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PHASE 1: FINAL REPORT

Raising Readers

Can mobile technology enable Kenyan schools to improve parent and carer engagement in reading with their children?

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Acronyms and abbreviations

DBR	Design-based research
KAP	Knowledge, attitudes, and practices
LMIC	Lower middle-income country

Executive summary

The study Raising Readers: Can mobile technology enable Kenyan schools to improve parent and carer engagement in reading with their children?[1] led by **ODI and Worldreader**, investigates how technology can enhance parental and carer involvement in children's reading in Kenya. Kenya faces a significant challenge, with about 70% of children unable to read a simple text by age 10. This is not dissimilar to the situation across low- and middle-income countries around the globe, where over 50% of children cannot read a simple text by the age of 10.

Focus of the study

Through the support of EdTech Hub, ODI[2], a global affairs think tank, partnered with Worldreader to explore various engagement methods in using Worldreader's BookSmart App,[3] to understand effective approaches to digital reading better. BookSmart is a free digital reading application that offers a curated collection of books in English and Kiswahili, along with accompanying activities. The app can be used on any data-enabled device, including basic mobile phones, and allows offline reading by downloading books. This study takes an in-depth look at the interrelationship between engagement methods and the effectiveness of the BookSmart technology, keeping in mind Worldreader's intended purpose to **get children reading and comprehending at least 25 books a year**.

The main research question centres on whether mobile technology can help Kenyan schools improve parent and carer engagement in reading with their children. It focuses on the following sub-question in Phase 1 of the study:

Do different intervention modalities impact carer–child engagement in a reading application? If so, how?

Additional sub-questions on cost-effectiveness and impact on parent–child engagement and reading outcomes across gender and socioeconomic backgrounds are also explored. These questions will have central attention in the next phase of the study.

[1] See https://edtechhub.org/evidence/edtech-hub-research-portfolio/technology-to-improve-parent-and-carers-engagement-and-literacy-learning-kenya/ Retrieved 10 August 2023
[2] See https://odi.org/en/about/ Retrieved 16 August 2023
[3] See https://www.worldreader.org/booksmart-app/ Retrieved 10 August 2023

Methodology

Phase 1 involved parents and carers of 1,914 Grade 3 students from 14 schools in Nairobi and Kiambu counties in the use of BookSmart over a 12-week implementation period. A mixed-methods, design-based research (DBR) approach was used with five stages of research:

1. **Co-creation**, which involved convening a set of co-design workshops with stakeholders active in the parental engagement space in Kenya and ~60 school leaders, Grade 3 teachers and parents of Grade 3 students from schools where the study took place.
2. **Baseline survey**, conducted with 209 parents and carers across 14 schools who self-reported on reading with their child. A Knowledge, Attitudes, and Practices (KAP) framework was used to structure analysis.
3. **Continuous review,** analysing tracking and back-end data from the BookSmart App, and used to make adjustments and plan for further testing.
4. **Endline survey** conducted with ~78% of the carers who participated in the baseline survey, further complemented by a set of 16 qualitative interviews with parents and carers, as well as 8 interviews with teachers.
5. **Analysis**, using a combination of statistical tools, including the statistical software package known as STATA, excel for surveys, and the qualitative analysis software NVivo for in-depth interviews and focus group discussions, thematic network analysis, using both deductive and inductive coding. A co-analysis workshop was also held with research and implementation teams, along with a study adviser.

Interventions tested

Each of the 14 schools received a one-day training on how to use BookSmart. This training introduced school leaders, teachers, and parents to BookSmart and the digital literacy skills needed to use it. Two to three schools were assigned to each of the five interventions, while two schools served as control schools. Over 12 weeks, these supplementary inputs designed to improve parent-child engagement included training, digital messaging, feedback loops, and performance-based incentives. Table 1 below gives an overview of the interventions tested.

Table 1. *Overview of interventions tested in Phase 1 of the Raising Readers study*

Modalities	Description of intervention
Training	Providing carers training on how to read to their child, emphasising the importance of reading and book selection.
Messaging / Nudges	Delivering reminders through WhatsApp groups to encourage carers to read to their child.
Incentives	Offering rewards in the form of data bundles to carers with high-frequency reading tracked through reading passports.
Reading Celebrations	Inviting carers to attend events that recognise children's efforts and celebrate progress made in reading.
Feedback Loops	Conducting Learning Labs with teaching staff, school board, leaders, and parent representatives to discuss carer engagement as seen on Worldreader's 'Insights' dashboard.

Study results

Survey data revealed that mothers played a crucial role in children's reading habits, with 74% being mothers. Participants had low education levels and were engaged in casual labour or self-employment. Smartphone ownership was high (69%), making the BookSmart app generally accessible, also through neighbours and teachers, where needed. Endline data showed a 57% increase in app usage among male (89%) and female (82%) carers, promoting parental engagement despite financial barriers, with 60% having a monthly income under USD 100.

As measured by average reading time, intervention groups showed higher engagement using BookSmart than the control group. 'Incentives' led with 39 hours 29 minutes average reading time per school over 12 weeks, followed by 'reading celebrations' with 24 hours 13 minutes. 'Feedback loops' and 'training' had comparable levels (10 hours, 28 minutes, and 9 hours, 27 minutes per school, respectively). 'Messaging / nudges' had the lowest engagement (5 hours 57 minutes versus 3 hours 2 minutes in the control group).

There were indications that parents' knowledge, attitudes, and practices supporting their child's reading improved with the interventions. Parental perception was that children showed enhanced reading abilities, with a 4% decrease in basic readers and attendant increase in intermediate or advanced readers. Sixty-eight per cent of carers became 'very comfortable' using mobile apps for reading, up from 43% in the baseline survey. App usage increased by 57%, with 89% male and 82% female carers using it. Of carers, 85% preferred

the app for convenience and book range. Teachers said they adopted the app to enhance student learning.

Limitations and next steps

From a user perspective, limitations included ~20% citing access issues to the app due to costly data bundles, power outages, and, in some cases, lack of smartphones. Adjustments were made with the use of neighbours' phones and teachers reading to children without smartphones. In terms of research, school environments were found to have high influence on intervention fidelity, with variation in conditions affecting implementation.

This research confirms the importance of targeted engagement efforts to involve parents with children in using a digital reading app. While certain interventions appear promising, they raise questions on their efficacy in terms of impact and cost of higher intensity modalities such as 'training' versus lower intensity ones such as 'messaging'. This will be further explored in Phase 2 of the study, which will test refined modalities using quasi-experimental techniques.

1. Introduction

Over 50% of children in low- and middle-income countries (LMICs) cannot read a simple text by age 10 (↑Uwezo, 2021). **Parents and carers are critical in supporting foundational skills needed for children to improve their reading.** There is strong evidence of the role these actors play in building foundational skills needed for children to attend, prepare, and excel in school (↑Desforges & Abouchaar, 2003; ↑Dowd et al., 2016). Moreover, children spend considerably more hours outside than in school; in LMICs, only between 10% and 20% of a child's hours are spent in school (↑Friedlander & Goldenberg, 2016).

While it has long been known that parents and carers play a vital role in building children's foundational literacy, reliance on home learning increased exponentially during the Covid-19 pandemic. National lockdowns placed increased responsibilities for children's learning on parents as classroom teaching and learning shifted to take place — or not — in the home. Many, however, lack the educational resources, capacity, and requisite connections with schools to support their children's reading effectively. A critical question becomes how to help bridge those gaps.

Our research explores how technology can be best used to strengthen parental and carer engagement with children's reading in Kenya. Kenya has high rates of children who are unable to read, with about 70% of children unable to read a simple text by the age of 10 (↑Uwezo Kenya, 2016). In close collaboration with Worldreader, a digital reading organisation and partners in this study, this study tests a range of co-designed modalities that show high potential in facilitating greater parental engagement around children's reading using Worldreader's BookSmart app.[4]

This report covers findings from Phase I of this research, involving design-based research. Following this introduction, Section 2 outlines the methodology used, Section 3 covers contextual data, and Section 4 explores carer baseline knowledge, attitudes, and practices surrounding reading. In Section 5, we analyse data on the five modalities tested, comparing elements such as effectiveness, reading engagement, and reflections on modalities. Section 6 discusses insights on data, feedback from parents and carers, and plans for Phase II, with Section 7 concluding.

[4] BookSmart is a free digital reading programme accessible on any data-enabled device. It provides books and activities to children 3–12 years of age

2. Methodology

The methodology section discusses the research design, data collection mechanisms, and analytical approaches employed over the course of this study. Section 2.1 outlines the core research questions, while Section 2.2 discusses the design-based research (DBR) approach to the study. Section 2.3 discusses the implementation of the intervention and outlines the specific modalities tested. Finally, Section 2.4 discusses the strategies for gathering both qualitative and quantitative data, the sampling methods used, and the analytical tools applied.

2.1 Research questions

The main research question and sub-questions explored are as follows:

Can mobile technology enable Kenyan schools to improve parent and carer engagement in reading with their children?

Three sub-questions further guide our study design and analysis:

RQ1: Do **different intervention modalities** impact carer–child engagement in a reading application? If so, how?

RQ2: Do the different modalities **impact carer–child engagement and reading outcomes** based on gender and socio-economic backgrounds? If so, how?

RQ3: What is the **cost-effectiveness of each of these modalities** for improving carer–child engagement?

In Phase 1 we focused on **RQ1** to evaluate the effect of modalities on carer–child engagement and optimise for further testing. The subsequent research phase will explore all three sub-questions.

2.2 Design-based research (DBR)

The working hypothesis for RQ1 above is that there are a host of modalities that could impact increased engagement of parents and carers with children, and that some are more effective than others. In this study, effectiveness is defined as carer–child interaction time and quality, as reported by the carers and online analytics.

Co-creation and DBR methodology were used to understand which modality of implementation, from among those tested, increases carer–child

engagement the most. DBR uses “iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, leading to contextually sensitive design principles and theories” (↑Wang & Hannafin, 2005, p. 2).

The main stages of Phase 1 of the study have included:

- **Co-creation:** This initial step involved convening a set of co-design workshops. The first day was with a small group of stakeholders active in the parental engagement space in Kenya (Keep Kenya Learning, Kidogo, Kenya Library Association, Busara Center for Behavioural Economics). A second day was with ~60 school leaders, Grade 3 teachers, and parents of Grade 3 students from 12 Nairobi-based schools where the study would take place. The outcome was to co-design the set of five digital and physical interventions that would be tested.
- **Baseline survey:** In the initial phase of this research, we conducted a baseline survey through which 209 parents and carers across 14 schools self-reported their experiences in relation to reading with their child. A KAP framework was used to structure questions and subsequent data collection and analysis.
- **Continuous review:** Reading engagement on the BookSmart app was tracked, and the back end was analysed each week over the 12-week implementation. The findings were discussed in organisational meetings to evaluate the effectiveness of different modalities, to support adjustments, and to feed into plans for further testing.
- **Endline survey:** An endline survey was conducted with ~78% of the carers who participated in the baseline survey. The participants self-reported their experiences with their child’s reading during the intervention period. This survey was complemented by a set of 16 qualitative interviews with parents and carers, as well as 8 interviews with teachers.
- **Analysis:** Data collected through the above processes were analysed, with findings collectively reviewed by the research team. This included a two-day gathering of the research and implementation teams, along with our academic adviser, to have a closer look at emerging data. This report presents findings and analysis from across this first phase.

2.3 Implementation of the intervention

Building on the literature review and through the co-creation process, a set of five intervention modalities were identified. These were tested among carers of Grade 3 students in Nairobi and Kiambu counties in Kenya.

Intervention modalities developed through literature review and the co-creation process included:

1. Parental training
2. Nudges
3. Feedback loops
4. Incentives
5. Reading celebrations

All Grade 3 children were granted access to the BookSmart app. Different schools were purposely selected to receive different intervention packages.

Table 2 below lists the names of the schools associated with the different intervention modalities. A set of activities under each modality is listed alongside each school. The intervention modalities were implemented across 14 government schools located in Nairobi and Kiambu counties. Worldreader had an existing partnership with 12 of these schools, and it chose two schools to act as the control group. Carers from all 14 schools were given training on how to use the app. However, in the control schools, randomly selected carers were provided access to the BookSmart app but were not exposed to any of the five intervention modalities.

Table 2. *List of schools in the sample*

School Name	Modality	Location
AEF Ruben primary school	Training of parents (i.e., train parents on app usage and on building their awareness of why reading is important and how to engage children as they read). A total of 301 carers were trained at baseline in the two schools. Twenty-four carers were surveyed at endline.	Nairobi-Urban Informal
Elsavera primary school		Kiambu
Gatoto community school	Feedback loops (i.e., data on child learning sent to carers / teachers / school leaders through learning labs where reading engagement data is interrogated, and action plans are designed at the school level). A total of 313 carers were in this modality. Twenty were surveyed at endline.	Nairobi-Urban informal
Kabuku primary school		Kiambu
Kwa Njenga primary school		Nairobi-Urban Informal
St Elizabeth primary school	Reading celebrations (i.e., in-person community events on the importance of reading, led by parent-teacher associations and the schools). A total of 292 carers were in this modality. 23 carers were surveyed at endline.	Nairobi-Urban Informal
St Paul primary school		Kiambu
Our Lady of Nazareth (OLN)	Incentives (i.e., children and parents are given reading goals and incentives for the parents and carers who read the most books over the 12-week intervention. Progress is tracked using school-to-home reading passports). A total of 368 carers were given incentives. Thirty-one carers were surveyed at endline.	Nairobi-Urban informal
Limuru Mission primary school		Kiambu
Rongai primary school	Nudges / messaging (i.e., sending different types of WhatsApp and in-app messages / notifications to encourage app use and to inform parents on the benefits of reading). A total of 448 carers were in the 'nudges / messaging' modality. Thirty-one carers were surveyed at endline.	Kiambu
Mukuru Kayaba primary school		Nairobi-Urban Informal
Mukuru Community Centre (M) primary school		Nairobi-Urban informal
Ngecha primary school	Control group. A total of 192 carers belonged to the control group. Thirty-three were surveyed at endline.	Kiambu
Lunga Lunga primary school		Nairobi-Urban Informal

2.4 Data collection and analysis

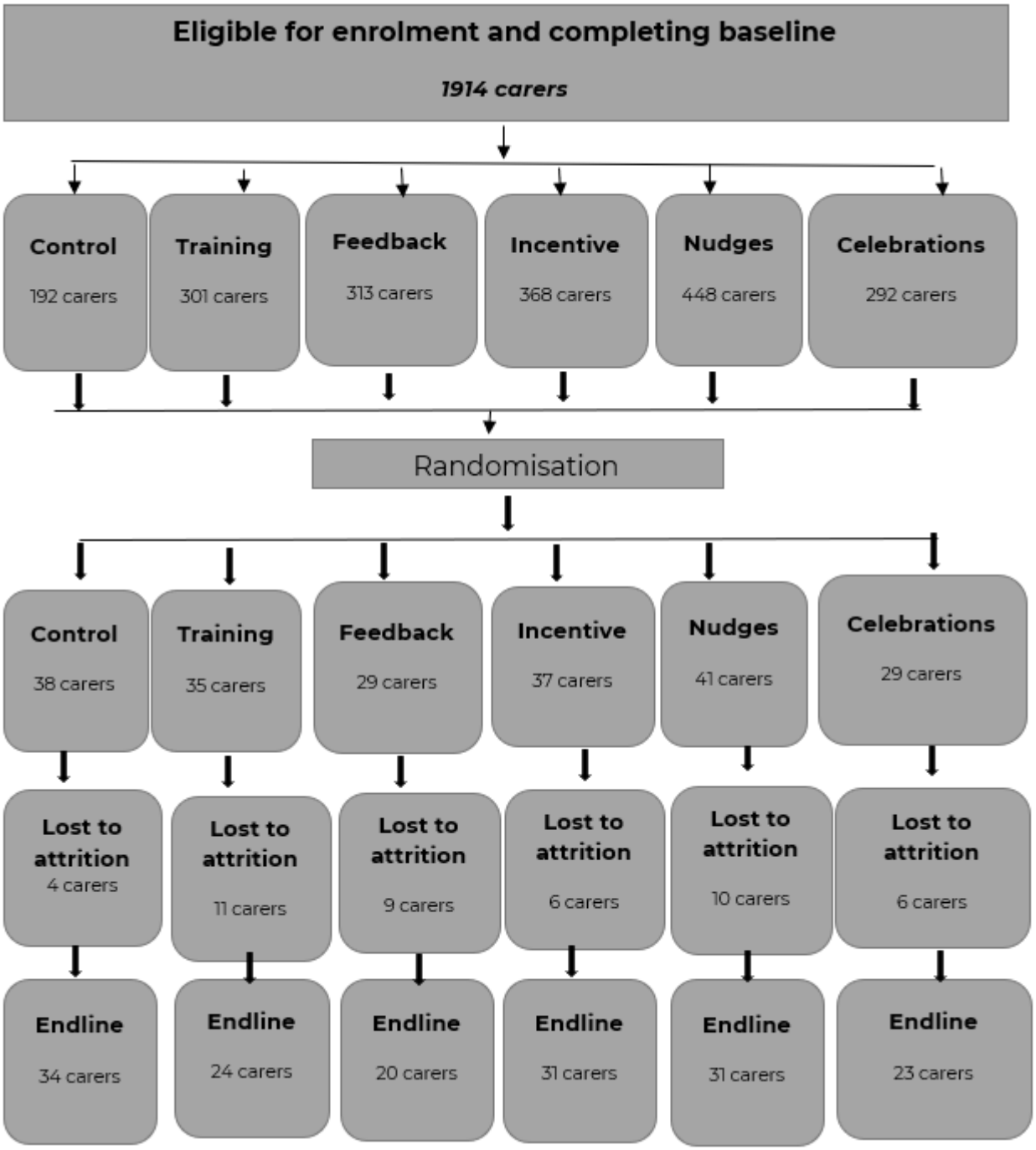
Endline data collection followed up with the carers who were interviewed in the baseline survey between July and August 2022 across the 14 schools. The endline was conducted in December 2022.

2.4.1 Sampling strategy

A random sampling design was used to draw a sample of participants in the survey at baseline. Within each school, random sampling was used to select participants for the project. The sample size was determined by targeting 10% of children from Grade 3. According to ↑Mugenda & Mugenda (2012), when the study population is less than 10, 000, a sample size of between 10% and 30% is a good representation of the target population and hence 10% was adequate for the analysis. At endline, the survey followed carers who participated at baseline and were then re-interviewed after the intervention was implemented.

Based on this, a randomised list of Grade 3 children was generated for each school to identify the sample of parents and carers for the survey. Figure 1 below shows the number of carers who were interviewed for the baseline and endline surveys in each school, as well as their respective shares in the overall sample, by modality.

Figure 1. *Total number of carers interviewed at baseline and endline*



2.4.2 Data collection procedures and analysis

The data collection tools for both the baseline and endline surveys were developed to capture relevant aspects of carers' socio-economic profiles and their engagement with children's reading before and after the intervention. Both baseline and endline data were collected at the school premises where children are enrolled. Messages were sent to carers inviting them to come to the school premises to participate in the interviews.

The KAP framework was identified as an appropriate lens through which survey questions could be framed, and behaviour outcomes measured at baseline, post intervention, and endline to assess any significant differences. The KAP survey has frequently been used by Worldreader as a method for collecting qualitative and quantitative information to measure effective reading behaviour change and potential social and attitudinal impacts of its programmes. The KAP framework[5] is based on the premise that knowledge positively influences an individual's attitude and attitude, in turn, influences practices or behaviour.

A paper-based survey questionnaire was piloted and adapted at baseline, and the survey questionnaire at endline was housed on the *Kobo Collect platform*. The instrument was pre-tested and then adapted before the actual exercise began, with the final version available in Annex 1. Eleven enumerators were trained on how to use the tool and collect data using tablets. Data were collected with close oversight from a country-based researcher from EdTech Hub and Worldreader's country team.

2.4.3 Quantitative data cleaning and analysis

On completion of each questionnaire, data enumerators saved and uploaded the responses to the online platform. The final database was compiled and downloaded in an Excel format. All respondents at baseline (209) and endline (162) are retained in the final analysis. An analysis of characteristics of individuals who did not participate at endline was conducted to assess whether there was any systematic omission from participation.

The statistical analysis tool known as STATA was used to analyse all quantitative data on the socio-economic profile of respondents as well as on their self-reported behaviours relating to engagement in children's reading using the KAP framework. Gender disaggregation and disaggregation by modalities of the data were considered to provide further insight.

2.4.4 Qualitative data and analysis

Three types of qualitative data were collected at the endline phase of this research:

1. qualitative questions within the endline survey
2. in-depth interviews with carers and teachers
3. a focus group discussion with school leaders.

[5] See https://www.spring-nutrition.org/sites/default/files/publications/annotation/spring_kap_survey_model_0.pdf Retrieved 24 October 2023

- A total of 13 qualitative questions were included as part of the endline survey, including specific questions on respondents' experiences with, and attitudes to, the BookSmart app and the intervention.
- A total of 24 in-depth interviews were conducted, of which 16 were with carers and 8 with teachers. The questions elicited detailed accounts of:
  - carers' knowledge and attitudes towards their child's reading
  - the different ways that the app was used at home and in schools; carers' and teachers' practices to drive reading at home
  - specific challenges faced in effectively using the BookSmart app.
- A focus group discussion was conducted with school leaders from 11 schools. The data on reading engagement was reviewed and discussed by school leaders, providing rich insights into the factors that affected this throughout the intervention in each of these schools.

A thematic analysis was used to organise and analyse this data across two levels — organising and basic themes.

Organising themes followed the KAP framework. Insights were grouped into either knowledge, attitudes, or practices. For instance, responses on why carers perceived their child's reading ability as basic, intermediate, or advanced were categorised under 'knowledge'. Preferences were grouped under 'attitudes'. Specific behaviours around children's reading were grouped under 'practices'.

Basic themes were the lowest-order themes. They were created based on the nature of the open-ended survey questions and an initial scan of the qualitative responses. They covered issues such as child performance, ability, types of training providers, knowledge of community resources, etc.

For the organising and basic themes, the team used a hybrid approach of deductive and inductive coding to analyse the data. For example, basic themes corresponding to 'knowledge' included understanding the child's challenges, school performance, and motivation. First, a deductive coding scheme was identified based on the topic areas contained within the survey questions. Then, the team applied a more inductive approach, capturing emergent themes through a closer reading of the responses. Together, these approaches helped to identify the basic and organising themes iteratively. The qualitative survey data were analysed using manual qualitative coding on Microsoft Excel, while the data from in-depth interviews and the focus group discussion were coded using NVivo.

3. Contextual data

This section presents **key statistics on carers who participated in both baseline and endline surveys**, including information about their children and households. This includes information on socio-economic status, carers' education levels, employment status, monthly household income, the number of books at home, carers' ownership and usage of smartphones, and their digital literacy.

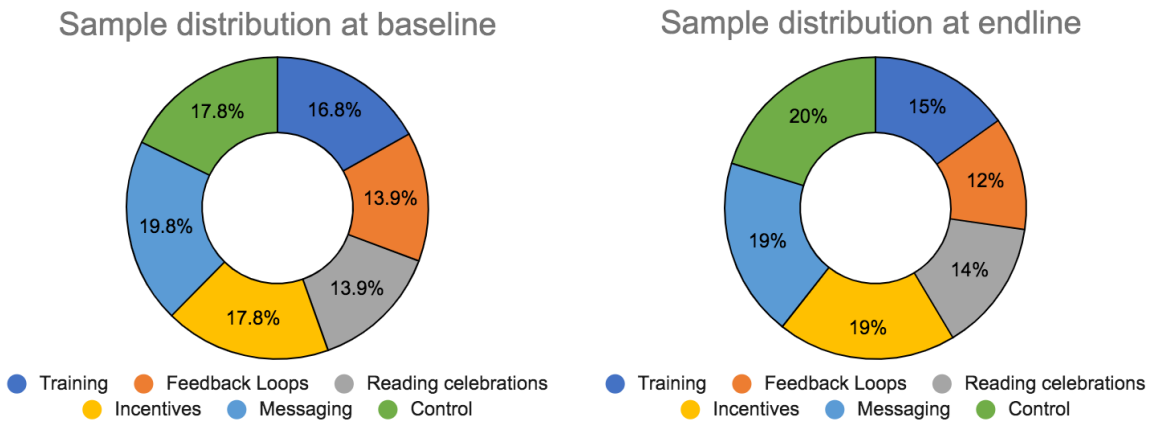
The contextual data helps **frame and inform findings in subsequent sections** on carers' knowledge, attitudes, and practices around children's reading and on the effectiveness of different intervention modalities to enhance their engagement.

3.1 Sample description

A total of 209 carers were surveyed at baseline. One hundred and sixty-four respondents (78.5% of the sample) were female, while the remaining 45 (25.5%) were male. A total of 162 carers were successfully re-interviewed at endline. The gender composition of the sample remains unchanged between the baseline and endline surveys, despite changes in the absolute numbers. Women were overrepresented in both samples.

Figure 2 below shows the distribution of participating carers across the modalities. At endline, carers in the control group constituted the biggest proportion (20%) of the total participants. From the intervention modalities, carers in the 'messaging' and 'incentive' modalities both make up 19% of the total participants. 'Feedback loops' (12%) make up the smallest group of the total participants.

Figure 2. *Sample distribution by modality at baseline and endline*



3.2 Sample attrition

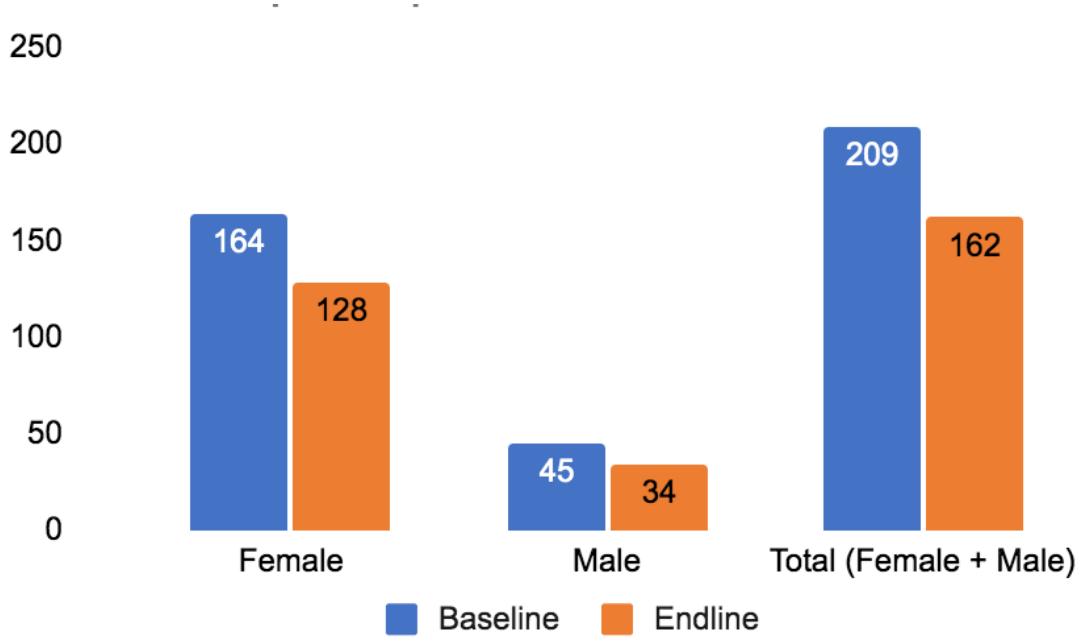
The total number of carers who participated in the surveys fell from 209 at baseline to 162 at endline. This represents a **77.5% re-interview success rate**. The **attrition rate of 22.5%** was due to several factors, including because:

1. Some carers could not be reached via phone to confirm participation
2. Some parents and children had transferred from the area
3. Some carers could not get time off from their work to participate in the interviews.

Figure 3 below illustrates that the number of participants was constantly lower at endline than at baseline, with males demonstrating a higher percentage of decline in participation at 24%, compared to females at 22%.

Most of the carers' basic characteristics (e.g., age, gender, education, occupation, and income levels) did not vary across the two time periods and different intervention arms. Carers were followed for a period of nine weeks after baseline, and 47 carers were lost in the process of following up. Thus, at endline, there were 47 fewer participants. We found no correlation between the drop in participants from 209 to 162 and baseline characteristics such as carer age and gender, and thus a lower likelihood of bias in the validity of results. This is in line with a test for attrition showing that the difference in characteristics of participants at baseline and endline was not statistically significant.

Figure 3. *Number of participants by gender*



3.3 Key child and household data

This section offers the context for this study, situating the findings within the context of varied household environments and profiles of parents and carers who were part of the intervention. The key variables include gender, age, education levels, socio-economic backgrounds, smartphone ownership, and digital literacy.

3.3.1 Key statistics on children: age and gender

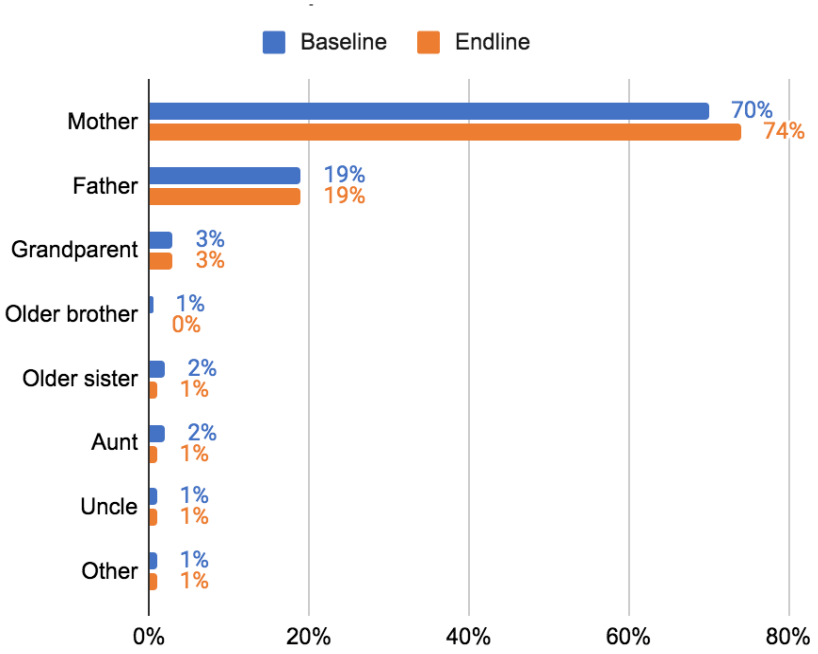
The average age of respondents' children at endline was 8 years and 8 months, a minor increase from 8 years and 7 months at baseline (see Table 5 in Annex 2). The average age is consistent with the official age of Grade 3 children across Kenya (↑Ngware et al., 2013). There is no change in the gender composition of Grade 3 children at endline. At baseline and endline, 57% of the children in our sample are girls, while the remaining 43% are boys.

3.3.2 Carers's relationship to children

Of the 162 carers who responded at endline, 119 are mothers, representing 74% of the total survey sample (see Figure 4). Thus, there is a 4-percentage point change in percentage between mothers at baseline (70% of the sample) and those at endline. Mothers represent the largest subgroup, with fathers at 19%. The percentage of mothers is perhaps not surprising given that typically, mothers perform the role of primary carer (↑Zuurmond et al., 2019). There are

also minimal percentages of grandparents, older sisters, aunts, older brothers, and uncles in the carer sample.

Figure 4. *Carers' relationship to children*



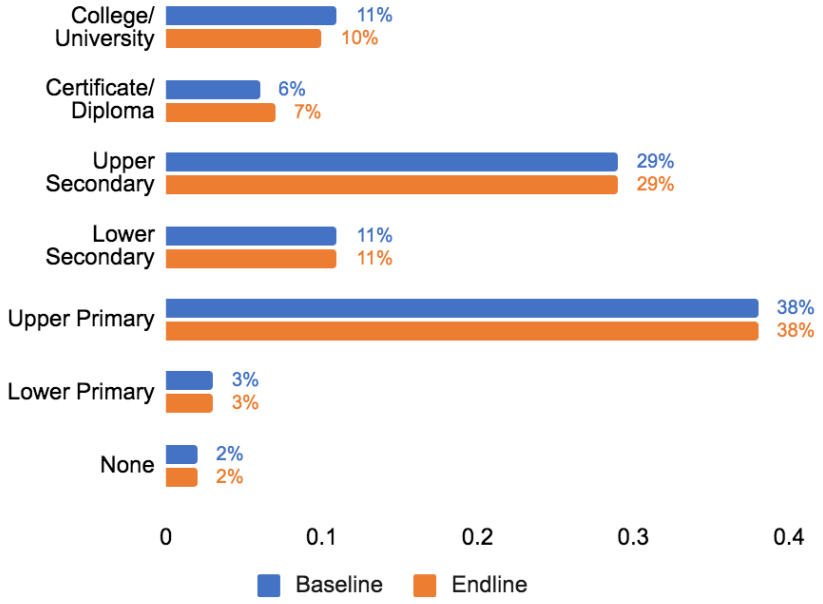
3.3.3 Household size

The average household in our sample consists of 2.3 children. Male respondents tend to represent slightly larger households, with 2.6 children, relative to female respondents, with 2.2 children. The endline average household sizes were lower than at baseline, but the distribution by gender of the carer has been the same. Attrition was higher among carers from larger households. The maximum household size is 16 at baseline and 8 at endline.

3.3.4 Education level

The **education level of the survey respondents is low overall** (see Figure 5). About 38% of the respondents completed primary upper grades (i.e., Grades 6–8). Only 29% of the respondents completed secondary upper education (i.e., Forms 3–4). A limited percentage (2%) have no education.

Figure 5. *Education levels of carers at baseline and endline*

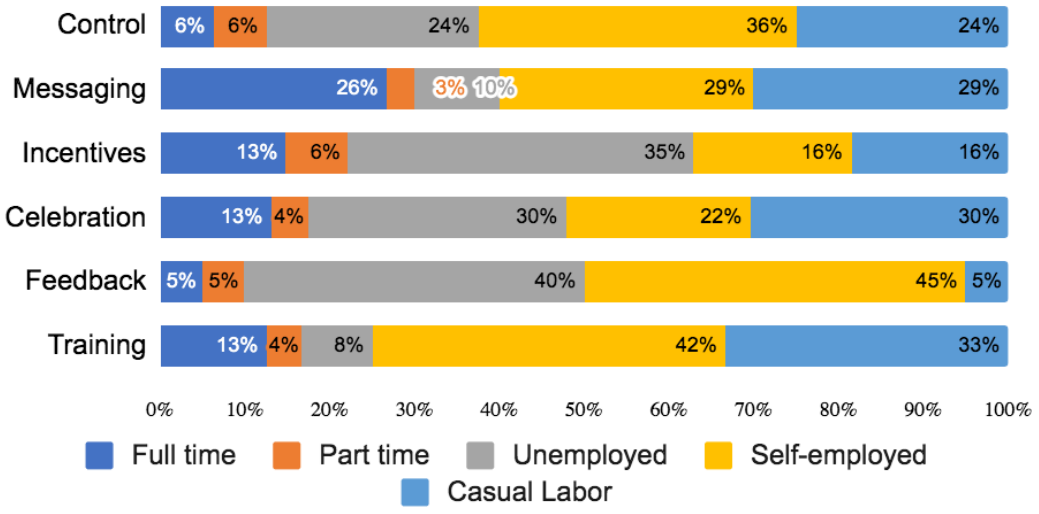


3.3.5 Occupation status

Approximately 30% of the carers surveyed are employed as casual labourers, and another 30% are self-employed.

The most prevalent participant employment type (42%) in the 'training' modality is self-employment; for participants in 'feedback loops', it is casual labour. Casual labour and unemployment are equally common (30%) in the 'reading celebrations' modality, while in the 'incentive' modality, unemployment is the most prevalent (35%) employment type.

Figure 6. Carer *occupations by modality at endline*

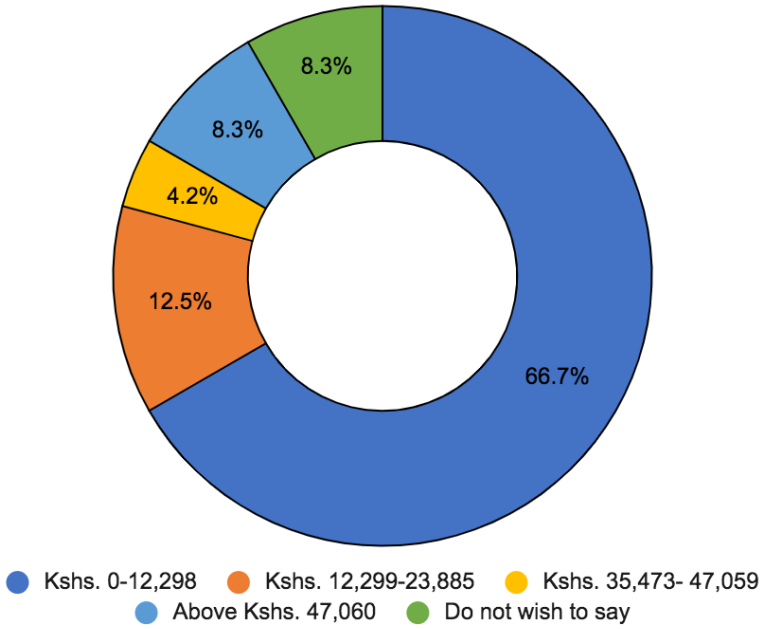


3.3.6 Household income

Average monthly household income for over 60% of the survey respondents lies between Kenyan shillings (Kshs) 0 to 12,298 (i.e., USD 0 to 94.89) (see Table 11).[6] The remaining 42% of respondents have reported incomes higher than Kshs 12,299 (i.e., USD 98.28, or over). Almost 80% of the sample falls into the two lowest income categories.

Further analysis suggests that female respondents tend to come from households with lower income levels. Even though many males come from households with the lowest income bracket, the situation is not the same across all modalities. For example, there are many males with an average monthly income of Kshs 12,299–23,885 in 'feedback loops', 'reading celebrations', and 'messaging' modalities and in the control group.

Figure 7. *Carers' monthly household income at endline*



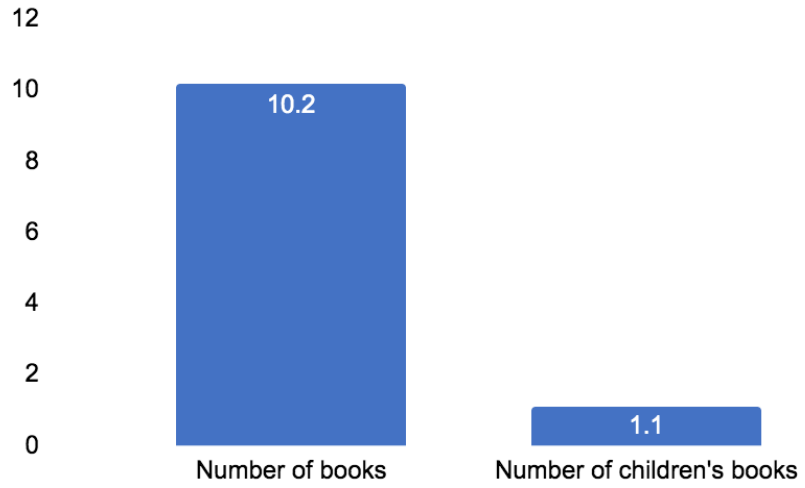
Exchange rate: 1 USD = 129.59 Kshs. Source: xe.com (on 11 March 2023)

3.4 Overall number of books and children's storybooks

While respondents have an average of ten books in their house, they only have one children's book per household on average.

[6] Exchange rate: USD 1 = Kshs 129.59. Source: xe.com (on 11 March 2023).

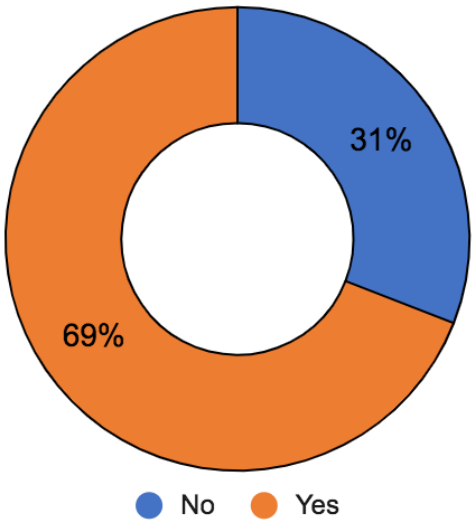
Figure 8. *Average number of books and children's storybooks in carers' homes*



3.5 Phone ownership and usage

Smartphone ownership is relatively widespread in the study communities, allowing easy access to the *BookSmart app*. **Over 69% of the sample stated they own a smartphone** (see Figure 9 below).

Figure 9. *Smartphone ownership among parents and carers*

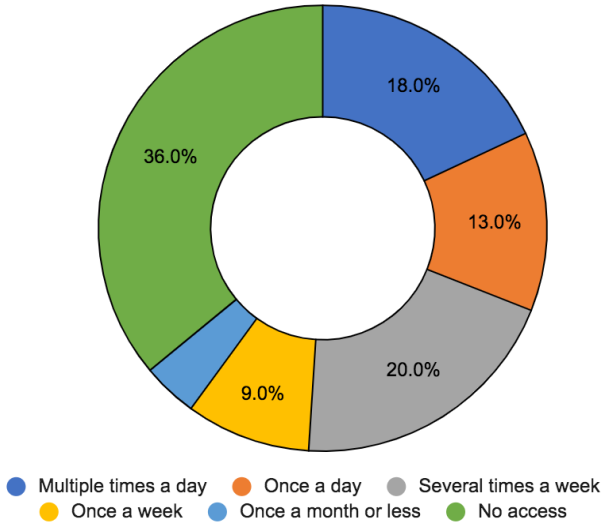


Additionally, **some carers have access to smartphones** even though they do not own them. Twenty per cent of carers have access to smartphones several times a week, even though they do not own the smartphone themselves (see Figure 10 below).

Many carers who own smartphones also report that they use the smartphone frequently. Ninety-five per cent of carers use smartphones multiple times a

day. Fewer groups of participants with smartphones access it once a day (3%) and several times a week (2%).

Figure 10. *Usage of smartphones not owned by carers*



3.6 Access to mobile data

The variations in the ownership, usage, and access to smartphones have implications for access and usage of mobile data. Thirty-three per cent of carers responded that they buy mobile data daily, while 27% purchase mobile data twice a week.

There are low percentages of respondents who purchase data once a week (10%), once a month (4%), and some who never buy data (3%). Figure 11 below shows that many carers in the 'training' (32%) and 'messaging / nudges' treatment arms (56%) buy data daily. In other treatment arms such as 'feedback loops', 'incentives', and 'reading celebrations', many carers buy data twice a week.

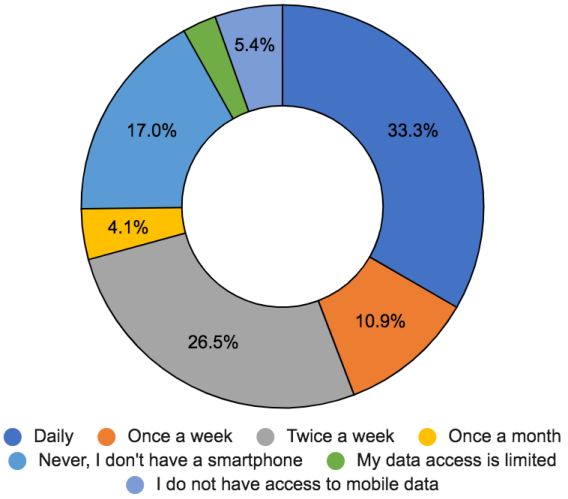
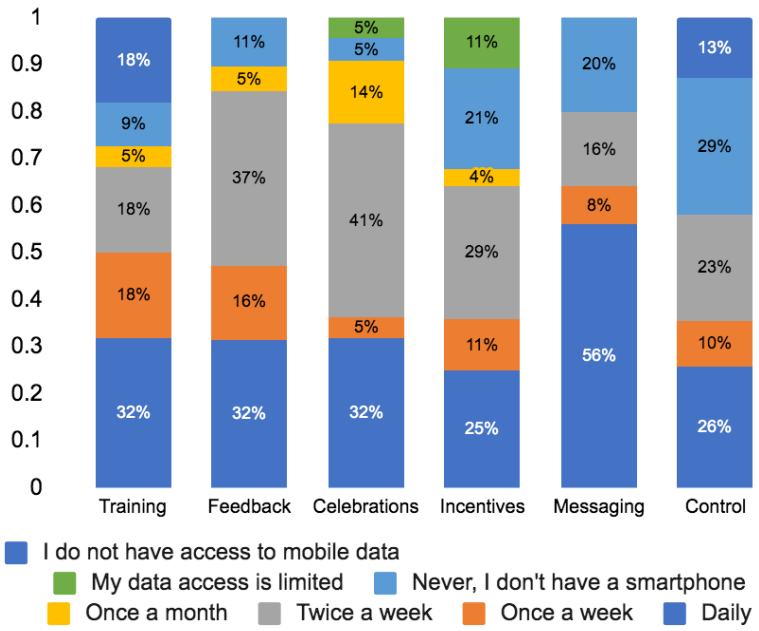


Figure 11. *Frequency of buying mobile data.*

Figure 12. *Frequency of buying mobile data by modality*



3.7 Digital literacy

Carers use a range of mobile apps on their own smartphones. We observed an increase in the use of mobile apps among the carers. At baseline, Mpesa and WhatsApp were the most widely used apps among male and female carers. At endline, WhatsApp, BookSmart, Mpesa, and YouTube were being used the most. This indicates a significant increase in the use of BookSmart at endline. **The BookSmart app, which was used by 24% of male carers and 33% of female carers at baseline, is being used by 89% of male carers and 82% of female carers at endline representing an average percentage point increase of 57%.**

Accessibility challenges

Teachers have noticed two key accessibility concerns among their students' carers. First, some carers do not have smartphones or are not digitally literate, which is a disadvantage. Second, some carers are uneducated or illiterate and are unable to read to their children at all.

Teachers often read with students who do not have access to smartphones, either before or after school. At Ngecha Primary, for example, teachers offer remedial classes between 2 and 4 p.m. for students who cannot access the app. Some schools also downloaded the app onto computers to allow students to use school facilities to read on BookSmart during remedial classes. Some have students read or narrate stories in class so that all the students can

participate in class discussions and questions. Additionally, teachers themselves use BookSmart to read to students whose carers are not educated to ensure that the students are not left behind.

4. Parental knowledge, attitudes, and practices

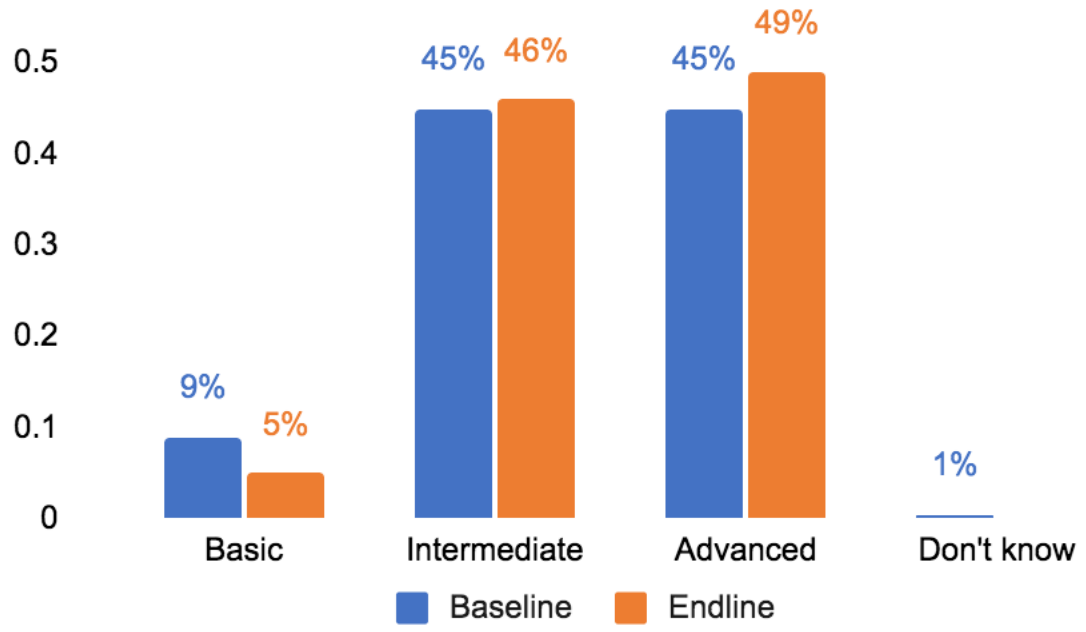
The baseline and endline surveys prompted respondents to reflect on their knowledge, attitudes, and practices towards multiple aspects of reading with their child and reading more broadly. This section evaluates the changes in carers' knowledge, attitudes, and practices over time.

4.1. Knowledge of children's reading ability

At endline, 79 carers or 49% (out of a total of 163) classified their children's reading ability as advanced; meaning the children were able to read and correctly comprehend a paragraph or short story. This proportion has increased slightly since the baseline survey, where 45% of the 209 carers stated that their child was at an advanced reading level.

Another 75 carers, i.e., roughly 46% of the overall sample, classified their children's reading ability as intermediate; this was defined by their ability to read a word or sentence. The proportion of this group (45%) is approximately the same as at the beginning of the intervention.

Figure 13. *Perception of children's reading ability at baseline and endline*



To assess their children's reading ability, many carers noted **their children's strengths and weaknesses**. Carers whose children read at an intermediate level, for example, noted that their children could read a full sentence

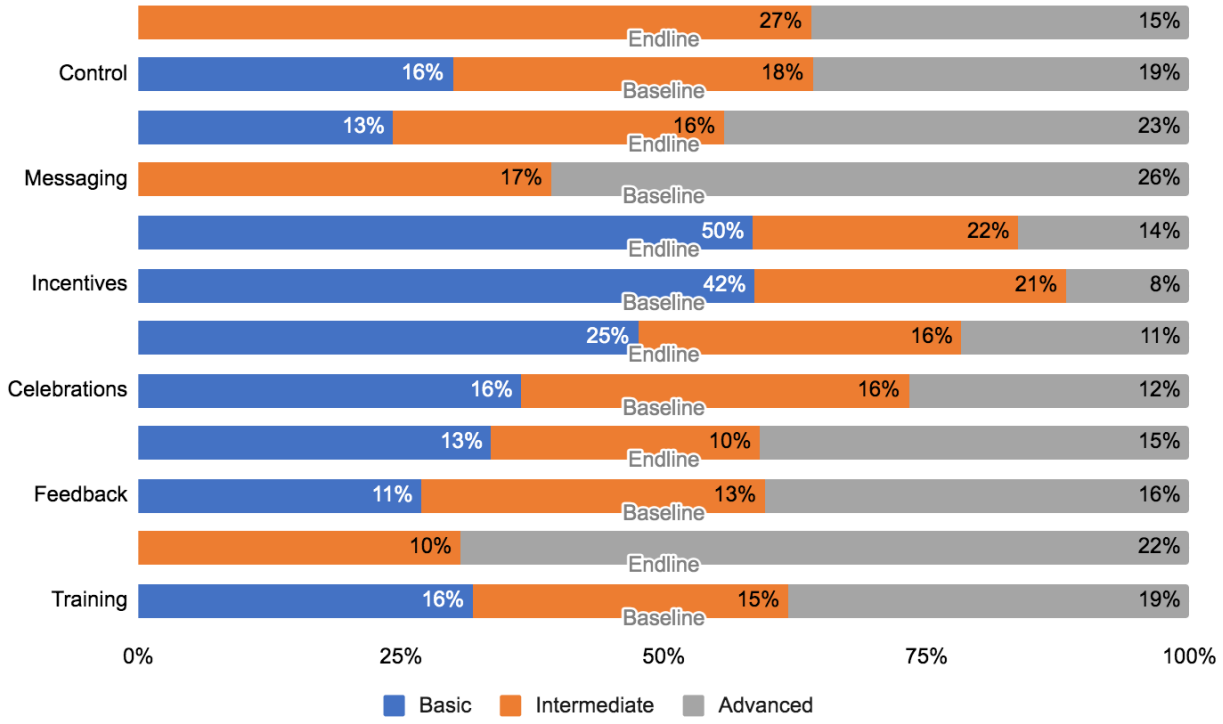
comfortably, struggled with reading unfamiliar words, were lacking in comprehension skills, or could do homework independently even if with some mistakes. **Teachers' feedback on children's performance in school** is cited as an important source of information about the children's reading ability. Further, the carers also referenced school report cards, exam results, and observed improvements in their school performance. Children who scored high marks or received glowing feedback from teachers were perceived to have an advanced reading ability. **Children's attitudes** also helped inform the perceptions of the carers. Twenty-five carers perceived their children's reading levels as advanced or intermediate based on their children's love of reading (sometimes without supervision), and self-discipline and self-motivation in studies and while doing homework.

Finally, 45 carers appear to have gained insight into their children's reading levels by **spending time reading with their children**. Through this practice, carers gain insight into their children's confidence, comprehension, pace, fluency, hesitation, and need for assistance. Further, the interviews revealed that carers who regularly read to their child were better able to evaluate the different aspects of their child's reading that improved. Carers were able to accurately pinpoint improvements in specific areas such as creativity, confidence, compositions, communication, interest, pace, hesitation, and need for assistance. **Through the course of their reading practice, carers have been able to evaluate their children's specific strengths and weaknesses.**

Five carers (5%) reported their child's reading ability as basic (i.e., having some knowledge of sounds and letters). At baseline, 19 out of 209, or 9%, had stated that their child's reading ability was basic. These carers noticed their child's challenges with reading sentences and spelling, along with concerns about their child's performance.

Figure 14 below disaggregates carer perceptions of their children's reading ability by intervention modality. Among the modalities, there is generally an increase in the percentages of carers who classified their children as having intermediate and advanced levels of reading skills at endline. For example, carers in the 'training' and 'incentives' groups demonstrate a three per cent increase in the number of carers who classified their children as having advanced skill levels. Further, between two time periods, the data also indicate a reduction in the percentages of carers who classified their children as having advanced or intermediate reading skills. This is true of carers in the 'feedback loops', 'reading celebrations', 'messaging / nudges' groups as well as the control group.

Figure 14. *Perception of children's reading ability by modality*



4.2 Knowledge of community resources

The proportion of carers who reported that they were aware of resources in their communities to support learning **increased by 4%** — from 24% at baseline to 28% at endline. While a similar proportion of men and women were aware of community resources at baseline, women were five percentage points more likely to know about community resources at endline.

The most popular community resources were **libraries and community centres**. Twenty respondents, or 44%, were aware of community libraries in their area. However, we noted that signing up to use libraries and community centres involves a fee, which acts as a barrier to accessing these resources for some students. Eleven respondents mentioned different community centres, learning resource centres, and community reading centres.

A total of 10 respondents sent their child for **tuition** (additional classes or tutoring) to supplement their child's learning. Five respondents mentioned **faith-based organisations** such as churches and madrassas, of these, three mentioned churches as sites for tuition. This was closely followed by enrolment in tuition classes, mentioned by 11 respondents.

Five more respondents noted **friends and neighbours** as significant support for students' learning. Some carers observed that students in the community take the initiative to revise as a group outside of classes and form **reading groups and study groups** with their peers. This indicates that students are motivated and lean on their social connections to improve their learning and performance in school.

4.3. Participants' experiences using BookSmart

Five of the 16 carers who were interviewed stated that their most significant learning was that BookSmart could help save them money, particularly because they no longer have to buy multiple storybooks. Another significant learning was related to the value of the app's features. The dictionary was seen as a way to improve students' vocabulary, questions as a way to improve their child's comprehension, and the audio teacher feature helped with reading difficult words. Carers appreciated the collection of stories and pointed out that they can access various stories for different ages. They have also learnt that reading time has strengthened their bond with their children.

Carers pointed out that BookSmart was a great way to engage their children with reading. The children appeared more interested in starting to read and more focused when using BookSmart than when doing homework and reading physical books. In an interview, one carer explained that reading using BookSmart has helped her child stutter less. One interviewed carer said their most significant learning was "*that my child can do so much if given the right support*" (carer, Rongai Primary).

4.4. Attitudes towards reading

Carers were asked if they felt reading was important for their child's success in school. Both at endline and baseline, most carers agreed that reading is important. The data shows that at both endline and baseline, over 97% of carers agreed that reading is important for children's success at school.

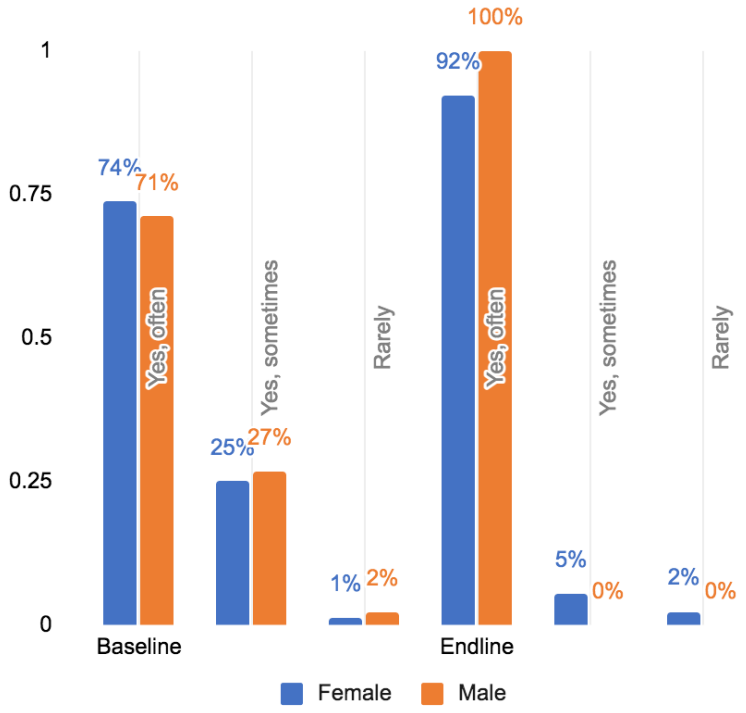
Carers who were interviewed stated several **reasons why they believe that reading to their child is important**. Carers accurately linked parental engagement to improving their children's school outcomes, particularly in the context of their futures — they want their children to improve in their studies to get into a good secondary school and get a scholarship. The motivation is to help their children succeed and lead good lives. According to one carer, "*the one-on-one experience with the child leads to more concentration and focus, which can lead to better performance, unlike in school where the teacher has*

many children to look after." Another clearly described her motivation to read to her child, "*I feel so excited when my child is able to read well, something I was not able to do when I was her age … I want my child to achieve more than I was able to achieve*" (carer interview, Ngecha Primary).

4.5. Attitudes towards relationships with children

Compared to baseline, endline data shows a very high percentage of carers reporting that they communicate with their children frequently. There is an increase from 71% to 100% among male carers and an increase from 74% to 92% among female carers reporting that they speak with their children frequently. A small percentage of carers, especially female carers, also reported speaking with their children less often (5%) and rarely (2%).

Figure 15. *Communicating with children: frequency of carer–child communication*



Carers were asked to reflect on whether they had observed any changes in their children's behaviour while reading to them. These included being more confident, doing better in school, speaking more with their parents, telling stories, or wanting to read more with their carers, and asking for more stories. Data show that the most common observed behaviour changes are children having more confidence, children telling more stories, and children doing better at school. Carers stated that their children felt happy and / or supported when they were read to. Carers were asked to choose from one or more responses to indicate how their children felt when being read to. A total of 85%

of carers responded that their children felt happy when read to, while another total of 60% of carers also reported that their children felt supported when they were being read to. About 44% of carers also felt that their children were confident when being read to.

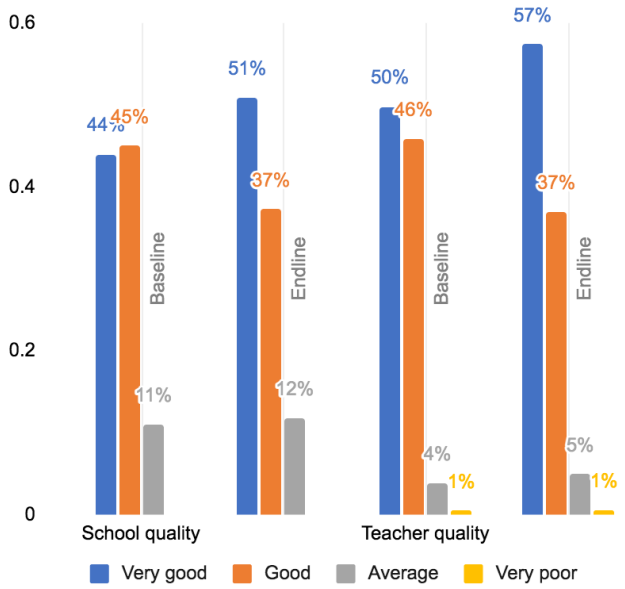
In interviews, carers mentioned that the shared reading time helped them develop better emotional connections with their children. Several carers mentioned that spending one-on-one time with their children, using BookSmart as a shared activity, helped them develop friendship and a new level of closeness between them and the children. In this context, one carer elaborated,

> *"Anytime she comes across a challenging word she comes to me for help, and we read together, and sometimes she asks me which story I would like her to read for me and would read out loud to me"* (Elsavera primary).

4.6. Attitudes towards children's schools

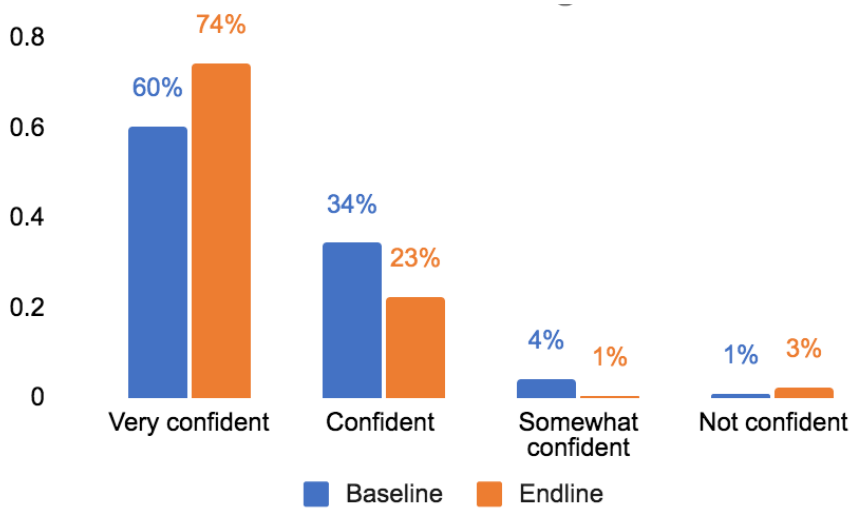
Carers also shared their perceptions of the quality of teachers and of the schools their children attend (see Figure 16). A higher share of carers at endline (51%) relative to baseline (44%) found school quality to be 'very good'. Similarly, at endline, many carers ranked teacher quality as 'very good'. This is an increase of 7 percentage points from 50% at baseline to 70% at endline.

Figure 16. *Perceptions of education quality*



Carers felt more confident about communicating with the children's teachers at endline, compared to baseline. About 74% of the carers said they are 'very confident' talking to their child's teachers about school performance (see Figure 17). This is an increase from 60% at baseline. Smaller percentages of carers said that they were confident (23%) and somewhat confident (1%) about communicating with teachers.

Figure 17. *Confidence communicating with teachers*



4.6.1. Attitudes to the use of mobile apps

Carers were asked if they would feel comfortable reading to their children using mobile apps. Sixty-eight per cent reported they are 'very comfortable', while 24% reported they are 'comfortable' (see Figure 18). The percentage of carers who reported being very comfortable reading with their child increased by 25 points between baseline and endline.

Figure 18. *Carers' levels of comfort with reading using mobile apps*

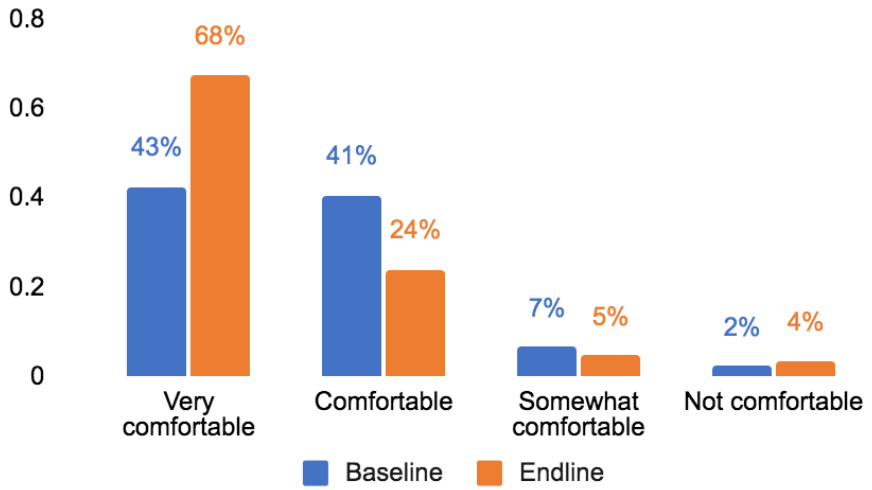
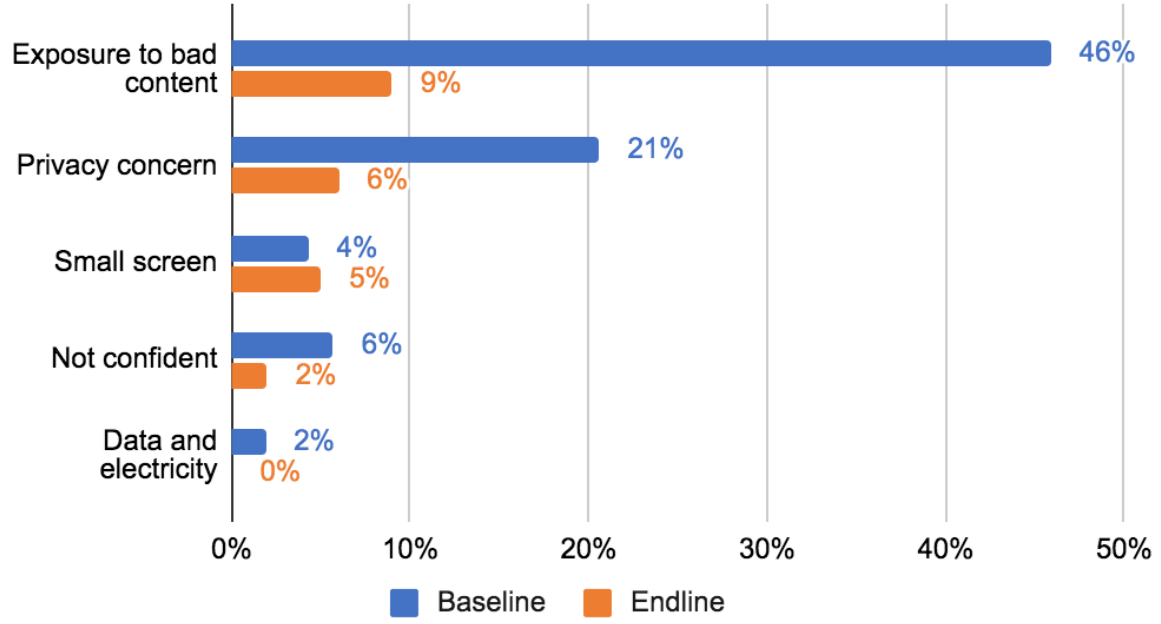


Figure 19. *Primary worries about children using mobile phones*



However, some carers still expressed concerns about children using mobile phones. For example, only 9% of respondents reported worrying that their children would be exposed to harmful content. This is a significant decline from 46% at baseline. An additional 6% of carers raised privacy concerns.

When asked an open-ended question about their experiences with reading on a digital platform, 92 participants who responded to the endline survey mentioned things they did not like about reading on a digital platform.

The most common concern about using a digital platform was children's safety on the internet. Twenty-six out of the 92 respondents (28%) highlighted significant concerns over their children accessing unsafe, inappropriate content over the internet instead of reading. Concerns over a lack of access to the internet followed this. Additionally, nine carers were concerned that their children would be distracted by games and other apps during their reading time.

Eighteen respondents (19.5%) cited digital platforms' reliance on an internet connection as a significant barrier, of which 15 specified challenges with the cost and shortage of data bundles. Further, five respondents highlighted the reliance on power, which is unstable, and five noted challenges with accessing smartphones. One respondent mentioned that their child loses access to all the stories when a parent is not around.

Other concerns include privacy issues (5 responses, or 5%), concerns about damage to the smartphone (3 responses, or 3%), technical issues such as

frozen apps or long loading times (2 responses or 2%), and the harm to their child's eyes caused by extended exposure to screens (1 response, or 1%).

4.7. Preferences between BookSmart and physical books

Carers' preferences: Of the 92 responses, 82 or an overwhelming majority of carers (85%) responded that they preferred using BookSmart to reading physical storybooks. Eight per cent of respondents preferred physical books, while 6% had no preference or liked to use both.

There are three main reasons why carers prefer BookSmart. First, 27 respondents pointed out that BookSmart is more cost-effective than physical storybooks, as they can save on the cost of buying storybooks for their child. Second, 16 respondents said they liked the variety of books available on BookSmart. This is also linked to cost, as carers appreciate the access to many types of books for free using the app. Finally, 16 carers liked the accessibility and convenience of reading on the app, as they no longer needed to carry many heavy storybooks to read to their child.

Other reasons included BookSmart features such as the dictionary, pictures, and questions (5 responses), the fact that children are more interested in reading on the app (3 responses), and the improvement of children's digital literacy (2 responses). Two respondents also mentioned that physical books are prone to damage and misplacement, while carers and children are more careful with smartphones.

Those who prefer physical storybooks stated lack of access to smartphones and a reliance on data and networks as barriers, while physical storybooks are familiar and readily available.

Children's preferences: Eighty-eight respondents, comprising 93% of the sample, stated that their children preferred reading on BookSmart to reading physical storybooks. Five per cent of respondents indicated that their children do not have a preference, and only 2% indicated that their children preferred physical storybooks.

Two main reasons draw children to the BookSmart app. First, as 25 carers stated, their children wanted to use the smartphone. They were happier reading on the phone and enjoyed reading on the app more than a physical book. The responses indicated that the novelty and excitement of using the phone, supplemented by children's fascination and curiosity with

smartphones, promoted reading habits for children. Second, as 22 carers stated, the BookSmart app could better hold children's attention. Carers note that children enjoy the app and are more eager to read on it than physical books. Seven of these respondents stated that their child actively asks to read using the app and that they do not need reminding. One respondent explained that her child preferred BookSmart because she gets to read without it feeling like homework. Two respondents observed that their children also read to their younger siblings, indicating that their interest in reading has spillover effects on the rest of the household.

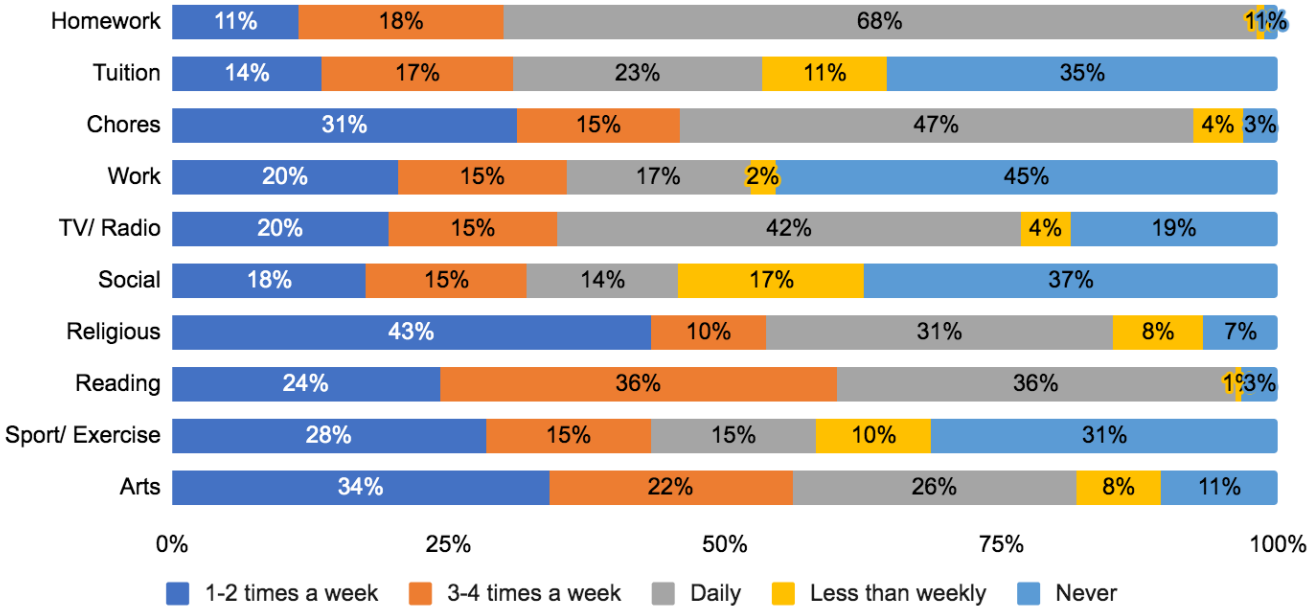
Additionally, nine carers highlighted their child's interest in various BookSmart features, including pictures, activities, the dictionary, and the option to listen to the story. Six mentioned the variety of stories to choose from, while another six stated that their child was interested in the content of the stories. One respondent stated that their child loves reading wildlife books. BookSmart's digital library allowed him access to various stories about animals with pictures that kept him highly engaged.

Neither of the two respondents who stated their child's preference for physical storybooks offered a reason. One of the carers explained that their child did not have a preference, as he liked switching between digital and physical stories.

4.8. Activities to support learning

During baseline data collection, carers were asked to list any activities they felt would help support a child's learning. A list of activities was drawn from this survey and collated into a set of related items. At endline, the carers were asked questions about the activities they do with their children to support their learning and how frequently they participated in these activities. Figure 20 shows that most carers participated daily in learning when their children were doing homework, household chores, watching television or listening to the radio, and when their children were reading.

Figure 20. *Frequency of doing activities to support learning*



Carers were then asked to specify any new activities that they had started doing with their children over the course of the intervention. **Reading was the most popular habit selected by the respondents.** Sixty-four out of the 99 responses, or 64% of the respondents, had begun to read with their child. One father stated that he had begun to read with his child, whereas, before the intervention, only the child's mother would read to him. Of these 64, 23 specifically mentioned that they had begun to read on the BookSmart app. Six respondents indicated they had developed reading habits, repeating the activity at varying intervals. Finally, one respondent said, *"Reading on BookSmart, now it has become a culture."*

4.8.1. Encouragement and support

The majority of respondents stated that they encourage their children to work hard at school. This proportion increased from 89% at baseline to 98% at endline. All carers in 'training', 'feedback loops', and 'celebrations' modalities agreed that they encourage children to work in school. There were fewer carers in other modalities and the control group who either did not agree with this statement or said they 'sometimes' encourage their child.

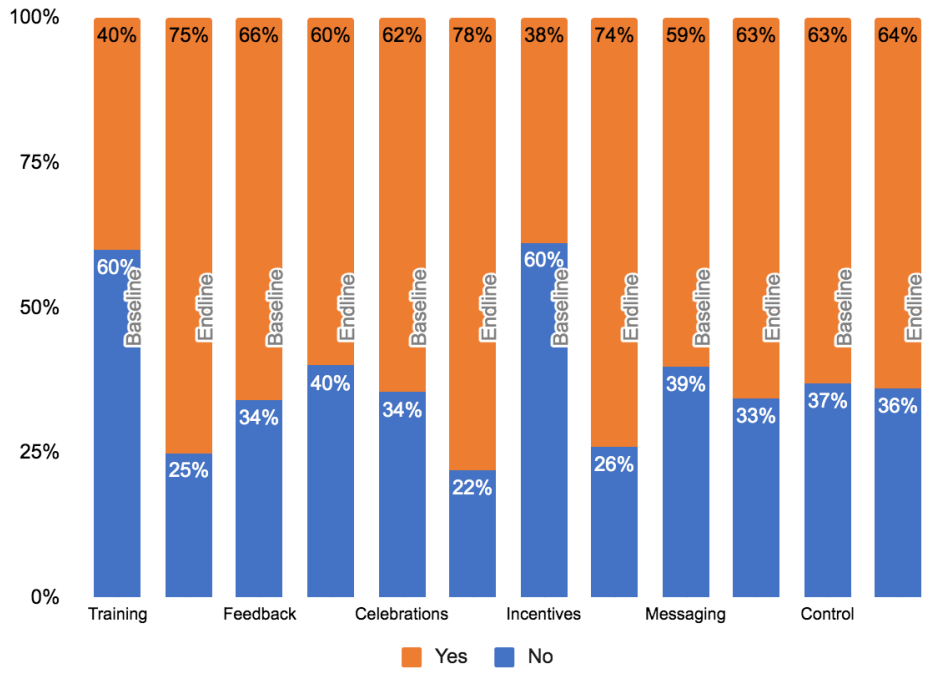
Apart from encouraging children to work hard, most respondents in all modalities also stated that they talk to children about their problems at school and their performance. Eighty-five per cent of carers responded that their children talk to them about problems at school, while 9% said they do not. A

small proportion of parents (6%) reported their children sometimes talk about problems at school.

4.8.2. Reading practices

Sixty-nine per cent of respondents stated that someone in the household had read to their child the week before the survey. This is a rise from 54% at baseline. Figure 21 shows the change in reading practices within each modality between baseline and endline. The data show that the percentages of carers who reported either reading with their children themselves or that someone else read to their child in the past week increased in the intervention modalities of 'training', 'reading celebrations', 'incentives' and 'messaging'. In the 'training' modalities, there was a 35% increase, while the 'reading celebrations' showed a 16% increase, and the 'incentives' modality had an increase of 36%. A minor increase of 4% was reported for the 'messaging and nudges' modality. In the 'feedback loops' modality, however, there was a reduction in the percentage of carers who reported having read with their children.

Figure 21. *Reading to children by modality*



Most carers reported reading to their children in the evenings, and the most common times were between 6 and 9 p.m. This suggests that evenings are a better time to provide messaging and prompts to remind carers to read to their children.

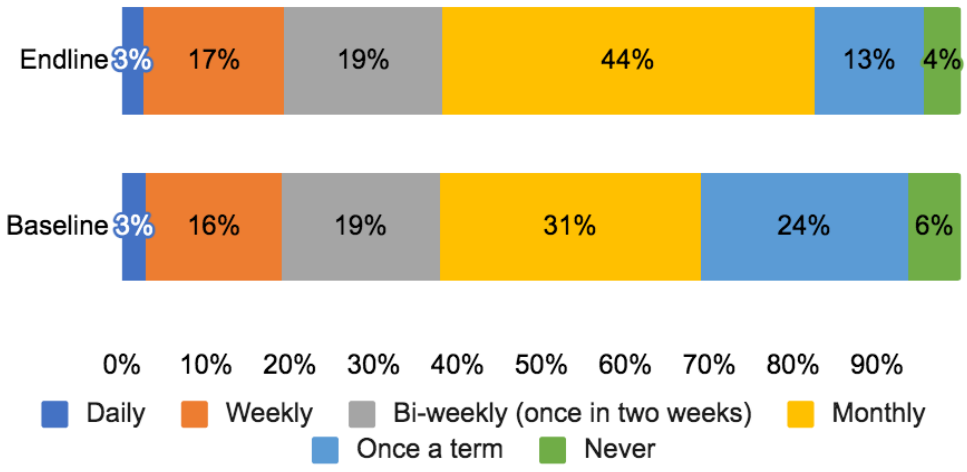
Parents read with their children in three main ways. First, some carers chose to narrate the stories to their children. Second, some carers decided to give their children the smartphone while supervising their reading sessions. Finally, some carers allowed their children to read independently while the carers engaged with the material to answer questions from their children, help with vocabulary, or improve their children's comprehension of the story. Some carers combined multiple strategies during their reading sessions. In fact, one carer from the 'training' cohort read each story to their child three times and then gave him a chance to read independently to help improve his reading ability. Another carer from the 'messaging / nudges' cohort narrated the story to their child, monitored her as she read independently, and then asked her questions to engage with the material more deeply.

Further, carers were asked an open-ended question to understand their different practices to drive reading with their child. The practices include buying storybooks, making a reading schedule, downloading books, ensuring their phone is charged and accessible to their children, using data bundles, and paying for remedial classes.

4.8.3 Parental engagement with children's school and teachers

To understand parental engagement with children's learning in practice, carers were asked how frequently they checked their children's homework and how often they visited their children at school. Figure 22 below shows that both at baseline and endline, many carers visited their children's schools monthly. There is an increase from 31% at baseline to 44% and endline for carers who visited children's schools monthly. While at baseline, 24% of carers visited a child's school once a term; the percentage decreased to 13% at endline.

Figure 22. *Frequency of visiting children's schools*



Many carers, both at baseline and endline, reported checking their children's homework daily. Figure 23 below uses a pie chart to illustrate the proportions of carers who reported checking their children's homework. The data show that 83% of carers reported to have checked their children's homework daily, and just 12% checked it weekly. There are also lower percentages of carers who checked their children's homework once every two weeks (1%) or monthly (1%) as well as those who never checked (2%). In all modalities, the majority of carers reported that they check their children's homework daily.

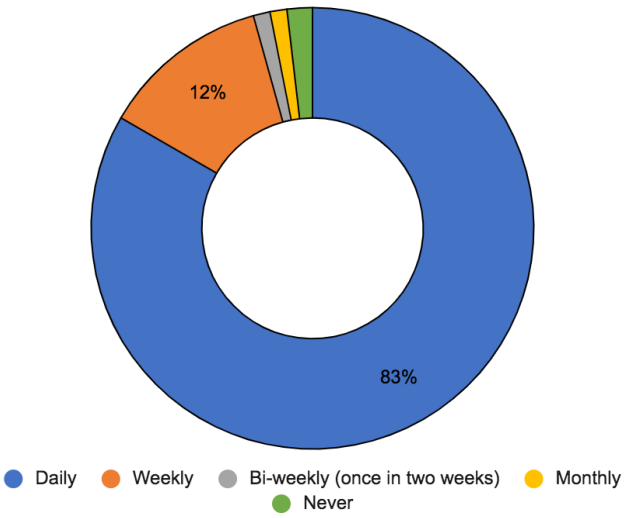
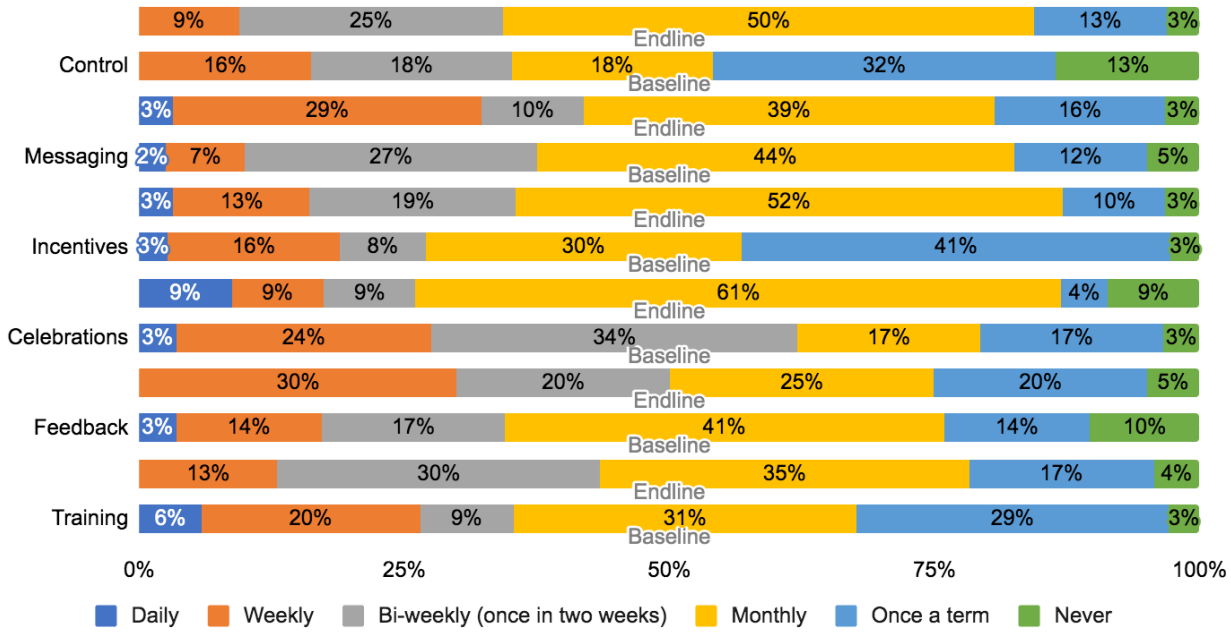


Figure 23. *Frequency of carers checking children's homework at endline*

The number of carers who visit their children's school monthly is also highest in most modalities at endline. Thus, in 'messaging', 'incentives', 'reading celebrations', and 'training' modalities, a bigger percentage of respondents reported visiting their children's school monthly. Figure 24 shows these statistics comparing both baseline and endline.

Figure 24. *Frequency of visiting children's schools by modality*



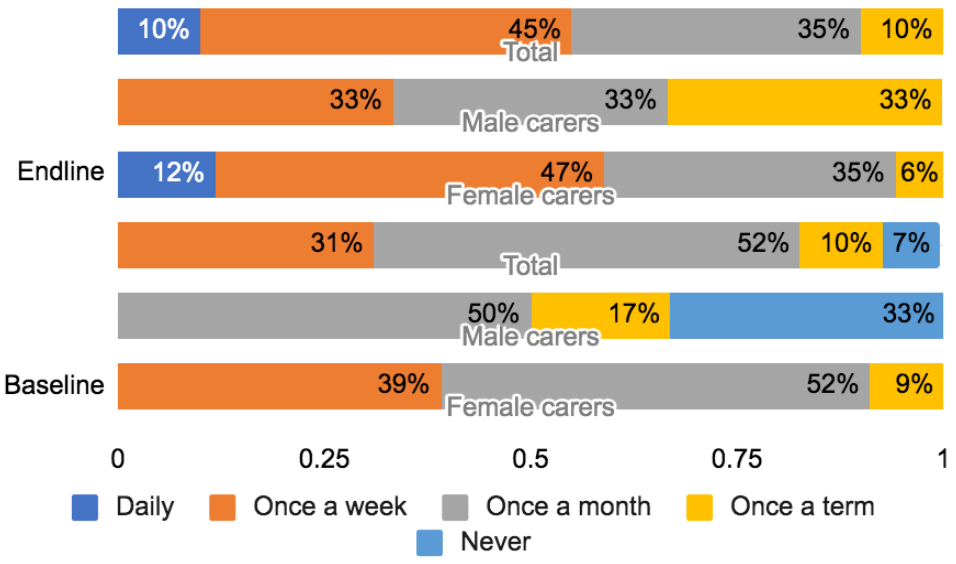
Carers and teachers were both asked about the different practices teachers have implemented to drive reading at home. The carers mentioned that they

received several critical modes of support from teachers. The most common type of support that carers mentioned was guidance on using BookSmart and choosing books to read. Further, teachers were closely engaged with carers to provide encouragement to read. They also provided detailed feedback about their child's reading, which enabled carers to understand their child's needs and progress more accurately.

Teachers follow up with both students and their carers to drive parental engagement at home. All eight teachers who were interviewed stated that they communicate directly with parents by sending messages, particularly through WhatsApp groups, and by making phone calls. By following up with parents and carers, teachers can reiterate the importance of reading while ensuring accountability. By asking students whether they've been reading using the BookSmart app, teachers encourage students to actively ask for and drive reading practices at home. In fact, teachers have noticed that being pushed by children is a very effective way of getting parents to read more at home. This is also supplemented by providing rewards and praise to students who have read well in class, which acts as an additional motivator for students to drive reading practices.

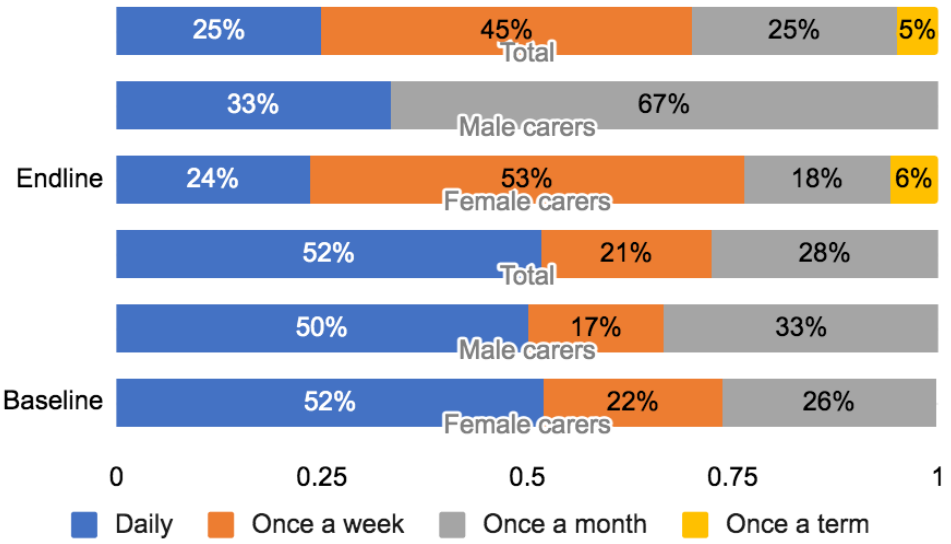
Carers who belonged to the 'feedback loops' cohort were also asked several questions regarding their communication with teachers and children to understand the children's performance in class. Figure 25 shows that 45% of carers communicated with teachers or head teachers regarding their child's performance once a week. A smaller proportion of carers communicated with teachers daily (10%) or once a term (10%).

Figure 25. *Frequency of talking to teachers*



Carers also spoke to their children about their performance to understand how they are doing in school. Figure 26 shows the frequency with which carers spoke to their children about school performance. Forty-five per cent of carers talked to their children once a week, while 25% talked to them either once a day or once a month. Many female carers talked to their children once a week, while many male carers talked to their children once a month.

Figure 26. *Frequency of talking to children about performance*



4.8.3. Teachers' engagement with BookSmart

Several teachers who were interviewed stated that they use BookSmart in the classroom to supplement their students' learning. While this was not a programmatic objective of the intervention, the app was organically adopted by the teachers to use in classrooms.

The illustrations on the app have helped teachers demonstrate learning material to improve students' interest and engagement in their lessons. A teacher from Kwa Njenga elaborated, stating that the illustrations were especially beneficial while teaching students about animals. Some teachers pass their phones around to allow students in class to attempt reading. One stated that she has each student read one sentence until they complete a story together in class. According to the teachers, this also improves engagement as students enjoy reading on the phone. Finally, one teacher mentioned that she asks the students to dramatise the stories in class, allowing students to engage with the material and understand the stories in a

fun way. However, short school terms limit the number of stories that can be read or assigned. Teachers who would prefer to engage with the app more during or after class are constrained by the number of other activities they are required to complete.

5. Modalities for supporting parental engagement

This section evaluates carers' responses to a range of questions specific to the modalities rolled out in their children's schools.

5.1 Training

Carers of students at AEF Ruben and Elsavera Primary received training on reading to their children. A total of 24 responses were received from this cohort during the endline survey.

5.1.1 Overview of 'training' modality

The curriculum for training carers consisted of eight modules, each covering a different topic. The topics addressed were:

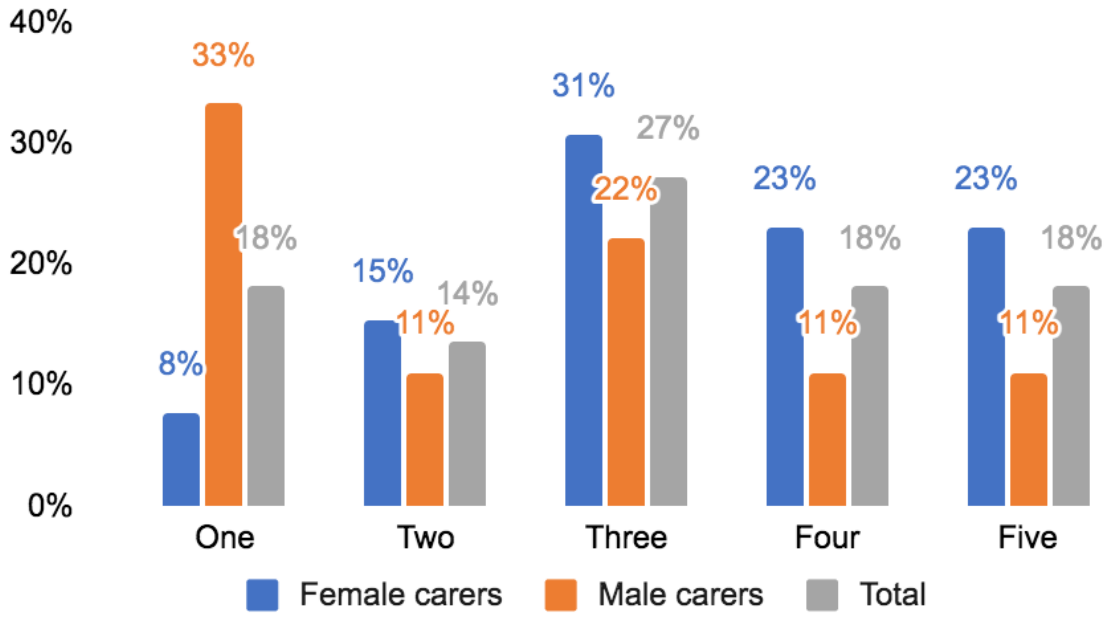
- Module 1: Why is reading with your child important?
- Module 2: Incorporating reading into your daily life
- Module 3: Training on BookSmart
- Module 4: Choosing a book
- Module 5: Making connections
- Module 6: Joyful reading
- Module 7: Weekly books and reading activities
- Module 8: Make & take activities

5.1.2 Types of training received

Ninety-two per cent of 24 carers in the 'training' modality responded that they received training on using the BookSmart app, the importance of reading, and how to engage children when reading. While all male carers reported to have received training, only 86% of female carers received training.

Twenty-seven per cent of carers stated that they had attended three training sessions by Worldreader. While more women (31%) attended three sessions, most male carers attended only one session (33%).

Figure 27. *Number of training sessions by Worldreader attended by carers*



5.1.3 Reading engagement during the intervention

During the 12-week implementation phase, carers from this cohort read a total of 87 books, with a total reading time of 18.9 hours. This translates to an average of 7.25 books per week and an average of 1.6 hours of reading time per week by the entire cohort.

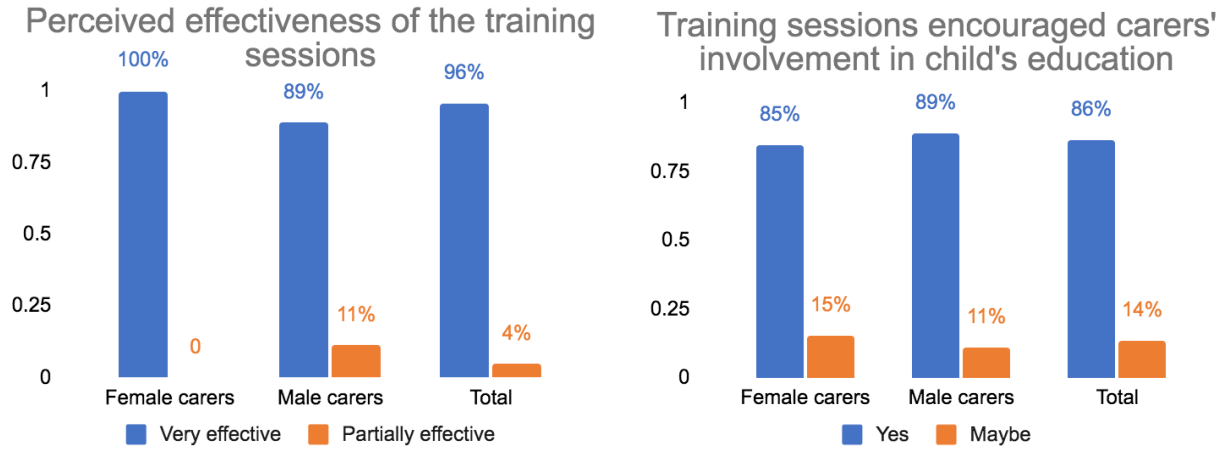
This engagement varies between the two schools in the cohort. While carers of students at Elsavera Primary completed 74 books, those from AEF Ruben only read 13. However, according to school leaders, this difference could be attributed to the unfortunate circumstances at AEF Ruben, as the school was suffering from the loss of an integral part of the teaching team. This indicates that a schools' specific circumstances affect the intervention's effectiveness.

5.1.4 Perceptions of the effectiveness of the training

The overwhelming majority of carers — 96% — reported that they felt the training sessions were very effective in making them engage with their children's reading. While 100% of female carers perceived the training sessions as very effective, 11% of male carers found them to be only partially effective.

In a follow-up question, 86% of carers agreed that the training encouraged them to get involved in their children's education. However, 14% still had reservations.

Figure 28. *Perceptions of effectiveness of training*



5.1.5 Reflections

Carers were asked to specify the specific modules that need to be revisited. Fifty-four per cent wanted the training to review the importance of reading. A gendered analysis also shows that most male carers want to revisit training on using the BookSmart app while most female carers want to revisit the modules on joyful reading and the importance of reading.

All participants in the 'training' modality said they would recommend the training sessions to other carers. Further, about 64% of carers said they would prefer the training sessions to be in Kiswahili, while 23% wanted them in both Kiswahili and English. However, only 9% of carers said they would prefer the training sessions to be only in English.

5.2 Messaging / nudges

Carers of students at Rongai Primary, Mukuru Kayaba, and MCC Primary received messages or nudges to remind them to read to their children. A total of 31 responses were received from this cohort during the endline survey.

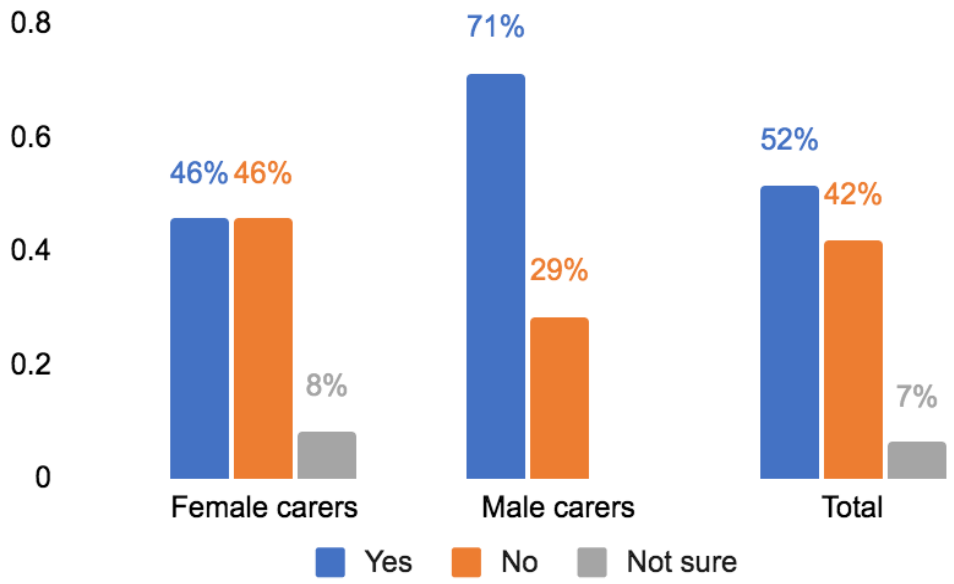
5.2.1 Overview of nudges modality

In this modality, messages or nudges were sent to carers as reminders to encourage them to read to their children. Teachers at each school delivered the messages through WhatsApp groups created in Week 6 of the intervention. However, some schools noted that there were conflicts in the WhatsApp group chats or that the groups were being used for purposes other than reminders to read.

5.2.2 Types of nudges and messaging received

Fifty-two per cent of carers receiving messaging / nudges reported that they had received messages and nudges. Figure 29 below shows the distribution of messages and nudges across gender. Seventy-one per cent of carers from this cohort who received the messages are male. Only 46% of female carers in this modality reported that they had received messages, while 46% reported that they had not received reminders to read.

Figure 29. *Messaging / nudges received*



5.2.3 Reading engagement during the intervention

During the 12-week implementation phase, carers from this cohort read a total of 87 books, with a total reading time of 17.9 hours. This translates to an average of 7.25 books per week and an average of 1.5 hours of reading time per week by the entire cohort.

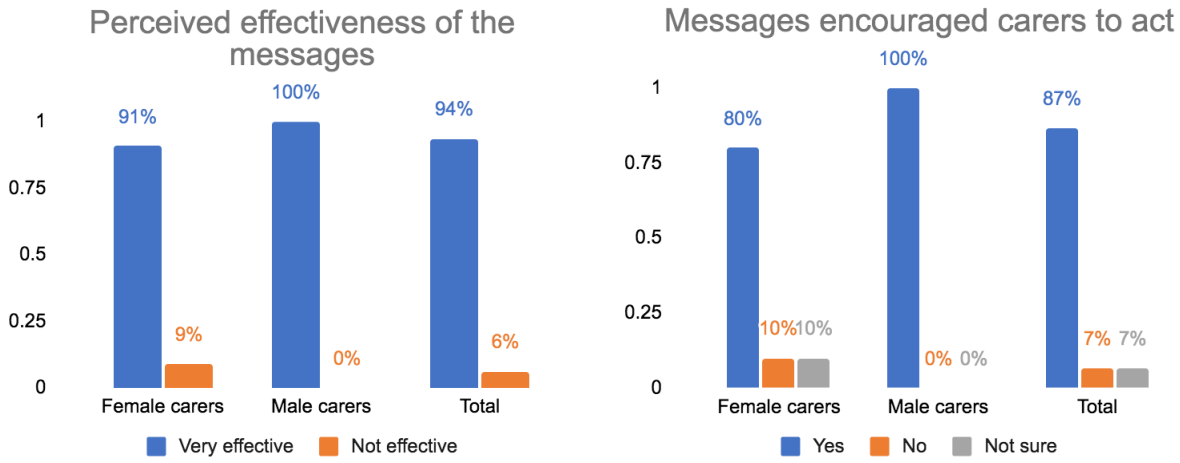
This engagement varies between the three schools in the cohort. While carers of students at MCC Primary completed 54 books, those from Mukuru Kayaba read 24. However, carers of students from Rongai Primary only read 9 books over the 12-week intervention. This further indicates that the intervention worked better in some schools than others, even within the same cohort.

5.2.4 Perceptions of the effectiveness of nudges

Ninety-four per cent of carers in this cohort perceived the intervention as effective, while 87% stated that the nudges prompted them to act. All male

carers agreed that messaging and nudging prompted them to act and were very effective in prompting the carers to get more engaged in their child's reading. However, few female carers (9%–10%) did not think these messages were effective.

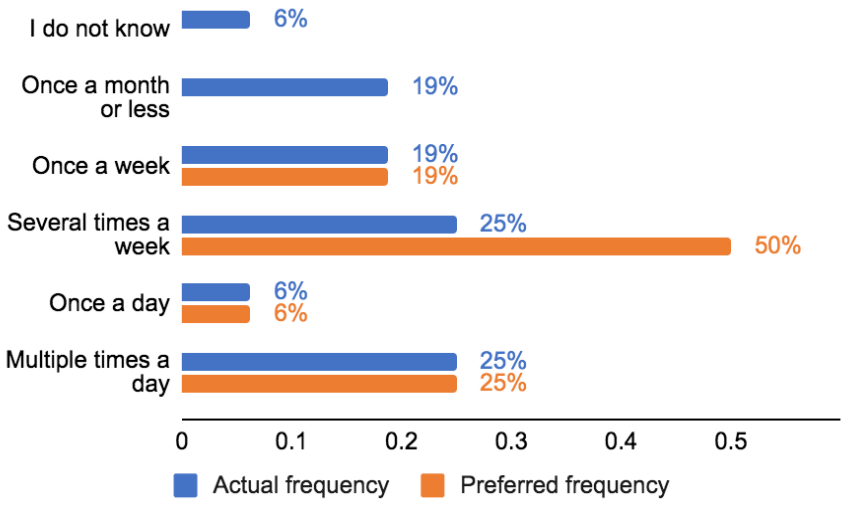
Figure 30. *Effectiveness of messages and nudges*



5.2.5 Reflections

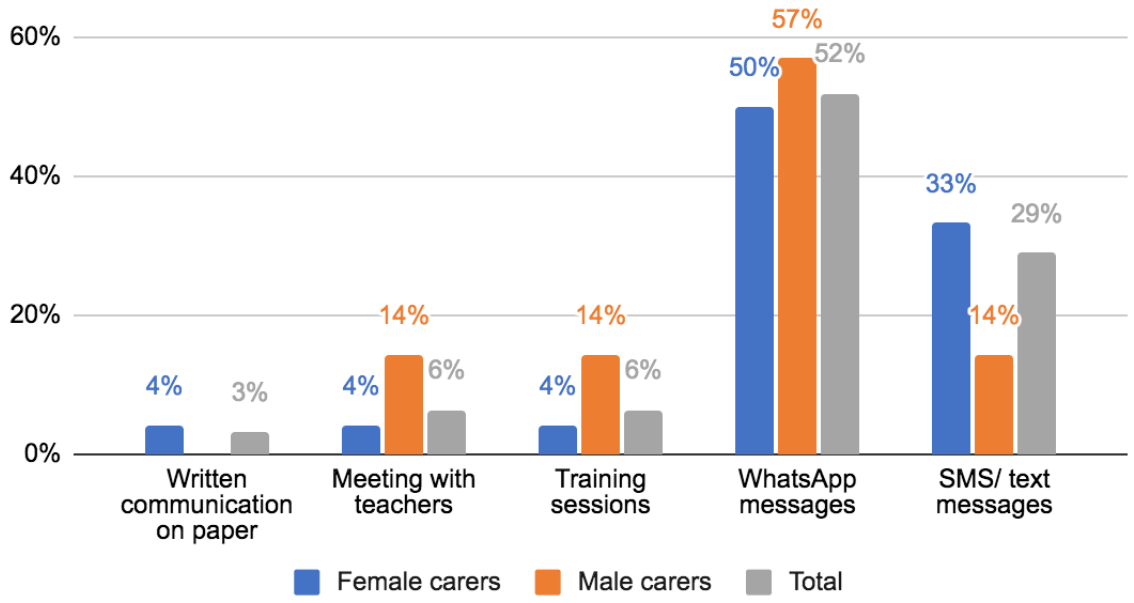
Carers were asked about how often they received nudges and how often they would like to receive them. Most carers from the group receiving messages / nudges stated that they had received messages multiple times a day, while another 25% reported receiving them several times a week. Others (19%) received messages once a week, once a month, or less often. The largest share of respondents, 50% of the sample, reported that they would prefer to receive messages several times a week, followed by 25% who would prefer to receive messages multiple times a day.

Figure 31. *Actual and preferred frequency of messages received*



Further, carers were also asked about actions which could help them read to their children more regularly. Fifty per cent of female carers and 57% of male carers reported that WhatsApp messages would prompt engagement, while a total of 29% preferred SMS / text messages.

Figure 32. *Actions to help carers engage more with children*



5.3 Incentives

Carers of students at Limuru Mission and OLN Primary received incentives for reading to their children. A total of 31 responses were received from this cohort during the endline survey.

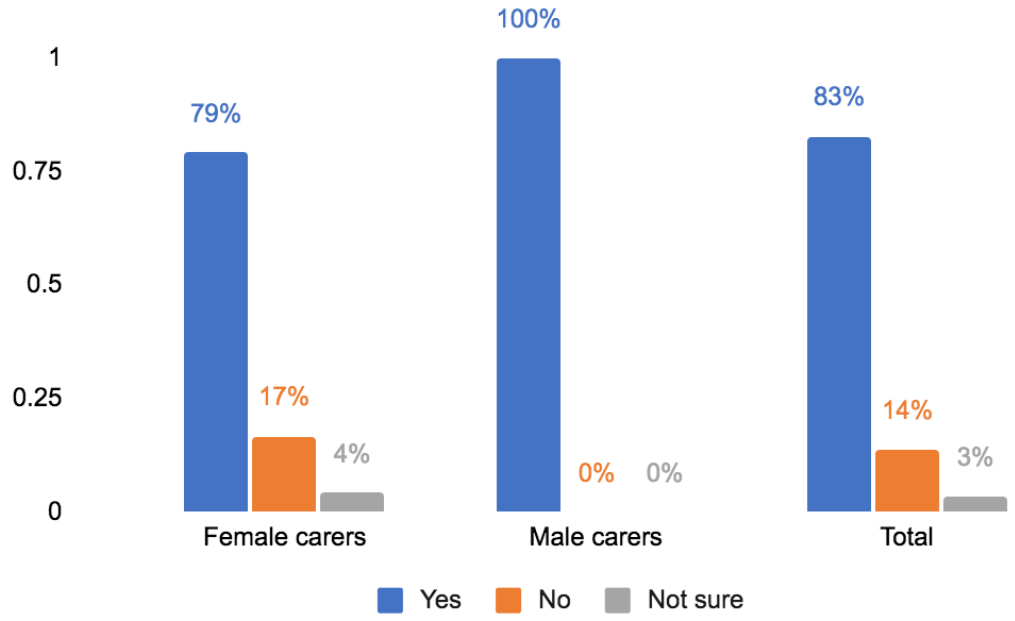
5.3.1 Overview of 'incentives' modality

Incentives were delivered to the carers who showed the highest level of reading behaviour in a series of celebrations held in the different schools. The reading behaviour was tracked through reading passports that suggested two books to be read each week, one in English and one in Kiswahili. The students filled in the reading passports and submitted them to the teachers and school leaders in charge of the events. Carers who showed the highest levels of engagement were given data bundles worth Kshs 200 (USD 1.63) each to facilitate reading at home, and 59 learners who attended the event received refreshments. The team noted a highly engaged, positive environment at the schools during these celebrations.

5.3.2 Frequency of using reading passports

Carers in the 'incentives' group were given reading passports to track their reading engagement. However, not all who belonged to this modality received the reading passports. Eighty-three per cent of the carers reported receiving reading passports during the intervention. All male carers in this modality received the passports, while only 79% of female carers received the passports. Figure 33 shows the gendered distribution of those who received the reading passports during the implementation of the intervention.

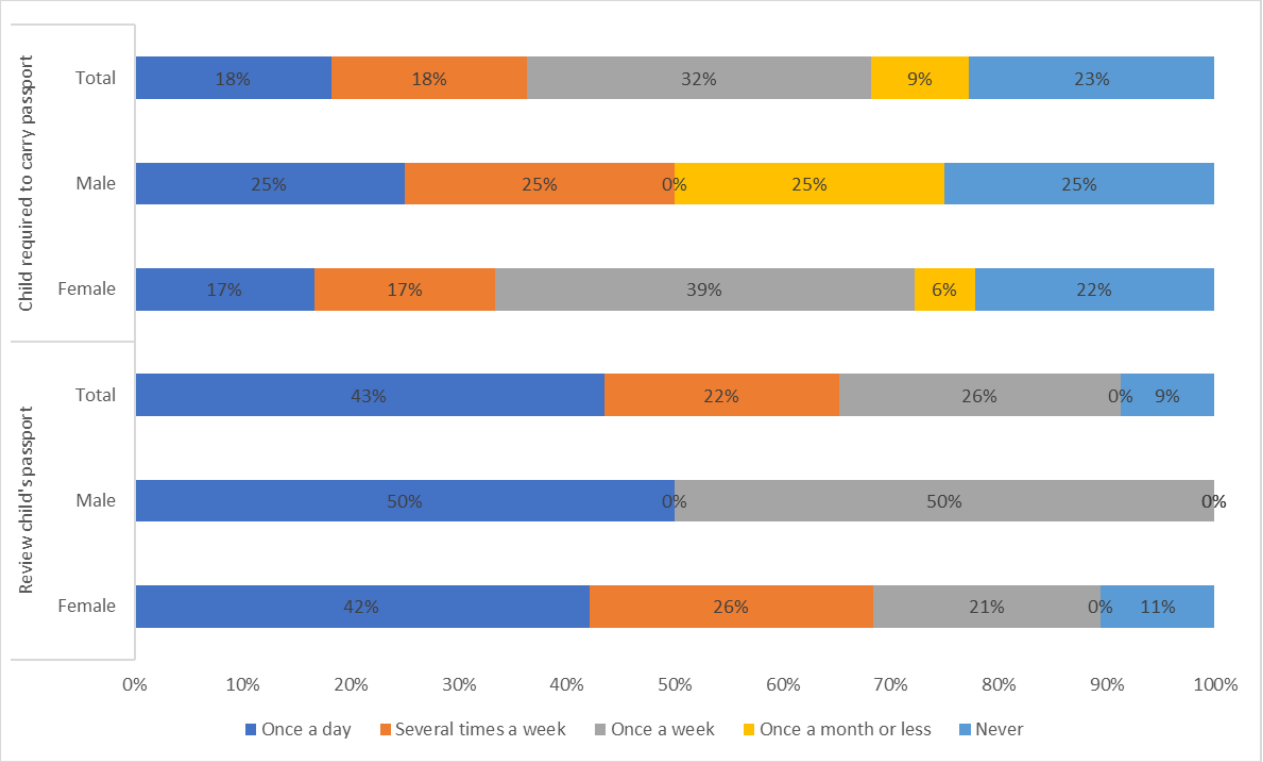
Figure 33. *Percentages of carers of who received reading passports*



To establish the frequency of using the reading passports, carers were asked two related questions. First, carers responded to a question on the frequency of reviewing their children's reading passport. Figure 34 below shows that 43% of carers reviewed their children's reading passports once a day, followed by 26% who reviewed them several times a week. A small proportion (11%) said they did not review the reading passports at all.

Next, carers were asked about how often their child was required to take a reading passport to school. Thirty-two per cent of carers also responded that their child was required to take the reading passport to school once a week. Eighteen per cent of carers said their child was expected to take the reading passport once a day or several times a week.

Figure 34. *Frequency of using reading passports*



5.3.3 Reading engagement during the intervention

The 'incentives' cohort showed the highest levels of engagement compared to all the modalities tested by a significant amount. During the 12-week implementation phase, carers from this cohort read a total of 431 books, with a total time spent reading of 79 hours. This translates to a stellar average of 40 books per week and an extremely impressive average of 6.6 hours of reading time per week by the entire cohort.

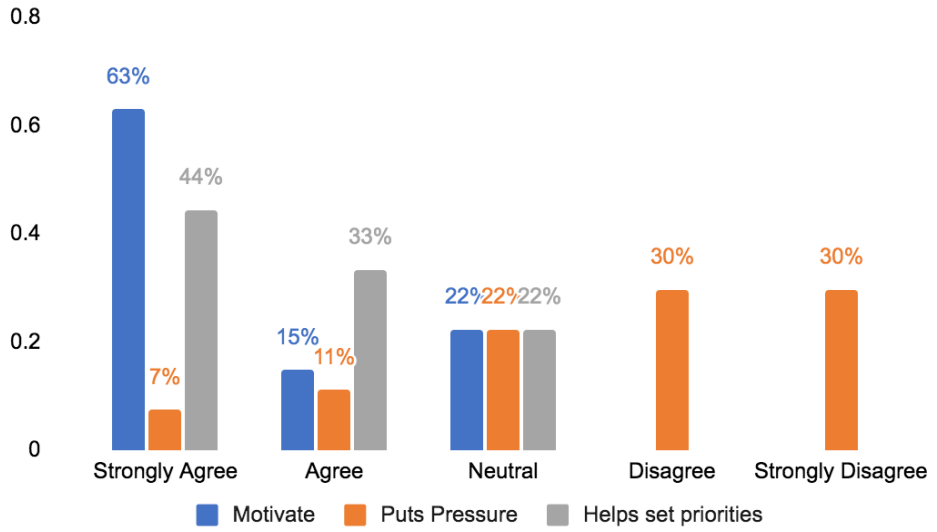
While this level of engagement does vary between the two schools in the cohort, both schools from the 'incentives' cohort outperform those from other modalities. Carers from OLN Primary fared best, as carers read a total of 292 books during the intervention, for a total reading time of 57.6 hours. Carers from Limuru Mission read a total of 139 books during the intervention, for a total reading time of 21.3 hours. These numbers suggest that the 'incentives' modality has been very effective in promoting parental engagement with their child's reading.

5.3.4 Perceptions on effectiveness of reading passports

Carers were asked about the extent to which they agreed or disagreed with three statements on the impact of the reading passports on their

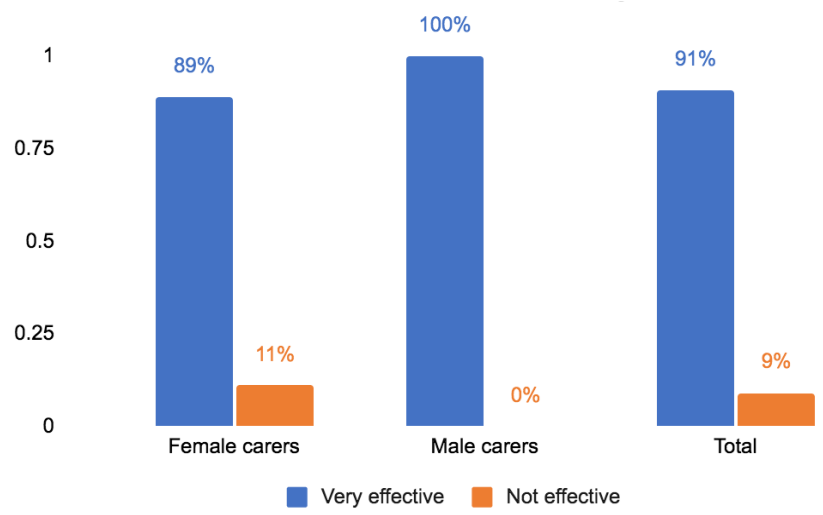
engagement levels. Figure 35 below shows that many carers (63%) strongly agreed that reading passports motivate their child to read on BookSmart, while 43% strongly agreed that reading passports help set priorities. A combined total of 60% of carers either disagree or strongly disagree that reading passports put unnecessary pressure on children to read on the BookSmart app.

Figure 35. *Perceptions about reading passports*



Carers were also asked to subjectively assess the effectiveness of reading passports in making them read to their children. Figure 36 below shows 91% of carers thought that reading passports were effective, while only 9% thought otherwise. A gender disaggregation indicates that only female carers contribute to the 9% given that 100% of male carers reported that the reading passports were very effective.

Figure 36. *Perceived effectiveness of reading passports*



5.4 Reading celebrations

Carers of students at St Paul's and St Elizabeth Primary were invited to attend the reading celebrations. A total of 23 responses were received from the 'reading celebrations' cohort during the endline survey.

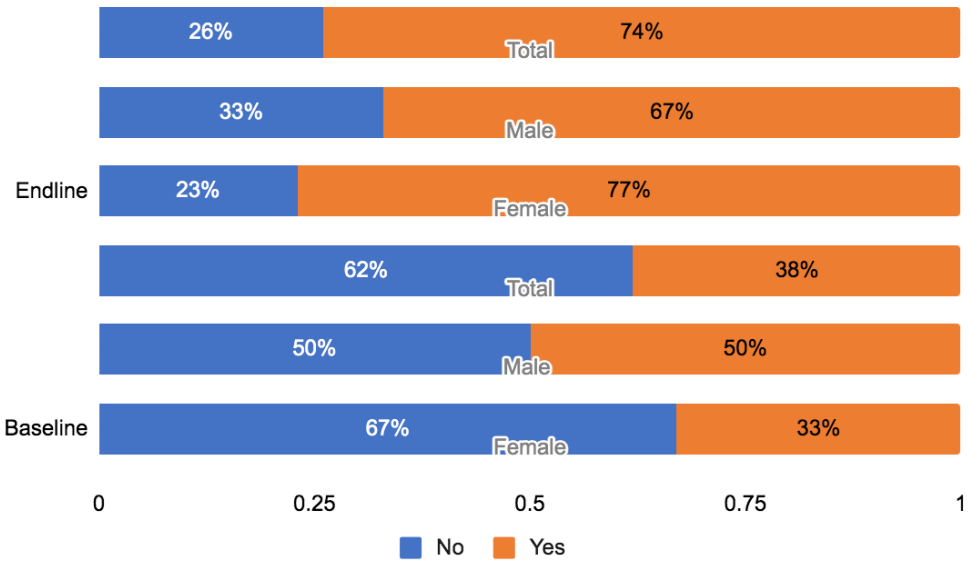
5.4.1 Overview of the 'reading celebrations' modality

Reading celebrations were organised in St Elizabeth and St Paul's schools to acknowledge the children's efforts and to celebrate the progress made in reading. Two reading celebrations were held in the schools, surrounding themes of International Literacy Day and environmental conservation. There were myriad activities, including dramatisation of books, creating artwork based on the books read, reading poems, and in-class reading for parents and the larger community to engage with digital reading integration in the classrooms. Speeches given were on the importance of reading and especially the benefits of parental engagement with reading. The speeches were delivered by area chiefs, local politicians, librarians, curriculum support officers, religious leaders, and Worldreader representatives.

5.4.2 Attendance of reading celebrations

Seventy-four per cent of the 23 carers in the 'reading celebrations' modality attended a celebration. Seventy-seven per cent of female carers attended the reading celebrations, compared to 67% of male carers. As expected, there was an increase in the number of carers who attended celebrations from baseline to endline.

Figure 37. Carers' *attendance of reading celebrations*



5.4.3 Reading engagement during the intervention

During the 12-week implementation phase, carers from the 'reading celebrations' cohort read a minimum of 159 books, with a total time spent reading exceeding a minimum of 48.4 hours. The actual levels of reading engagement are unknown, as the research team does not have data on reading engagement by carers at St Paul's for the first 7 weeks of the intervention.

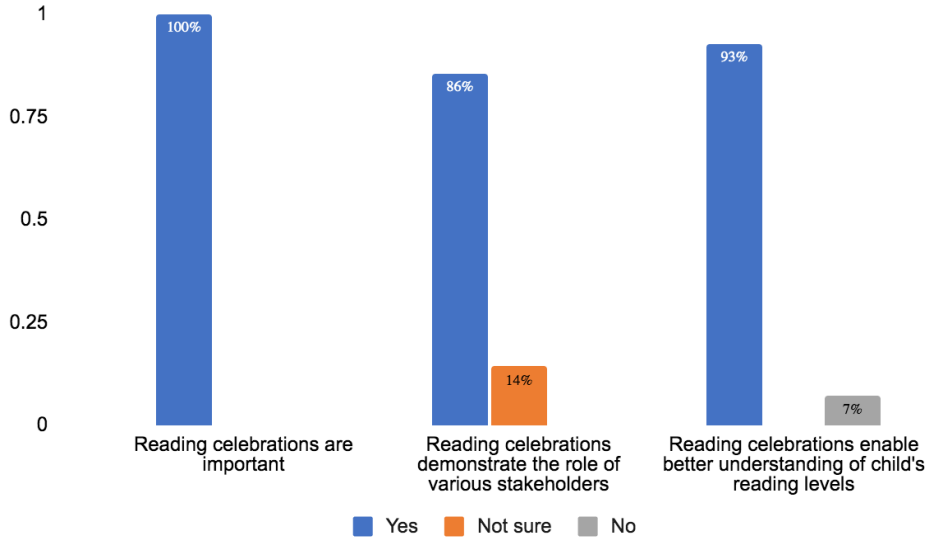
In order to compare levels of reading engagement between the two schools, reading engagement data used only encompasses the last 5 weeks of the intervention. There is a significant difference in the reading engagement levels by carers between the two schools. While carers from St Elizabeth completed a total of 73 books during the last 5 weeks of the intervention, those from St Paul's only completed 37. Further, the average reading time per week during the last five weeks of the intervention was 6.6 hours per week for St Elizabeth and only 1.6 hours for St Paul's.

5.4.4 Perceptions of the effectiveness of reading celebrations

All the carers in the 'reading celebrations' sample considered the reading celebrations important for their child's learning. Figure 38 below shows that 86% of carers felt that reading celebrations also helped them understand the role of different stakeholders in their children's reading. Most carers (93%), also

thought that reading celebrations enabled them to understand their children's reading levels.

Figure 38. *Perceived effectiveness of reading celebrations*



5.5 Feedback loops

carers of students at Gatoto Community, Kwa Njenga Primary, and Kabuku Primary were part of the 'feedback loops' modality. A total of 24 responses were received from this cohort during the endline survey.

5.5.1 Overview of the 'feedback loops' modality

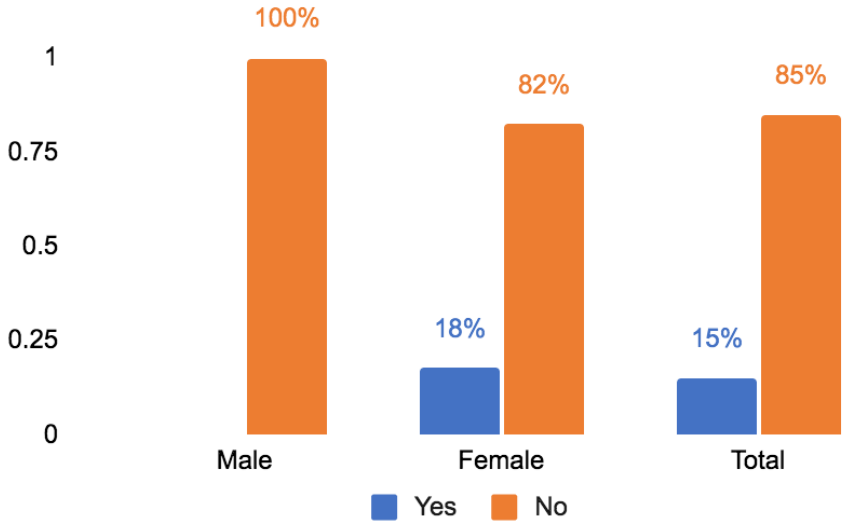
Learning Labs were conducted in the three schools, with teaching staff, the school board, school leaders, and parent representatives on 28 and 29 October 2023. Conversations took place around the reading engagement of the carers, as seen on Worldreader's 'Insights' dashboard. The number of readers who engaged with the app was compared against the school's enrolment data, and content preferences were discussed based on the content section of the dashboard. As a result of the conversations during the learning labs, Kabuku Primary school held a Parent-Child Reading Symposium involving teachers and Grade 3 students and their carers during Week 8 of the intervention.

In the 'feedback loops' modality, school leaders and teachers were given the data to understand the use of the BookSmart app among parents of children at their school. Subsequently, teachers and directors used this information to brainstorm innovative approaches for connecting with parents and encouraging their involvement. This modality highlights the potential for directors and teachers to enhance their efforts in effectively communicating

the results to parents, thereby empowering them to use BookSmart more frequently with their children.

Carers were asked whether the teacher or headteacher had provided them with any information regarding their reading engagement on BookSmart during the Learning Labs. Only 15% of carers agreed that they had received such information. This indicates lower communication rates between carers and teachers than required. In fact, Figure 39 below shows that all male carers responded that teachers did not communicate with them. In absolute numbers, only three carers, all female, stated that they had received information on reading engagement from teachers.

Figure 39. *Number of carers who received information about their reading engagement on BookSmart*

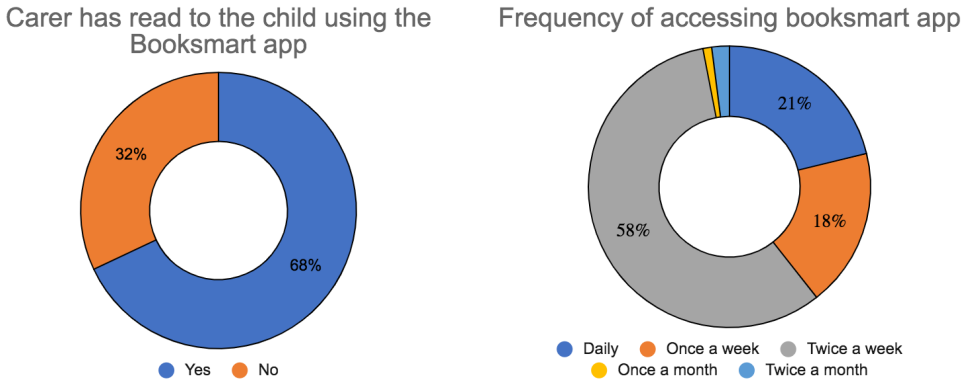


5.5.3 Reading engagement on the BookSmart App

During the 12-week implementation phase, carers from the 'feedback loops' cohort read a total of 87 books, with a total time spent reading of 17.9 hours. This translates to an average of 7.25 books per week and an average of 1.5 hours of reading time per week for the entire cohort.

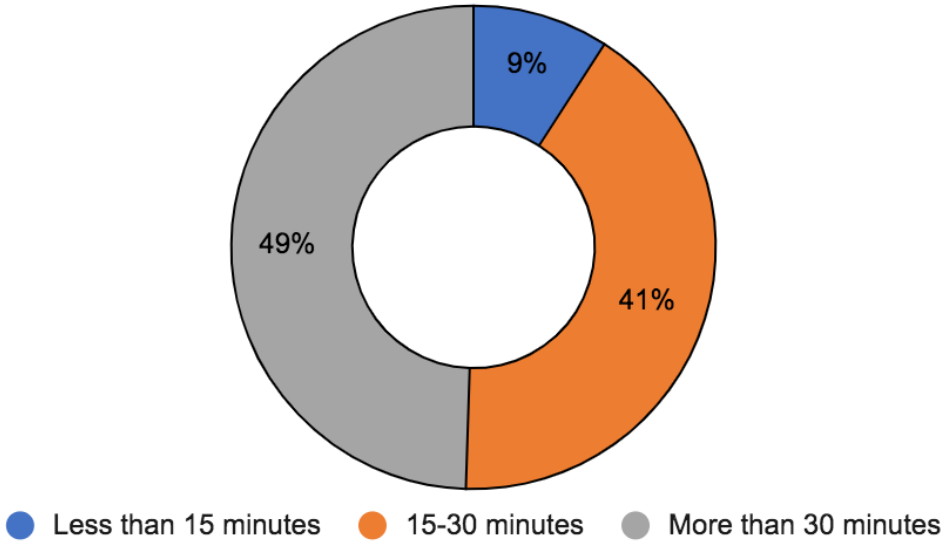
Carers were also asked questions about their engagement with the BookSmart app. Sixty-eight per cent of carers agreed that either they or their children read using the BookSmart app. A large percentage (58%) of carers reported accessing the app twice a week, followed by those who accessed the app daily (21%) and once a month (18%).

Figure 40. *Access and frequency of accessing BookSmart app*



Forty-nine per cent of carers stated that they accessed and used the app for more than 30 minutes on average, while 41% of carers stated that they used the app for 15–30 minutes on average. Eighty-seven per cent of carers also report that the total time spent reading with their children increased after they started using the BookSmart app. More female carers (95%) reported such an increase than male carers (84%).

Figure 41. *Average length of a reading session*



6. Discussion of findings

This section pulls together the core findings outlined in this report, with a clear analysis of how the insights guide any subsequent decision-making.

6.1 Insights on data

Further analysis of data collected across our baseline, through continuous data review, and at endline, as well as that gathered through qualitative interviews, leads to the following insights.

6.1.1 Contextual data

Much of the contextual data gathered at baseline was as expected, given the communities where the research took place. For instance, in our sample, it was clear that **mothers play a critical role in children's reading habits.** Most carers involved in the intervention were mothers (74%), which is not surprising given that mothers typically perform the role of primary carer. In addition, **the parents' and carers' education level is low overall**, with only 29% of respondents having completed upper secondary education. Approximately 30% of carers surveyed were employed as casual labourers, and another 30% were self-employed. At baseline, however, we found that **smartphone ownership and access were high among the parents and carers in the sample**. This was one of the reasons these communities were chosen for our study, as the BookSmart app would likely be accessible to a large portion of the study participants. Sixty-nine per cent of the sample stated that they owned a smartphone, while another 20% of the sample had access to smartphones even if they didn't own one themselves.
Through both the continuous data review and endline data, results showed several promising indicators in the use of a digital tool such as BookSmart.

- **There was a significant increase in the use of the BookSmart app**, indicating that the interventions have been effective in promoting parental engagement. At endline, 89% of male and 82% of female carers were using the BookSmart app to read with their children, representing a 57% increase from baseline.
- **The potential cost-saving benefit of the BookSmart app makes it a promising choice among parents and carers.** Financial barriers often limit carers' access to reading resources, with the average monthly household income for 60% of the survey respondents at between Ksh 0 and 12,298 (i.e., USD 0 and 94.89). Parents and carers who

participated in the endline survey indicated they were appreciative of the potential cost-saving benefit, as it suggested they could reduce expenses associated with purchasing multiple physical books.

6.1.2 Effectiveness of interventions

This research tested five modalities of parental engagement, identified and developed through a co-creation process, alongside a control group. **Overall, the intervention groups exhibited greater engagement than the control group.** However, analysis of the efficacy of each modality indicated that different modalities promoted varying levels of reading engagement among parents and carers. Given the nuances in these variations, substantive findings on efficacy are inconclusive, but have been very useful in refining the modalities with increased definition for further testing.

Table 3. *Description of intervention modalities*

Modalities	Description of intervention
Training	Providing carers training on how to read to their child, emphasising the importance of reading and book selection.
Messaging / Nudges	Delivering reminders through WhatsApp groups to encourage carers to read to their child.
Incentives	Offering rewards in the form of data bundles to carers who demonstrate high levels of reading behaviour, tracked through reading passports.
Reading Celebrations	Inviting carers to attend events recognising children's efforts and celebrating progress made in reading.
Feedback Loops	Holding Learning Labs with teaching staff, school boards, leaders, and parent representatives to discuss carer engagement as seen on Worldreader's Insights dashboard.

The 'training' modality had the highest perceived effectiveness by parents. Sixty-one carers who received training on reading with their children read a total of 87 books over the course of the intervention. The overwhelming majority of carers (96%) felt the training sessions were very effective in engaging them with their children in reading, with 100% of female carers reporting them as very effective.

Messaging was seen as valuable in prompting action, but with a slight bias towards engaging male carers. Fifty-six carers who received messaging / nudges also read a total of 87 books. All male carers agreed that messaging and nudging were very effective in prompting them to engage more with

their children's reading. Only a few female carers did not think these messages were effective. Additionally, 87% of the parents and carers in the sample stated that the nudges prompted them to act.

The 'incentives' modality showed the highest level of engagement measured by the number of books read, with a total of 431 books being read by 169 users during the 8-week intervention — an average of 2.5 books per learner. Ninety-one per cent of carers thought reading passports were effective, while only 9% thought otherwise.

Reading celebrations were seen as helping to strengthen knowledge of reading, but there were implementation challenges in our sample. Fifty-eight parents and carers from the 'reading celebrations' cohort read a minimum of 159 books over the intervention period, with the actual number unknown due to the lack of data over seven weeks for one of the schools. All carers in the cohort perceived the reading celebrations as important for their child's learning. Ninety-three per cent of carers thought that the events enabled them to have a better understanding of their children's reading levels.

The 'feedback loops' modality had mixed results, with self-reported data showing increased reading time with children when using the app. Carers from the 'feedback loops' cohort read an average of 245 books during the intervention. However, 233 of these were read by carers from one school, while carers from other schools only read 4 and 8 books. Eighty-seven per cent reported an increase in time spent reading with their children since they started using the app, with more female carers reporting such an increase than male carers.

6.1.3 Knowledge, attitudes, and practices

Baseline and endline surveys, as well as qualitative interviews, were conducted to better understand the ways in which BookSmart influenced changes in parental knowledge, attitudes, and practices in reading with their children.

While this phase of the study was unable to measure learning outcomes, it found **perceived improvements in children's reading abilities,** albeit only slight improvements, according to parental observations. Over the course of the intervention, there was a 4% increase in the proportion of carers who classified their children's reading ability as intermediate or advanced and a corresponding decrease in those who classified their children's reading ability as basic. Alongside this, parents and carers who regularly read with their children on BookSmart **could pinpoint children's improvements in socio-emotional skills** such as creativity, confidence, increased pace, and less hesitation and confidence to ask for assistance. In addition, **carers learnt**

about community resources in their area, such as libraries and community centres, **which can support their children's learning**.

There were **significant shifts in attitudes toward reading on a digital platform** during the intervention. This built on **already positive attitudes towards reading itself**, which was perceived as important for children's success at school by over 97% of carers at both baseline and endline. At endline, both **carer and child preferences strongly favour digital books**, with 85% and 93% respectively preferring BookSmart over physical books. Parents cited cost-effectiveness, the convenience of carrying a phone rather than heavy books, and the variety of books available as reasons for their preferences. On the other hand, children's preferences were explained by the app's novelty, the pictures, and the variety of stories. In addition, **parental digital literacy increased during the intervention**, with 68% of carers at endline reporting being 'very comfortable' with reading to their children using mobile apps — an increase of 25 points from baseline.

Findings suggest that the interventions showed promising influence on reading practices. There was an **increase in parents who reported reading with their child** in the week before the survey, rising to 69% at endline from 54% at baseline. Some 64% of the responses discussed the development of new reading habits, with 23% of carers specifically mentioning using the BookSmart app in this regard. **Parents and carers cited use of a wider range of reading practices**, including narrating stories, supervising reading sessions, and allowing their children to read independently. Qualitative interviews indicated that shared reading time using the BookSmart app helped develop better emotional connections between carer and child. There was an increase in carers reporting that they encouraged their children to read and talked more to them about their problems at school and with performance. Some carers also observed that children took the initiative and formed **reading and study groups** with their peers.

6.2 Feedback from parents and carers

Through qualitative interviews and other data collection efforts, parents and carers had opportunities to identify challenges and offer suggestions for ways to strengthen their use of BookSmart.

6.2.1 Challenges of using BookSmart

The most common challenge reported by carers and teachers, both across interviews and the endline survey, is the **lack of internet access due to the cost of data bundles**. This is a significant barrier for a large section of

participants, especially considering that the majority of participants belong to the two lowest income brackets.

Other key challenges observed during the study were:

- Lack of access to the BookSmart app during **power outages and areas with network issues**. Power outages are common, with frequent disconnections, particularly in rural and peri-urban spaces.
- Lack of **access to smartphones**, especially when a carer goes to work.
- **Time constraints for carers.** Carers often work late and cannot read with their children during the week; some only reach home after the children have gone to sleep. The inconsistent time availability limits carers' ability to maintain regular reading schedules.
- **Financial difficulties** underline time constraints. Carers with major financial difficulties are more concerned with paying school fees than reading to their child, thus limiting their potential for parental engagement.
- Schools and teachers have **varied measures to reduce inequalities** in access and uptake. Some teachers have addressed these inequalities by reading to the children without smartphone access, either before or after school. Carers who are not educated or not confident about reading have discussed a need for remedial classes.

6.2.2 Suggestions for greater engagement

As with the challenges mentioned above, the most popular suggestion from both carers and teachers is to provide data bundles or some form of internet access to download the books. This would ensure that the cost of data is not a barrier to reading activity.

Other notable recommendations include:

- Carers expressed a clear interest in receiving **more training** on the effective use of the BookSmart app. While several carers specifically asked for more training sessions, others recommended existing features (such as the dictionary) as possible additions, thus indicating the need to discuss the available features in more detail during orientation.
- Carers discussed the **importance of recognition** in incentivising reading engagement. Apart from monetary incentives (such as mobile

data), some carers also suggested providing verbal appreciation for carers and students with high reading engagement levels.

- Some carers discussed the need for closer **communication and** sharing **feedback** between carers and teachers.
- In the context of the **content of stories**, carers asked for more stories encompassing different subjects. While they repeatedly expressed appreciation for stories that teach moral lessons, they would also like to see books that feature science or maths.
- Some carers recommended possible **technical improvements to the user interface**.
  - Some include the option to have Kiswahili as a user language and sound icons to learn the proper pronunciation of difficult words more easily. This is particularly important to improve accessibility for children of relatively less-educated or confident carers.
  - Carers who asked for reminders also specified the time of day that they would like to receive these messages. Push notifications that can be customised to a particular time may effectively address these suggestions.
  - Finally, five carers mentioned glitches where the app hangs (especially during offline reading). This should be addressed before the second phase of the intervention.

6.3 Implications for Phase 2

In light of the impacts observed in Phase 1, our next step is to build on the findings by conducting a Phase 2 intervention using a quasi-experimental design. This design will draw on the results of the design-based research phase, allowing us to test a refined set of interventions surrounding the use of Worldreader's BookSmart app. Modifying modalities from the first phase, we plan to test four new strategies, comparing them to a control group. Table 4 below indicates the new intervention modalities envisaged for Phase 2.

Table 4. *Description of new intervention modalities for Phase 2*

Modality	Intensity	Description
Control	No	No modalities (only access to BookSmart)
Digital messaging	Low	Push messages using WhatsApp groups to prompt reading
Assigned reading	Medium	Teacher-assigned reading recorded on reading passports for paper-based tracking of digital reading
Hybrid training	High	Tailored in-person training sessions for parents on how to support their child's digital reading
Shared reading sessions	Maximum	Weekly guided shared reading sessions at school with observation

The rationale for this selection is to adjust modalities towards five different levels of intensity, whereby higher-intensity modalities require more resources. By examining and comparing the outcomes across these levels, we can guide our resource allocation more efficiently. For instance, if we discover that a lower-intensity strategy, such as digital messaging, yields results nearly on par with a higher-intensity one, like shared reading sessions, it would signal an opportunity to optimise resource utilisation without compromising on effectiveness. Additionally, by comparing the impacts across the different intensity levels, we can assess the cost-effectiveness of each intervention. This information will guide future decisions about programme investments and design. Moreover, this range of intensity levels will allow us to more confidently attribute changes to our interventions, thus improving credibility and impact.

Further adjustments of modalities are being made due to some implementation issues discovered during Phase 1. For instance, since it was considered effective, the new 'digital messaging' modality will be re-tested using WhatsApp for business. The 'assigned reading' modality will re-test the reading passports element of the highly effective 'incentives' modality, and the 'hybrid training' modality will re-test the original 'training' modality using new, improved content.

This next phase of research will not only test interventions but also delve more deeply into whether any discernible learning outcomes are found using the Uwezo reading test at both baseline and endline. It will also examine whether any discernible learning outcomes are found across interventions. To ensure the efficient use of resources, we will also evaluate the cost-effectiveness of various intervention modalities during Phase 2. This exploration will help identify the most economical approach, maximising the interventions' positive

outcomes while curbing financial and resource investments. This strategic inclusion will assist in decision-making and enhance the scalability of our programmes.

7. Conclusion and next steps

In conclusion, this Raising Readers research study using design-based methods underscores the promising potential of digital tools like Worldreader's BookSmart in strengthening parent and carer engagement in children's reading. The study's central question explores **whether and how digital technologies can enable schools to improve parent and carer engagement in reading with their children.** In Phase 1, design-based research was conducted in Kenya to co-create and test a set of promising modalities with a focus on the following sub-question:

RQ1: Do **different intervention modalities** impact carer–child engagement in a reading application? If so, how?

Key findings show the significance of digital tools in enhancing children's access to a wide range of reading resources, with the BookSmart app providing free and diverse books in a low-resource environment. Overall usage of BookSmart increased during the study, and schools and teachers played a critical role in supporting parents' engagement efforts. There were differences in duration and frequency of parent–child engagement with the app across modalities tested, with high-intensity face-to-face interaction showing greater engagement outcomes than lower-intensity efforts such as messaging. Visible improvements were observed in parent and carer knowledge, attitudes, and practices toward reading with their children. Although not the intention of the intervention, teachers also began to use the app in their classrooms, using its features to enhance learning and engagement.

The study's overall findings highlight the potentially transformative role of BookSmart and similar technologies in communities facing low literacy rates, offering affordable and convenient access to a variety of reading materials. However, successful engagement with the app depends on effective approaches to involve parents and carers in shared reading experiences.

Phase 2 will continue with quasi-experimental research, testing refined strategies like digital messaging, assigned reading, and hybrid training alongside control groups. This phase will further investigate cost-effectiveness and learning outcomes across different intensities of interventions. By addressing the identified limitations and building on the positive indicators, the research seeks to contribute significantly to the goal of improving literacy rates in low- and middle-income countries.

The research outcomes will inform Worldreader's digital reading approach and programmes and provide valuable evidence for literacy partners and governments on scalability, cost-effectiveness, and expected benefits.

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Annex 1. Endline survey tool

Parent Questionnaire guide

Dear Program Participant,

I would like to thank you for sharing your valuable time with me. During this interview, I will ask a few personal questions, with some of them recorded. I would like you to be rest assured that it is only to better understand the various responses that we collected.

This survey is designed to help Worldreader and EdTech Hub track any changes in your knowledge, attitudes, and practices towards child reading. Answers to this survey will remain anonymous. No personal information will be shared. Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study at any time you will not be penalised. Some questions will be recorded as we capture all the details of your response.

Your responses will be confidential, and if you would like further information on the survey, please feel free to reach out to us at **wanjiku@worldreader.org**. Thank you for your time!

I agree to be interviewed by _____ for the purpose mentioned above:

Name:

Date:

Did the respondent give their consent? **1. Yes** **2. No**

Did you participate in the baseline? 1. Yes **2. No**

The following questionnaire needs to be administered with the carer of the child. Let them know that all child-related questions should be answered keeping in mind the Grade 3 study child. For questions where options are provided, mark their response by circling the number beside the option. Only **one** option for each question is to be selected, unless specified in the question.

PART 1: Details of Visit

1	Date	_ _/ _ _/ _ _
2	Time	Start _ : _ _ End:__:__
3	Name of researcher	
4	Researcher code	_ _
5	Respondent ID	

PART 2: Basic Information about child

1	Name of child in grade 3	■ Last Name _____ ■ First Name _____
2	Age of child	Completed years ☐☐
3	Gender of child	■ Boy ■ Girl ■ Do not wish to confirm
4	Name of school child attends	

PART 3: Respondent and Household Descriptives

1	Name of respondent/ carer/ parent	■ Last Name _____ ■ First Name _____
2	Age of respondent	Completed years ☐☐
3	Gender of respondent *[Choose/circle only one option]*	■ Male ■ Female ■ Do not wish to confirm
4	Relationship with participating child *[Choose/circle only one option]*	■ Mother ■ Father

		■ Stepmother ■ Stepfather ■ Grandparent ■ Older brother ■ Older sister ■ Aunt ■ Uncle ■ Other (specify)
5	Total number of other children living in the house *[Number of children spending the night and eating from the same kitchen for at least 3 months]*	☐☐
6	Primary language(s) spoken at home *[Choose/circle only one option]*	■ Kiswahili ■ English ■ Other (specify)
7	Highest level of education of the respondent *[Choose/circle only one option]*	■ None ■ Primary lower (1-5) ■ Primary upper (6-8) ■ Secondary lower (Form 1-2)) ■ Secondary upper (form 3-4) ■ Certificate/Diploma ■ College/ university ■ Other (specify)
8	Respondent occupation status *[Choose/circle only one option]*	■ Employed full time ■ Employed part time ■ Unemployed ■ Self-employed ■ Casual Labour ■ Retired ■ Other ■ Do not wish to say (if this option, skip the next question)
9	Monthly average household income *[Choose/circle only one option]*	■ Kshs. 0- Kshs. 12,298 ■ Kshs.12,299- Kshs. 23,885 ■ Kshs.23,886- Kshs. 35,472

		■ Kshs. 35, 473-Kshs.47,059 ■ Above Kshs. 47,060 ■ Do not wish to say
10	Which of the following are owned by the household? *[Choose/circle all that apply]*	■ Electricity connection ■ Ceiling fan ■ Gas/stove / Jiko ■ A separate kitchen ■ Toilet inside the premises ■ Scooter/motorcycle/ moped ■ Car/jeep/van ■ Bicycle ■ Refrigerator ■ Washing Machine ■ Air conditioner (AC) ■ Television set ■ Landline telephone ■ Mobile phone ■ Computer/laptop/tablet (including i-pad) ■ Internet access within the house ■ Bank account ■ Other (specify)
11	How many books are there in the house?	☐☐
12	How many children's story books are there in the house?	☐☐
13	Have you bought any new books since the intervention started? If so, how many children's story books?	☐☐

PART 4: Parent/ carer knowledge about child reading

1 What activities outside the classroom do you do with your child that supports their learning?
[Enumerator writes down the activity and circles the applicable frequency. Circle ONLY one number against each activity]

No	Activity	Frequency			
		Daily	1-2 times a week	3-4 times a week	Less than weekly
1	Art (Incl. drawing, singing, dance)	1	2	3	4
2	Exercise (Incl. football and cycling)	1	2	3	4
3	Reading	1	2	3	4
4	Religious activities	1	2	3	4
5	Social (Incl. play groups, visiting homes)	1	2	3	4
6	TV (Educational and children's shows)	1	2	3	4
7	Work (Incl. shopkeeping, farming)	1	2	3	4
8	Chores	1	2	3	4
9	Tuition	1	2	3	4
10	Homework	1	2	3	4

2	Are there any new activities that you do with your child that supports their learning since this intervention? If yes, please specify	■ Yes ■ No
3 A	What level do you perceive your child's reading ability to be? *[Choose/circle only one option]*	■ Basic e.g Knowledge of sounds and letters ■ Intermediate e.g. can read/ make a word/sentence ■ Advanced e.g can read a paragraph/ short story and answer

		comprehension questions correctly. ■ Don’t know
3 B	What makes you think that? *Open ended question with parent's/carer's description.*	
4	What do you think you can do to help your child's reading skills with the resources you have? *[Choose/circle all that apply]*	■ Take/send my child to community reading centre ■ Take/send my child to tuition ■ Read to them ■ Listen to /support them in reading ■ Buy my child books ■ Take my child to a library ■ Continue to use BookSmart ■ Other, specify:
5 a	Are there any community resources where you live that help support your child's reading? *[Choose/circle only one option]*	■ Yes ■ No ■ Don’t know
5 b	If yes, what are these resources? *Open ended question with parent's/carer's description.*	

PART 5: Parent/ carer attitude towards child reading

1	Do you ever encourage your child to study at home to improve their performance? *[Choose/circle only one option]*	■ Yes, often ■ Yes, sometimes ■ Rarely ■ Never
2	Do you think it is important to talk to your child about their problems at school and their performance? *[Choose/circle only one option]*	■ Yes, often ■ Not really ■ Can’t say

3	What is your perception about the quality of education in the school you send your child to? *[Choose/circle only one option]*	■ Very good ■ Good ■ Average ■ Very poor
4	What is your perception about the teachers in the school you send your child to? *[Choose/circle only one option]*	■ Very good ■ Good ■ Average ■ Very poor
5	Do you feel comfortable and confident communicating with the teachers in that particular school? *[Choose/circle only one option]*	■ Very confident ■ Confident ■ Somewhat confident ■ Not confident
6	Do you feel reading is important for your child's success in school? *[Choose/circle only one option]*	■ Yes, often ■ Not really ■ Can't say
7.	Do you read to your child? (If answer is No, skip to question 12)	■ Yes ■ No
8	Do you feel confident reading to your child? *[Choose/circle only one option]*	■ Very confident ■ Confident ■ Somewhat confident ■ Not confident
9	What do you think your child feels like when you read to him/her? *[Choose/circle all that apply]*	■ Supported ■ Happy ■ Confident ■ Bored ■ Indifferent ■ Irritated ■ Nervous ■ Other — specify
10	Do you see any behaviour change in your child when you read to him/her? *[Choose/circle only one option]*	■ Yes ■ No ■ Can't say
11	If Yes, what behaviour change do you see in the child? *[Choose/circle all that apply]*	■ My child has more confidence ■ My child speaks with me more

		■ My child does better in school ■ My child is more creative ■ My child is calmer ■ My child is less naughty ■ My child tells stories or wants to read with me ■ My child asks for more stories ■ Other, specify
12	Do you face any barriers to spending time reading with/to your child? *[Choose/circle all that apply]*	■ I have a lack of time ■ I lack confidence to read aloud ■ My reading ability is low is English ■ My reading ability is low in Kiswahili ■ I don't have reading material ■ Other, specify ■ Can't say
13	Do you feel comfortable reading to your child using BookSmart? *[Choose/circle only one option]*	■ Very comfortable ■ Comfortable ■ Somewhat comfortable ■ Not comfortable
14	What are your primary worries about using BookSmart to read to your child? *[Choose/circle all that apply]*	■ My child will be exposed to bad content ■ My child is using my phone which is private ■ My child will find the screen small ■ I am not confident reading from a phone ■ Other (specify)

PART 6: Parent/ carer practices to support child reading

1	Do you encourage your child to work hard at school? *[Choose/circle only one option]*	■ Yes ■ No ■ Sometimes
2	Does your child talk to you about problems at school? *[Choose/circle only one option]*	■ Yes ■ No ■ Sometimes
3	How often do you visit the child's school other than drop off/pick up? *[Choose/circle only one option]*	■ Daily ■ Weekly ■ Bi-weekly (once in two weeks) ■ Monthly ■ Once a term ■ Never
4	How often do you check on your child's homework? *[Choose/circle only one option]*	■ Daily ■ Weekly ■ Bi-weekly (once in two weeks) ■ Monthly ■ Once a term ■ Never
5 a	Have you or someone in the household read to your child in the past week? (This is not homework reading but reading aloud a storybook.) *[Choose/circle only one option]*	■ Yes ■ No ■ Don‘t remember
5 b	If yes, how many times would you estimate your child was read to in the past week? *[Choose/circle only one option]*	■ One to two times a week ■ Three to four times a week ■ Five times a week or more
5 c	From the answer provided above, how many of these times were through BookSmart?	■ One to two times a week ■ Three to four times a week ■ Five times a week or more

5 d	Who usually reads to your child? *[Choose/circle only one option]*	■ Mother ■ Father ■ Stepmother ■ Stepfather ■ Grandparent ■ Older brother ■ Older sister ■ Aunt ■ Uncle ■ Child reads by himself/herself ■ Other (specify)
5 e	When your child is read to, how long, on average, is each storytelling session? *Reading for school or story books (not homework generally)* *[Choose/circle only one option]*	■ 0-10 minutes ■ 11-20 minutes ■ 21-30 minutes ■ More than 30 minutes

PART 7: Mobile phone and data access and digital literacy

1	Do you own a mobile phone? *[Choose/circle only one option]*	■ Yes ■ No
2	If yes, is the phone mentioned above a smartphone? *[Choose/circle only one option]*	■ Yes ■ No ■ Don't know
3	How often do you use the smartphone? *[Choose/circle only one option]*	■ Multiple times a day ■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less
4 a	If you do not own a smartphone, do you have access to a smart phone at home? *[Choose/circle only one option]*	■ Multiple times a day ■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less ■ Never

4 b	How do you access the smartphone? *[Choose/circle all that apply]*	■ Spouse ■ Immediate family member ■ Extended family member ■ Neighbour (Home) ■ Neighbour (Work)
5	How often do you buy data, if you own a smartphone? *[Choose/circle only one option]*	■ Daily ■ Once a week ■ Twice a week ■ Once a month ■ Never, I don't have a smartphone ■ My data access is limited/ Wifi access ■ I do not have access to mobile data
6	What mobile apps do you use, if you use a smartphone? *[Please let the respondent openly answer. You do not need to list each one. Choose/circle all that apply]*	■ Facebook ■ MPesa ■ WhatsApp ■ Instagram ■ Gmail ■ Telegram ■ Yahoo ■ BookSmart ■ Youtube ■ Other, specify

PART 8: Modalities of supporting parental engagement (Training)

1	Have you received any training regarding how you can support your child's learning? *[Choose/circle only one option]* *[If no, enumerator skips to question 3.]*	■ Yes ■ No ■ Don't remember
3	How many training sessions administered by Worldreader did you attend?	■ None ■ One ■ Two ■ Three ■ Four ■ Five
4	Did you find the training effective?	■ Very effective ■ Partially effective

	[Choose/circle only one option]	■ Not effective
6	What language do you prefer the training sessions to be in? *[Choose/circle only one option]*	■ Kiswahili ■ English ■ Both Kiswahili and English ■ Other, specify
7	Would you recommend other parents to be taken through the training you received?	■ Yes ■ No
8	What area of the training do you think needs to be revisited by Worldreader?	■ Importance of reading ■ Incorporating reading into your daily life ■ BookSmart ■ Choosing a book ■ Making connections ■ Joyful reading ■ Weekly books and ■ Activities
9	Do you think the training you received during this intervention encouraged you to get more involved in your child's reading?	■ Yes ■ Maybe ■ No
10	State one thing that you remember from the training sessions that you attended.	

PART 9: Modalities of supporting parental engagement (Nudges/ Messages)

1	Have you received mobile messages to encourage you to read to your child, in the past four months? *[Choose/circle only one option]*	■ Yes ■ No ■ Not sure
2	If yes, how frequently did you receive these messages? *[Choose/circle only one option]*	■ Multiple times a day ■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less ■ I do not know
3	Were the messages effective?/Did they prompt you to act? *[Choose/circle only one option]*	■ Very effective ■ Partially effective ■ Not effective
4	Do you think WhatsApp messages sent to you encouraged you to get more involved in reading to your child? *[Choose/circle only one option]*	■ Yes ■ No ■ Not sure
5	In your opinion, how many times in a week do you think you need to receive messages to prompt you to read to your child?	■ Multiple times a day ■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less
6	Can you rank , in terms of importance to you, whose opinion on reading you are more inclined to listen to and act on?	■ ■ Worldreader staff ■ Area Chief ■ Curriculum Support Officer ■ Headteacher ■ Grade Teacher
7	What would help you to engage more with your child's regular reading? *[Choose/circle all that apply]*	■ Written/ paper Communication ■ Meetings ■ Trainings ■ Facebook Messages ■ WhatsApp message ■ SMS/Text ■ Other, specify

PART 10: Modalities of supporting parental engagement (Incentives/ Reading Passports)

1	Has your child received a reading passport to guide reading engagement at home? *[Choose/circle only one option]*	■ Yes ■ No ■ Not sure
	To what extent do you agree or disagree with this statement: The reading passport helped to motivate your child to read on BookSmart?	■ Strongly agree ■ Agree ■ Neutral ■ Disagree ■ Strongly disagree
	To what extent do you agree or disagree with this statement: The passports put unwelcome pressure on me or my child to read on BookSmart?	■ Strongly agree ■ Agree ■ Neutral ■ Disagree ■ Strongly disagree
	To what extent do you agree or disagree with this statement: The reading passport helped me prioritise time spent reading on BookSmart?	■ Strongly agree ■ Agree ■ Neutral ■ Disagree ■ Strongly disagree
2	How effective were the reading passports in making you read to your child?	■ 1.Very effective ■ Partially effective ■ Not effective
3	How often did you review your child's reading passport?	■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less ■ Never
4	How often was your child required to take the reading passport to school?	■ Once a day ■ Several times a week ■ Once a week ■ Once a month or less ■ Never

PART 11: Modalities of supporting parental engagement (Reading Celebrations)

1	Have you attended any celebrations / events regarding parental engagement geared towards your child's learning/reading, in the last four months? *[Choose/circle only one option]* *(If answer is No, skip to 5)*	■ Yes ■ No ■ Not sure
2	Did these reading celebrations improve your engagement with your child's learning? *[Choose/circle only one option]*	■ Yes ■ No ■ Not sure
3	How effective were the reading celebrations in making you read to your child?	■ Very effective ■ Partially effective ■ Not effective
4	Do you think reading celebrations are important for your child's learning? *[Choose/circle only one option]*	■ Yes ■ No ■ Not sure
5	Did the reading celebrations help you to better understand the roles of different stakeholders in your child's learning? (Stakeholders include area chief, librarians Curriculum Support Officers)	■ Yes ■ No ■ Not sure
6	Did the reading celebration help you better understand your child's reading level?	■ Yes ■ No ■ Not sure

PART 12: Modalities of supporting parental engagement (Feedback loops)

1	How often do you talk to your child's teachers or headteacher regarding your child's performance at school? *[Choose/circle only one option]*	■ Daily ■ Once a week ■ Once a month ■ Once a term ■ Once a year ■ Never
2	How often do you talk to your child about his/her performance and give him/her feedback? *[Choose/circle only one option]*	■ Daily ■ Once a week ■ Once a month ■ Once a term ■ Once a year ■ Never
3	Has the teacher or headteacher given you information about how long you are reading to your child on the BookSmart app?	■ Yes ■ No

4	If yes, what kind of information did you receive? (Capture frequency and type of information)	
5	How frequently did you receive this information?	■ Daily ■ Once a week ■ Once a month ■ Once a term ■ Never
6	Was the information useful? If so, how? (*Skip if never was selected*)	
7	What do you do to encourage your child to read more? *[Choose/circle all that apply]*	■ Buying reading books ■ Creating reading times with child ■ Allowing and accompanying child to participate in reading galas ■ Encouraging child to start/own a home library ■ Nothing/I don't know

PART 13: General reading engagement on BookSmart

1	Have you or your child read on BookSmart? *[Choose/circle only one option]* *[If no, end of interview/survey]*	■ Yes ■ No
2	How often did you or your child access BookSmart?	■ Daily ■ Once a week ■ Twice a week ■ Once a month ■ Twice a month ■ Once a term
3	On average, how long did the reading sessions on BookSmart last?	■ Less than 15 min ■ 15-30 min ■ 30 minutes or more

	If you started using BookSmart, has the total time you spend reading with your child increased, decreased, or stayed the same?	■ Increased ■ Stayed the same ■ Decreased
4	Does your child read by himself/herself or with you? *[Choose/circle only one option]*	■ Always with you ■ Mostly with you ■ With supervision from another adult ■ Child reads by himself/herself
5	Name the top three things you like the most about BookSmart.	
6	Name the top three things you would like to see improve on BookSmart.	
7	Name three things that you liked about reading on a digital platform.	
8	Name three things that you did not like about reading on a digital platform.	
9	What are the main differences you've found in reading with your child on BookSmart versus reading with a physical story book?	
10	Did you prefer BookSmart or a physical story book? Why?	
11	Did your child prefer BookSmart or a physical story book? Why?	

Annex 2. Tables for figures

Table 5. *Sample distribution by modalities at baseline and endline*

	Baseline			Endline		
Modalities	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
Training	24(15%)	11(24%)	35(17%)	15(12%)	9(26%)	24(15%)
Feedback Loops	23(14%)	6(13%)	29(14%)	17(13%)	3(9%)	20(12%)
Reading celebrations	21(13%)	8(18%)	29(14%)	17(13%)	6(18%)	23(14%)
Incentives	30(18%)	7(16%)	37(18%)	25(20%)	6(18%)	31(19%)
Messaging	33(20%)	8(18%)	41(20%)	24(19%)	7(21%)	31(19%)
Control	33(20%)	5(11%)	38(18%)	30(23%)	3(9%)	33(20%)
Respondents	**164 (78.5%)**	**45 (21.5%)**	**209 (100%)**	**128 (79%)**	**34 (21%)**	**162 (100%)**

Table 6. *Average age of carers' Year 3 children and their share in the sample*

	Baseline			Endline		
	Girl	**Boy**	**Total**	**Girl**	**Boy**	**Total**
Average age	8 years 7 months	8 years 7 months	8 years 7 months	8 years 9 months	8 years 8 months	8 years 8 months
No. and share of children whose carers participated	119 (57%)	90 (43%)	209 (100%)	93 (57%)	69 (43%)	162 (100%)

Table 7. *Carer relationship to child*

	Baseline		Endline	
	Number	**Percentage**	**Number**	**Percentage**
Mother	146	69.86	119	73.46
Father	40	19.14	30	18.52
Grandparent	7	3.35	5	3.09
Older brother	1	0.48	0	0
Older sister	5	2.39	2	1.23
Aunt	5	2.39	4	2.47
Uncle	2	0.96	2	1.23
Other	3	1.44	0	0

Table 8. *Average household size*

	Baseline			Endline		
	Female	**Male**	**Total**	**Female**	**Male**	**Total**
Average household size						
Household size	2.6	2.9	2.7	2.2	2.6	2.3
Observations	**164**	**45**	**209**	**128**	**34**	**162**

Table 9. *Education levels of carers*

		Baseline		Endline
	Number	**Percentage**	**Number**	**Percentage**
None	5	2.39	5	3.14
Lower primary lower (1–5)	7	3.35	3	1.89
Upper primary upper (6–8)	80	38.28	57	35.85
Lower secondary(Forms 1–2)	22	10.53	16	10.06
Upper secondary (Forms 3–4)	60	28.71	51	32.08
Certificate / Diploma	12	5.74	6	3.77
College / university	23	11	21	13.21

Table 10. *Occupation of carers by modalities at endline (%)*

	Training		Feedback		Celebrations		Incentives		Messaging		Control	
	M	F	M	F	M	F	M	F	M	F	M	F
Full time (%)	11	13	33	0	17	12	17	12	71	13	0	7
Part-time (%)	0	7	0	6	17	0	17	4	14	0	0	7
Unemployed (%)	11	7	67	35	0	41	50	32	0	13	67	20
Self-employed (%)	56	33	0	53	33	18	17	16	0	38	33	37
Casual labour (%)	22	40	0	6	33	29	0	20	14	33	0	27
Observations	9	15	3	17	6	17	6	25	7	24	3	33

Table 11. *Occupation of carers by gender — baseline*

Occupation at baseline			
	Female carers	**Male carers**	**Total**
Employed full time	23 (14.02%)	9 (20%)	32 (15.31%)
Employed part-time	3 (1.83%)	3 (6.67%)	6 (2.87%)
Unemployed	40 (24.39%)	6 (13.33%)	46 (22.01%)
Self-employed	45 (27.44%)	15 (33.33%)	60 (28.71%)
Casual labour	49 (29.88%)	12 (26.67%)	61 (29.19%)
Retired	1 (0.61%)	0	1 (0.48%)
Student	2 (1.22%)	0	2 (0.96%)
Won't say	1 (0.61%)	0	1 (0.48%)
Observations	**164**	**45**	**209**

Table 12. *Occupation of carers by gender — Endline*

Endline Occupation			
	Female carers	**Male carers**	**Total**
Employed full time	17 (13%)	7 (21%)	24 (15%)
Employed part-time	1 (1%)	3 (9%)	4(2%)
Unemployed	32 (25%)	4 (12%)	36 (22%)
Self-employed	36 (28%)	12 (35%)	48 (30%)
Casual Labour	40 (31%)	8 (24%)	48 (30%)
Retired	1 (1%)	0	1(0.6%)
Student	0	0	0
Won't say	1 (1%)	0	1 (0.6%)
Observations	**128**	**34**	**162**

Table 13. *Monthly household income*

	Female carers	Male carers	Total	Female carers	Male carers	Total
Kshs 0–12,298 (USD 0–102)	98 (60.1%)	22 (49%)	120 (58%)	81 (63%)	17(50%)	98 (60%)
Kshs 12,299–23,885 (USD 102–198)	27 (16.56%)	13(28.89%)	40 (19.23%)	21 (16%)	8(24%)	29 (18%)
Kshs 23,886–35,472 (USD 198 –294)	3 (1.84%)	5 (11.11%)	8 (3.85%)	2(2%)	4(12%)	6 (4%)
Kshs. 35, 473–47,059 (USD 294–390)	3 (1.84%)	0	3(1.44%)	3(2%)	0	3 (2%)
Above Kshs 47,060 (above USD 390)	2 (1.23%)	1 (2.22%)	3 (1.44%)	1(1%)	1(2%)	2 (1%)
Do not wish to say	31 (18.90%)	4 (8.89%)	34 (16.35%)	20(16%)	4(12%)	24 (15%)
Total	**164**	**45**	**209**	**128**	**34**	**162**

Figure 42. *Ownership of smartphone by modalities*

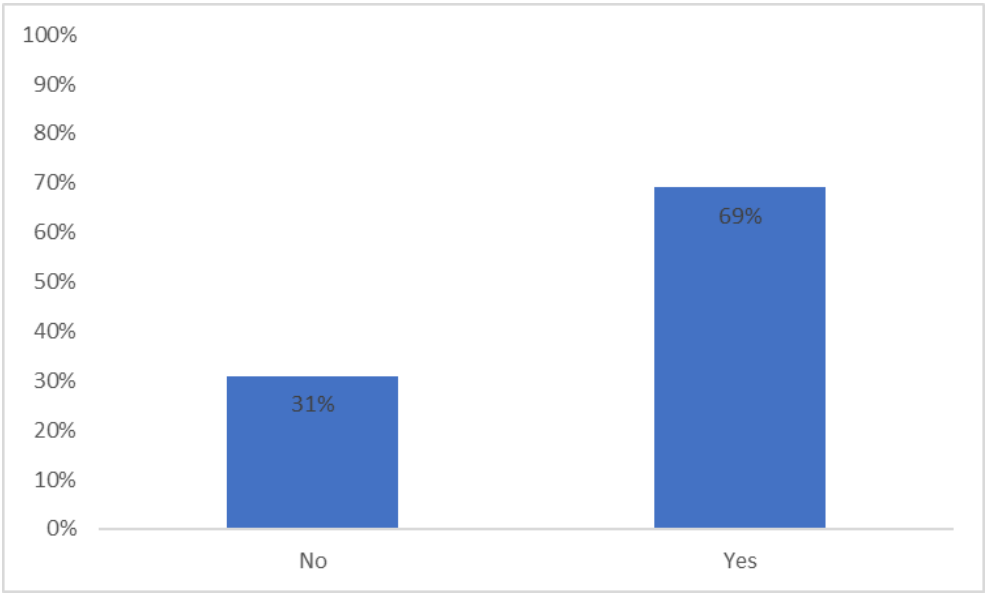

Figure 43. *Frequency of usage of smartphones for carers who own smartphones*

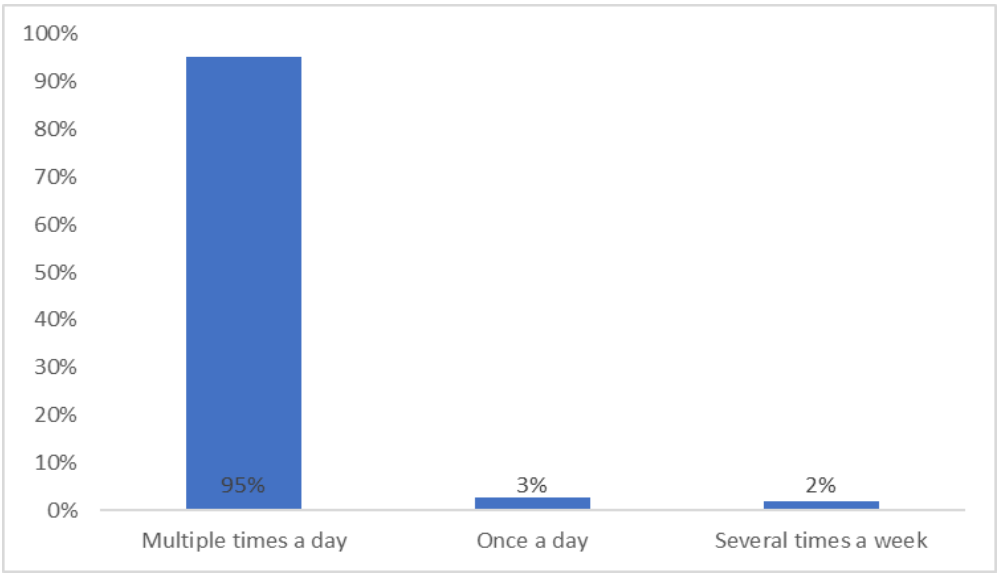

Figure 44. *Most frequently used mobile apps at endline*

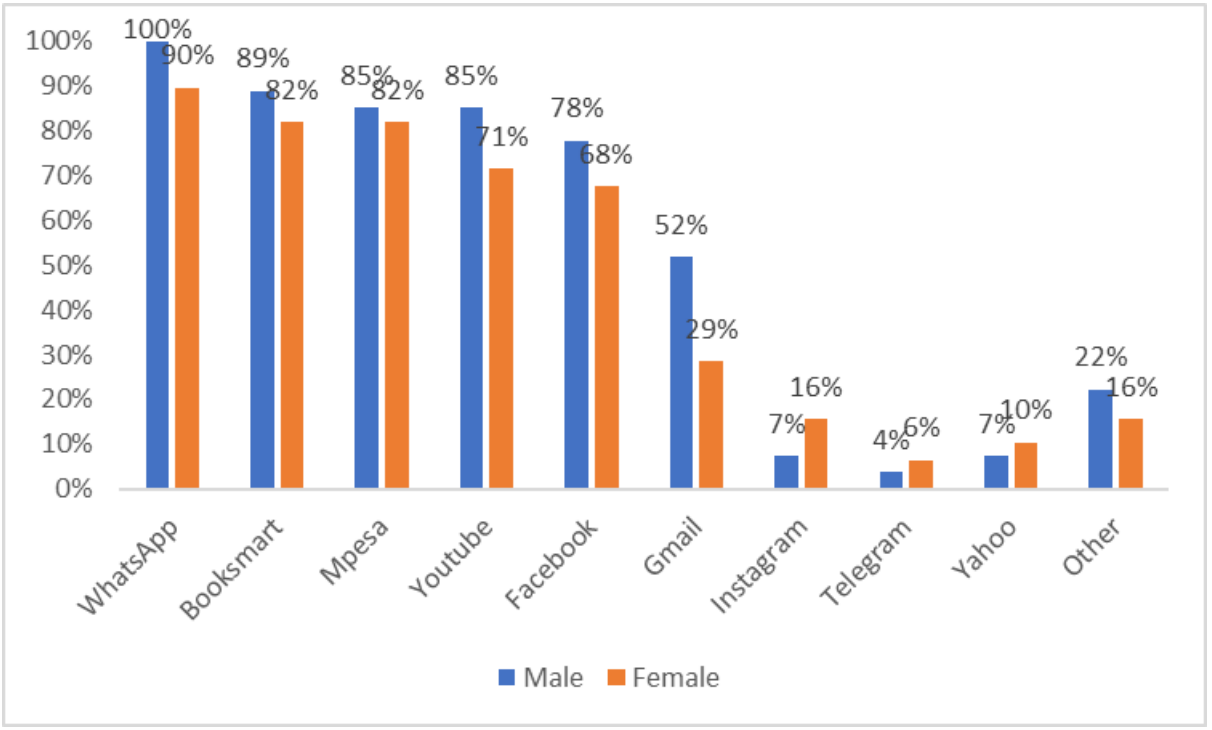

Table 14. *Training experience before (baseline) and after intervention (endline)*

	Baseline			Endline		
Response	**Female carers**	**Male carers**	**Total**	**Female carers**	**Male carers**	**Total**
No	66.7%	100%	77.1%	13.3%	0	8.3%
Yes	25%	0	17.1%	86.7%	100%	91.7%
Don't remember	8.3%	0	5.8%	0	0	0
Observations	**24**	**11**	**35**	**15**	**9**	**24**

Table 15. *Nudges and messages received*

	Female carers	Male carers	Total
Yes	45.8%	71.4%	51.6%
No	45.8%	28.6%	41.9%
Not sure	8.4%	0	6.5%
Observations	**24**	**7**	**31**

Table 16. *Reading passports received*

Endline			
Response	**Female carers**	**Male carers**	**Total**
Received reading passports			
Yes	79.2%	100%	82.8%
No	16.7%	0	13.8%
Not sure	4.1%	0	3.4%
Observations	**24**	**5**	**29**

Table 17. *Effectiveness of reading celebrations*

Endline			
Response	**Female carers**	**Male carers**	**Total**
Reading celebrations helping in understanding role of stakeholders			
Yes	90%	75%	85.7%
Not sure	10%	25%	14.3%
Observations	**10**	**4**	**14**
Reading helps carers understand child's reading levels			
Yes	100%	75%	92.9%
No	0	25%	7.1%
Observations	**10**	**4**	**14**

Table 18. *Feedback loops between carers, teachers, and children*

	Baseline			**Endline**		
	Female carers	**Male carers**	**Total**	**Female carers**	**Male carers**	**Total**
Frequency of talking to teachers						
Daily	0	0	0	11.8%	0	10%
Once a week	39.1%	0	31%	47.1%	33.3%	45%
Once a month	52.2%	50%	51.7%	35.3%	33.3%	35%
Once a term	8.7%	16.7%	10.3%	5.9%	33.3%	10%
Never	0	33.3%	6.9	0	0	0
Observations	**23**	**6**	**29**	**17**	**3**	**20**
Frequency of talking to child about performance						
Daily	52.2%	50%	51.7%	23.5%	33.3%	25%
Once a week	21.7%	16.7%	20.7%	52.9%	0.0	45%
Once a month	26.1%	33.3%	27.6%	17.7%	66.7%	25%
Once a term	0	0	0	5.9%	0.0	5%
Observations	**23**	**6**	**29**	**17**	**3**	**20**