
2016-2019	1.7	2.4	2.0		7.1	5.9	6.5	
2020	1.2	0.5	0.8		12.9	9.4	11.2	
2021	3.3	3.5	3.4		24.7	30.6	27.7	
2022	7.6	8.0	7.8		15.3	24.7	20.0	
2023	8.7	8.5	8.6		2.4	5.9	4.1	

	Teachers				School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig	Control(%)	Treatment(%)	Total(%)	Chi2 sig
In which year did you last do a training course for Learning through Play or play-based learning?								
Never	91.5	73.7	82.6	0.000	71.8	64.7	68.2	0.032
Before 2010	0.5	0.2	0.4		0.0	1.2	0.6	
2010-2015	0.2	0.2	0.2		0.0	0.0	0.0	
2016-2019	0.9	2.6	1.8		3.5	1.2	2.4	
2020	0.0	0.2	0.1		0.0	0.0	0.0	
2021	0.7	1.4	1.1		2.4	3.5	2.9	
2022	3.5	2.4	2.9		16.5	8.2	12.4	
2023	2.6	19.3	11.0		5.9	21.2	13.5	

	Teachers				School leaders			
Was the course (or courses) for Learning through Play or play-based learning online or in-person?	Control	Treatment	Total	Chi2 sig	Control	Treatment	Total	Chi2 sig
Online	0.0	0.9	0.7	0.823	0.0	3.3	1.9	0.359
In-person	94.4	94.6	94.6		95.8	96.7	96.3	
Blended (mix of online and in-person)	5.6	4.5	4.7		4.2	0.0	1.9	

	Teachers			School leaders		
Training provider	Control(%)	Treatment(%)	Chi2 sig	Control(%)	Treatment(%)	Chi2 sig
Right to Play	0.0	260.0	0.000	4.2	75.0	0.002
VVOB	0.0	0.0		4.2	4.2	
VSO (Voluntary Service Overseas)	0.0	0.0		20.8	12.5	
UNICEF	0.0	3.3		0.0	0.0	
PLAN International	13.3	0.0		0.0	0.0	

Save the Children	0.0	6.7		4.2	4.2
Play for Education	3.3	0.0		0.0	0.0
Inspire, Educate and Empower (IEE)	30.0	13.3		0.0	0.0
Other(specify)	53.3	76.7		66.7	25.0

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Teachers at my school are interested in learning new methodologies to support student learning.					
Control %	0	0	2	60	38
Treatment %	0	0	1	65	34
Total %	0	0	2	62	36
Pearson chi2(2) = 0.6318 Pr = 0.729					
Teachers at my school have experience implementing play-based learning approaches to deliver curriculum content.					
Control %	2	14	22	51	11
Treatment %	1	15	12	54	18
Total %	2	15	17	52	14
Pearson chi2(4) = 4.7676 Pr = 0.312					
Teachers at my school do not have enough time after school to learn new methodologies to support student learning.					
Control %	5	29	11	45	11
Treatment %	11	42	12	33	2
Total %	8	36	11	39	6

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(4) = 9.9290 Pr = 0.042					
Teachers at my school do not have enough time during classes to try out new methodologies to support student learning					
Control %	1	21	5	61	12
Treatment %	8	18	5	53	16
Total %	5	19	5	57	14
Pearson chi2(4) = 5.9445 Pr = 0.203					
Communities of Practices (COPs) sound good in theory but do not have any influence on student learning.					
Control %	4	0	0	64	33
Treatment %	1	1	0	65	33
Total %	2	1	0	64	33
Pearson chi2(3) = 2.0092 Pr = 0.571					
Communities of Practice are committed to supporting the continuous professional development of teachers.					
Control %	0	0	0	48	52
Treatment %	0	0	0	45	55
Total %	0	0	0	46	54
Pearson chi2(1) = 0.0000 Pr = 1.000					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
School-Based Mentors are committed to supporting the continuous professional development of teachers in my school.					
Control %	52	47	0	1	0
Treatment %	40	55	4	1	0
Total %	46	51	2	1	0
Pearson chi2(1) = 0.2128 Pr = 0.645					
Communities of Practice should do more to help teachers in my school overcome challenges when applying new learning methods in the classroom.					
Control %	54	46	0	0	0
Treatment %	45	54	1	0	0
Total %	49	50	1	0	0
Pearson chi2(2) = 2.3384 Pr = 0.311					
School-Based Mentors should do more to help teachers in my school to overcome challenges when applying new learning methods in the classroom.					
Control %	52	47	0	1	0
Treatment %	40	55	4	1	0
Total %	46	51	2	1	0
Pearson chi2(3) = 4.8453 Pr = 0.183					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
School-Based Mentors help teachers in my school to integrate gender-responsive learning in lessons.					
Control %	0	0	0	47	53
Treatment %	0	0	0	41	59
Total %	0	0	0	44	56
Pearson chi2(1) = 0.5965 Pr = 0.440					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I have sufficient support from the District Director of Education (DDE) to improve teaching quality					
Control %	1	6	11	60	22
Treatment %	0	7	2	71	20
Total %	1	6	6	65	21
Pearson chi2(4) = 6.3863 Pr = 0.172					
As a school leader, I should ensure that teachers complete the curriculum without wasting time on trying out new methodologies.					
Control %	56	33	1	9	0
Treatment %	47	33	2	14	4
Total %	52	33	2	12	2

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson $\chi^2(4) = 4.8606$ Pr = 0.302					
I do not have enough time to support teachers with learning new methodologies.					
Control %	4	9	2	59	26
Treatment %	0	15	1	67	16
Total %	2	12	2	63	21
Pearson $\chi^2(4) = 6.7595$ Pr = 0.149					
I frequently attend courses about new teaching methods that I can support teachers with.					
Control %	0	5	7	56	32
Treatment %	0	5	4	60	32
Total %	0	5	5	58	32
Pearson $\chi^2(3) = 1.0909$ Pr = 0.779					
I conduct lesson observations to monitor teachers' instructional practices.					
Control %	0	1	0	60	39
Treatment %	0	0	0	61	39
Total %	0	1	0	61	39
Pearson $\chi^2(2) = 1.0097$ Pr = 0.604					
In my school, I tell teachers to reach out for my help only if it is a very urgent issue.					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %	1	11	1	69	18
Treatment %	4	13	0	71	13
Total %	2	12	1	70	15
Pearson chi2(4) = 2.8238 Pr = 0.588					
My school does not have enough ICT devices to serve all teachers that need them.					
Control %	34	47	5	12	2
Treatment %	28	38	6	24	5
Total %	31	42	5	18	4
Pearson chi2(4) = 5.4717 Pr = 0.242					
In each school term, I make sure that as many teachers as possible have access to ICT devices (smartphones, computers, laptops, tablets) through my school.					
Control %	5	19	7	52	18
Treatment %	7	20	5	49	19
Total %	6	19	6	51	18
Pearson chi2(4) = 0.9091 Pr = 0.923					
In each school term, I make sure that teachers have at least one hour per week to dedicate to continuous professional development.					
Control %	0	1	0	40	59
Treatment %	0	0	1	42	56

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Total %	0	1	1	41	58
Pearson chi2(3) = 2.0980 Pr = 0.552					
In each school term, I make sure that teachers have at least one hour per week to participate to Communities of Practice.					
Control %	0	2	1	51	46
Treatment %	0	7	0	47	46
Total %	0	5	1	49	46
Pearson chi2(3) = 3.1084 Pr = 0.375					

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
My school needs to make improvements to school infrastructure and facilities to be child-friendly for boys and girls.						
Control %	0	15	2	44	39	0
Treatment %	1	16	2	44	36	0
Total %	1	16	2	44	38	0
Pearson chi2(4) = 1.0995 Pr = 0.894						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
My school needs to make improvements to the teaching and learning environment to make it child-friendly for boys and girls.						
Control %	0	12	5	52	32	0
Treatment %	1	12	0	51	36	0
Total %	1	12	2	51	34	0
Pearson chi2(4) = 5.2874 Pr = 0.259						
My school does not have the resources to make infrastructure and facilities child-friendly for boys and girls.						
Control %	40	32	8	20	0	0
Treatment %	36	34	2	22	5	0
Total %	38	33	5	21	2	0
Pearson chi2(4) = 7.0988 Pr = 0.131						
My school does not have the technical knowledge make the teaching and learning environment child-friendly for boys and girls						
Control %	21	36	6	33	4	0
Treatment %	15	35	5	38	7	0
Total %	18	36	5	35	5	0
Pearson chi2(4) = 2.2006 Pr = 0.699						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
My school does not need to make improvements to school infrastructure and facilities accessible to children who experience disabilities.						
Control %	21	36	6	33	4	0
Treatment %	15	35	5	38	7	0
Total %	18	36	5	35	5	0
Pearson chi2(4) = 1.9730 Pr = 0.741						
My school does not need to make improvements to the teaching and learning environment to better include children who experience disabilities.						
Control %	1	9	0	65	25	0
Treatment %	1	7	0	60	32	0
Total %	1	8	0	62	28	0
Pearson chi2(3) = 1.1867 Pr = 0.756						
My school has the resources to support children with disabilities.						
Control %	25	60	4	12	0	0
Treatment %	22	66	1	9	1	0
Total %	24	63	2	11	1	0

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Pearson chi2(4) = 2.5559 Pr = 0.635						
Teachers in my school have the technical knowledge to support children with disabilities						
Control %	4	47	11	34	5	0
Treatment %	12	31	13	42	0	2
Total %	8	39	12	38	2	1
Pearson chi2(5) = 13.6928 Pr = 0.018						
I have the technical knowledge to support children with disabilities in my school.						
Control %	6	29	11	45	9	0
Treatment %	9	27	12	48	4	0
Total %	8	28	11	46	6	0
Pearson chi2(4) = 3.2149 Pr = 0.523						

	School leaders			
	Control (%)	Treatment(%)	Total(%)	Chi2 sig
Are you a member of a Professional Learning Community (PLC) (CoP for headteachers)?				
No	11	6	8	0.264

	School leaders			
	Control (%)	Treatment(%)	Total(%)	Chi2 sig
Yes	89	94	92	
Did you participate in any Professional Learning Community meetings in the last term, before schools closed?				
No	13	1	7	0.004
Yes	87	99	93	
How often were Professional Learning Community meetings held in the last term, before schools closed?				
Once a week	5	4	4	0.984
Once every two weeks	5	5	5	
Once a month	83	85	84	
Once a term	8	6	7	

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Professional Learning Communities meetings are often focused on how school leaders can support teachers to adopt new methodologies.						
Control %	0	5	4	56	32	4
Treatment %	0	4	0	59	38	0
Total %	0	4	2	58	35	2
Pearson chi2(4) = 6.6074 Pr = 0.158						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
During Professional Learning Communities meetings, it is rare that school leaders exchange ideas on how to improve teaching quality in their school.						
Control %	4	4	13	1	71	8
Treatment %	0	4	6	2	56	32
Total %	2	4	9	2	64	20
Pearson chi2(5) = 18.6814 Pr = 0.002						
Professional Learning Communities sound good in theory, but school leaders are too busy to dedicate time to them.						
Control %	2	7	14	4	59	14
Treatment %	0	2	15	2	61	19
Total %	1	5	15	3	60	16
Pearson chi2(5) = 4.8506 Pr = 0.434						

	School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
How effective do you think WhatsApp groups are to learn a new teaching method				
Somewhat ineffective	0.0	7.1	3.5	0.085
Neither effective nor ineffective	28.2	28.2	28.2	

	School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
Somewhat effective	51.8	43.5	47.7	
Very effective	20.0	21.2	20.6	
How effective do you think in-person conversations are to learn a new teaching method?				
Neither effective nor ineffective	1.2	3.5	2.4	0.597
Somewhat effective	25.9	25.9	25.9	
Very effective	72.9	70.6	71.8	
How effective do you think online resources are to learn a new teaching method?				
Neither effective nor ineffective	0.9	0.4	0.7	0.574
Somewhat effective	24.3	21.3	22.7	
Very effective	74.8	78.3	76.6	
Total				
How effective do you think school resources with are to learn a new teaching met				
Somewhat ineffective	0.0	0.3	0.2	0.53
Neither effective nor ineffective	0.3	0.0	0.2	
Somewhat effective	7.8	6.8	7.3	
Very effective	91.9	92.9	92.4	
How effective do you think support from school based mentors are to learn a new teaching method?				
Neither effective nor ineffective	5.9	8.2	7.1	0.691
Somewhat effective	32.9	36.5	34.7	
Very effective	61.2	55.3	58.2	

	School leaders			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
How effective do you think support from school leadership are to learn a new teaching methodology?				
Neither effective nor ineffective	0.0	2.4	1.2	0.186
Somewhat effective	21.2	28.2	24.7	
Very effective	78.8	69.4	74.1	
Total				
How effective do you think support from community practices are to learn a new teaching method?				
Neither effective nor ineffective	2.4	4.7	3.5	0.29
Somewhat effective	21.2	29.4	25.3	
Very effective	76.5	65.9	71.2	
Are there other resources that were not mentioned in the list that teachers can use to learn a new teaching method?				
No	71.8	74.1	72.9	0.73
Yes	28.2	25.9	27.1	

	Teachers			
	Control(%)	Treatment(%)	Total(%)	chi2 sig
Are WhatsApp groups effective?				
No	56.1	50.6	53.4	0.105
Yes	43.9	49.4	46.6	
Are In-person discussions with other teachers effective?				
No	9.9	13.7	11.8	0.091

	Teachers			
	Control(%)	Treatment(%)	Total(%)	chi2 sig
Yes	90.1	86.4	88.2	
Are online resources effective?				
No	49.5	42.6	46.1	0.043
Yes	50.5	57.4	54.0	
Are school resources effective?				
No	24.1	27.5	25.8	0.248
Yes	75.9	72.5	74.2	
Are support from School-Based Mentors effective?				
No	30.0	26.4	28.2	0.244
Yes	70.1	73.7	71.9	
Are support from school leadership effective?				
No	30.0	26.4	28.2	0.766
Yes	70.1	73.7	71.9	
Are support from Communities of Practice effective?				
No	22.2	28.5	25.3	0.035
Yes	77.8	71.5	74.7	
Are they other effective resources not mentioned?				
No	99.8	99.3	99.5	0.317
Yes	0.2	0.7	0.5	

	Teachers		
	No	Yes	Not applicable
Is there a Community of Practice that is regularly held in your school?			
Control %	12	88	0
Treatment %	11	89	0
Total %	11	89	0
Pearson chi2(1) = 0.2452 Pr = 0.620			
Are you a member of a Community of Practice? (COP)			
Control %	4	96	0
Treatment %	5	95	0
Total %	4	96	0
Pearson chi2(1) = 0.7650 Pr = 0.382			
Did you participate in any Communities of Practice meetings in the past term, before schools closed?			
Control %	11	88	1
Treatment %	11	89	1
Total %	11	88	1
Pearson chi2(2) = 0.0066 Pr = 0.997			

	Teachers			
	Once a week	Once every two weeks	Once a month	Less than once a month
How often were Communities of Practice meetings held in your school?				
Control %	63	21	15	1
Treatment %	62	21	16	1
Total %	62	21	16	1
Pearson chi2(4) = 1.2574 Pr = 0.869				
How often have you attended Communities of Practice meetings in your school in the past term, before schools closed?				
Control %	58	23	17	2
Treatment %	54	24	17	5
Total %	56	24	17	3
Pearson chi2(3) = 3.8306 Pr = 0.280				

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Communities of Practice do not focus enough on supporting the continuous professional development of teachers					
Control %	3	5	3	57	32
Treatment %	2	10	1	57	30
Total %	2	7	2	57	31
Pearson chi2(4) = 8.7457 Pr = 0.068					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Communities of Practice are committed to help teachers to overcome challenges when applying new learning methods in the classroom					
Control %	0	1	1	49	48
Treatment %	0	1	1	54	44
Total %	0	1	1	51	46
Pearson chi2(4) = 1.9567 Pr = 0.744					
Communities of Practice are not helpful to integrate gender-responsive learning in my lessons					
Control %	1	1	1	58	39
Treatment %	1	3	0	60	37
Total %	1	2	1	59	38
Pearson chi2(4) = 3.3045 Pr = 0.508					
The support I received from the Community of Practice helped me to overcome a challenge.					
Control %	0	1	0	51	48
Treatment %	0	0	0	52	47
Total %	0	0	0	52	47
Pearson chi2(3) = 3.0352 Pr = 0.386					
The support I received from the Community of practice informed my teaching practices.					
Control %	0	0	1	53	46

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Treatment %	0	0	0	50	50
Total %	0	0	0	51	48
Pearson chi2(3) = 4.7803 Pr = 0.189					

	Teachers	
	No	Yes
Is there an appointed School-Based Mentor you can refer to in your school?		
Control %	3	97
Treatment %	2	98
Total	3	97
Pearson chi2(1) = 1.3467 Pr = 0.246		
Have you received support from a School-Based Mentor in the past term?		
Control %	22	78
Treatment %	19	81
Total	20	80
Pearson chi2(1) = 1.0212 Pr = 0.312		

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
School-Based Mentors do not focus enough on supporting the continuous professional development of teachers					
Control %	1	11	7	53	28
Treatment %	0	10	3	55	32
Total %	1	10	5	54	30
Pearson chi2(4) = 13.6018 Pr = 0.009					
School-Based Mentors are committed to help teachers to overcome challenges when applying new learning methods in the classroom					
Control %	0	4	2	55	38
Treatment %	0	4	2	52	42
Total %	0	4	2	53	40
Pearson chi2(4) = 2.3913 Pr = 0.664					
School-Based Mentors are helpful to integrate gender-responsive learning in my lessons					
Control %	0	4	2	55	38
Treatment %	0	4	2	52	42
Total %	0	4	2	53	40
Pearson chi2(4) = 2.3144 Pr = 0.678					
The support I received from a School-Based Mentor was not helpful for me to overcome the challenge I was facing.					
Control %	0	3	1	56	40
Treatment %	0	2	1	55	41
Total %	0	3	1	56	41

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(4) = 7.0101 Pr = 0.135					
The support I received from a School-Based Mentor informed my teaching practices					
Control %	0	3	1	56	40
Treatment %	0	2	1	55	41
Total %	0	3	1	56	41
Pearson chi2(4) = 1.6062 Pr = 0.808					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The headteacher in my school is committed to supporting the continuous professional development of teachers.					
Control %	0	3	4	46	47
Treatment %	0	3	2	50	44
Total %	0	3	3	48	45
Pearson chi2(4) = 2.6277 Pr = 0.622					
The headteacher in my school is not interested in supporting teachers to adopt new learning methods in the classroom.					
Control %	0	3	2	55	40
Treatment %	1	4	1	54	40
Total %	1	3	2	54	40
Pearson chi2(4) = 3.5261 Pr = 0.474					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The headteacher in my school supports me to integrate gender-responsive learning in my lessons.					
Control %	0	3	1	48	48
Treatment %	1	1	1	51	46
Total %	0	2	1	49	47
Pearson chi2(4) = 5.6873 Pr = 0.224					
The headteacher in my school does not support me to work with students who experience disabilities.					
Control %	0	3	3	58	36
Treatment %	1	6	2	56	36
Total %	0	4	3	57	36
Pearson chi2(4) = 6.0281 Pr = 0.197					
The headteacher in my school regularly conducts classroom observations to monitor teachers' instructional practices.					
Control %					
Treatment %	0	2	1	53	44
Total %	0	2	0	50	48
Pearson chi2(3) = 4.4550 Pr = 0.216	0	2	1	52	46

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
In the past term, did the headteacher in your school allow at least 1 hour per week for teachers to complete professional development or participate in Communities of Practice?				
No	2.6	2.6	2.6	0.237
Yes, at least one hour per week, but only in some weeks	20.9	15.8	18.3	
Yes, at least one hour per week every week	76.0	80.7	78.3	
Not applicable	0.5	0.9	0.7	
Have you received encouragement by the headteacher in your school to adopt new teaching methods in the past term?				
No	11.3	9.9	10.6	0.583
I received some occasional encouragement	26.7	24.2	25.4	
I received consistent encouragement	61.6	64.9	63.3	
Not applicable	0.5	0.9	0.7	

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
I have enough time after lessons to prepare activities for the classroom				
Never	2.6	5.2	3.9	0.275
Sometimes	47.2	46.8	47.0	
Often	17.0	16.5	16.7	
Always	33.3	31.5	32.4	
I have enough time during my classes to try out new teaching methods.				
Never	0.9	3.3	2.1	0.119
Sometimes	28.3	28.9	28.6	

Often	27.6	26.1	26.9
Always	43.2	41.7	42.4

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
I have access to indoor play spaces.				
Never	24.1	21.4	22.8	167
Sometimes	44.9	41.2	43.0	
Often	9.5	13.7	11.6	
Always	21.5	23.8	22.6	
Pearson chi2(3) = 5.0656 Pr = 0.167				
I have access to outdoor play spaces.				
Never	2.6	1.7	2.1	0.112
Sometimes	28.1	21.9	25.0	
Often	26.7	31.1	28.9	
Always	42.6	45.4	44.0	
Pearson chi2(3) = 5.9994 Pr = 0.112				
I have access to physical play resources (e.g., books, playdough).				
Never	14.9	11.1	13.0	0.219
Sometimes	51.5	50.1	50.8	
Often	17.0	20.9	19.0	
Always	16.6	17.9	17.2	
Pearson chi2(3) = 4.4222 Pr = 0.219				

	Teachers			
	Control(%)	Treatment(%)	Total(%)	Chi2 sig
I have access to online play resources (e.g., tips for games and activities)				
Never	29.7	24.0	26.9	
Sometimes	48.4	48.0	48.2	
Often	10.6	13.2	11.9	
Always	11.3	14.8	13.1	
Pearson chi2(3) = 5.7526 Pr = 0.124				

	Teachers				School leaders			
	Control (%)	Treatment(%)	Total(%)	Chi 2 sig	Control(%)	Treatment(%)	Total(%)	Chi 2 sig
Did you attend the face to face orientation session about the E-certification course?								
No	75.0	24.1	24.9	0.02	0	49.4	49.4	.
Yes	25.0	75.9	75.1		0	49.4	49.4	
Not applicable	0.0	0.0	0.0		0	1.2	1.2	
The face to face orientation session about the E-certification course was useful to me.								
Neither agree nor disagree	0.0	1.6	1.6	0.492	0	2.4	2.4	.
Agree	100.0	41.2	41.5		0	35.7	35.7	
Strongly agree	0.0	57.3	57.0		0	61.9	61.9	

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Play is only important for learning for preschool aged children.						
Control %	0	4	1	65	31	0
Treatment %	1	2	1	60	35	0
Total %	1	3	1	62	33	0
Pearson chi2(4) = 1.6367 Pr = 0.802						
Students learn better when they have opportunities to be involved actively in learning activities.						
Control %	0	2	38	60	0	0
Treatment %	0	0	34	65	1	0
Total %	0	1	36	62	1	0
Pearson chi2(3) = 3.2985 Pr = 0.348						
If children don't understand, they should try to find the answer independently before asking the teacher.						
Control %	2	28	5	53	12	0
Treatment %	4	39	2	44	12	0
Total %	3	34	4	48	12	0
Pearson chi2(4) = 3.0682 Pr = 0.546						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Working in small groups is important for children's learning.						
Control %	0	1	0	39	60	0
Treatment %	0	0	0	40	60	0
Total %	0	1	0	39	60	0
Pearson chi2(2) = 1.0149 Pr = 0.602						
It is important for classrooms to be quiet for learning to take place.						
Control %	38	44	7	12	0	0
Treatment %	36	46	7	11	0	0
Total %	37	45	7	11	0	0
Pearson chi2(3) = 0.1211 Pr = 0.989						
Students learn best when they are sitting still at their desks.						
Control %	21	44	8	27	0	0
Treatment %	21	35	11	31	2	0
Total %	21	39	9	29	1	0
Pearson chi2(4) = 3.1650 Pr = 0.531						
Children learn best from the teacher, not from their peers.						
Control %	7	60	7	25	1	0

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Treatment %	2	61	8	21	7	0
Total %	5	61	8	23	4	0
Pearson chi2(4) = 5.8888 Pr = 0.208						
Children should be able to choose their own learning activities in the classroom.						
Control %	2	58	13	25	2	0
Treatment %	5	55	8	26	6	0
Total %	4	56	11	25	4	0
Pearson chi2(4) = 2.9062 Pr = 0.574						
Parents welcome more play-based approaches to learning in the classroom						
Control %	1	9	14	41	22	12
Treatment %	0	4	12	68	12	5
Total %	1	6	13	55	17	8
Pearson chi2(5) = 14.5072 Pr = 0.013						

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Play is only important for learning for preschool aged children.					
Control %	5	4	2	54	36
Treatment %	4	3	1	54	38
Total %	4	3	2	54	37
Pearson chi2(4) = 1.6863 Pr = 0.793					
Students learn better when they have opportunities to be involved actively in learning activities.					
Control %	0	0	0	43	57
Treatment %	0	0	0	38	62
Total %	0	0	0	41	59
Pearson chi2(2) = 3.1190 Pr = 0.210					
If children don't understand, they should try to find the answer independently before asking the teacher.					
Control %	8	38	3	40	12
Treatment %	6	33	2	48	11
Total %	7	36	2	44	11
Pearson chi2(4) = 5.8418 Pr = 0.211					
Working in small groups is important for children's learning.					
Control %	0	0	0	39	60

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Treatment %	0	0	0	38	61
Total %	0	0	0	39	61
Pearson chi2(4) = 2.1428 Pr = 0.710					
It is important for classrooms to be quiet for learning to take place.					
Control %	50	42	1	5	1
Treatment %	50	39	4	5	2
Total %	50	41	2	5	1
Pearson chi2(4) = 6.5472 Pr = 0.162					
Students learn best when they are sitting still at their desks.					
Control %	40	47	2	8	2
Treatment %	38	42	3	15	2
Total %	39	45	2	12	2
Pearson chi2(4) = 9.3016 Pr = 0.054					
Children learn best from the teacher, not from their peers.					
Control %	16	35	7	37	5
Treatment %	11	31	9	43	6
Total %	14	33	8	40	6

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(4) = 10.0203 Pr = 0.040					
Children should be able to choose their own learning activities in the classroom.					
Control %	9	65	5	18	2
Treatment %	12	62	5	18	3
Total %	10	64	5	18	2
Pearson chi2(4) = 3.0623 Pr = 0.547					
Parents welcome more play-based approaches to learning in the classroom					
Control %	0	8	11	56	25
Treatment %	1	10	9	53	27
Total %	1	9	10	54	26
Pearson chi2(4) = 3.5441 Pr = 0.471					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Teachers need to ensure that all students are doing the same things in order to get the same results.					
Control %	0	41	27	25	7
Treatment %	0	31	33	33	4
Total %	0	36	30	29	5
Pearson chi2(3) = 3.8181 Pr = 0.282					
Students should do hands-on activities after they have learned the related concepts.					
Control %	0	5	36	59	0
Treatment %	0	19	31	51	0
Total %	0	12	34	55	0
Pearson chi2(2) = 8.1655 Pr = 0.017					
When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.					
Control %	0	59	28	13	0
Treatment %	1	56	29	12	1
Total %	1	58	29	12	1
Pearson chi2(4) = 2.1088 Pr = 0.716					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.					
Control %	0	41	31	26	2
Treatment %	0	36	28	32	4
Total %	0	39	29	29	3
Pearson chi2(3) = 1.0326 Pr = 0.793					
Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.					
Control %	0	0	32	68	0
Treatment %	0	4	24	73	0
Total %	0	2	28	71	0
Pearson chi2(2) = 4.1759 Pr = 0.124					
Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.					
Control %	0	9	12	24	55
Treatment %	0	6	13	22	59
Total %	0	8	12	23	57

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(3) = 0.8584 Pr = 0.835					
Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.					
Control %	0	2	40	58	0
Treatment %	0	2	25	73	0
Total %	0	2	32	65	0
Pearson chi2(2) = 4.5952 Pr = 0.100					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Teachers need to ensure that all students are doing the same things in order to get the same results.					
Control %	0	57	25	16	1
Treatment %	0	55	25	18	2
Total %	0	56	25	17	2
Pearson chi2(3) = 1.6589 Pr = 0.646					
Students should do hands-on activities after they have learned the related concepts.					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %					
Treatment %	0	13	28	58	0
Total %	1	12	31	56	0
	0	13	30	57	0
Pearson chi2(3) = 2.1742 Pr = 0.537					
When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.					
Control %	0	70	21	8	1
Treatment %	0	67	22	10	0
Total %	0	68	22	9	1
Pearson chi2(3) = 3.2281 Pr = 0.358					
Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.					
Control %	0	52	20	23	4
Treatment %	0	51	26	20	2
Total %	0	52	23	22	3
Pearson chi2(3) = 7.0870 Pr = 0.069					
Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %	0	2	26	72	0
Treatment %	0	1	27	72	0
Total %	0	2	27	72	0
Pearson chi2(2) = 0.3039 Pr = 0.859					
Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.					
Control %	0	19	12	28	42
Treatment %	0	22	13	26	40
Total %	0	20	12	27	41
Pearson chi2(3) = 1.9681 Pr = 0.579					
Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.					
Control %	0	5	30	64	0
Treatment %	0	6	28	66	0
Total %	0	6	29	65	0
Pearson chi2(2) = 0.6054 Pr = 0.739					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The needs of students with disabilities can be best served in special, separate classes or schools.					
Control %	35	25	1	28	11
Treatment %	18	19	2	42	19
Total %	26	22	2	35	15
Pearson chi2(4) = 10.3690 Pr = 0.035					
Girls and boys have the same needs in the classroom.					
Control %	14	40	2	41	2
Treatment %	21	42	1	31	5
Total %	18	41	2	36	4
Pearson chi2(4) = 3.5850 Pr = 0.465					
Girls and boys must have equal opportunity to lead group discussions activities in my class.					
Control %	0	0	0	24	76
Treatment %	0	0	0	28	72
Total %	0	0	0	26	74
Pearson chi2(1) = 0.4906 Pr = 0.484					
Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.					

	School leaders				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %	0	0	0	26	74
Treatment %	0	0	0	27	73
Total %	0	0	0	26	74
Pearson chi2(1) = 0.0302 Pr = 0.862					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The needs of students with disabilities can be best served in special, separate classes or schools.					
Control %	38	38	1	16	6
Treatment %	46	35	2	12	5
Total %	42	37	2	14	5
Pearson chi2(4) = 6.8939 Pr = 0.142					
Girls and boys have the same needs in the classroom.					
Control %	45	41	2	11	1
Treatment %	46	37	0	15	2
Total %	45	39	1	13	2

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(4) = 8.7351 Pr = 0.068					
Teachers must adapt their teaching practices to ensure their lessons are accessible to both girls and boys.					
Control %	1	5	1	45	48
Treatment %	1	7	0	39	54
Total %	1	6	1	42	51
Pearson chi2(4) = 8.1219 Pr = 0.087					
Girls and boys must have equal opportunity to lead group discussions activities in my class.					
Control %	0	0	0	27	73
Treatment %	0	0	0	24	76
Total %	0	0	0	25	75
Pearson chi2(1) = 0.7887 Pr = 0.374					
Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.					
Control %	0	0	0	26	74
Treatment %	0	0	0	24	76
Total %	0	0	0	25	75
Pearson chi2(1) = 0.3314 Pr = 0.565					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I have trouble adapting classroom activities to the different ability levels of different groups of students.					
Control %	2	27	6	48	17
Treatment %	2	32	5	49	12
Total %	2	29	6	49	14
Pearson chi2(4) = 5.1889 Pr = 0.268					
I feel confident I can integrate participatory approaches, such as role-play or drawing, into my lessons.					
Control %	0	1	2	47	50
Treatment %	0	1	1	43	55
Total %	0	1	2	45	52
Pearson chi2(4) = 4.4416 Pr = 0.350					
I do not feel confident I can integrate playful activities into my lessons.					
Control %	1	6	4	60	28
Treatment %	1	4	2	60	33
Total %	1	5	3	60	31
Pearson chi2(4) = 6.9982 Pr = 0.136					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I feel confident I have a large repertoire of playful activities to choose from for my lessons.					
Control %	0	5	5	49	40
Treatment %	0	3	2	48	47
Total %	0	4	4	49	44
Pearson chi2(4) = 10.3267 Pr = 0.035					
I am able to develop lesson plans that include playful activities.					
Control %	1	9	8	54	27
Treatment %	1	5	7	57	30
Total %	1	7	7	56	29
Pearson chi2(4) = 6.0838 Pr = 0.193					
If students stop working, I am able to put them back on track.					
Control %	0	0	0	57	43
Treatment %	0	0	0	55	44
Total %	0	0	0	56	43
Pearson chi2(4) = 3.0758 Pr = 0.545					
I am always able to clearly communicate my expectations to my students.					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %	0	0	1	54	45
Treatment %	0	0	0	55	44
Total %	0	0	1	55	44
Pearson chi2(4) = 1.2632 Pr = 0.868					
There are some students whose behaviour I cannot manage.					
Control %	1	9	4	63	23
Treatment %	3	13	3	57	25
Total %	2	11	3	60	24
Pearson chi2(4) = 8.8702 Pr = 0.064					
When the lesson begins, I have to wait quite a long time for students to be quiet down.					
Control %	1	4	1	67	28
Treatment %	1	3	0	63	32
Total %	1	3	1	65	30
Pearson chi2(4) = 4.9016 Pr = 0.298					
I am able to gain students' active participation and interest in the content of my lessons.					
Control %	0	0	0	38	62
Treatment %	0	0	0	38	61

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Total %	0	0	0	38	62
Pearson chi2(3) = 2.0131 Pr = 0.570					

	School leaders		
Do you know what Learning through Play, or play-based learning, is?	No	Yes	Somewhat
Control %	14	61	25
Treatment %	5	69	26
Total %	9	65	25
Pearson chi2(2) = 4.4647 Pr = 0.107			

	Teachers		
Do you know what Learning through Play, or play-based learning, is?	No	Yes	Somewhat
Control %	22	51	27
Treatment %	11	73	16
Total %	16	62	22
Pearson chi2(2) = 44.8254 Pr = 0.000			

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Teachers in my school should adopt Learning through Play methodologies in their classes.						
Control %	1	1	0	44	53	0
Treatment %	0	0	1	58	41	0
Total %	1	1	1	51	47	0
Pearson chi2(4) = 5.9486 Pr = 0.203						
Learning through Play approaches are fun but do not result in improvements in learning outcomes.						
Control %	3	3	4	66	25	0
Treatment %	2	4	1	68	25	0
Total %	3	3	3	67	25	0
Pearson chi2(4) = 1.3691 Pr = 0.850						
Learning through Play approaches distract students from curriculum content.						
Control %	0	1	3	67	29	0
Treatment %	0	0	2	62	36	0
Total %	0	1	3	64	32	0
Pearson chi2(3) = 1.8796 Pr = 0.598						
As a school leader, I am committed to help teachers with integrating Learning through Play in their classroom.						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Control %	15	40	7	25	14	0
Treatment %	5	38	4	38	15	0
Total %	10	39	5	32	14	0
Pearson chi2(3) = 2.7231 Pr = 0.436						
As a school leader, I have the resources needed to support teachers with integrating Learning through Play in their classroom.						
Control %	15	40	7	25	14	0
Treatment %	5	38	4	38	15	0
Total %	10	39	5	32	14	0
Pearson chi2(4) = 7.0676 Pr = 0.132						
As a school leader, I have the knowledge needed to support teachers with integrating Learning through Play in their classroom.						
Control %	4	30	14	41	10	1
Treatment %	1	26	6	62	5	0
Total %	3	28	10	52	7	1
Pearson chi2(5) = 9.1171 Pr = 0.104						
Learning through Play activities enable teachers to use a variety of assessment strategies to assess children's learning.						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Control %	0	0	1	64	34	0
Treatment %	0	1	2	58	38	0
Total %	0	1	2	61	36	0
Pearson chi2(3) = 1.5648 Pr = 0.667						
Learning through Play activities enable teachers to respond to difficult questions from learners.						
Control %	1	5	63	27	3	0
Treatment %	4	6	60	30	0	0
Total %	3	6	62	29	1	0
Pearson chi2(4) = 3.1624 Pr = 0.531						
Learning through Play activities enable teachers to assess children's understanding of basic concepts.						
Control %	0	1	70	27	1	0
Treatment %	1	1	63	35	0	0
Total %	1	1	66	31	1	0
Pearson chi2(4) = 2.9256 Pr = 0.570						
Learning through Play activities enable teachers to adjust lessons to the appropriate level of children.						
Control %	0	0	52	47	1	0
Treatment %	0	1	47	52	0	0
Total %	0	1	49	49	1	0

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Pearson chi2(3) = 2.4331 Pr = 0.488						
Learning through Play activities enable teachers to provide alternative paths to learning when children are confused or do not understand.						
Control %	0	1	41	56	1	0
Treatment %	1	0	56	43	0	0
Total %	1	1	49	49	1	0
Pearson chi2(4) = 6.0745 Pr = 0.194						
Learning through Play activities enable teachers to keep the classroom quiet when they are teaching.						
Control %	0	27	52	4	14	3
Treatment %	1	16	47	9	25	2
Total %	1	21	49	6	19	3
Pearson chi2(5) = 7.0215 Pr = 0.219						
Learning through Play activities enable teachers to provide equal learning chances for boys and girls.						
Control %	0	1	3	47	49	0
Treatment %	0	1	2	48	48	0
Total %	0	1	3	47	49	0
Pearson chi2(3) = 0.0470 Pr = 0.997						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Learning through Play activities enable teachers to provide better learning chances for students with disabilities.						
Control %	8	12	52	25	3	0
Treatment %	10	9	59	22	0	0
Total %	9	10	56	23	1	0
Pearson chi2(4) = 3.2918 Pr = 0.510						
Learning through Play activities enable teachers to explain to children what to do when they encounter a challenge.						
Control %	34	58	7	1	0	0
Treatment %	32	64	0	4	0	0
Total %	33	61	3	3	0	0
Pearson chi2(3) = 6.6859 Pr = 0.083						
Learning through Play activities enable teachers to motivate children who show low interest in learning.						
Control %	0	0	29	71	0	0
Treatment %	0	2	43	54	0	0
Total %	0	1	36	62	0	0
Pearson chi2(2) = 5.7666 Pr = 0.056						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Learning through Play activities enable teachers to help children to believe or think they can do well in class activities.						
Control %	0	0	4	66	30	0
Treatment %	0	2	4	60	33	0
Total %	0	1	4	63	32	0
Pearson chi2(3) = 2.1106 Pr = 0.550						
Learning through Play activities enable teachers to help children to memorize the lesson content better.						
Control %	62	34	3	1	0	0
Treatment %	52	42	4	2	0	0
Total %	56	38	3	2	0	0
Pearson chi2(3) = 1.5984 Pr = 0.660						
Learning through Play activities enable teachers to help children to value learning.						
Control %	0	0	4	51	45	0
Treatment %	0	1	1	54	43	0
Total %	0	1	3	53	44	0
Pearson chi2(3) = 2.2543 Pr = 0.521						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Learning through Play activities enable teachers to help children follow what the teacher is telling them to do.						
Control %	45	52	3	0	0	0
Treatment %	37	60	1	1	0	0
Total %	41	56	2	1	0	0
Pearson chi2(3) = 2.4580 Pr = 0.483						
Learning through Play activities enable teachers to help children think critically.						
Control %	0	0	1	37	62	0
Treatment %	0	0	1	51	48	0
Total %	0	0	1	44	55	0
Pearson chi2(2) = 2.9032 Pr = 0.234						
Learning through Play activities enable teachers to help children develop creativity.						
Control %	0	0	0	42	58	0
Treatment %	0	0	1	40	59	0
Total %	0	0	1	41	58	0
Pearson chi2(2) = 1.0030 Pr = 0.606						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Learning through Play activities enable teachers to identify children who are struggling with their learning or falling behind in class.						
Control %	0	0	7	48	45	0
Treatment %	1	4	2	59	32	1
Total %	1	2	5	54	38	1
Pearson chi2(5) = 8.7604 Pr = 0.119						
Learning through Play activities enable teachers to identify children that disrupt the class so that they can be punished.						
Control %	5	15	5	62	12	
Treatment %	2	14	9	59	16	
Total %	4	14	7	60	14	
Pearson chi2(4) = 1.8984 Pr = 0.754						
Learning through Play activities enable teachers to help improve children's reading skills.						
Control %	0	12	10	52	26	0
Treatment %	1	11	5	70	12	0
Total %	1	12	7	62	19	0
Pearson chi2(4) = 8.0173 Pr = 0.091						

	School leaders					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Learning through Play activities enable teachers to help improve children's numeracy skills.						
Control %	0	4	5	66	25	0
Treatment %	1	5	2	60	31	0
Total %	1	5	4	63	28	0
Pearson chi2(4) = 2.5507 Pr = 0.636						

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am motivated to use Learning through Play in the classroom to improve my teaching practices.					
Control %	0	0	1	37	62
Treatment %	0	1	1	35	64
Total %	0	0	1	36	63
Pearson chi2(3) = 0.8236 Pr = 0.844					
Learning through play activities enable me to use a variety of assessment strategies to assess children's learning.					
Control %	0	1	2	52	46
Treatment %	0	0	2	49	49

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Total %	0	1	2	51	47
Pearson chi2(3) = 1.8609 Pr = 0.602					
Learning through play activities enable me to respond to difficult questions from learners.					
Control %	0	4	4	53	39
Treatment %	0	3	1	56	39
Total %	0	3	2	55	39
Pearson chi2(4) = 4.8419 Pr = 0.304					
Learning through play activities enable me to assess children's understanding of basic concepts.					
Control %	0	2	3	53	42
Treatment %	0	1	2	53	44
Total %	0	2	2	53	43
Pearson chi2(4) = 2.7596 Pr = 0.599					
Learning through play activities enable me to adjust lessons to the appropriate level of children.					
Control %	0	1	1	51	47
Treatment %	0	1	1	55	44
Total %	0	1	1	53	45

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(3) = 1.0883 Pr = 0.780					
Learning through play activities enable me to provide alternative paths to learning when children are confused or do not understand.					
Control %	0	1	2	51	45
Treatment %	0	1	1	52	47
Total %	0	1	1	52	46
Pearson chi2(4) = 4.7594 Pr = 0.313					
Learning through play activities enable me to keep the classroom quiet when I am teaching					
Control %	33	50	4	13	1
Treatment %	31	51	4	11	2
Total %	32	51	4	12	1
Pearson chi2(4) = 3.5660 Pr = 0.468					
Learning through play activities enable me to provide equal learning chances for boys and girls.					
Control %	0	1	0	41	58
Treatment %	0	0	0	41	58
Total %	0	0	0	41	58
Pearson chi2(4) = 1.4014 Pr = 0.844					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Learning through play activities enable me to provide better learning chances for students with disabilities.					
Control %	1	7	6	47	39
Treatment %	1	6	4	49	41
Total %	1	6	5	48	40
Pearson chi2(4) = 2.7566 Pr = 0.599					
Learning through play activities enable me to explain to children what to do when they encounter a challenge.					
Control %	39	56	1	3	0
Treatment %	41	55	2	2	0
Total %	40	55	1	3	0
Pearson chi2(4) = 2.2537 Pr = 0.689					
Learning through Play activities enable me to motivate children who show low interest in learning.					
Control %					
Treatment %	0	1	0	34	64
Total %	0	0	0	35	65
	0	0	0	35	64
Pearson chi2(4) = 1.6448 Pr = 0.801					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Learning through Play activities enable me to help children to believe or think they can do well in class activities.					
Control %	0	3	3	51	43
Treatment %	0	4	2	48	46
Total %	0	3	2	50	44
Pearson chi2(4) = 2.1176 Pr = 0.714					
Learning through Play activities enable me to help children to memorize the lesson content better.					
Control %	64	36	0	0	0
Treatment %	64	34	1	1	0
Total %	64	35	1	0	0
Pearson chi2(3) = 1.0585 Pr = 0.787					
Learning through Play activities enable me to help children to value learning.					
Control %	0	1	1	48	50
Treatment %	0	0	1	47	52
Total %	0	1	1	48	51
Pearson chi2(3) = 2.4283 Pr = 0.488					
Learning through Play activities enable me to help children follow what the teacher is telling them to do.					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Control %	46	53	1	1	0
Treatment %	51	47	1	1	0
Total %	48	50	1	1	0
Pearson chi2(3) = 2.3407 Pr = 0.505					
Learning through Play activities enable me to help children think critically.					
Control %	0	2	3	40	56
Treatment %	0	1	2	35	62
Total %	0	1	2	38	59
Pearson chi2(3) = 3.9692 Pr = 0.265					
Learning through Play activities enable me to help children develop creativity.					
Control %	0	1	2	40	58
Treatment %	0	0	2	40	58
Total %	0	0	2	40	58
Pearson chi2(3) = 3.6975 Pr = 0.296					
Learning through Play activities enable me to identify children who are struggling with their learning or falling behind in class.					
Control %	0	3	1	58	38

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Treatment %	1	3	2	51	43
Total %	1	3	1	54	41
Pearson chi2(4) = 6.5855 Pr = 0.159					
Learning through Play activities enable me to identify children that disrupt the class so that they can be punished.					
Control %	15	31	7	41	7
Treatment %	14	31	6	38	10
Total %	15	31	6	39	9
Pearson chi2(4) = 2.7308 Pr = 0.604					
Learning through Play activities enable me to help improve children's reading skills.					
Control %	0	11	5	53	31
Treatment %	1	12	3	48	36
Total %	1	12	4	50	34
Pearson chi2(4) = 9.1039 Pr = 0.059					
Learning through Play activities enable me to help improve children's numeracy skills.					
Control %	0	5	2	58	34
Treatment %	1	5	3	55	37
Total %	0	5	3	56	36
Pearson chi2(4) = 0.9898 Pr = 0.911					

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
I let students work in small groups to come up with a joint solution to a problem or task.					
Control %	2	1	2	20	75
Treatment %	1	0	2	19	78
Total %	1	0	2	20	76
Pearson chi2(4) = 2.7040 Pr = 0.609					
I let students present their project or findings to the class.					
Control %	4	1	4	17	74
Treatment %	3	0	2	14	81
Total %	3	1	3	15	78
Pearson chi2(4) = 8.1873 Pr = 0.085					
I let students decide what to do in a group activity					
Control %	33	3	5	22	37
Treatment %	35	2	7	20	36
Total %	34	2	6	21	37
Pearson chi2(4) = 4.0294 Pr = 0.402					
I use students' background and interests in developing lessons and learning objectives.					

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
Control %	8	1	4	13	74
Treatment %	8	1	4	14	72
Total %	8	1	4	14	73
Pearson chi2(4) = 0.4952 Pr = 0.974					
I connect my lessons to students' lives outside school.					
Control %	3	1	1	8	88
Treatment %	2	1	2	7	87
Total %	2	1	1	8	88
Pearson chi2(4) = 4.5970 Pr = 0.331					
I let students try multiple ways to reach an answer even though it would be faster for me to tell them.					
Control %	2	0	1	4	92
Treatment %	1	0	0	9	89
Total %	2	0	1	7	91
Pearson chi2(4) = 9.0181 Pr = 0.061					
I let students evaluate and reflect upon their own work in class.					
Control %	43	2	4	17	33
Treatment %	45	1	6	16	32
Total %	44	2	5	17	33

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
Pearson $\chi^2(4) = 4.5838$ Pr = 0.333					
I examine students work and assessments to inform my teaching.					
Control %	1	0	1	6	92
Treatment %	1	0	1	6	92
Total %	1	0	1	6	92
Pearson $\chi^2(3) = 1.0202$ Pr = 0.796					
I use questions directed to specific students to monitor their understanding and learning during a lesson.					
Control %	4	0	1	8	87
Treatment %	1	1	1	6	91
Total %	2	0	1	7	89
Pearson $\chi^2(4) = 11.1411$ Pr = 0.025					
I help students build on each other's ideas to solve problems.					
Control %	7	0	2	13	77
Treatment %	6	2	3	15	74
Total %	6	1	3	14	76
Pearson $\chi^2(4) = 4.7841$ Pr = 0.310					

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
I encourage children to have discussions with each other without my involvement.					
Control %	18	1	5	19	58
Treatment %	20	1	6	14	59
Total %	19	1	5	16	58
Pearson chi2(4) = 3.6316 Pr = 0.458					
I facilitate a lesson where different children are working on different things.					
Control %	26	3	5	19	48
Treatment %	23	2	5	16	54
Total %	24	2	5	17	51
Pearson chi2(4) = 3.2765 Pr = 0.513					
I try to include children that are not participating in the lesson.					
Control %	1	0	0	1	98
Treatment %	1	0	0	1	98
Total %	1	0	0	1	98
Pearson chi2(3) = 1.6209 Pr = 0.655					
I tell students who plays each role in a group activity.					
Control %	2	1	2	16	78

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
Treatment %	2	1	3	12	81
Total %	2	1	3	14	79
Pearson chi2(4) = 3.0426 Pr = 0.551					
I encourage students to compare themselves to their peers to understand who did a better job.					
Control %	3	1	3	12	81
Treatment %	5	0	3	10	82
Total %	4	1	3	11	82
Pearson chi2(4) = 4.4816 Pr = 0.345					
I focus on theoretical concepts when teaching.					
Control %	20	3	6	22	49
Treatment %	21	2	9	20	49
Total %	20	2	8	21	49
Pearson chi2(4) = 5.0850 Pr = 0.279					
I tell students the right answer and ask them to repeat it to make sure they learn well.					
Control %	5	0	1	4	90
Treatment %	5	1	1	3	89
Total %	5	0	1	3	90
Pearson chi2(4) = 2.4268 Pr = 0.658					

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
I evaluate students' performance and tell them what to do to improve it.					
Control %	1	0	0	6	93
Treatment %	0	0	2	6	92
Total %	0	0	1	6	92
Pearson chi2(4) = 7.6905 Pr = 0.104					
I assess students' understanding only at the end of the lesson.					
Control %	26	1	2	12	58
Treatment %	30	2	4	15	49
Total %	28	2	3	13	54
Pearson chi2(4) = 7.2649 Pr = 0.123					
I encourage children to compete with others to motivate them to solve problems.					
Control %	3	0	1	5	91
Treatment %	2	0	1	6	90
Total %	2	0	1	5	91
Pearson chi2(4) = 3.4288 Pr = 0.489					
I facilitate a lesson where children are all doing the same thing at the same time.					

	Teachers				
	Never	Once or twice in the last term	Once or twice a month	Once or twice a week	Daily or almost daily
Control %	4	1	1	14	79
Treatment %	5	0	1	11	82
Total %	5	1	1	13	80
Pearson chi2(4) = 8.4025 Pr = 0.078					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I develop adapt my lesson plans to the different needs of boys and girls.					
Control %	2	4	1	43	51
Treatment %	2	5	0	42	51
Total %	2	4	1	43	51
Pearson chi2(4) = 0.6705 Pr = 0.955					
I design playful activities in a way that ensures equal and comfortable participation of boys and girls.					
Control %	0	1	1	35	63
Treatment %	0	0	0	32	68
Total %	0	1	0	33	65

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pearson chi2(4) = 6.0998 Pr = 0.192					
I design playful activities in a way that ensures equal and comfortable participation of students with disabilities.					
Control %	0	3	3	45	49
Treatment %	0	2	2	40	56
Total %	0	2	3	42	53
Pearson chi2(4) = 5.0249 Pr = 0.285					
I assign roles to students even if they are considered non-traditional, for example a girl playing a carpenter role.					
Control %	1	5	3	58	33
Treatment %	1	4	1	60	33
Total %	1	4	2	59	33
Pearson chi2(4) = 2.9487 Pr = 0.566					
I assign school chores mostly to girls					
Control %	0	2	1	41	56
Treatment %	0	1	1	39	59
Total %	0	1	1	40	58
Pearson chi2(4) = 2.4448 Pr = 0.655					

	Teachers				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I discipline girls and boys in different ways					
Control %	2	3	0	43	52
Treatment %	2	2	1	42	54
Total %	2	2	1	42	53
Pearson chi2(4) = 1.7459 Pr = 0.782					
I usually let boys answer difficult questions in class.					
Control %	0	0	0	41	58
Treatment %	0	0	0	40	60
Total %	0	0	0	40	59
Pearson chi2(3) = 1.0750 Pr = 0.783					

Annex C: Field procedure

This annex details all the field procedures, from the field team recruitment to the data collection on the field, along with completion statistics.

Field team recruitment

Laterite maintains a pool of enumerators specialized in quantitative and qualitative data collection projects. To qualify for field enumeration work, individuals must pass a testing process which evaluates logic, problem solving, and communication skills. The interview process includes an Excel test, a written test, and a situational face-to-face interview. Successful candidates are added to the Laterite pool.

For this study, Laterite selected enumerators with previous experience in education research projects and/or had studied education during their education.

The field team for this study comprised three different profiles:

- Field Supervisors are experienced members of the Laterite team who oversee data collection activities and manage both Field Coordinators and Enumerators for both the field preparation and main data collection activities,
- Field Coordinators are ground-level supervisors who lead small teams of Enumerators while conducting data collection themselves. They coordinate logistics for their teams and monitor the team's daily data uploading for both the field preparation and main data collection activities,
- Enumerators are data collectors who conduct in-person surveys or phone surveys, and perform field preparation activities, which includes securing approvals and listing activities.

For the local approval and listing phases, Laterite contracted 15 enumerators who were in charge of securing local authorities' approvals from the district level to the sector level, and listing research participants namely school leaders and teachers at the sampled schools.

For the quantitative study, the field data collection team consisted of 25 field staff divided into six sub-teams. Each sub-team was led by one Field Coordinator. We also had one Field Supervisor and one Data Operations Associate who stayed with the team on the field for the entire data collection period.

The qualitative data collection team comprised two pairs, each consisting of a moderator and a note-taker. All team members possessed extensive experience in qualitative research, with at least one individual in each pair having participated in prior rounds of the Right to Play research activities.

All data collection activities were overseen by one of Laterite's Data Managers.

Field team training

For the approval and listing phases, Laterite trained 15 enumerators on a listing survey that was designed in-house by Laterite. This training also covered best practices to follow when conducting the approval and listing activities.

For the quantitative data collection, Laterite and Oxford MeasurEd trained enumerators over a five day-period, spanning from September 25-29. Laterite trained the survey team on the following topics for the school leader and teacher surveys:

- Introduction
- Study Methodology and Sampling Strategy
- Team Structure and Responsibilities
- Data Collection Protocols
- Data Quality and Research instruments

Oxford MeasurEd trained 6 classroom observers, 2 Field Coordinators and the Data Operations Associate on the Oxford MeasurEd PLAY tool. The training covered the PLAY tool constructs, items with the paper version, and later the team had the opportunity to practice on the coded version of the tool. As part of training, the team of observers had a chance to do two practice sessions on separate days at GS Kagugu school. The observers worked in pairs during the practice sessions at GS Kagugu, and this allowed Oxford MeasurEd to run an Inter Rater Reliability (IRR) analysis from the different pair of observations. Following the IRR analysis, the trainers provided feedback to the field team on areas of improvement.

For the qualitative study, Laterite led in-person training sessions with data collectors for a period of two days from October 10 to 11, 2023. Half of the first day of training covered the overview of the RTP E-certification project, data collection structure, the team structure and responsibilities, and best practices for qualitative data collection. The remaining one and a half days of the training covered the review and practices of the interview guides through mock interviews. Most of the training time was dedicated to practicing mock interviews to ensure that data collectors are familiar with the interview guides. Mock interviews were conducted in a group setting: one moderator leading the discussion while the rest of the team acted as respondents. During the practice session, the trainer took notes of what went well and what to improve. All moderators were provided feedback before for further practice. Reflection sessions were integrated after mock interviews of each interview guide to discuss questions on the interview guide and provide feedback on the moderators' performance.

Data collection pilot

Ahead of data collection, we organized a pilot exercise to test the survey instrument's length, design, coding, classroom observations and interview protocols. It also provided an opportunity for data collectors to practice the instruments in survey-like conditions and identify areas that needed further training.

The pilot for the quantitative study was conducted on October 3, 2023, in five schools around Kigali over one day: G S MUGANZA II, GS RUKARAGATA, GS RUNDA, GS HILLTOP ACADEMY and GS RUKARAGATA in Runda sector, Kamonyi district. These schools were selected from the Education Management Information System (EMIS) database, as they had not been selected for the main data collection. They were selected intentionally based on their accessibility, using the same criteria as for the main data collection. Pilot participants had been listed by the listing team at the same time as the main data collection's participants.

We interviewed 5 school leaders from the five schools that were visited, four of them being headteachers, while one is the director of studies at the school. We also interviewed 34 teachers, 29 female and 5 male teachers at the five pilot. The median duration of both the school leader and teacher surveys was 49 minutes.

A team of six enumerators conducted six classroom observations in pairs. The data from the enumerator pairs was used by Oxford MeasurED to conduct an Inter-Rater Reliability (IRR) analysis.

Enumerators familiarized themselves with the administration protocols, and weaknesses were noted by the supervising team and emphasized again before the main data collection.

The qualitative data collection team conducted a pilot exercise on October 12, 2023, at GS Kagugu in Gasabo district, specifically in Kinyinya sector. After investing sufficient time to familiarize themselves with the teacher focus group discussion interview guide during the training and ensuring their mastery of it, the team shifted their focus to the students' focus group discussion interview guide during the pilot activity. In this phase, each pair facilitated two focus group discussions, with each group consisting of eight students of primary 3 grade.

Main data collection

Protocol

The data collection for the quantitative surveys spanned from October 9-November 3, 2023. Prior to the main data collection training, Laterite collected approvals from September 21-22 and conducted listing activities from September 25-29.

During the approval phase, a team of 15 enumerators visited 11 districts to secure approvals at both the district and sector levels, with official introduction letters signed and stamped by the relevant local authorities.

Laterite followed the protocol below during the approval phase:

- Presentation of RNEC, NISR, NCST, and the affiliation letter from REB to local authorities at both the district and sector levels. These letters were annexed to the Laterite letter addressed to all sampled districts, under which the local authorities stamped for their official approval,
- Explaining the purpose of the research and responding to any questions that might be raised, and securing local authorities' approvals to conduct research activities in their respective locations,
- Collection of school leader details including names, positions, and telephone numbers, where available.

During the listing phase, Laterite deployed the same team of 15 enumerators to do the listing activities in all sampled locations for a period of five days.

Laterite followed the protocol below during the listing phase of the field preparation:

- Prior to the deployment, enumerators called the school leaders from the allocated schools to inform them about the day of the physical visit as well as confirming the location of the school.
- At school, enumerators requested to meet with the head teacher or another school leader present at the time of visit.
- After explaining the purpose of research, enumerators asked the school leader for their self-consent to participate in data collection, as well as consent for sampled lower primary teachers and students.
- Enumerators then asked the school leader's and teachers' personal details including their names, positions, phone number, class, and subjects.

The main data collection was rolled-out over a period of 15 working days (not including weekends or travel). Data collection was conducted by six teams of two enumerators and one observer each, plus a Field Coordinator. In the first week, three teams led by one Field Supervisor were assigned to districts in the Western and Northern provinces, while the other three teams led by the Data Operations Associate covered the districts in the Southern Province. In the last week of data collection, all the six teams covered the Southern province's districts. The Data Operations Associate, the Field Supervisor and the Field Coordinators were in charge of:

- Monitoring the conduct of data collection and trouble-shooting issues;

- Assessing the data collectors' conformity to the instruments' protocols and adherence to the study professional and ethical code of conduct;
- Leading debriefing sessions and providing regular feedback on areas of improvement; and
- Reporting issues to their supervisors, including the Data Manager.

Each team covered two neighboring schools per day where possible. The teams of two enumerators and one observer, led by a Field Coordinator, aimed to complete surveys with two school leaders and ten teachers, as well as conducting four classroom observations per day. In addition to team coordination within allocated schools, which include introducing the team to the school leader, interviewing the school leader, and allocating enumerators and observers to their respective interviewees, the Field Coordinator was also in charge of doing spot checks to ensure data quality and adherence to the protocols.

Data was collected electronically through tablets using SurveyCTO software. The data was monitored daily, and we followed up with the data collectors on cases where clarifications were needed.

Appointment calls

Prior to the deployment, Laterite contacted the selected school leaders and the selected five teachers to set an appointment for the interview day and time. The appointments were conducted by the appointment calls' team made of four enumerators. Each enumerator was expected to call the head teachers, reminding them of the upcoming data collection activities in their schools, and inquiring if the five selected teachers were still available. After calling the school leaders, the enumerators called the selected teachers and informed them of the day and time of the data collection team's arrival. In case there were unavailable teachers due to different reasons, the appointment calls' team tracked these changes in the logbook for the data collection team to make relevant replacements during the main data collection. The purpose of this was also to maintain good communication between the field team and the respondents.

Informed consent

The consent form (in Kinyarwanda) was read aloud by the enumerators and included the following information:

- The subject and purpose of the research,
- How and why participants were selected,
- That personal information collected would be used only for study purposes and would remain confidential,
- The type of questions to be asked and the estimated time to complete the surveys,
- The study lead contact details in case of questions or concerns, and

- That participation is voluntary and that participants may withdraw at any time.

We obtained consent electronically, by having participants sign the consent form on the enumerators' tablets. We also provided paper versions of the consent form to participants for them to sign and keep for their record.

Changes to survey instruments

During data collection, the field team reported a few suggestions for survey changes in SurveyCTO. All the survey changes were made in the teacher survey instrument. One suggested change was on adding fields for recording newly identified teachers' information in the survey, as the team identified some teachers who were not listed during the listing phase. The other suggestion was to add a "Not applicable" answer option to questions that refer to the last term, for new teachers who were not in the profession in the last term.

Completion statistics

School leader survey

We aimed to survey 170 school leaders in both treatment and control groups. We were primarily targeting the headteachers as the main participants, however in some instances when the headteacher was not available, we were asking other school leaders in their respective leadership roles to participate. Upon completion of data collection, approximately 88% of the school leaders who participated were headteachers while approximately 22% were Deputy headteachers or Dean of Studies. The table below shows the completion by school leader type.

School leader type

School leader type	Frequency	Percentage
Headteacher	150	88.24
Deputy HT or DoS	20	11.76
Total	170	100

Most of the school leaders who participated in the study were male with a proportion of 70%, while female teachers were only 30%. The table below shows the distribution of the teachers by gender.

School leader gender

Gender	Frequency	Percentage
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Male	119	70
Female	51	30
Total	170	100

Teacher survey

We aimed to survey 850 teachers in both treatment and control groups. We were primarily targeting teachers who were randomly selected to participate. However, in some instances, teachers selected were replaced for various reasons following the replacement protocol. Upon completion of DC activities, a total of 849 teachers were interviewed. We could not reach the target because there were only 4 teachers in the lower primary at GS MUTAKARA, a school in the control group. Of the 849 teachers who participated, approximately 76% were female while male teachers were approximately 24%. The table below shows the distribution of teachers who participated in the study by their gender.

Teachers interviewed by gender

Gender	Frequency	Percentage
Male	199	23.44
Female	650	76.56
Total	849	100.00

Most of the teachers who participated in the study were teaching only in one grade. 204 teachers were solely teaching in P1, 187 were teaching in P2 and 221 were teaching in P3. The remaining teachers reported teaching in more than one grade as illustrated in the table below.

Teachers interviewed by grade

Grade	Frequency	Percentage
P1	204	24.03
P2	187	22.03

P3	221	26.03
P1 & P2	62	7.3
P1 & P3	27	3.18
P2 & P3	76	8.95
P1, P2 & P3	72	8.48
Total	849	100

Among the 850 teachers that we targeted to interview; 107 teachers were replaced. The table below describes the reasons for teacher replacement during data collection. The “other reasons” include the teachers being sick, no longer teaching in the lower primary section at the school, not having lessons/classes on the day of data collection, or just being off duty during the data collection period.

Reasons for replacement in the teacher survey

Reason	Replacement	Percent
The teacher is no longer at the school	14	13.08
The teacher is not available during data collection	49	45.79
The teacher refused to be observed	1	0.93
Other reasons	43	40.19
Total	107	100.00

Classroom observations

We aimed to observe 2 teachers per school, making a total of 340 teachers in both treatment and control groups. 80% of the teachers observed were female, while 20% of the teachers observed were male.

Teachers observed by gender

Gender	Frequency	Percentage
Male	272	80.00
Female	68	20.00
Total	340	100.00

We observed teachers teaching lessons in different grades and the table below shows the grades of the classes that were observed. Most of the teachers observed were conducting lessons in primary 1 and primary 3 grades.

Grades of the classrooms observed

Grade	Frequency	Percentage
P1	116	34.12
P2	111	32.65
P3	113	33.24
Total	340	100.00

Among the 340 teachers that we targeted to observe, 61 teachers were replaced. The table below describes the reasons for teacher replacement in classroom observations during data collection. The reasons for replacement are listed in the table below. Some of the “other reasons” include the teachers being sick, no longer teaching in the primary section at the school, not having lessons/classes on the day of data collection, having lost a relative or just being off duty during the data collection period.

Reasons for replacement in the classroom observations

Reason	Replacement	Percent
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The teacher is no longer at the school	6	9.84
The teacher is not available during data collection	22	36.07
The teacher refused to be observed	1	1.64
Other reasons	32	52.46
Total	61	100.00

Qualitative study

The team was able to conduct all the six teacher Focus Group Discussions (FGD) as well as the six student focus group discussions as targeted. Each FGD was formed of eight participants.

In case the sampled participants were not available or ineligible, replacements were made within the same school, following the priority order established during the sampling. Laterite made four replacements, three in Muhanga district and one in Ngororero district:

Muhanga

- Two teachers were replaced because they no longer teach at the lower primary level.
- One teacher was replaced due to being on sick leave.

Ngororero

- One teacher was replaced due to being on maternity leave.

Annex D: Matching methodology

This annex details the steps taken to run the propensity score matching between the schools in the control group and the schools in the treatment group.

We first merged the list of schools targeted by Right to Play (the treatment) with the schools in the Education Management Information System (EMIS) database and created meaning indicators from the EMIS data. We did a fuzzy merging by school name given that the two datasets did not have the same school IDs. After fuzzy merging, there were 104 potential treatment schools. Missing values on some indicators led to 100 treatment group schools. A potential of 981 schools in Gakenke, Gisagara, Huye, Kamonyi, Karongi, Nyamagabe, Nyabihu, and Rutsiro districts in the comparison group was boiled down to the 100 most comparable schools using the matching approach. We have excluded all private schools.

Based on the indicators, we described the population of schools in Rwanda and whether, where (which schools), and how (which indicators) the treatment schools are different from the population of schools in Rwanda.

By combining the EMIS data, we have used 60 features/variables in the model to estimate the propensity score. These are grouped in the domain of school characteristics, school types and level (note that most schools combine primary and secondary grades, or pre-primary grades), information about students (all children in a school), about pupils (children in grade p1-p6), shares of girls, shares of pupils in each grade relative to all students in that particular school, teacher and staff information (e.g. student to teacher ratios or pupil to teacher ratios), information about infrastructure and resources, inclusion focused infrastructure and geospatial data. The geospatial data is, where relevant, about the village where the school is located to proxy a 'catchment area' of pupils. For instance, the relative wealth index pertains to the village as a whole. Distance measures (proxying remoteness) refer to the school location (i.e., latitude and longitude).

We have estimated a random forest, a balanced random forest, and a simple logistic regression to estimate the propensity score.

- **Random forest:** suffers from heavy imbalance in the treatment ($n=100$) vs the comparison group class (981). The model 'learns' to almost predict schools exclusively as comparison group schools. This is a problem often seen in random forests.
- **Balanced random forest:** We have implemented a balanced random forest with 350 trees, where in each bootstrap the minority class (the treatment group) is oversampled. Instead of fitting a class label (treatment or control) we predicted the probability of each class label. The probability of the class-label treatment group was then used as a propensity score. Subsequently, we have matched each treatment observation to its nearest neighbor comparison group school (without replacement to ensure we end up with unique treatment-control pairs) using `psmatch2` in Stata. Its covariate after matching seems to be good, except for features that refer to school size.
- **Logistic regression:** We used a logistic regression to estimate the probability of treatment group class membership (in Stata, using `psmatch2`). Subsequently, we have matched nearest neighbor comparison group schools without replacement, similar to the balanced random forest approach. To create pairs of second-best matches, we have re-run the nearest neighbor algorithm but first excluded all best matching comparison

group schools. This is to create unique pairs of T-C schools, also for the second-best matches, and to ensure that there is no overlap in the first and second-best control group schools.

The logistic regression approach was able to match comparison group schools so that pre-existing imbalance on all features was removed. We have assessed this by comparing the pre- and post-match differences between the treatment and matched comparison schools. All statistically significant ($p < 0.05$) differences (assessed with paired-t-tests for all features) in the unmatched sets were removed.

From the estimated propensity scores, we created pairs of treatment and control by selecting the nearest two neighbors for each treatment school in the control group. We sampled 85 treatment schools and their two nearest neighbors in the control group. We also created 15 more treatment-control pairs in case schools refused to participate in the study.

The selection of the control group schools was made over neighboring districts to prevent spillover effects from selecting schools in the same districts.

The table below shows the 60 features/variables in the model to estimate the propensity score.

Feature domain	Feature name	Feature description
Treated RTP-school	treated	Indicates that school is a treated (1) or comparison school (1)
School characteristics	schoolc_gov_aided	School is government aided school
School characteristics	schoolc_boarding	School is a boarding school
School characteristics	schoolc_years_established	Years since school was established (2023)
School types and level	school_setting_primary_only	School type is primary school only.
School types and level	school_setting_has_preprimary	School includes pre-primary education

Feature domain	Feature name	Feature description
School types and level	school_setting_has_secondary	School includes secondary education or higher
Student information	studenti_total_students	Total number of students in school
Student information	studenti_share_female_students	Share of female students in school
Student information	studenti_total_pupils	Total number of pupils in all relevant grades: p1 - p6
Student information	studenti_share_female_students	Share of female students (all_grades) in school
Student information	studenti_p1_girl_share	Share of female pupils in P1
Student information	studenti_p2_girl_share	Share of female pupils in P2
Student information	studenti_p3_girl_share	Share of female pupils in P3
Student information	studenti_p4_girl_share	Share of female pupils in P4
Student information	studenti_p5_girl_share	Share of female pupils in P5
Student information	studenti_p6_girl_share	Share of female pupils in P6
Student information	studenti_share_female_pupils	Share of female pupils in all relevant primary grades: p1 -p6

Feature domain	Feature name	Feature description
Student information	studenti_p1_pupil_share	Share of pupils in grade p1 (male and female pupils in p1/studenti_total_pupils)
Student information	studenti_p2_pupil_share	Share of pupils in grade p2 (male and female pupils in p2/studenti_total_pupils)
Student information	studenti_p3_pupil_share	Share of pupils in grade p3 (male and female pupils in p3/studenti_total_pupils)
Student information	studenti_p4_pupil_share	Share of pupils in grade p4 (male and female pupils in p4/studenti_total_pupils)
Student information	studenti_p5_pupil_share	Share of pupils in grade p5 (male and female pupils in p5/studenti_total_pupils)
Student information	studenti_p6_pupil_share	Share of pupils in grade p6 (male and female pupils in p6/studenti_total_pupils)
Teacher and staff information	ts_female_teacher_share	Share of female teachers in school
Teacher and staff information	ts_teach_student_ratio_school	Teacher to student ratio for school (total_students/total_teachers)
Teacher and staff information	ts_allstaff_student_ratio_school	All staff to student ratio total_tudents /(teacher & admin staff)
Teacher and staff information	ts_teach_pupil_ratio_primary	Teacher to pupil ratio for primary grades (total pupils in primary grades/total_teachers for primary level)
Infrastructure & Resources	infra_students_per_room_school	Average number of students per classroom school (studenti_total_students/total_classrooms)
Infrastructure & Resources	infra_pupils_per_room_primary	Average number of pupils per classroom primary classrooms (studenti_total_pupils/primary_school_classrooms)

Feature domain	Feature name	Feature description
Infrastructure & Resources	infra_pupils_per_room_p1	Average number of pupils per classroom p1 (total number of pupils in p1/total number of p1 classrooms)
Infrastructure & Resources	infra_pupils_per_room_p2	Average number of pupils per classroom p2 (total number of pupils in p2/total number of p2 classrooms)
Infrastructure & Resources	infra_pupils_per_room_p3	Average number of pupils per classroom p3 (total number of pupils in p3/total number of p3 classrooms)
Infrastructure & Resources	infra_pupils_per_room_p4	Average number of pupils per classroom p4 (total number of pupils in p4/total number of p4 classrooms)
Infrastructure & Resources	infra_pupils_per_room_p5	Average number of pupils per classroom p4 (total number of pupils in p4/total number of p4 classrooms)
Infrastructure & Resources	infra_pupils_per_room_p6	Average number of pupils per classroom p4 (total number of pupils in p4/total number of p4 classrooms)
Infrastructure & Resources	infra_students_to_computer_r_school	Student to computer ratio school (imputed)
Infrastructure & Resources	infra_internet	School has internet connectivity
Infrastructure & Resources	infra_tap_water_supply	School has tap water
Infrastructure & Resources	infra_rain_water_haversting	School harvests rain water

Feature domain	Feature name	Feature description
Infrastructure & Resources	infra_safe_drinking_water	School has safe drinking water
Infrastructure & Resources	infra_on_grid_electricity	School has electricity on grid
Infrastructure & Resources	infra_solar_power	School has solar power
Infrastructure & Resources	infra_electric_power_generator_supply	School has electric power generator
Infrastructure & Resources	infra_biogas_system	School has biogas system
Infrastructure & Resources	infra_students_toilets	Students per toilet ratio (studenti_total_students/students_toilets)
Infrastructure & Resources: inclusion focused infrastructure	infra_toiletes_for_students_with_disabilities	School has disability toilet for students
Infrastructure & Resources: inclusion focused infrastructure	infra_toiletes_for_staff_with_disabilities	School has disability toilet for staff
Infrastructure & Resources: inclusion focused infrastructure	infra_specialgirlsroom	School has dedicated girls room
Infrastructure & Resources: inclusion focused infrastructure	infra_adapted_infrastructure	School is accasible for people with disabilities ?
Geospatial data	geo_km_nearest_school	Euclidian distance to nearest school in km from school

Feature domain	Feature name	Feature description
Geospatial data	geo_dist_road_2016	(Worldpop) Distance to nearest major road in km from school
Geospatial data	geo_dst_artif_surf_100m_2015	(Worldpop) Distance to nearest artificial surface in km from school
Geospatial data	geo_settlement_2020	(Worldpop) Binary indicator for presence of settlement in village
Geospatial data	geo_pop2020	(Worldpop) Total population in 2020 in village
Geospatial data	geo_antenatal_care	(Worldpop) % receiving antenatal care in village
Geospatial data	geo_dist_intersection_2016	(Worldpop) Distance to nearest major intersection in km from school
Geospatial data	geo_elevation_100m	(Worldpop) Elevation in m (100m around school)
Geospatial data	geo_slope_100m	(Worldpop) Topographic slope (100m around school)
Geospatial data	geo_nightlights_2016	(Worldpop) Nightlights in 2016 in village
Geospatial data	geo_rwi	Facebook Relative Wealth Index in village

Annex E: Research Instruments

Teacher survey

Question	Answer						
(17): [Enumerator] Kindly confirm the date on this device. The date on this device is Jan 09, 2024 , is this the correct?	<table border="1"> <tr> <td>1</td> <td>Yes</td> </tr> <tr> <td>0</td> <td>No</td> </tr> </table>	1	Yes	0	No		
1	Yes						
0	No						
(20): Please enter your enumerator ID <i>Start with 'RW' (Capital letters)</i>	Done						
(22): The enumerator ID you entered does not belong to this project, please go back and enter a correct ID. Otherwise, contact your supervisor. <i>Question relevant when: \${enum_name_pii} = null</i>							
(23): You have entered the enumerator ID of [enum_name_pii] . Please confirm that this is correct.	<table border="1"> <tr> <td>Done: The note follows this question</td> <td>1</td> <td>Yes</td> </tr> <tr> <td>Done: The note follows this question</td> <td>0</td> <td>No</td> </tr> </table>	Done: The note follows this question	1	Yes	Done: The note follows this question	0	No
Done: The note follows this question	1	Yes					
Done: The note follows this question	0	No					
(24): If this is not your name, please go back and enter a correct ID. Otherwise, contact your supervisor <i>Question relevant when: \${enum_name_drp} = 0</i>							
(27): School ID							
(29): The school ID that you entered does not belong to the sample list, kindly go back and write correct school ID <i>Question relevant when: \${school_name} = null</i>							
(30): The ID entered corresponds to [school_name] . Please confirm	<table border="1"> <tr> <td>Done</td> <td>1</td> <td>Yes</td> </tr> <tr> <td>Done</td> <td>0</td> <td>No</td> </tr> </table>	Done	1	Yes	Done	0	No
Done	1	Yes					
Done	0	No					
(31): If the school name is not correct, kindly go back and write correct school ID <i>Question relevant when: \${school_name_conf} = 0</i>							

Question	Answer
(42): Please verify that you are at the following school: School - [school_name] Village - [village_name] Cell - [cell_name] Sector - [sector_name] District - [district_name]	Done 1 Yes Done 0 No
(43): District <i>Question relevant when: \${sch_loc_conf} = 0</i>	district_code district_name
(44): Sector <i>Question relevant when: \${sch_loc_conf} = 0</i>	sector_code sector_name
(45): Cell <i>Question relevant when: \${sch_loc_conf} = 0</i>	cell_code cell_name
(46): Village <i>Question relevant when: \${sch_loc_conf} = 0</i>	village_code village
(49): Teacher ID <i>Please enter 999 if this is a new teacher who was not listed during field preparation</i>	done
(50): What is the name of the new teacher at [school_name] <i>Question relevant when: \${tr_id_pii} = 999</i>	
(57): The teacher ID that you entered does not belong to the sample list, kindly go back and write correct teacher ID <i>Question relevant when: \${tr_name_pii} = null and \${tr_id_pii} != 999</i>	
(58): The teacher ID that you entered ([tr_id_pii]) does not belong to the school that you entered ([school_name]: ID [school_id]), kindly go back and write correct teacher ID or the school ID <i>Question relevant when: \${school_name} != null and \${school_id} != \${tr_school} and \${tr_id_pii} != 999</i>	
(59): Please confirm that you are talking the following teacher: [tr_name_pii], and that this is a new teacher (not previously listed) at [school_name] <i>Question relevant when: \${tr_id_pii} = 999</i>	done 1 Yes done 0 No
(60): Please confirm that you are talking the following teacher: [tr_name_pii] <i>Question relevant when: \${tr_id_pii} != 999</i>	done 1 Yes done 0 No
(62): The ID that you entered ([tr_id_pii]) is the ID of a replacing teacher. Please enter the ID of the teacher being replaced	done

Question	Answer
(68): The replaced teacher ID that you entered does not belong to the sample list, kindly go back and write correct teacher ID <i>Question relevant when: \${rep_tr_name_pii} = null</i>	
(69): The replaced teacher ID that you entered ([rep_tr_id_pii]) does not belong to the school that you entered ([school_name]: ID [school_id]), kindly go back and write correct teacher ID or the school ID <i>Question relevant when: \${school_name} != null and \${school_id} != \${rep_tr_school}</i>	
(70): The replaced teacher ID that you entered ([rep_tr_id_pii]) is of another replacement teacher at ([school_name]: ID [school_id]), kindly go back and write correct teacher ID of the replaced teacher <i>Question relevant when: \${rep_tr_sample} = 0</i>	
(71): Enumerator: Please state the reason why you're replacing [rep_tr_name_pii]	1 The teacher is no longer at the school
	2 The teacher is not available during the data collection period
	3 The teacher refused to participate
	997 Other (specify)
(72): Please specify <i>Question relevant when: \${rep_reason} = 997</i>	
(75): Hello, My name is [enum_name_pii] and I am from Laterite Ltd, a data, research and advisory firm that is based in Kigali. Laterite has been hired by Right to Play to conduct a study with lower primary teachers in Rwanda about their experience with playful learning in the classroom. Your school has been selected to participate in this study and you have been selected too.	
(76): Please note that your answers and personal information will be kept strictly confidential and no one will be able to access them. During the analysis, findings will be anonymised and no one will be able to trace them back to you. Moreover, participation in this study is completely voluntary and there will be no consequences if you decline to participate. If you decide to take part in the interview and at any time you want to stop, there will be no consequences. If you prefer to not answer any question throughout the survey, you are free to do so. There will be no direct benefits if you decide to participate.	
(77): Do you agree to take part in the interview?	1 Yes
	0 No
(78): We would also like to record certain parts of the survey as a proof that it took place. We will not record any parts with sensitive information like your personal details or identifying details about your school. Is that okay with you?	1 Yes
	0 No

Question	Answer
<i>Question relevant when: \${consent} = 1</i>	
(79): Teacher's signature <i>Question relevant when: \${consent} = 1</i>	
(82): Which grade do you teach	done 1 Primary 1 done 2 Primary 2 done 3 Primary 3 done 4 Primary 4 done 5 Primary 5 done 6 Primary 6 done 994 None of the above
(84): Which grades do teach ? <i>Question relevant when: \${grade} = 0</i>	
(85): Please enter the teacher's primary phone number <i>999=Refused</i>	
(86): Do you have another phone number at which you can be contacted?	1 Yes 0 No
(87): Please enter the teacher's secondary phone number <i>Question relevant when: \${other_number} = 1</i>	done
(88): What is your gender?	1 Male 2 Female 3 Other - Prefer not to say 99
(89): How old are you? (in years)	1 18-25 2 26-30 3 31-35 4 36-40 5 41-45 6 46-50 7 51-55 8 56-60 9 Over 60
(90): What language do you speak at home most regularly?	1 Kinyarwanda

Question	Answer
	2 English 3 French 77 Other (specify)
(91): Other language <i>Question relevant when: $\{language\} = 77$</i>	
(92): Do you have a disability?	0 No 1 Yes - Prefer not to say 99
(93): Which disability? <i>Question relevant when: $\{disability\} = 1$</i>	1 Visual impairment 2 Hearing impairment 3 Speech impairment 4 Locomotor disabilities (e.g. having restriction in movement of the limbs) 5 Intellectual/learning disability 6 Mental health disability 77 Other (Specify) - Prefer not to say 99
(94): Other disability <i>Question relevant when: $selected(\{disability_type\}, 77)$</i>	done
(95): In total, how many years of work experience do you have working in education related roles (e.g. as a teacher or school leader)?	Done: Years of experience constrained to 50
(96): How many years of work experience do you have working in this school?	done
(97): Which subjects do you currently teach?	1 Mathematics 2 Kinyarwanda 3 English 4 Social and religious studies 5 Science and elementary technologies 6 Creative arts (music, fine art, and craft) 7 Physical education 8 French 77 Other (Specify)
(98): Other subject(specify)	

Question	Answer
<i>Question relevant when: selected(\${subjects} ,77)</i>	
(99): What is the highest level of education you have completed?	0 Below Lower Secondary (Specify years completed) 1 Lower Secondary 2 Upper Secondary 3 Certificate (e.g. WDA, TTC) 4 Bachelors Degree (BA, BSc) 5 Masters (MA, Msc) 6 MPhil/Phd 7 Advanced Diploma 8 Postgraduate diploma 77 Other (specify)
(100): Below lower secondary(specify years completed) <i>Question relevant when: \${education} = 0</i>	
(101): Other specify <i>Question relevant when: selected(\${education} ,77)</i>	
(102): Which teaching qualifications do you hold?	0 I do not hold any qualification for teaching 1 Postgraduate Diploma in Education 2 Advanced Diploma in Education 3 Certificate in Teacher Training (Primary, A2) 4 Bachelors of Education (A0) 77 Other (specify)
(103): Other qualification <i>Question relevant when: \${qualification} = 77</i>	
(104): Have you ever attended a Teacher Training College (TTC) in Rwanda?	1 No 2 Yes - Don't know 98
(108): Do you have access to the following electronic devices? <i>Select all that apply</i>	done 1 Computer (Desktop or Laptop) done 2 Smartphone done 3 Tablet done 0 None of the above
(Repeated group)	

Question	Answer												
(112): How do you have access to Computer (Desktop or Laptop)? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	<table> <tr><td>1</td><td>I own it</td></tr> <tr><td>2</td><td>Shared with spouse</td></tr> <tr><td>3</td><td>Shared with other family members</td></tr> <tr><td>4</td><td>At school</td></tr> <tr><td>5</td><td>From neighbors/friends/relatives not in household</td></tr> <tr><td>77</td><td>Other (specify)</td></tr> </table>	1	I own it	2	Shared with spouse	3	Shared with other family members	4	At school	5	From neighbors/friends/relatives not in household	77	Other (specify)
1	I own it												
2	Shared with spouse												
3	Shared with other family members												
4	At school												
5	From neighbors/friends/relatives not in household												
77	Other (specify)												
(113): Other ways of accessing to device <i>Question relevant when: selected(\${device_acces} , 77)</i>	done												
(114): How often are you able to access Computer (Desktop or Laptop)? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	<table> <tr><td>1</td><td>Less than once a week</td></tr> <tr><td>2</td><td>Once or twice a week</td></tr> <tr><td>3</td><td>Three or four times a week</td></tr> <tr><td>4</td><td>Almost daily</td></tr> </table>	1	Less than once a week	2	Once or twice a week	3	Three or four times a week	4	Almost daily				
1	Less than once a week												
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4	Almost daily												
(115): On average, for how long are you able to access Computer (Desktop or Laptop) each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	<table> <tr><td>1</td><td>Less than one hour</td></tr> <tr><td>2</td><td>One or two hours</td></tr> <tr><td>3</td><td>More than two hours</td></tr> <tr><td>-</td><td>Don't know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Less than one hour	2	One or two hours	3	More than two hours	-	Don't know	98			
1	Less than one hour												
2	One or two hours												
3	More than two hours												
-	Don't know												
98													
(Repeated group)													
(112): How do you have access to Smartphone? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	<table> <tr><td>1</td><td>I own it</td></tr> <tr><td>2</td><td>Shared with spouse</td></tr> <tr><td>3</td><td>Shared with other family members</td></tr> <tr><td>4</td><td>At school</td></tr> <tr><td>5</td><td>From neighbors/friends/relatives not in household</td></tr> <tr><td>77</td><td>Other (specify)</td></tr> </table>	1	I own it	2	Shared with spouse	3	Shared with other family members	4	At school	5	From neighbors/friends/relatives not in household	77	Other (specify)
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77	Other (specify)												
(113): Other ways of accessing to device <i>Question relevant when: selected(\${device_acces} , 77)</i>	done												
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(115): On average, for how long are you able to access Smartphone each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	<table> <tr><td>1</td><td>Less than one hour</td></tr> <tr><td>2</td><td>One or two hours</td></tr> <tr><td>3</td><td>More than two hours</td></tr> </table>	1	Less than one hour	2	One or two hours	3	More than two hours						
1	Less than one hour												
2	One or two hours												
3	More than two hours												

Question	Answer
	- Don't know 98
(Repeated group)	
(112): How do you have access to Tablet? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members 4 At school 5 From neighbors/friends/relatives not in household 77 Other (specify)
(113): Other ways of accessing to device <i>Question relevant when: selected(\${device_acces} , 77)</i>	done
(114): How often are you able to access Tablet? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or twice a week 3 Three or four times a week 4 Almost daily
(115): On average, for how long are you able to access Tablet each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More than two hours - Don't know 98
(Repeated group)	
(112): How do you have access to [device_name]? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members 4 At school 5 From neighbors/friends/relatives not in household 77 Other (specify)
(113): Other ways of accessing to device <i>Question relevant when: selected(\${device_acces} , 77)</i>	done
(114): How often are you able to access [device_name]? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or twice a week 3 Three or four times a week 4 Almost daily

Question	Answer
(115): On average, for how long are you able to access [device_name] each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More than two hours - Don't know 98
(119): Have you done an accredited or certified online training course for teacher professional development before?	1 Yes 0 No
(120): In which year did you last do an accredited or certified online training course for teacher professional development? <i>Question relevant when: \${training} = 1</i>	
(121): Have you done a training course that includes Learning through Play or play-based learning before?	1 Yes 0 No
(122): In which year did you last do a training course for Learning through Play or play-based learning? <i>Question relevant when: \${training_ltp} = 1</i>	
(123): Who delivered the training course (or courses) for Learning through Play or play-based learning? <i>Question relevant when: \${training_ltp} = 1</i>	1 Right to Play 2 VVOB 3 VSO (Voluntary Service Overseas) 4 UNICEF 5 PLAN International 6 Save the Children 7 Play for Education 8 Inspire, Educate and Empower (IEE) 77 Other(specify) - Don't remember 98
(124): Other (specify) <i>Question relevant when: selected(\${training_provider} ,77)</i>	
(125): Was the course (or courses) for Learning through Play or play-based learning online or in-person? <i>Question relevant when: \${training_ltp} = 1</i>	1 Online 2 In-person 3 Blended (mix of online and in-person) - Don't remember 98
(128): Which of the following do you use to seek support on learning new methods?	1 WhatsApp group

Question	Answer
<i>Select all that apply</i>	2 In-person discussions with other teachers 3 Online resources 4 School resources 5 Support from School-Based Mentors 6 Support from school leadership 7 Support from Communities of Practice 77 Other (specify) 0 None
(129): Other (specify) <i>Question relevant when: selected(\${support_ways} , 77)</i>	
(Repeated group)	
(133): How effective do you think WhatsApp group are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective - Don't know 98
(Repeated group)	
(133): How effective do you think In-person discussions with other teachers are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective - Don't know 98
(Repeated group)	
(133): How effective do you think Online resources are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective - Don't know 98

Question	Answer														
(Repeated group)															
(133): How effective do you think School resources are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	<table> <tr><td>1</td><td>Very ineffective</td></tr> <tr><td>2</td><td>Somewhat ineffective</td></tr> <tr><td>3</td><td>Neither effective nor ineffective</td></tr> <tr><td>4</td><td>Somewhat effective</td></tr> <tr><td>5</td><td>Very effective</td></tr> <tr><td>-</td><td>Don't know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Very ineffective	2	Somewhat ineffective	3	Neither effective nor ineffective	4	Somewhat effective	5	Very effective	-	Don't know	98	
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4	Somewhat effective														
5	Very effective														
-	Don't know														
98															
(Repeated group)															
(133): How effective do you think Support from School-Based Mentors are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	<table> <tr><td>1</td><td>Very ineffective</td></tr> <tr><td>2</td><td>Somewhat ineffective</td></tr> <tr><td>3</td><td>Neither effective nor ineffective</td></tr> <tr><td>4</td><td>Somewhat effective</td></tr> <tr><td>5</td><td>Very effective</td></tr> <tr><td>-</td><td>Don't know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Very ineffective	2	Somewhat ineffective	3	Neither effective nor ineffective	4	Somewhat effective	5	Very effective	-	Don't know	98	
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4	Somewhat effective														
5	Very effective														
-	Don't know														
98															
(Repeated group)															
(133): How effective do you think Support from school leadership are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	<table> <tr><td>1</td><td>Very ineffective</td></tr> <tr><td>2</td><td>Somewhat ineffective</td></tr> <tr><td>3</td><td>Neither effective nor ineffective</td></tr> <tr><td>4</td><td>Somewhat effective</td></tr> <tr><td>5</td><td>Very effective</td></tr> <tr><td>-</td><td>Don't know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Very ineffective	2	Somewhat ineffective	3	Neither effective nor ineffective	4	Somewhat effective	5	Very effective	-	Don't know	98	
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2	Somewhat ineffective														
3	Neither effective nor ineffective														
4	Somewhat effective														
5	Very effective														
-	Don't know														
98															
(Repeated group)															
(133): How effective do you think Support from Communities of Practice are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways} , \${support_id})</i>	<table> <tr><td>1</td><td>Very ineffective</td></tr> <tr><td>2</td><td>Somewhat ineffective</td></tr> <tr><td>3</td><td>Neither effective nor ineffective</td></tr> <tr><td>4</td><td>Somewhat effective</td></tr> <tr><td>5</td><td>Very effective</td></tr> <tr><td>-</td><td>Don't know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Very ineffective	2	Somewhat ineffective	3	Neither effective nor ineffective	4	Somewhat effective	5	Very effective	-	Don't know	98	
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4	Somewhat effective														
5	Very effective														
-	Don't know														
98															
(Repeated group)															

Question	Answer
(133): How effective do you think [method] are to learn a new teaching method? <i>Question relevant when: selected(\${support_ways}, \${support_id})</i>	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective - Don't know 98
(135): Is there a Community of Practice that is regularly held in your school?	0 No 1 Yes - Don't know 98
(137): Are you a member of a Community of Practice? (COP) <i>Question relevant when: \${comm_pract} = 1</i>	0 No 1 Yes
(138): Did you participate in any Communities of Practice meetings in the last term before schools closed? <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i> <i>Question relevant when: \${cop_member} = 1</i>	0 No 1 Yes 996 Not applicable
(139): How often were Communities of Practice meetings held in your school in the last term, before schools closed? <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i> <i>Question relevant when: \${cop_participation} = 1</i>	1 Once a week 2 Once every two weeks 3 Once a month 4 Less than once a month 996 Not applicable
(140): How often have you attended Communities of Practice meetings in your school in the last term, before schools closed? <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i> <i>Question relevant when: \${cop_member} = 1 and \${cop_participation} = 1</i>	done 1 Once a week done 2 Once every two weeks done 3 Once a month done 4 Less than once a month done 996 Not applicable
(143): I am now going to read a series of statements about Communities of Practice at your school. Please indicate the extent to which you agree or disagree with the following statements, stating "strongly disagree", "disagree", "neither agree nor disagree", "agree", or "strongly agree":	
(144): Communities of Practice do not focus enough on supporting the continuous professional development of teachers	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree

Question	Answer
	5 Strongly agree - Don't know 98
(145): Communities of Practice are committed to help teachers to overcome challenges when applying new learning methods in the classroom	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(146): Communities of Practice are not helpful to integrate gender-responsive learning in my lessons	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(147): The support I received from the Community of Practice helped me to overcome a challenge. <i>Question relevant when: \${cop_participation} = 1</i>	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(148): The support I received from the Community of practice informed my teaching practices. <i>Question relevant when: \${cop_participation} = 1</i>	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(150): Is there an appointed School-Based Mentor you can refer to in your school?	0 No 1 Yes - Don't know 98

Question	Answer														
(151): Have you received support from a School-Based Mentor in the past term? <i>Question relevant when: $\{appointed_sbm\} = 1$</i>	<table> <tr><td>0</td><td>No</td></tr> <tr><td>1</td><td>Yes</td></tr> </table>	0	No	1	Yes										
0	No														
1	Yes														
(153): I am now going to read a series of statements about School-Based Mentors at your school. Please indicate the extent to which you agree or disagree with the following statements, stating “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, or “strongly agree”:															
(154): School-Based Mentors do not focus enough on supporting the continuous professional development of teachers	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>-</td><td>Don’t know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	-	Don’t know	98	
1	Strongly disagree														
2	Disagree														
3	Neither agree nor disagree														
4	Agree														
5	Strongly agree														
-	Don’t know														
98															
(155): School-Based Mentors are committed to help teachers to overcome challenges when applying new learning methods in the classroom	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>-</td><td>Don’t know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	-	Don’t know	98	
1	Strongly disagree														
2	Disagree														
3	Neither agree nor disagree														
4	Agree														
5	Strongly agree														
-	Don’t know														
98															
(156): School-Based Mentors are helpful to integrate gender-responsive learning in my lessons	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>-</td><td>Don’t know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	-	Don’t know	98	
1	Strongly disagree														
2	Disagree														
3	Neither agree nor disagree														
4	Agree														
5	Strongly agree														
-	Don’t know														
98															
(157): The support I received from a School-Based Mentor was not helpful for me to overcome the challenge I was facing. <i>Question relevant when: $\{support_sbm\} = 1$</i>	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>-</td><td>Don’t know</td></tr> <tr><td>98</td><td></td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	-	Don’t know	98	
1	Strongly disagree														
2	Disagree														
3	Neither agree nor disagree														
4	Agree														
5	Strongly agree														
-	Don’t know														
98															
(158): The support I received from a School-Based Mentor informed my teaching practices	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> </table>	1	Strongly disagree	2	Disagree										
1	Strongly disagree														
2	Disagree														

Question	Answer
<i>Question relevant when: $\{support_sbm\} = 1$</i>	3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(161): I am now going to read a series of statements about the headteacher at your school. Please indicate the extent to which you agree or disagree with the following statements, stating “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, or “strongly agree”:	
(162): The headteacher in my school is committed to supporting the continuous professional development of teachers.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(163): The headteacher in my school is not interested in supporting teachers to adopt new learning methods in the classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(164): The headteacher in my school supports me to integrate gender-responsive learning in my lessons.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(165): The headteacher in my school does not support me to work with students who experience disabilities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree

Question	Answer
	- Don't know 98
(166): The headteacher in my school regularly conducts classroom observations to monitor teachers' instructional practices.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(168): In the past term, did the headteacher in your school allow at least 1 hour per week for teachers to complete professional development or participate in Communities of Practice? <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 No 1 Yes, at least one hour per week, but only in some weeks 2 Yes, at least one hour per week every week -98 Don't know 996 Not applicable
(169): Have you received encouragement by the headteacher in your school to adopt new teaching methods in the past term? <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 No 1 I received some occasional encouragement 2 I received consistent encouragement 996 Not applicable
(171): I am now going to read a series of statements about the time and resources that are available to you. Please indicate how often you are able to access what the following statements describe, stating "never", "sometimes", "often", or "always".	
(172): I have enough time after lessons to prepare activities for the classroom	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(173): I have enough time during my classes to try out new teaching methods.	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98

Question	Answer
(174): I have access to indoor play spaces.	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(175): I have access to outdoor play spaces.	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(176): I have access to physical play resources (e.g., books, playdough).	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(177): I have access to online play resources (e.g., tips for games and activities).	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(181): Do you belong to the group that is currently under e-certification Ltp certification?	1 Yes 0 No
(182): Did you attend the face to face orientation session about the E-certification course? <i>Question relevant when: \${treatment_group} = 1</i>	0 No 1 Yes - Don't know 98
(184): I'm going to read a statement and I'd like you to indicate the extent to which you agree or disagree with the statement	
(185): The face to face orientation session about the E-certification course was useful to me.	1 Strongly disagree 2 Disagree

Question	Answer
	3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(192): I am now going to read a series of statements about how children learn. Please indicate the extent to which you agree or disagree with the following statements: (193): Play is only important for learning for preschool aged children.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(194): Students learn better when they have opportunities to be involved actively in learning activities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(195): If children don't understand, they should try to find the answer independently before asking the teacher.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(196): Working in small groups is important for children's learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98

Question	Answer
(197): It is important for classrooms to be quiet for learning to take place.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(198): Students learn best when they are sitting still at their desks.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(199): Children learn best from the teacher, not from their peers.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(200): Children should be able to choose their own learning activities in the classroom.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(201): Parents welcome more play-based approaches to learning in the classroom	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98

Question	Answer
(204): Imagining a teacher has all the resources and time they need, please indicate how often they should do the following. You can indicate never, sometimes, often, or always..	
(205): Teachers need to ensure that all students are doing the same things in order to get the same results.	1 Never
	2 Sometimes
	3 Often
	4 Always
	- Don't know
	98
(206): Students should do hands-on activities after they have learned the related concepts.	1 Never
	2 Sometimes
	3 Often
	4 Always
	- Don't know
	98
(207): When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.	1 Never
	2 Sometimes
	3 Often
	4 Always
	- Don't know
	98
(208): Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.	1 Never
	2 Sometimes
	3 Often
	4 Always
	- Don't know
	98
(209): Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.	1 Never
	2 Sometimes
	3 Often
	4 Always
	- Don't know
	98
(210): Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.	1 Never
	2 Sometimes
	3 Often

Question	Answer
	4 Always - Don't know 98
(211): Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.	1 Never 2 Sometimes 3 Often 4 Always - Don't know 98
(216): To what extent do you agree or disagree with the following statements:	
(217): The needs of students with disabilities can be best served in special, separate classes or schools.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(218): Girls and boys have the same needs in the classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(219): Teachers must adapt their teaching practices to ensure their lessons are accessible to both girls and boys.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(220): Girls and boys must have equal opportunity to lead group discussions activities in my class.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree

Question	Answer
	4 Agree 5 Strongly agree - Don't know 98
(221): Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(228): I am now going to read a series of statements about your confidence with some teaching practices. Please indicate the extent to which you agree or disagree with the following statements: (229): I have trouble adapting classroom activities to the different ability levels of different groups of students.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(230): I feel confident I can integrate participatory approaches, such as role-play or drawing, into my lessons.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(231): I do not feel confident I can integrate playful activities into my lessons.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98

Question	Answer
(232): I feel confident I have a large repertoire of playful activities to choose from for my lessons.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(233): I am able to develop lesson plans that include playful activities.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(234): If students stop working, I am able to put them back on track.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(235): I am always able to clearly communicate my expectations to my students.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(236): There are some students whose behaviour I cannot manage.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98

Question	Answer
(237): When the lesson begins, I have to wait quite a long time for students to be quiet down.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(238): I am able to gain students' active participation and interest in the content of my lessons.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(240): Do you know what Learning through Play, or play-based learning, is?	0 No 1 Yes 2 Somewhat
(245): To what extent do you agree or disagree with the following :	
(246): I am motivated to use Learning through Play in the classroom to improve my teaching practices.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(249): I am now going to read a series of statements about Learning through Play in the classroom. Please indicate to what extent do you agree or disagree with the following.	
(250): Learning through play activities enable me to use a variety of assessment strategies to assess children's learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98

Question	Answer
(251): Learning through play activities enable me to respond to difficult questions from learners.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(252): Learning through play activities enable me to assess children's understanding of basic concepts.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(253): Learning through play activities enable me to adjust lessons to the appropriate level of children.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(254): Learning through play activities enable me to provide alternative paths to learning when children are confused or do not understand.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(255): Learning through play activities enable me to keep the classroom quiet when I am teaching	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98

Question	Answer
(256): Learning through play activities enable me to provide equal learning chances for boys and girls.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(257): Learning through play activities enable me to provide better learning chances for students with disabilities.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(258): Learning through play activities enable me to explain to children what to do when they encounter a challenge.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(261): Please indicate to what extent do you agree or disagree with the following:	
(262): Learning through Play activities enable me to motivate children who show low interest in learning.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	- Don't know
	98
(263): Learning through Play activities enable me to help children to believe or think they can do well in class activities.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree

Question	Answer
	- Don't know 98
(264): Learning through Play activities enable me to help children to memorize the lesson content better.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(265): Learning through Play activities enable me to help children to value learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(266): Learning through Play activities enable me to help children follow what the teacher is telling them to do.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(267): Learning through Play activities enable me to help children think critically.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(268): Learning through Play activities enable me to help children develop creativity.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree

Question	Answer
	- Don't know 98
(269): Learning through Play activities enable me to identify children who are struggling with their learning or falling behind in class.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(270): Learning through Play activities enable me to identify children that disrupt the class so that they can be punished.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(271): Learning through Play activities enable me to help improve children's reading skills.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(272): Learning through Play activities enable me to help improve children's numeracy skills.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(280): I'm going to ask you some questions about your practices as a teacher. I'm going to ask about how frequently you engage in a range of activities. Please indicate how often you did each of those in your class in the last term before schools closed: never, once or twice in the last term, once or twice a month, once or twice a week, daily or almost daily. Let's start. Please indicate how often you did the following in your class in the last term:	

Question	Answer
(281): I let students work in small groups to come up with a joint solution to a problem or task. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never
	1 Once or twice in the last term
	2 Once or twice a month
	3 Once or twice a week
	4 Daily or almost daily
	-98 Don't know
	996 Not applicable
(282): I let students present their project or findings to the class. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never
	1 Once or twice in the last term
	2 Once or twice a month
	3 Once or twice a week
	4 Daily or almost daily
	-98 Don't know
	996 Not applicable
(283): I tell students who plays each role in a group activity. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never
	1 Once or twice in the last term
	2 Once or twice a month
	3 Once or twice a week
	4 Daily or almost daily
	-98 Don't know
	996 Not applicable
(284): I let students decide what to do in a group activity <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never
	1 Once or twice in the last term
	2 Once or twice a month
	3 Once or twice a week
	4 Daily or almost daily
	-98 Don't know
	996 Not applicable
(285): I encourage students to compare themselves to their peers to understand who did a better job. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never
	1 Once or twice in the last term
	2 Once or twice a month
	3 Once or twice a week
	4 Daily or almost daily
	-98 Don't know

Question	Answer
	996 Not applicable
(288): Please indicate how often you did the following in your class in the last term, before schools closed:	
(289): I use students' background and interests in developing lessons and learning objectives. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(290): I focus on theoretical concepts when teaching. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(291): I connect my lessons to students' lives outside school. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(292): I tell students the right answer and ask them to repeat it to make sure they learn well. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(293): I let students try multiple ways to reach an answer even though it would be faster for me to tell them. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month

Question	Answer
	3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(294): I evaluate students' performance and tell them what to do to improve it. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(295): I let students evaluate and reflect upon their own work in class. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(296): I examine students work and assessments to inform my teaching. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(297): I use questions directed to specific students to monitor their understanding and learning during a lesson. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(298): I assess students' understanding only at the end of the lesson. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term

Question	Answer
	2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(301): Please indicate how often you did the following in your class in the last term, before schools closed:	
(302): I help students build on each other's ideas to solve problems. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(303): I encourage children to compete with others to motivate them to solve problems. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(304): I encourage children to have discussions with each other without my involvement. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(305): I facilitate a lesson where different children are working on different things. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know

Question	Answer
	996 Not applicable
(306): I facilitate a lesson where children are all doing the same thing at the same time. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(307): I try to include children that are not participating in the lesson. <i>Only select "Not applicable" if this is a teacher who was not teaching in the last term</i>	0 Never 1 Once or twice in the last term 2 Once or twice a month 3 Once or twice a week 4 Daily or almost daily -98 Don't know 996 Not applicable
(312): I'm going to read you some statements about your practices as a teacher. Please indicate to what extent do you agree or disagree with the following statements:	
(313): I assign school chores mostly to girls	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(314): I discipline girls and boys in different ways	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(315): I usually let boys answer difficult questions in class.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree

Question	Answer
	4 Agree 5 Strongly agree - Don't know 98
(316): I develop adapt my lesson plans to the different needs of boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(317): I design playful activities in a way that ensures equal and comfortable participation of boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(318): I design playful activities in a way that ensures equal and comfortable participation of students with disabilities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(319): I assign roles to students even if they are considered non-traditional, for example a girl playing a carpenter role.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree - Don't know 98
(324): Why they don't wish to take part in the interview? <i>Question relevant when: \${consent} = 0</i>	1 Do not have time 2 Do not want to participate in research 3 Do not have permission/agreement from spouse

Question	Answer
	997 Other (specify)
(325): Other reason for not taking part in the study <i>Question relevant when: \${noconsent} = 997</i>	
(326): This is the end of our interview, thank you for your time.	
(327): GPS coordinates <i>GPS coordinates can only be collected when outside.</i>	
(328): [To the enumerator], Do you have any comments?	0 No
	1 Yes
(330): [To the Enumerator] What type of comments do you have?	1 question/answer not applicable
	2 survey length
	3 question not understood
	4 respondent upset
	5 respondent name is misspelled
	6 no comment
	7 test survey
	8 No contact with the respondent
	997 Other (Specify)
(331): Which question/option was not applicable and why? <i>Question relevant when: selected(\${comments_category} , 1)</i>	
(332): Please tell us why the survey was too long/short <i>Question relevant when: selected(\${comments_category} , 2)</i>	
(333): Which question was not understood? <i>Question relevant when: selected(\${comments_category} , 3)</i>	
(334): Please tell us at which point the respondent became upset <i>Question relevant when: selected(\${comments_category} , 4)</i>	
(335): Write the correct name of the respondent <i>Question relevant when: selected(\${comments_category} , 5)</i>	
(336): Please specify <i>Question relevant when: selected(\${comments_category} , 997)</i>	

School leader survey

Question	Answer
(19): [Enumerator] Kindly confirm the date on this device. The date on this device is Jan 09, 2024 , is this the correct?	1 Yes 0 No
(22): Please enter your enumerator ID <i>Start enumerator's id by RW</i>	
(24): The enumerator ID you entered does not belong to this project, please go back and enter a correct ID. Otherwise, contact your supervisor. <i>Question relevant when: \${enumerator_name_pii} = null</i>	
(25): You have entered the enumerator ID of [enumerator_name_pii] . Please confirm that this is correct	Done 1 Yes Done 0 No
(26): If this is not your name, please go back and enter a correct ID. Otherwise, contact your supervisor. <i>Question relevant when: \${enum_name_confirm} = 0</i>	
(29): Please enter the school ID	
(31): The school ID that you entered does not belong to the sample list, kindly go back and write correct school ID <i>Question relevant when: \${school_name_pii} = null</i>	
(32): You have the school ID of [school_name_pii] . Please confirm that this is correct.	Done 1 Yes Done 0 No
(33): If the school name is not correct, kindly go back and write correct school ID <i>Question relevant when: \${school_info_confirm} = 0</i>	
(42): Please verify that you are at the following school: School - [school_name_pii] Village - [village_name] Cell- [cell_name] Sector - [sector_name] District - [district_name]	1 Yes 0 No
(44): District	district_code district_name
(45): Sector	sector_code sector_name
(46): Cell	cell_code cell_name
(47): Village	village_code village

Question	Answer								
(51): Which school leader is available at the moment	<table> <tr> <td>1</td><td>Headteacher</td></tr> <tr> <td>2</td><td>Deputy or DoS</td></tr> </table>	1	Headteacher	2	Deputy or DoS				
1	Headteacher								
2	Deputy or DoS								
(52): Please enter the school leader ID	Done								
(57): The school leader ID that you entered does not belong to the sample list, kindly go back and write correct school leader ID <i>Question relevant when: $\{sl_name_pii\} = null$</i>									
(58): The school leader ID that you entered ([sl_id_pii]) does not belong to the school that you entered ([school_name_pii] : ID [school_id_pii]), kindly go back and write correct school leader ID or the school ID <i>Question relevant when: $\{school_name_pii\} \neq null$ and $\{school_id_pii\} \neq \{sl_school\}$</i>									
(59): The school leader ID that you entered ([sl_id_pii]) belongs to the Director of Studies of ([school_name_pii]), kindly go back and correct the school leader's position <i>Question relevant when: $(\{sl_responding\} = 1 \text{ and } \{sl_pos\} \neq 1) \text{ or } (\{sl_responding\} = 2 \text{ and } \{sl_pos\} = 1)$</i>									
(60): [enumerator_name_pii] : You have entered school leader ID of [sl_name_pii] of [school_name_pii] . Please confirm if it is correct ?	<table> <tr> <td>1</td><td>Yes</td></tr> <tr> <td>0</td><td>No</td></tr> </table>	1	Yes	0	No				
1	Yes								
0	No								
(65): Enumerator : The school leader [sl_name_pii] with ID [sl_id_pii] that you've just entered is a Director of Studies . State the reason why you replacing the headteacher [rep_sl_name_pii] in this school.	<table> <tr> <td>1</td><td>The headteacher is no longer at the school</td></tr> <tr> <td>2</td><td>The headteacher is not available during the data collection period</td></tr> <tr> <td>3</td><td>The headteacher refused to participate</td></tr> <tr> <td>997</td><td>Other (specify)</td></tr> </table>	1	The headteacher is no longer at the school	2	The headteacher is not available during the data collection period	3	The headteacher refused to participate	997	Other (specify)
1	The headteacher is no longer at the school								
2	The headteacher is not available during the data collection period								
3	The headteacher refused to participate								
997	Other (specify)								
(66): Please specify <i>Question relevant when: $\{rep_reason\} = 997$</i>									
(71): Hello, my name is [enumerator_name_pii] and I am from Laterite Ltd, a data, research and advisory firm that is based in Kigali. Laterite has been hired by Right to Play to conduct a study with lower primary teachers and school leaders in Rwanda about their experience with playful activities in the classroom. Your school has been selected to participate in this study. Please note that your answers and personal information will be kept strictly confidential and no one will be able to access them. During the analysis, findings will be anonymised and no one will be able to trace them back to you. Moreover, participation in this study is completely voluntary and there will be no consequences if you decline to participate. If you decide to take part in the interview and at any time you want to stop, there will be no consequences. If you prefer to not answer any question throughout the survey, you are free to do so. There will be no direct benefits if you decide to participate.									

Question	Answer
(72): Do you agree to take a part in the interview	1 Yes 0 No
(75): We would also like to record certain parts of the survey as a proof that it took place. We will not record any parts with sensitive information like your personal details or identifying details about your school. Is that okay with you?	1 Yes 0 No
(76): Do you consent for students to participate in research?	1 Yes 0 No
(77): Respondents signature	
(79): Please enter the school leader primary phone number <i>The phone number should start with 7. Do not start with 0.
If you are not able to obtain the phone number, type 999</i>	done
(80): Do you have a secondary phone number?	1 Yes 0 No
(81): Please enter the school leader secondary phone number <i>Question relevant when: \${phone_oth} = 1</i>	done
(82): What is your gender	0 Male 1 Female
(83): How old are you? (in years)	1 18-25 2 26-30 3 31-35 4 36-40 5 41-45 6 46-50 7 51-55 8 56-60 9 Over 60
(84): What language do you speak at home most regularly?	1 Kinyarwanda 2 English 3 French 77 Other(specify)
(85): Other (specify) <i>Question relevant when: \${home_language} = 77</i>	
(86): Do you have a disability?	1 Yes

Question	Answer
	0 No 99 Refused/ Prefer not to say
(87): Specify the kind of disability you have ? <i>Question relevant when: \${disability_confirm} =1</i>	1 Visual impairment 2 Hearing impairment 3 Speech impairment 4 Loco-motor disabilities (e.g. having restriction in movement of the limbs) 5 Intellectual/ learning disability 6 Mental health disability 77 Other (specify) 99 Refused/Prefer not to say
(88): Other (specify) <i>Question relevant when: selected(\${disability} ,77)</i>	
(89): In total, how many years of work experience do you have working as a school leader?	
(90): In total, how many years of work experience do you have working as a teacher, or in other education related roles? <i>Do not consider the years of experience as a headteacher in this count</i>	Done
(91): How many years of work experience do you have working as a school leader in this school?	
(92): What is your current employment status as a school leader or headteacher?	1 Full time (90% or more of full-time hours) 2 Part time (less than 90% of full-time hours) 77 Other (specify) 99 Refused/Prefer not to say
(93): Other (specify) <i>Question relevant when: \${employment_status} =77</i>	
(94): What is the highest level of education you have completed?	0 Below Lower Secondary (Specify years completed) 1 Upper secondary 2 Certificate (e.g. WDA, TTC) 3 Bachelors Degree (BA, BSc) 4 Masters (MA, MSc) 5 DPhil/PhD 6 Advanced Diploma 7 Postgraduate diploma 77 Other (specify)

Question	Answer
(95): Specify years of lower secondary you have completed <i>Question relevant when: \${educ_level} = 0</i>	
(96): Other (specify) <i>Question relevant when: \${educ_level} = 77</i>	
(97): Which teaching qualifications do you hold?	0 I do not hold any qualification for teaching 1 Postgraduate diploma in Education 2 Advanced diploma in Education 3 Certificate in Teacher Training (Primary, A2) 4 Bachelors of Education (A0) 77 Other (specify)
(98): Other (specify) <i>Question relevant when: \${teach_qual} = 77</i>	
(99): Did your formal education include a course or training on school administration?	0 No 1 Yes, some training 2 Yes, a complete training/course 98 Don't know/Don't remember
(100): Did your formal education include a course or training on school leadership?	0 No 1 Yes, some training 2 Yes, a complete training/course 98 Don't know/Don't remember
(101): Did your formal education include a course or training on mentoring or coaching?	0 No 1 Yes, some training 2 Yes, a complete training/course 98 Don't know/Don't remember
(105): Do you have access to the following electronic devices? <i>Select all that apply</i>	1 Computer 2 Smartphone 3 Tablet 0 None of the above
(Repeated group)	
(109): How do you have access to Computer ? <i>Select all that apply</i> <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members 4 At school

Question	Answer
	5 From neighbors/friends/relatives not in household 77 Other (specify)
(110): Other ways of accessing to device (specify) <i>Question relevant when: selected(\${device_acces} ,77)</i>	done
(111): How often are you able to access Computer? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or Twice a week 3 Three or four times a week 4 Almost daily
(112): On average, for how long are you able to access Computer each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More that two hours 98 Don't know/ Don't remember
(Repeated group)	
(109): How do you have access to Smartphone? <i>Select all that apply</i> <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members 4 At school 5 From neighbors/friends/relatives not in household 77 Other (specify)
(110): Other ways of accessing to device (specify) <i>Question relevant when: selected(\${device_acces} ,77)</i>	done
(111): How often are you able to access Smartphone? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or Twice a week 3 Three or four times a week 4 Almost daily
(112): On average, for how long are you able to access Smartphone each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More that two hours 98 Don't know/ Don't remember
(Repeated group)	
(109): How do you have access to Tablet? <i>Select all that apply</i> <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members

Question	Answer
	4 At school 5 From neighbors/friends/relatives not in household 77 Other (specify)
(110): Other ways of accessing to device (specify) <i>Question relevant when: selected(\${device_acces} ,77)</i>	done
(111): How often are you able to access Tablet? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or Twice a week 3 Three or four times a week 4 Almost daily
(112): On average, for how long are you able to access Tablet each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More that two hours 98 Don't know/ Don't remember
(Repeated group)	
(109): How do you have access to [device_name]? <i>Select all that apply</i> <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 I own it 2 Shared with spouse 3 Shared with other family members 4 At school 5 From neighbors/friends/relatives not in household 77 Other (specify)
(110): Other ways of accessing to device (specify) <i>Question relevant when: selected(\${device_acces} ,77)</i>	done
(111): How often are you able to access [device_name]? <i>Question relevant when: selected (\${devices} , \${device_id}) and \${device_acces} != 1</i>	1 Less than once a week 2 Once or Twice a week 3 Three or four times a week 4 Almost daily
(112): On average, for how long are you able to access [device_name] each time you use it? <i>Question relevant when: selected (\${devices} , \${device_id})</i>	1 Less than one hour 2 One or two hours 3 More that two hours 98 Don't know/ Don't remember
(116): Have you done an accredited or certified online training course for teacher professional development before?	0 No 1 Yes 98 Don't know

Question	Answer
(117): In which year did you last do an accredited or certified online training course for teacher professional development? <i>Question relevant when: \${certified_onlinetr} =1</i>	
(118): Have you done a training course that includes Learning through Play or play-based learning before?	1 Yes 0 No
(119): In which year did you last do a training course for Learning through Play or play-based learning? <i>Question relevant when: \${playbased_course} =1</i>	
(120): Who delivered the training course (or courses) for Learning through Play or play-based learning? <i>Select all that apply</i> <i>Question relevant when: \${playbased_course} =1</i>	1 Right to Play 2 VVOB 3 VSO (Voluntary Service Overseas) 4 UNICEF 5 PLAN International 6 Save the Children 7 Play for Education 77 Other (specify) 98 Don't know/ Don't remember
(121): Other specify <i>Question relevant when: selected(\${course_org} ,77)</i>	done
(122): Was the course (or courses) for Learning through Play or play-based learning online or in-person? <i>Question relevant when: \${playbased_course} =1</i>	1 Online 2 In-person 3 Blended (mix of online and in-person) 98 Don't know/Don't remember
(123): Have you done any training (NOT during your formal education) on school administration as part of your professional development?	0 No 1 Yes, some training 2 Yes, a complete training/course 98 Don't know/Don't remember
(124): Have you done any training (NOT during your formal education) on school leadership as part of your professional development?	0 No 1 Yes, some training 2 Yes, a complete training/course 98 Don't know/Don't remember
(125): Have you done any training (NOT during your formal education) on mentoring or coaching as part of your professional development?	0 No 1 Yes, some training 2 Yes, a complete training/course

Question	Answer
	98 Don't know/Don't remember
(129): I am now going to mention some resources that teachers can use to learn new teaching practices or methods. Please indicate how effective you think each resource is. I choosing from 5 options, which are “very ineffective”, “ineffective”, “neither effective nor ineffective”, “effective” and “very effective”.	
(130): Please indicate how effective you think each resource is?	
(131): WhatsApp	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(132): In-person	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(133): Online resources	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(134): School resources	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(135): Support from school based mentor	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective

Question	Answer
	5 Very effective 98 Don't know/ Don't remember
(136): Support from school leadership	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(137): Support from community practices	1 Very ineffective 2 Somewhat ineffective 3 Neither effective nor ineffective 4 Somewhat effective 5 Very effective 98 Don't know/ Don't remember
(139): Are there other resources that were not mentioned in the list that teachers can use to learn new teaching practices?	1 Yes 0 No
(140): Please specify which other resources can be used by teachers to learn new teaching practices or methods: <i>Question relevant when: \${resources_oth} = 1</i>	
(141): Is there a Community of Practice that is regularly held in your school?	0 No 1 Yes 98 Don't know/ Don't remember
(142): How often were Communities of Practice meetings held in your school in the last term, before schools closed? <i>Question relevant when: \${sc_comm_practices} = 1</i>	1 Once a week 2 Once every two weeks 3 Once a month 4 Less than once a month 98 Don't know/ Don't remember
(143): Is there at least one appointed School-Based Mentor in your school?	0 No 1 Yes 98 Don't know/ Don't remember
(145): I am now going to read some statements that relate to teachers in your school and how they learn about new teaching methods. Please indicate the extent to which you agree or disagree with the following statements, stating “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, or “strongly agree”:	

Question	Answer
(146): Please indicate the extent to which you agree or disagree with the following statements:	
(147): Teachers at my school are interested in learning new methodologies to support student learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 97 N/A 98 Don't know/ Don't remember
(148): Teachers at my school have experience implementing play-based learning approaches to deliver curriculum content.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 97 N/A 98 Don't know/ Don't remember
(149): Teachers at my school do not have enough time after school to learn new methodologies to support student learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 97 N/A 98 Don't know/ Don't remember
(150): Teachers at my school do not have enough time during classes to try out new methodologies to support student learning	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 97 N/A 98 Don't know/ Don't remember
(151): Communities of Practices (COPs) sound good in theory but do not have any influence on student learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree

Question	Answer
	97 N/A
	98 Don't know/ Don't remember
(152): Communities of Practice are committed to supporting the continuous professional development of teachers.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	97 N/A
	98 Don't know/ Don't remember
(153): School-Based Mentors are committed to supporting the continuous professional development of teachers in my school.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	97 N/A
	98 Don't know/ Don't remember
(154): Communities of Practice should do more to help teachers in my school overcome challenges when applying new learning methods in the classroom.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	97 N/A
	98 Don't know/ Don't remember
(155): School-Based Mentors should do more to help teachers in my school to overcome challenges when applying new learning methods in the classroom.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree
	5 Strongly agree
	97 N/A
	98 Don't know/ Don't remember
(156): School-Based Mentors help teachers in my school to integrate gender-responsive learning in lessons.	1 Strongly disagree
	2 Disagree
	3 Neither agree nor disagree
	4 Agree

Question	Answer
	5 Strongly agree 97 N/A 98 Don't know/ Don't remember
(159): I am now going to read some statements about support for teacher learning from school leadership. Please indicate the extent to which you agree or disagree with the following statements: (160): I have sufficient support from the District Director of Education (DDE) to improve teaching quality	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(161): As a school leader, I should ensure that teachers complete the curriculum without wasting time on trying out new methodologies.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(162): I do not have enough time to support teachers with learning new methodologies.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(163): I frequently attend courses about new teaching methods that I can support teachers with.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(166): Please indicate the extent to which you agree or disagree with the following statements:	
(167): I conduct lesson observations to monitor teachers' instructional practices.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree

Question	Answer
	5 Strongly agree 98 Don't know
(168): In my school, I tell teachers to reach out for my help only if it is a very urgent issue.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(169): My school does not have enough ICT devices to serve all teachers that need them.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(170): In each school term, I make sure that as many teachers as possible have access to ICT devices (smartphones, computers, laptops, tablets) through my school.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(171): In each school term, I make sure that teachers have at least one hour per week to dedicate to continuous professional development.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(172): In each school term, I make sure that teachers have at least one hour per week to participate to Communities of Practice.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(175): I am now going to read some statements about inclusive learning environments. To what extent do you agree or disagree with the following statements:	

Question	Answer
(176): My school needs to make improvements to school infrastructure and facilities to be child-friendly for boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(177): My school needs to make improvements to the teaching and learning environment to make it child-friendly for boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(178): My school does not have the resources to make infrastructure and facilities child-friendly for boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(179): My school does not have the technical knowledge make the teaching and learning environment child-friendly for boys and girls	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(180): My school does not need to make improvements to school infrastructure and facilities accessible to children who experience disabilities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(183): I am now going to read some statements about inclusive learning environments. To what extent do you agree or disagree with the following statements:	
(184): My school does not need to make improvements to the teaching and learning environment to better include children who experience disabilities.	1 Strongly disagree 2 Disagree

Question	Answer
	3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(185): My school has the resources to support children with disabilities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(186): Teachers in my school have the technical knowledge to support children with disabilities	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(187): I have the technical knowledge to support children with disabilities in my school.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(189): Are you a member of a Professional Learning Community (PLC) (CoP for headteachers)?	done 0 No done 1 Yes done 98 Don't know/ Don't remember
(190): Did you participate in any Professional Learning Community meetings in the last term, before schools closed? <i>Question relevant when: \${plc_member} =1</i>	0 No 1 Yes 98 Don't know/ Don't remember
(191): How often were Professional Learning Community meetings held in the last term, before schools closed? <i>Question relevant when: \${plc_participation} =1</i>	1 Once a week 2 Once every two weeks 3 Once a month 4 Once a term
(193): Please indicate the extent to which you agree or disagree with the following statements?	

Question	Answer												
(194): Professional Learning Communities meetings are often focused on how school leaders can support teachers to adopt new methodologies.	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>98</td><td>Don't know</td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	98	Don't know
1	Strongly disagree												
2	Disagree												
3	Neither agree nor disagree												
4	Agree												
5	Strongly agree												
98	Don't know												
(195): During Professional Learning Communities meetings, it is rare that school leaders exchange ideas on how to improve teaching quality in their school.	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>98</td><td>Don't know</td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	98	Don't know
1	Strongly disagree												
2	Disagree												
3	Neither agree nor disagree												
4	Agree												
5	Strongly agree												
98	Don't know												
(196): Professional Learning Communities sound good in theory, but school leaders are too busy to dedicate time to them.	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>98</td><td>Don't know</td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	98	Don't know
1	Strongly disagree												
2	Disagree												
3	Neither agree nor disagree												
4	Agree												
5	Strongly agree												
98	Don't know												
(201): Did you attend the face-to-face orientation session at your school about the E-certification course? <i>Question relevant when: \${group_type} = "Treatment"</i>	<table> <tr><td>0</td><td>No</td></tr> <tr><td>1</td><td>Yes</td></tr> <tr><td>98</td><td>Don't know/ Don't remember</td></tr> </table>	0	No	1	Yes	98	Don't know/ Don't remember						
0	No												
1	Yes												
98	Don't know/ Don't remember												
(203): I'm going to read a statement and I'd like you to indicate the extent to which you agree or disagree with the statement:													
(204): The face to face orientation session about the E-certification course was useful to me.	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> <tr><td>4</td><td>Agree</td></tr> <tr><td>5</td><td>Strongly agree</td></tr> <tr><td>98</td><td>Don't know</td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree	4	Agree	5	Strongly agree	98	Don't know
1	Strongly disagree												
2	Disagree												
3	Neither agree nor disagree												
4	Agree												
5	Strongly agree												
98	Don't know												
(210): I am now going to read a series of statements about how children learn. Please indicate the extent to which you agree or disagree with the following statements:													
(211): Play is only important for learning for preschool aged children.	<table> <tr><td>1</td><td>Strongly disagree</td></tr> <tr><td>2</td><td>Disagree</td></tr> <tr><td>3</td><td>Neither agree nor disagree</td></tr> </table>	1	Strongly disagree	2	Disagree	3	Neither agree nor disagree						
1	Strongly disagree												
2	Disagree												
3	Neither agree nor disagree												

Question	Answer
	4 Agree 5 Strongly agree 98 Don't know
(212): Students learn better when they have opportunities to be involved actively in learning activities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(213): If children don't understand, they should try to find the answer independently before asking the teacher.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(214): Working in small groups is important for children's learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(217): Please indicate the extent to which you agree or disagree with the following statements:	
(218): It is important for classrooms to be quiet for learning to take place.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(219): Students learn best when they are sitting still at their desks.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know

Question	Answer
(220): Children learn best from the teacher, not from their peers.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(221): Children should be able to choose their own learning activities in the classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(222): Parents welcome more play-based approaches to learning in the classroom	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(225): Imagining a teacher has all the resources and time they need, please indicate how often you think they should do the following. You can indicate never, sometimes, often, or always.	
(226): Teachers need to ensure that all students are doing the same things in order to get the same results.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(227): Students should do hands-on activities after they have learned the related concepts.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(228): When students do a hands-on activity and they don't get the correct answer or result, teachers should tell students what they should have done or found.	1 Never 2 Sometimes 3 Often 4 Always

Question	Answer
	98 Don't know
(229): Teachers, not children, should make all choices about topics within the curricula, for example a project topic or materials to use.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(230): Teachers should provide students with opportunities to apply the concepts they have learned in new or different contexts.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(231): Students should be taught strictly the content of the curriculum, and should not waste time on connecting what they learn in the classroom to what they experience outside of the classroom.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(232): Students should have opportunities to connect the concept they are studying to what they learned in previous lessons.	1 Never 2 Sometimes 3 Often 4 Always 98 Don't know
(235): To what extent do you agree or disagree with the following statements:	
(236): The needs of students with disabilities can be best served in special, separate classes or schools.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(237): Girls and boys have the same needs in the classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know

Question	Answer
(238): Girls and boys must have equal opportunity to lead group discussions activities in my class.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(239): Teachers must ensure both girls and boys have equal chance to present group discussion work in plenary.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(244): Do you know what Learning through Play, or play-based learning, is?	1 Yes 0 No 2 Somewhat
(246): I am now going to read some statements about Learning through Play in the classroom. To what extent do you agree or disagree with the following :	
(247): Teachers in my school should adopt Learning through Play methodologies in their classes.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(248): Learning through Play approaches are fun but do not result in improvements in learning outcomes.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(249): Learning through Play approaches distract students from curriculum content.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree

Question	Answer
	98 Don't know
(250): As a school leader, I am committed to help teachers with integrating Learning through Play in their classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(251): As a school leader, I have the resources needed to support teachers with integrating Learning through Play in their classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(252): As a school leader, I have the knowledge needed to support teachers with integrating Learning through Play in their classroom.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(255): I am now going to read a series of statements about Learning through Play in the classroom. Please indicate to what extent do you agree or disagree with the following. Learning through Play activities enable teachers to:	
(256): Learning through Play activities enable teachers to use a variety of assessment strategies to assess children's learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(257): Learning through Play activities enable teachers to respond to difficult questions from learners.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know

Question	Answer
(258): Learning through Play activities enable teachers to assess children's understanding of basic concepts.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(259): Learning through Play activities enable teachers to adjust lessons to the appropriate level of children.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(260): Learning through Play activities enable teachers to provide alternative paths to learning when children are confused or do not understand.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(261): Learning through Play activities enable teachers to keep the classroom quiet when they are teaching.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(262): Learning through Play activities enable teachers to provide equal learning chances for boys and girls.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(263): Learning through Play activities enable teachers to provide better learning chances for students with disabilities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree

Question	Answer
	5 Strongly agree 98 Don't know
(264): Learning through Play activities enable teachers to explain to children what to do when they encounter a challenge.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(267): I am now going to read a series of statements about Learning through Play in the classroom. Please indicate to what extent do you agree or disagree with the following. Learning through Play activities enable teachers to:	
(268): Learning through Play activities enable teachers to motivate children who show low interest in learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(269): Learning through Play activities enable teachers to help children to believe or think they can do well in class activities.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(270): Learning through Play activities enable teachers to help children to memorize the lesson content better.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(271): Learning through Play activities enable teachers to help children to value learning.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree

Question	Answer
	98 Don't know
(274): Please indicate to what extent do you agree or disagree with the following. Learning through Play activities enable teachers to:	
(275): Learning through Play activities enable teachers to help children follow what the teacher is telling them to do.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(276): Learning through Play activities enable teachers to help children think critically.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(277): Learning through Play activities enable teachers to help children develop creativity.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(278): Learning through Play activities enable teachers to identify children who are struggling with their learning or falling behind in class.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(279): Learning through Play activities enable teachers to identify children that disrupt the class so that they can be punished.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(280): Learning through Play activities enable teachers to help improve children's reading skills.	1 Strongly disagree

Question	Answer
	2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(281): Learning through Play activities enable teachers to help improve children's numeracy skills.	1 Strongly disagree 2 Disagree 3 Neither agree nor disagree 4 Agree 5 Strongly agree 98 Don't know
(286): Why don't you wish to take part in the interview? <i>Question relevant when: \${consent} = 0</i>	1 Do not have time 2 Do not want to participate in research 3 Do not have permission/agreement from spouse 997 Other (specify)
(287): Other reason for not taking part in the study <i>Question relevant when: \${noconsent} = 997</i>	
(288): This is the end of our interview, thank you for your time.	
(289): GPS coordinates <i>GPS coordinates can only be collected when outside.</i>	
(290): [enumerator_name_pii], do you have any comments?	0 No 1 Yes
(292): [To the Enumerator] What type of comments do you have?	1 question/answer not applicable 2 survey length 3 question not understood 4 respondent upset 5 respondent name is misspelled 6 no comment 7 test survey 8 No contact with the respondent 997 Other (Specify)
(293): Which question/option was not applicable and why? <i>Question relevant when: selected(\${comments_category} , 1)</i>	

Question	Answer
(294): Please tell us why the survey was too long/short <i>Question relevant when: selected(\${comments_category} , 2)</i>	
(295): Which question was not understood? <i>Question relevant when: selected(\${comments_category} , 3)</i>	
(296): Please tell us at which point the respondent became upset <i>Question relevant when: selected(\${comments_category} , 4)</i>	
(297): Write the correct name of the respondent <i>Question relevant when: selected(\${comments_category} , 5)</i>	
(298): Please specify <i>Question relevant when: selected(\${comments_category} , 997)</i>	

Classroom observations

Question	Answer
(20): Please enter your enumerator ID <i>Start with 'RW' (Capital letters)</i>	
(22): You have entered the enumerator ID of [enum_name_pii]. Please confirm that this is correct.	☐ 1 Yes ☐ 0 No
(23): Enter the ID of the school you are visiting	
(25): You have entered the school ID for [sch_name_pii]. Please confirm that this is correct.	☐ 1 Yes ☐ 0 No
(40): Enter teacher ID	
(46): The teacher ID that you entered does not belong to the sample list, kindly go back and write correct teacher ID <i>Question relevant when: \${tr_name_pii} = null</i>	
(47): The teacher ID that you entered ([tr_id]) does not belong to the school that you entered ([sch_name_pii]: ID [sch_id_pii]), kindly go back and write correct teacher ID or the school ID <i>Question relevant when: \${sch_name_pii} != null and \${sch_id_pii} != \${tr_school}</i>	
(48): Please confirm that you are observing the following teacher: [tr_name_pii]	done ☐ 1 Yes done ☐ 0 No
(50): The ID that you entered ([tr_id]) is the ID of a replacing teacher. Please enter the ID of the teacher being replaced	done
(56): The replaced teacher ID that you entered does not belong to the sample list, kindly go back and write correct teacher ID <i>Question relevant when: \${rep_tr_name_pii} = null</i>	
(57): The replaced teacher ID that you entered ([rep_tr_id_pii]) does not belong to the school that you entered ([sch_name_pii]: ID [sch_id_pii]), kindly go back and write correct teacher ID or the school ID <i>Question relevant when: \${sch_name_pii} != null and \${sch_id_pii} != \${rep_tr_school}</i>	
(58): The replaced teacher ID that you entered ([rep_tr_id_pii]) is of another replacement teacher at ([sch_name_pii]: ID [sch_id_pii]), kindly go back and write correct teacher ID of the replaced teacher <i>Question relevant when: \${rep_tr_sample} = 0</i>	
(59): Enumerator: Please state the reason why you're replacing [rep_tr_name_pii]	☐ 1 The teacher is no longer at the school

Question	Answer
	2 The teacher is not available during the data collection period 3 The teacher refused to participate 997 Other (specify)
(60): Please specify <i>Question relevant when: \${rep_reason} = 997</i>	
(64): ENUMERATOR: Did [tr_name_pii] consent voluntarily to participate in the study?	1 Yes 0 No
(67): Observation Start Time? (Hours and minutes)	
(68): Hours	
(69): Minutes	
(72): Observation End Time? (Hours and minutes)	
(73): Hours	
(74): Minutes	
(76): Enter Classroom ID	
(77): Enter dates of the visit	
(78): Select the grade observed	1 grade 1 2 grade 2 3 grade 3 4 grade 4 5 grade 5 6 grade 6
(80): Select/Enter the subject observed	
(81): Note number of learners in the classroom	
(82): Identify the type of furniture for students	1 Desks with an attached bench 2 Individual desk and chair 3 Group table with chairs 4 Benches 994 None 997 Other specify
(83): Other specify	

Question	Answer
<i>Question relevant when: selected(\${furniture_type} ,997)</i>	
(84): Identify the arrangement of furniture	1 Rows 2 Groups (at a table or desks together) 3 A mix of rows and groups
(85): Select the available instructional resources even if they were not used during the observation <i>select all that apply</i>	1 Chalkboard 2 Whiteboard 3 Smartboard 4 Projector 5 Storage cabinet 6 Learning centers/corners 7 Slates/mini white boards 8 Mathematics (manipulatives, rulers) 9 Language (letter or word cards) 10 Art supplies (crayons, markers, glue) 11 Games 994 None
(86): Select the instructional materials that are displayed on the walls <i>select all that apply</i>	1 Language (e.g., alphabet, phonics patterns, grammar rules, word meaning) 2 Mathematics (e.g., 100's charts, shapes, fractions, multiplication tables) 3 Science (e.g., body parts, plants, solar system) 4 Social studies (e.g., maps, rivers, community) 994 None
(87): Select the ways student work are displayed in the classroom <i>select all that apply</i>	1 Exemplary (Only few students have work displayed) 2 Comprehensive (Many students have work displayed) 3 Charts with student names to track progress (e.g., books read, behaviour) 4 Student names as labels (e.g., desks, cubbies) 994 None
(88): Materials in the classroom connect new or abstract ideas to familiar experience (e.g., letters connected to pictures such as 'A' and a picture of an apple or 'sad' and a picture of a child crying) <i>select all that apply</i>	1 Language (e.g., letters with pictures of words beginning with that letter, words with accompanying pictures)

Question	Answer
	2 Mathematics (e.g., “one third” and a picture of a cake divided into 3, the number ‘4’ and a picture of 4 birds) 994 None
(89): A display with information that students can explore <i>select all that apply</i>	1 Science (e.g., body parts, plants, solar system) 2 Social studies (e.g., maps, rivers, community) 994 None
(90): Displays that support a sense of class togetherness <i>select all that apply</i>	1 Class or school values/goals 2 Class rules 3 Class or school motto/slogan 994 None
(91): Pictures or stories created by children are displayed	1 Exemplary (Only few students have their work displayed) 2 Comprehensive (Many students have displayed) 3 Charts with student names to track progress (e.g., books read, behaviour) 994 None
(95): Connection to Experience	
(96): Teacher uses everyday objects/spaces are physically present	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(97): Teacher orally connects interests, background or life outside the classroom	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(98): Teacher connects abstract concepts to things that are concrete and familiar	0 Not observed 1 Low= language only 2 High= movement, gestures or sounds etc
(99): Teacher uses other language (s)	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(102): Problem Solving Rating	

Question	Answer
(103): Teacher poses a problem to students	0 Not observed 1 Low= not genuine problem 2 High= genuine problem
(104): Teacher gives hints/suggestions/feedback	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(105): Students try different solutions (iteration).	0 Not observed 1 Low= Less than a half students 2 High= More than a half
(108): Exploration Rating	
(109): Exposure first before being shown how to use/answer it	0 Not observed 1 Low= rushed pace to explore 2 High= time and space to explore
(110): Teacher uses multiple methods to teach about a concept	0 Not observed 1 Low = Uses 2 methods to teach about a concept 2 High = Use 3 or more methods (calculation, drawing, listening, movement, objects, speaking, reading, writing).
(111): Symbolic play	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(114): Agency Rating	
(115): Students choose who plays each role in a group activity	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(116): Teachers allows freedom for academic task (students decide what/how)	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(117): Students express ideas or contribute without teacher prompting	0 Not observed.

Question	Answer
	1 Observed once. 2 Observed twice. 3 Observed three or more times.
(118): Students interact without direction from teacher	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(119): Teacher allows student freedom of movement	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(122): Participation Rating	
(123): Students practice a new skill	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(124): Teacher gives students opportunity to express their opinions	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(125): Teacher invites student questions	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(128): Social Connectedness Rating	
(129): Students assist each other in need	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(130): Students demonstrate togetherness or teamwork	0 Not observed 1 Low= Less than a half students 2 High= More than a half
(131): Teacher discusses / creates a sense of class togetherness"	0 Not observed.

Question	Answer
	1 Observed once. 2 Observed twice. 3 Observed three or more times.
(132): Teacher gives student or group of students responsibility	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(135): Positive Emotional Climate Rating	
(136): Teacher uses a mode of instruction that is explicitly positive	0 Not observed 1 Low=students response neutral 2 High=students response positive
(137): Teacher gives praise	0 Not observed 1 Low= general praise 2 High= specific labels/praise
(138): Use songs or energizers to start or divide activities	0 Not observed 1 Low=students response neutral/bored 2 High= students show joy
(139): Teacher shows awareness of student emotions	0 Not observed 1 Low= Teacher acknowledge Student emotional state 2 High= Teacher improves Student emotional state
(140): Teacher includes students who did not volunteer to answer	0 Not observed. 1 Observed once. 2 Observed twice. 3 Observed three or more times.
(141): Teacher provides risk free environment for participation	0 Not observed 1 Low=Encouragement is insincere/brief 2 High= Teacher is sincere/encouraging
(145): Why they don't wish to take part in the interview? <i>Question relevant when: $\{tr_consent\} = 0$</i>	1 Do not have time 2 Do not want to participate in research 3 Do not have permission/agreement from school Leader 997 Other (specify)
(146): Please specify other	

Question	Answer																		
<i>Question relevant when: selected(\${no_consent} ,997)</i>																			
(148): Thank you for your time																			
(150): [To the Enumerator] What type of comments do you have?	<table> <tr><td>1</td><td>question/answer not applicable</td></tr> <tr><td>2</td><td>survey length</td></tr> <tr><td>3</td><td>question not understood</td></tr> <tr><td>4</td><td>respondent upset</td></tr> <tr><td>5</td><td>respondent name is misspelled</td></tr> <tr><td>6</td><td>no comment</td></tr> <tr><td>7</td><td>test survey</td></tr> <tr><td>8</td><td>No contact with the respondent</td></tr> <tr><td>997</td><td>Other (Specify)</td></tr> </table>	1	question/answer not applicable	2	survey length	3	question not understood	4	respondent upset	5	respondent name is misspelled	6	no comment	7	test survey	8	No contact with the respondent	997	Other (Specify)
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(156): Please specify <i>Question relevant when: selected(\${comments_category} , 997)</i>																			

Focus Group Discussion guide – teachers

CONSENT FORM FOR ALL PARTICIPANTS - ENGLISH

RESEARCH COMPANY: Laterite Ltd.

AFFILIATED ORGANIZATION: Right to Play

AFFILIATED GOVERNMENT INSTITUTION: REB

YOUR INVOLVEMENT

As a primary school teacher, in this Focus Group Discussion, we will seek to capture your opinions about applying learning through play in the classroom and your experiences doing it or trying to do it. If you agree to participate, you will be asked a series of questions related to learning through play.

RISKS

We don't expect that you will experience any harm or negative consequences from participating in this research. However, if participation does make you feel uncomfortable or you experience any issues, you should feel free to leave at any time or raise any issues with us at any time.

BENEFITS

There are no direct benefits for participating in this study, but your opinions and insights may be used, where appropriate, to help Right to Play to develop or improve the E-learning and certification program.

AUDIO RECORDING, VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW

We take your consent to participating in this Focus Group Discussion seriously. We would like to record the session; this is for transcription and translation purposes only and will be kept confidential. If you do not consent to participating in the Focus Group Discussion or to it being recorded for transcription and translation purposes, you are free to leave the session at any time.

Participation in this research is entirely voluntary. You do not have to agree to be in this study and there will be no consequences to you if you refuse to participate. You will also have the right to withdraw from the study at any time, for any reason, if you so decide, or can choose not to answer any or certain questions that you do not want to answer. Any personal information or views you share here will be kept strictly confidential.

PRIVACY AND CONFIDENTIALITY

In order to respect your privacy and keep your answers confidential, we will not share any personally identifiable responses with persons who are not members of the research team. No personally identifiable information or any information that can be identified with you will be published. The information you will share will be safely stored on Laterite's secure servers and only professional research staff from Laterite Ltd. and programme staff from Right to Play will have access to this information.

By signing the form, you agree to not disclose any information shared by other participants in this Focus Group Discussion.

In addition, we will not identify you by name during our analysis or in the reports and final anonymous datasets that we produce. The final report will be published and the final anonymous datasets will be made available only to Right to Play and our learning partner Oxford MeasurEd. All details on you, including your names, the name of the village where you live, contact details and any information that could personally identify you will be removed before the data are shared.

WHO TO CONTACT

If you have questions about the research in general or about your role in the study, you can ask at any time during this focus group, or please feel free to contact Fabiola Niwenshuti, Laterite Data Manager, at Fniwenshuti@laterite.com or +250 788 648140.

For questions about your rights as a participant please call the Chair Person of Rwanda National Ethics Committee Dr Jean Baptiste Mazarati on +250 788 309 807, or Rwanda National Ethics Committee Secretary Dr. David Tumusiime on +250 788 749 398.

Before we proceed to consent, do you have any questions?

CONSENT FOR PARTICIPATION IN FOCUS GROUP DISCUSSIONS

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate and understand that I have the right to withdraw from the study at any time without any penalty.

Respondent - Print Name:

Respondent Signature:

Date (Day/month/year):

My signature below shows that I voluntarily agree that the focus group discussion can be recorded

Respondent Signature:

Objective

Right To Play is designing, building, and piloting a blended teacher training program on delivery of the Competence-Based Curriculum through play for lower primary teachers in Rwanda. As a part of Laterite's research on the project, this focus group discussion has the following research objectives:

1. To understand lower primary teachers' perceptions and attitudes towards the use of Learning through Play for the delivery of the CBC in their classrooms
2. To understand lower primary teachers' motivation and confidence towards the use of Learning through Play for the delivery of the CBC in their classrooms

Format and participants:

- Six focus group discussions, two in each of three locations in different districts
- Each focus group will contain 8 teachers
- The duration is one and a half hours of discussion including introductions and consent.

Format:

1. Introduction (15 minutes)
2. Theme 1: Perceptions about Learning through Play (40 minutes)
3. Theme 2: Confidence and motivation with Learning through Play (35 minutes)

FGD Guide

1: Introduction

15 minutes including introductions

Welcome to this Focus Group Discussion and thank you so much for making the time to join us today, we really appreciate it. We are from Laterite, a data collection and research company based in Kigali, and we have been asked by the NGO Right to Play to write a report about teacher training through education technology and your experience with the CPD course, called a “baseline study”. If you have been able to share an email address, we would be happy to share the final report, although it will be in English.

Right to Play is designing a blended teacher training programme for primary school teachers in grades P1 to P3, about how to do more to incorporate “Learning through Play” into their classroom practices and to deliver the Competence-Based Curriculum. The goal of this focus group discussion is to understand your views and experiences with Learning through Play. The feedback that you give us is very important and will be used to improve the course in the future.

Here are the ground rules of this session:

- All opinions are valid – there are no right or wrong answers.
- We would also ask you to be as honest as you can in your answers.
- Disagreeing with opinions is okay, but please respect each other’s opinions.
- We are recording the session to support our notetaking, so please talk one at a time.
- The session will last approximately 1 hour and 30 minutes.

Before we dive into our discussion, could we please do a round of introductions? Please tell us:

- your name
- subjects that you teach
- grades that you teach
- for how many years you have been a teacher

We are asking for your information so we can better understand the context. All the personal information you share here is confidential, and nothing you say can be traced to you as an individual through our research.

Hand out a sheet of paper and pen to register names; this should later be typed up onto a computer. A photo of the original list should be sent to the data team

Thank you very much. Before we start the discussion, we will do a short ice-breaker to make sure that we remember everyone's names.

Moderator: grab a small ball and sit in a circle with the participants.

Now, who wants to start? Please say your name and pass the ball to another person in the circle. The person will repeat your name and recite theirs to the rest of the class, then they will pass the ball again. When they pass the ball, the next person recites the two previous names and their own before passing. And so on until we finish the circle.

When the list starts to get long, encourage the participants to help each other remember forgotten names.

2: Perceptions about Learning through Play

40 minutes of discussion

In this section, we are going to discuss your perceptions and views about Learning through Play.

1. What do you think of when you hear the words Learning through Play?
2. How do you feel about a participatory and child-directed approach in the classroom? And how do you feel about a teacher-directed approach in the classroom?
 - a. Are there any specific situations in which a child-directed approach is better? Which ones, and why?
 - b. Are there any specific situations in which a teacher-directed approach is better? Which ones, and why?
3. In your view, how effective, or ineffective, is Learning through Play, at helping to teach the curriculum?
 - a. What subjects tend to benefit the most from a Learning through Play approach? Why?
 - b. What subjects may be better taught **without** a Learning through Play approach? Why?

4. In your view, what effects or outcomes, whether positive or negative, come from using a “Learning through Play” approach?
 - a. In your view, is Learning through Play effective or ineffective at improving students’ learning? Why or why not?
 - b. How can Learning through Play affect your relationship with students? Why?
 - c. How can Learning through Play affect the inclusion of boys and girls, and inclusion of students with disabilities? Why?

3: Confidence and motivation with Learning through Play

40 minutes of discussion

In this section, we are going to discuss your motivation and confidence to use Learning through Play in the classroom.

1. To what extent do you feel confident to use play into the classroom, and why?
 - a. What are some of the areas you would like to learn more about? Why?
 - b. Which skills would you like to develop more to better integrate play in the classroom? Why?
2. Do you feel that you have sufficient resources to implement Learning through Play? Why or why not?
 - a. In your view, which physical resources are needed to implement Learning through Play in general?
 - b. Which of those physical resources is your school lacking the most?
 - c. Do you feel that you have enough time to implement Learning through Play in the classroom? Why or why not?
 - d. Are there any other resources needed to implement Learning through Play that are missing in your school? Which ones?

Is there anything you would like to add that we have not already discussed? Do you have any questions for the research team?

- Thank you for your time and valuable participation! -

Focus Group Discussion guide – students

CONSENT FORM FOR SCHOOL LEADERS - ENGLISH

RESEARCH COMPANY: Laterite Ltd.

AFFILIATED ORGANIZATION: Right to Play

AFFILIATED GOVERNMENT INSTITUTION: REB

INTRODUCTION

Hi, my name is _____. We are from Laterite, a data collection and research company based in Kigali, and we have been asked by the NGO Right to Play to write a report about teachers' experiences with the Learning through Play E-certification course. If you have been able to share an email address or whatsapp number, we would be happy to share the final report, although it will be in English.

Right to Play would like to build a teacher training programme with an e-learning element to it, for primary school teachers in grades P1 to P3, about how to do more to incorporate "Learning through Play" into their classroom practices. The goal of this focus group discussion to understand students' experiences of their classroom environment. We expect this focus group discussion to last around one hour.

YOUR STUDENTS' INVOLVEMENT

In this Focus Group Discussion, we will seek to capture your students' opinions about their experience in the classroom: what they like about their classes, what they do not like, and if they have a good relationship with their teachers. If you agree for your students to participate, they will participate in a drawing exercise and will be asked questions about their classes.

RISKS

We don't expect that your students will experience any harm or negative consequences from participating in this research. However, if participation does make them feel uncomfortable or you experience any issues, they should feel free to leave at any time or raise any issues with us at any time.

BENEFITS

There are no direct benefits for participating in this study, but your students' opinions and insights may be used, where appropriate, to help Right to Play to develop or improve the E-learning and certification course.

AUDIO RECORDING, PICTURES, VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW

We take your consent of your students participating in this Focus Group Discussion seriously. We would like to record the session and take pictures of the drawing made by children during the exercise; this is for transcription and translation purposes only and will be kept confidential. If you do not consent to your students participating in the Focus Group Discussion or to it being recorded for transcription and translation purposes, they are free to leave the session at any time.

Participation in this research is entirely voluntary. You do not have to agree for your students to be in this study and there will be no consequences to you if you do not agree for them to participate. You will also have the right to withdraw your students from the study at any time, for any reason, if you so decide, or can choose for them to not answer any or certain questions that they do not want to answer. Any personal information or views they share here will be kept strictly confidential.

PRIVACY AND CONFIDENTIALITY

In order to respect your students' privacy and keep their answers confidential, we will not share any personally identifiable responses with persons who are not members of the research team. No personally identifiable information or any information that can be identified with your child will be published. The information you will share will be safely stored on Laterite's secure servers and only professional research staff from Laterite Ltd. and programme staff from Right to Play will have access to this information.

In addition, we will not identify your students by name during our analysis or in the reports and final anonymous datasets that we produce. The final report will be published and the final anonymous datasets will be made available only to Right to Play and our learning partner Oxford MeasurEd. All details on your students, including their names, the name of the village where they live, contact details and any information that could personally identify them will be removed before the data are shared.

WHO TO CONTACT

If you have questions about the research in general or about your students' role in the study, you can ask at any time during this focus group, or please feel free to contact Fabiola Niwenshuti, Laterite Data Manager, at Fniwenshuti@laterite.com or +250 788 648140.

For questions about your students' rights as participants please call the Chair Person of Rwanda National Ethics Committee Dr Jean Baptiste Mazarati on +250 788 309 807, or Rwanda National Ethics Committee Secretary Dr. David Tumusiime on +250 788 749 398.

Before we proceed to consent, do you have any questions?

CONSENT FOR PARTICIPATION IN FOCUS GROUP DISCUSSIONS

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily for my students to participate and understand that they have the right to withdraw from the study at any time without any penalty.

School Leader - Print Name:

School Leader Signature:

Date (Day/month/year):

My signature below shows that I voluntarily agree that the focus group discussion can be recorded and pictures of drawings can be taken:

School Leader Signature:

Objective: Right to Play is designing, building, and piloting a blended teacher training program on delivery of the Competence-Based Curriculum through play for lower primary teachers in Rwanda. The goal of this focus group discussion is to understand students' experiences with their classes and their interactions with teachers.

Please ensure that you:

- Provide school leaders and participants information that describes the aims of the research and sets out how data will be saved.
- Provide school leaders with the participation consent form, stating that they agree for their student to take part in the research.
- Ensure that all participants have agreed to take part at the start of the group before proceeding.
- Ensure that all participants have agreed to not disclose any information shared by others during the Focus Group Discussion.
- Ask school leaders for consent to record and take pictures of the drawings.
- Audio record the group discussion.

Format and participants:

- 6 participatory focus groups, with children from classrooms where teachers will attend the E-certification course.
- Each focus group will contain 6 students, either all male or all female. Two FGDs per treatment district.
- Up to one hour.
- Moderator and notetaker equipped with 6 sheets of A2 paper and a few packs of coloured pencils.
- Participants seated in a circle.

Format:

1. Introduction (15 minutes)
2. Discussion: Classroom experience (40 minutes)

FGD GUIDE

1. Introduction

15 minutes including introductions

Welcome to this Focus Group Discussion and thank you so much for being here today. We are from Laterite, a research company based in Kigali, and we are conducting this session to know more about your experience in the classroom. Please note that there are no right or wrong answers, so answer as honestly as possible. We will write down what is said in the discussion, but we will not use your names, so no one in your school or community will know what you said, and you will not get in trouble for anything you say.

Here are the ground rules of this session:

- All opinions are valid – there are no right or wrong answers.
- We would also ask you to be as honest as you can in your answers.
- Disagreeing with opinions is okay, but please respect each other's opinions.
- We are recording the session to support our notetaking, so please talk one at a time.
- The session will last approximately 60 minutes.

Before we dive into our discussion, could we please do a round of introductions? Please tell us:

- your name
- where you are from
- what is your favourite game.

Hand out a sheet of paper and pen to register names; this should later be typed up onto a computer. A photo of the original list should be sent to the data team.

Thank you very much! Before we start the discussion, we will do a short game.

Ice-breaker - *If you're happy and you know it song.*

The coach sings the song. The enumerator says what the children are supposed to do. E.g.) Coach: "if you're happy and you know it"; Enumerator: "snap your fingers!"

Now let's start with the discussion.

2: Classroom experience

40 minutes of discussion

Now we are going to talk about what you like and what you don't like about school. Please raise your hand before speaking. Also, please share as many details and examples as possible whenever you speak. Please remember there are no right or wrong answers. The teachers will not know what you share here in this discussion.

1. Game – your favourite class *(30 minutes including follow-up discussion)*

I am now going to give everyone a sheet of paper. On the sheet, I want you to draw your favourite class. While you're drawing, think about what you like about this class and what you do in it. Also think about what the teacher is doing in this class.

You have 10 minutes to draw the class, then you will present your drawing to the rest of the group.

Moderator: hand out sheets and coloured pencils to children, call everyone back in 10 minutes. Walk around the room while children are drawing, reminding them about the question they need to think about and include in their drawing.

Now everyone, in turn, will present their work and explain:

- a) What do you like about your favourite class?
- b) Can you tell us more about an activity you really liked in the class? Why did you enjoy it? Did you work alone or in groups during this activity?
- c) Can you tell us more about your teacher in this class? What does the teacher usually do? Do you enjoy working with your teacher in this class, and if yes, why?

Moderator: make sure to ask question a) to c) again if the student did not mention them in the presentation. Make sure to take a picture of each drawing that will be shared with the data team.

After every presentation, ask: Do you all agree? How many of you had a similar idea?

- 2. Now let's talk about a class that you **don't** like. Can you give me an example of a class that you did not enjoy?
 - a. What was the teacher doing in this class?
 - b. What were the students doing?
 - c. Did the class include any activities? If yes, which ones? Did you enjoy them?
- 3. Do you enjoy working with your teachers, such as doing activities during a class? Why or why not?
 - a. Do you have a good relationship with your teachers?

- b. Can you tell me about a time where you had a bad experience with one of your teachers? What were you doing, and why did you not like it?
- 4. What are some of the things that you like about going to school? Why? Can you please give examples?
- 5. Is there anything you would like to add or share with the group? Do you have any questions for us?

This is the end of the discussion. Thank you very much! Your participation is very important.