

Comparative Analysis of the Literacy and Numeracy Assessment for Children in Daadab Refugee Camp in Kenya

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Abstract

Getting marginalized and vulnerable refugee children back into learning, in physical school facilities when it is safe to do so; helping ensure that children who are unable to return to school receive contextually appropriate and operationally feasible learning was challenging, due to the impact of COVID-19 pandemic on education that left many children in refugee camps vulnerable because their parents could neither afford home-schooling nor online classes. COVID-19 left many children in Dadaab refugee camp vulnerable. Parents could not afford home-schooling and on-line classes for them. To compensate the lost learning of children aged 7 - 10 years during the pandemic, Save the Children (SC) in Kenya introduced digital learning in the camp aimed to improve their literacy and numeracy skills. The evaluation was for the pilot digital learning project, implemented for a period of one year. The purpose was to assess the contribution of digital learning on learning outcomes of children. A quasi-experimental design was used where 320 learners were assessed using three standard tools; numeracy and literacy boost and IDELA tools. Children from the intervention schools performed better than the control schools in literacy boost. However, the grand mean score achieved by them is still below average. Children from both the control and intervention groups achieved remarkably higher mean scores in the numeracy boost. Their performance was optimum in this area of assessment. The study recommends that digital learning can be scaled up and learners observed for a longer period of time with rigorous methodology applied to allow plausible results that can be attributed to the interventions.

Keywords

COVID-19, Literacy, Numeracy, Refugees, Digital Learning

1. Introduction

Kenya continues to host more than 468,000 refugees, mainly from Somalia and South Sudan; 45% of this population is located in Dadaab Refugee Camps. Children and adolescents account for 58% of Dadaab's population, 49% of whom are school-aged children between 5 and 17 years (NEMIS data February 2020). According to UNHCR, the growing number of unregistered asylum seekers and undocumented refugees has heightened the risks of abuse and exploitation faced by vulnerable children, particularly girls and children with disabilities who are out of school. Dadaab Sub County in Garissa County had more than 217,511 registered refugees and asylum seekers at the end of March 2020. About 57% of the total population are children and 62,610 refugee children are enrolled in school in Dadaab camps. About 39% of registered refugees and asylum seekers living in Dadaab Refugee Camp are children of school-going age (6 - 17 years) yet most of them are out of school) or drop out early due to multiple community-based and school-based barriers. In Dadaab, access to school, retention and transition remains low, and indicators related to education are persistently poor. At the community level, barriers include inability of parents/caregivers to pay school costs, resulting into children working instead of going to school so as to meet financial needs; parental preference for informal religious education and gender bias between girls and boys. At the school level, barriers include shortage of qualified teachers, inadequate learning materials, unsafe infrastructure, and inadequate support for children with disabilities.

1.1. Literature Review

The early years are a critical window of learning opportunity for young learners. Children who attend early childhood education are twice as likely to show progress in early literacy and numeracy. It promotes the development of language acquisition, motor and cognitive development, and social emotional skills. This has a knock-on effect throughout a child's educational journey (UNICEF 2019). To unlock the big change on pre-primary education in Kenya, there is a need to address the main barriers to effective pre-primary education provision including insufficient financing, incoherent policy framework, confusing institutional framework, geographical disparities, and impact of COVID-19 on education among others (Their World, 2022).

Sustainable Development Goal 4 promises inclusive and equitable quality education and lifelong opportunities for all by 2030. SDG4 4.1 specifically focuses on foundational learning, acknowledging that acquiring foundational literacy and numeracy is paramount for successful educational achievement at all later stages (Sustainable Development Goals, 2030). Despite this promise, millions of children are out of school, and global learning poverty levels (World Bank, 2023), Children who do not attain basic reading by age 10 are above 50 percent in low and middle income countries, and over 80 percent for sub-Saharan Africa (Policy Forum, 2022).

The Kenyan Constitution (Republic of Kenya, 2010) and the Basic Education Act of 2013 recognizes Basic Education as a human right. The Government of Kenya has committed to providing free and compulsory Basic Education to ensure no child is left behind. While there have been gains in access to education, learning outcomes remain low. The recent Uwezo assessment (2021) established that only 40 percent of grade 4 learners were able to read a grade 3 level text.

As a result of the COVID-19 pandemic, an estimated one billion children experienced a suspension to their learning due to global protracted lockdowns. Tens of millions of these children were not expected to return back to school, unless with targeted and contextualized interventions. An additional 260 million children who were not benefitting from educational services prior to the pandemic currently face additional barriers to access their right to an education. The situation presents a once-in-a-lifetime threat to our 2030 breakthroughs. In 2020, Save the Children declared the safe return to learning and return to school, when safe to do so—a global priority. Particular focus was given to the most marginalized, including girls, children with disabilities, children living in poverty and children that are displaced due to crisis (Save the Children, 2020).

COVID-19 was a public health crisis and a global education emergency. The learning of over 1 billion children was disrupted by protracted lockdowns. Some of these children continued with their education through distance learning and support from schools and parents. Many others were in lockdown without any learning support. Save the Children's Global COVID Survey Report indicated that 9 out of 10 children's learning had decreased during school closures, with over three quarters learning little or nothing and 1 in 5 were learning nothing at all, especially for refugee children and children with disabilities, especially girls (Save the Children, 2020).

The danger by then, as schools in the poorest countries prepared to re-open was that the most disadvantaged children, having fallen further behind, were at risk of not returning to school. Even if they returned to school, they would be returning to school systems ill-equipped to support their return to learning and would be at high risk of dropping out. Save the Children's Global COVID-19 Survey data indicates that children with disabilities, especially girls, were less likely to be expected to return to school. There was a real and present danger that the pre-COVID learning crisis which left millions of children in school with no prospect of gaining foundational literacy and numeracy would be magnified. Failure to address that danger would rob a generation of children of their right to education, exacerbate learning inequalities and, because of the links from education to virtually every other dimension of development-including progress in cutting poverty, malnutrition, inclusive growth, and gender equity and act as a brake on progress towards the Sustainable Development Goals.

1.2. Problem Statement

The COVID-19 pandemic impacted girls and boys negatively and those who

were vulnerable and from marginalized and refugee communities were affected more. During pandemic, the marginalized communities could not afford to home schooling and on-line classes for their children due to lack of resources, which left many children behind in learning. After the pandemic when the schools were re-opened, the enrolment rate was low and many children required psychosocial support as their family members were lost and became economically impoverished. In this context, Save the Children International introduced digital learning in the Dadaab refugee camp as this could ensure a continued learning for the children in the event of another pandemic too. Elevate is a comprehensive tablet-based independent literacy and numeracy learning system that can be integrated with Library for All's Spark Digital Classroom Kit. It incorporates literacy and numeracy skills for children aged 7 to 10 years. The goal of Elevate is to overcome some of the barriers preventing children in developing countries from accessing education.

The primary purpose of the intervention was to enable the literacy and numeracy levels of the children and support them to recover from the lost time due to the pandemic and offer an opportunity to learn and catch up the classes later with the use of digital technologies translated into their local language. The project was implemented as a pilot as the first digital learning opportunity for the children in the refugee camps and provided opportunities for both girls and boys to a continued learning and accelerated their learning.

The main outcome envisaged was inclusive and effective foundational learning opportunities for out of school children in the refugee camp while the expected outcomes were increased enrolment and retention of out of school children and increased access to safe and quality digital learning opportunities for the learners.

2. Objectives of the Study

The overall purpose of the evaluation was to assess the progress made towards achieving the learning outcomes for children and document challenges, programmatic lessons learnt and key recommendation for programme improvement. The study sought to address the following research questions:

- To what extent has the digital learning contributed to improvement in learning outcomes?
- What are the enrolment, attendance, and dropout rates of children in the target schools?
- What is the attitude towards digital learning between male and female teachers?
- What are the gaps in digital learning when it comes to children with disability?

3. Methodology

The end line evaluation used a mix of both quantitative and qualitative tools

and methods to assess the learning outcomes of the children in the ECD level. Since there was no baseline survey done at the beginning, the study applied a quasi-experimental design as the principal approach under which samples were taken from both the intervention and control groups. A total of 320 learners were assessed using three standard tools; numeracy and literacy boost and IDELA tools. In all quantitative findings, it was thus possible to compare the learning outcomes of the intervention group children with the control group children and assess the net effect produced by the project intervention.

The following six types of tools were used to collect data from teachers and children.

- 1) IDELA—A global quantitative tool that measures children's early learning and development, administered for ECD children.
- 2) Literacy boost and Numeracy boost (also called EGRA/EGMA), this is a global quantitative tool that measures the reading and numeracy skill of the children of grades 1 and 2.
- 3) Enrolment and attendance data collected from the target school centres.
- 4) Classroom teacher observation tool.
- 5) Knowledge, attitude, and practice (KAP) survey of teachers.
- 6) Focus group discussion with children in the selected schools.

4. Sample Design

The study applied a proportionate random sampling method to select respondents from the 4 targeted ABE schools. To estimate the sample size for tools like IDELA and Literacy and Numeracy boosts, a sample size calculator was used that produced the required sample size for the survey at 95% confidence level and 5% margin of errors for both control and intervention groups. An equal representation of respondents in both intervention and control groups was ensured to avoid any biasness in the achievements of learning outcomes between the groups. To ensure randomness in the selection, a list of learners from each class was generated in the excel sheet and the respondents were randomly selected out of the list. In case of children with disabilities (CWDs), they were purposively selected to ensure inclusivity in the survey. Teachers were also selected using the same random selection approach. In case of FGD, 2 FGDs (Focus group discussion) of purposively selected children per school from 4 schools was conducted (**Table 1**).

Training for both IDELA and Literacy/Numeracy boost was conducted in October 2022. Data were collected between October to November 2022 including focus group discussion with children. The training was conducted by the program team; education coordinator and MEAL officers in which 12 research assistants (8 male and 4 female) for Lit/Numeracy Boost, and 14 research assistants (12 male and 2 female) for IDELA were appointed. The research assistants were local who had been in the SCI database for about a year and were involved in similar types of studies in the past.

Table 1. Sample size at the design and actual data collection.

SN	Name of tools	Type of sampling	Planned Sample Size (Intervention/Control)	Actual (Intervention/Control)
1	IDELA	Random at 95% of CL and 5% CI	320 (160/160)	320 (160/160)
2	Lit/Numeracy boost	Random at 95% of CL and 5% CI	300 (150/150)	300 (150/150)
3	Teacher KAP Survey	Random	20 (10/10)	16 (6/10)
4	IDELA Classroom observation	Random	10 (6/4)	5 (2/3)
5	Enrolment and attendance data	Collection from registers	4 schools	4 schools
6	FGDs with children	Purposive	8	8

The quantitative questionnaire related to IDELA and Lit/Numeracy boost were designed in the KOBO software platform-a mobile data collection technology-which enabled live data collection and storage in the same day. Teacher KAP survey and IDELA classroom observation tools were designed in the excel sheet in such a way that they could later be exported to the desired statistical software. The data collected through these tools were later exported to SPSS software for statistical analysis and production of tables and figures. Data were disaggregated by intervention and control group as the main basis for comparing the learning results of the children. The learning achievements of children between control and intervention groups presented in the tables and figures were further verified by appropriate tests of significance-mainly Chi-Square and ANOVA tests. Percentages and means were the key descriptive data derived from the analysis. Where possible and feasible, data was further disaggregated by gender and disability. In some cases, correlation analysis was conducted to see the impact of some key variables on the learning outcomes. Qualitative data related to the FGDs of children were analyzed manually as they did not involve lots of descriptive data.

The study did not require official ethical consent from the government. Following SCI policy, child safeguarding was one the areas covered during the training and all the data collectors signed the policy before the data collection started. Consent forms were developed for all tools, and consents were sought during data collection from children and teachers who took part in the survey. Written consents were sought from head-teachers at the selected schools in which case they retained one copy, and one was provided to the Save the Children.

5. Study Findings

A total of six school centers were selected for the purpose of data collection-3 each as control and intervention group-in which 300 children were interviewed from six grade levels as shown in **Table 2** below. By sex 53.7% of male and 46.3% of female participated in the data collection. Out of total children, 3.7% were children with disabilities and majority of them (about 7) had physical disabilities while the rest had visual, intellectual and other types of disabilities.

Table 2. Distribution of children by school centers, grade, sex and disability.

By centers	N	%	By grade	N	%	By sex & Disability	N	%
Badbadho ABE (C)	50	16.70%	Catch up IA	149	49.70%	Male	161	53.70%
Daryel ABE (I)	50	16.70%	Catch up IB	141	47%	Female	139	46.30%
Dwatobeer ABE (I)	50	16.70%	Level IA	6	2%			
Gadudey ABE (C)	50	16.70%	Level IB	4	1.3%			
Liban ABE (C)	50	16.70%						
Waberi ABE (I)	50	16.70%						
Intervention	150	50.0%				CWDs	11	3.7%
Control	150	50.0%				Non CWDs	289	96.3%
Total		100%		300	100%		300	100%

I = Intervention; C = Control.

The mean age of the school attending children was found to be 11.30 years and it was not so different across school centers, with maximum age being 15 and minimum 6 years. Majority of the children (IG 82% to CG 90%) were centered within the age range of 9 to 13 years, while the rest were distributed among other age range). There is no statistical difference between intervention and control group in the children's age distribution pattern ($P = 0.165 > 0.05$) (Figure 1).

5.1. Attendance and Repetition Rate in ECD, Grade and School Centers

Several studies in the past have proven that children's attendance in the pre-schools influences positively in their future performance and skills in the primary schools. But not all children in the world have got access to pre-school education. According to the data below, overall, 45.7% of children targeted by the project had attended pre-schools and more children from control group (50%) attended pre-schools compared to the intervention group (42.3%). By gender, about 11% more girls have attended pre-schools compared to boys.

Statistical significance: There are significant statistical differences between boys and girls in attending pre-schools as determined by the Chi-square test ($P = 0.031 < 0.05$), while no statistical difference is found in between intervention and control group ($P = 0.082 > 0.05$) and CWDs and Non CWDs and ($P = 0.618 > 0.05$) (Figure 2).

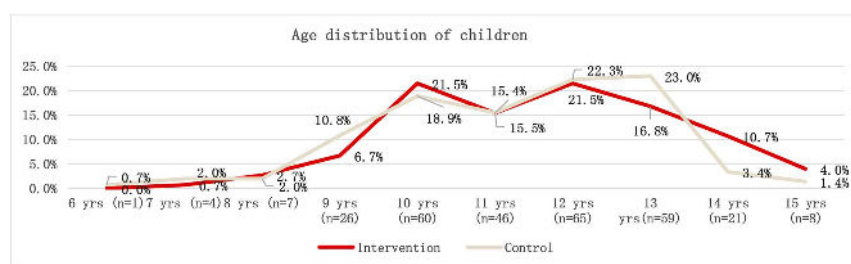


Figure 1. Age distribution of the children.

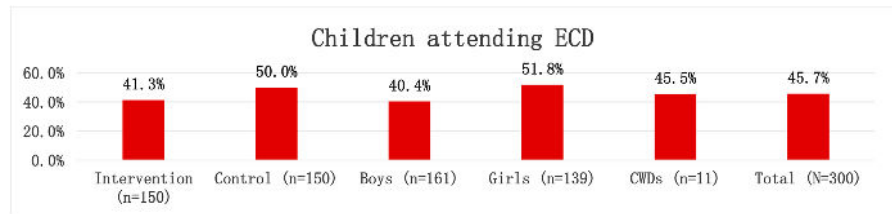


Figure 2. Proportion of children who attended ECD/Pre-schools.

The overall repetition rate at grade level is low among the children (8%), with 6% in the intervention and 10% in the control group. Among those who repeated a grade from both groups, 75% repeated only once while 25% repeated twice and there is no significant difference between control and intervention groups. The school missing rate by children overall is 6.7% - 7.3% in intervention and 6% in the control group. More girls have missed the schools (8.6%) than boys (5%) and the main reasons reported are sickness of child and family repatriation.

5.2. Attendance Rate of Enrolled Children at the School Centers

Table 3 below presents attendance data by schools and gender of the children. Data were collected from the school registers for the period of five months from May to October 2022. Overall, the attendance rate is 65.2% in all school centers, with girls' attendance higher by 13% compared to boys. Among the schools, Waberi ABE recorded the highest attendance rate with 84.3%, while lowest attendance rate is recorded at Dwatobeer (38.4%). To say whether the overall attendance rate is satisfactory, or poor depends on the context from which the children came to schools, but in general the Project and the schools should do more to increase the attendance rate in future.

Table 3. Attendance rate of enrolled children at the school centers.

Name of schools		Boys	Girls	Total
Daryel	Mean	56.4%	74.6%	64.3%
	N	23	23	23
Dwatobeer	Mean	26.9%	63.9%	38.4%
	N	23	23	23
Unity	Mean	74.8%	73.8%	74.1%
	N	23	23	23
Waberi	Mean	85.5%	83.2%	84.3%
	N	23	23	23
Total	Mean	60.9%	73.9%	65.2%
	N	92	92	92

N = 23 represents no. of days classes were operated in each center, not total children.

5.3. Language Spoken at Home

Overall, 96.3% of children speak Somali language at home and the case is similar in all school centers, followed by those who speak other types of languages (11%), which include languages like Maimai, Jarer and Nuer. English is spoken only by 3% of children and Swahili by 1.7%. Languages spoken at home influence the learning performance of children at ECD and early grade level. The digital learning kits were developed in Swahili language but the survey questions were unable to assess whether the children could speak, read, and write fluently in Swahili language (Figure 3).

5.4. Housing and Living Conditions

Children from all three camps were asked about their living and housing conditions. Overall, the average year of living in the camp is 10 years, which is same in all camps. Children reported to have overall 8 members in their households—slightly higher (by one) in case of Dagahaley and Hagadera camps—and in average, they have 3 rooms in their households (Table 4).

Overall, 52.3% of the children reported to have electricity at their home, however, the sources of electricity varied. Out of those whose houses were connected to electricity, 13% of them get electricity from KLPC, 62% have generators and 25% are connected to solar power systems. Likewise, 100% children stated that the main source of water in the camps are community well or tap, and 100% of them use

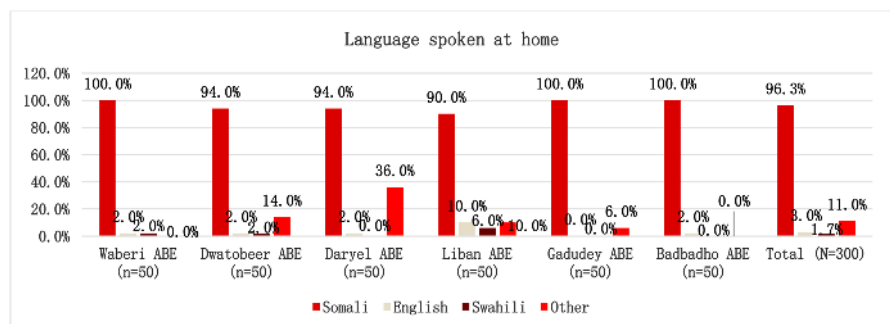


Figure 3. Language spoken at home.

Table 4. Housing and living status by camp.

Name of schools		No. of years lived in the camp	No. of people at home	No. of Rooms at home
Dagahaley	Mean	10	9	3
	N	84	100	100
Hagadera	Mean	10	9	3
	N	83	100	100
Ifo	Mean	10	8	3
	N	83	100	100
Total	Mean	10	8	3
	N	250	300	300

charcoal or wood as the main fuel source for cooking food (sources: SPSS dataset).

20.3% of children had come to school at the day of interview without breakfast (Intervention: 21.3%; control: 19.3%). A lower proportion of children overall (2.7%) were found working outside their homes; however, this proportion is high in intervention group (4%) compared to control group (1.3%).

5.5. Possession of Physical Assets

The Literacy and numeracy boost questionnaire also asked the children whether they possessed physical asset items such as television, mobile and transportation means at their homes. According to the findings below, a very low proportion of refugee population possess motorcycles and bicycles including televisions. Overall, 92% had mobiles at their homes, while the possession of television was found at 8.4% of homes only. Comparatively higher proportion of the population of intervention group possessed televisions and bicycles than the control group but both groups stand similar in possessing mobile phones and motorcycles (**Figure 4**).

5.6. Home Learning Environment

Reading habits of family members and availability of different kinds of books at home help nourish children's development from an early age. The literacy boost tool explored whether children had such learning materials at home and whether family members at homes had reading habits that could create a learning environment at home and further motivate children for learning. According to the data below, religious and textbooks are available at 93% and 51% of children's homes respectively; however, story books, comic books and coloring books which are the key materials for creating learning habits of children are not available in more than 65% of children's homes. The Project needs to provide such books and materials to all children if it expects improvement in their learning environment at home (**Figure 5**).

The questions below explored both the reading environment at home created for children by their parents or family members as well as teachers' encouragement to children for learning through reading stories. The learning environment at home is encouraging for children as overall 61% of family members or parents read story books or something for them and an equal proportion of children also read themselves. Another 61.8% of family members (overall) also helped children in their studies. However, this is not sufficient as the learning environment for another 40% of children did not seem encouraging at home. Reading stories to children at schools by teachers seems common as overall 75% of children reported that their teachers read stories for them or asked them to read story books in the last week preceding the interview. The situation of intervention and control group looks similar in all respects, expect for control group in which case more parents helped children read stories and helped in their studies compared to the intervention group (**Figure 6**).

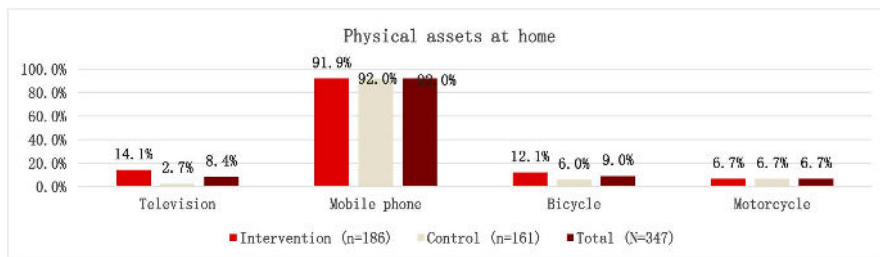


Figure 4. Possession of physical assets.

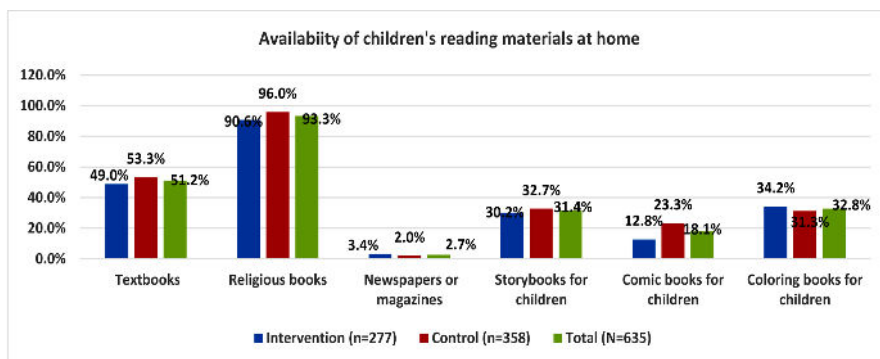


Figure 5. Proportion of children who were able to access different types of learning materials at home.

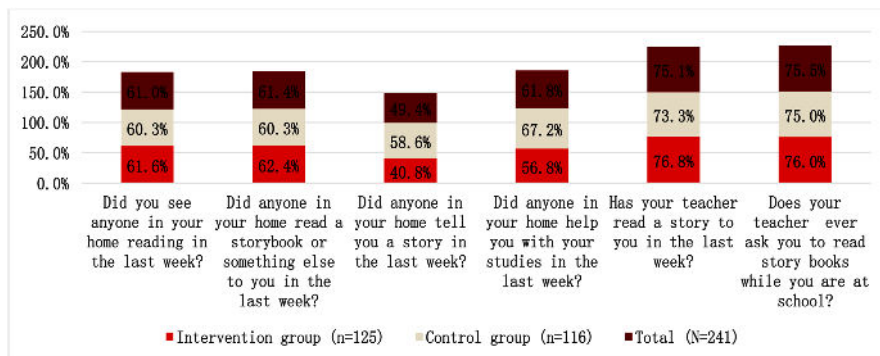


Figure 6. Home education environment.

5.7. Socio Emotional Learning Environment at School

An increase in socio emotional learning of the children helps them to build relation with their colleagues, personal problem management and developing creative thinking and empathy towards others. However, such skills may again deteriorate if there is no conducive environment at schools where they learn. The survey asked 10 questions to the children about what they thought of the school environment to assess if the schools were conducive to rise socio-emotional skills of the children. Except for data presented in Figure 7 below, the questions were also analyzed using a scoring system with due considerations to the positive and negative scoring questions. The findings suggest that overall, 28% of the schools (Int; 30%; Control: 26%) are in “high” socio-emotional category which means that these schools have conducive environment for children to further

develop their individual socio emotional skills, while the rest 72% fall into the category of “medium” socio-emotional environment (Int: 70%; Control: 74%).The findings suggest that schools need to make further efforts to develop a child friendly environment which can further enable their socio-emotional learning.

The figure below presents data on individual questions. Most of the questions fall into the categories of “sometimes” and “most of the times”. One of the important highlights is that majority of the children feel safe in their schools.

5.8. Findings on Literacy and Numeracy Skills and Attendance

Literacy scores: The following were the main domains of literacy assessment: 1) English letter identification 2) Common English words 3) Invented words 4) Reading passage and 5) Comprehension. Findings indicate that there was statistically significant difference in literacy/reading skills and attendance rates of learners between intervention and control schools. Overall, the literacy score was low in all schools, though there was better performance for learners in intervention (44%) compared to control schools (36.3%) and overall scores and percentages achieved by the children are statistically significant. Overall, the children were able to secure 64.9% scores out of 78 words asked, with intervention group by 2.7% higher than the control group. There was a better performance of CWD in intervention schools compared to control schools.

Numeracy scores: Numeracy boost consists of 12 components of assessment of the math skills of the students. They included counting, number identification, place values, skip counting, ordering numbers, addition, subtraction among others. ANOVA test of total score of numeracy skill assessment was conducted which confirms that there is no significant statistical difference between intervention and control group ($P = 0.117 > 0.05$). Hence, overall, no change has taken place in the intervention group compared to control group. The children have progressed almost equally in both groups. However, by percentage points overall, children from the intervention group performed slightly better than the control group.

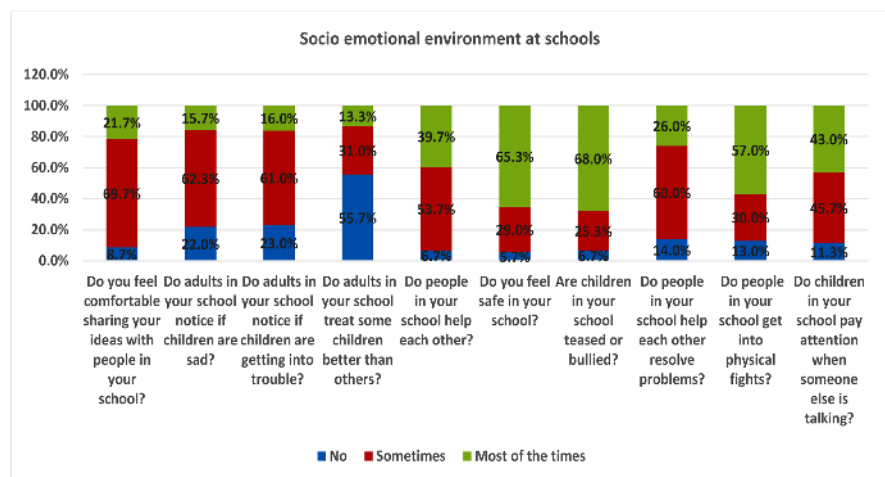


Figure 7. Socio-emotional environment at schools.

IDELA scores: IDELA is an education monitoring tool that measures the early learning skills of ECD children. It consists of four dimensions of skills or competencies against which children are assessed, and each of these dimensions further include from 4 to 7 sub-dimensions. Again, the sub-dimension may include a minimum of 2 to 8 questions which mostly include questions in the form of “yes” and “no” and few of them require numeric scoring. A total of 320 children, 160 each from the intervention and control group participated in this assessment. As shown by the P values derived from the ANOVA test, there are no statistically significant differences between control and intervention groups, neither in any dimensions nor in the grand total score of IDELA. Hence, the performances of children on IDELA skills between control and intervention groups remained the same. However, the notable factor here is that the mean scores achieved by the children in both intervention and control groups are above the average and both groups have progressed in their performance.

Higher attendance rates: Attendance rate was higher in intervention than control schools, more for girls compared to boys. This is quite significant because one of the challenges with learning in Dadaab is the low participation of girls and so there is potential to improve enrolment and attendance of girls through digital interventions in the classrooms.

Learning is fun and enjoyable: Interviews with children revealed that they perceive that digital technology-use of tablets makes learning fun and enjoyable as expressed by qualitative findings.

More confident teachers: The teachers who participated in the interview were aged between 23 to 28 years, were lead teachers and came from the ethnicity called “Somali Bantu”. They had a teaching experience of 1 to 4 years, with 12 to 48 months of experience working as facilitators in the classrooms they taught. Out of the five teachers, four could speak 3 dialects-English, Somali and Swahili and the remaining one could speak only Somali. Interviews with teachers indicate that eighty three percent of teachers in intervention sites believed that the integration of digital technology in class could benefit children in several ways such as developing their language, numeracy and fine motor skills. About 94% of teachers possess smart phones and the rest have got both smart phones and laptops. Majority of the teachers (62%) use the device most of the days, while most day users are 100% in case of the intervention group. This indicates that the use of digital device is common among the teachers. The use of internet, on the other hand, for most of the days is 67.5% in case of intervention group, while it is limited to 20% users in the control group. Although, there are 17% of teacher who reports that the use of mobile device is for communication purpose only, majority of the teachers both in intervention and control groups use for multi-purpose-work-productivity, communication, and education. In the intervention group, 100% teachers use on-line content, while only 50% do so in case of the control group. Overall, the use of digital device for communication and education purpose is increasingly becoming popular and depending on the purpose and resources, all teachers use the device for some or other reasons. All teachers from the Intervention groups were confi-

dent in developing lesson plans in the classroom and handling different aspects of classroom activities compared to only 70% in the control schools; they were able to deal better with children than their counterparts.

5.9. Physical Aspects of the ECD Centers

The status of the ECD centers was assessed in terms of physical space for children, physical structure of schools, access to technologies, size of classrooms and so on. The findings suggest that the ECD centers from the intervention groups were quite good with respect to having outdoor gross motor play space, physical structure of the center, access to basic technologies such as tablets, and supporting chairs and tables etc. but do not have advanced level of technologies for teaching. ECD classrooms from the intervention group were also found with large size enough for children and adults to move around easily. In case of the control group, they too possessed strong physical structure of the ECD centers, access to same level of technologies as in the intervention group but needed to further improve in terms of availability of outdoor space for children and classroom space. In all other areas such as availability of furniture, indoor space for children, safety of the play space and workspace for the children, both intervention and control groups need to further improve in the future.

5.10. Display of Classroom Materials in the ECD Centers

Display of classroom materials especially in the ECD centers is an important part of creating a motivational environment for children to learn in the classroom settings. According to the findings, learning materials such as books, writing materials, letters and or words, display of numbers were found almost equally in both intervention and control ECD centers. Tablets were found in all intervention ECD centers only and coloring materials in half of the intervention ECD centers, while none of the ECD centers had toys and pretend play materials. The findings indicate that all intervention ECD centers had necessary display of classroom materials compared to the control schools, except for toys and pretend play materials.

The survey also conducted qualitative ratings of the classrooms. According to the findings, out of five, two ECD centers were found with at least five print materials displayed on the walls in the intervention group, and one ECD center in case of the control group. Regarding the book environment, all 3 ECD centers from control group had at least five different age-appropriate books available to the children, while none had this facility in the intervention group. Only in one ECD center from intervention group had less than five books accessible to the children.

6. Conclusion

Children from the intervention schools performed better than the control schools in literacy boost. However, the grand mean score achieved by them is still below average. Children from both the control and intervention groups achieved remarkably higher mean scores in the numeracy boost. Their performance was op-

timum in this area of assessment. The attendance rate of the enrolled children in the ABE schools stood at 65% overall, which can be considered low in general context. In IDELA, children performed equally very well from both the intervention and control group, although no difference is found in their performance. All the teachers from the intervention group are found with “high” confidence in teaching based on 15 questions asked to them. Children liked the integration of digital technology (Elevate) in their learning and stated that it helped them to understand their lessons better. The preferred language of the Elevate, according to them, was Somali.

The teachers are found less knowledgeable and confident in developing work plans for children with difficulties. The teachers appreciated the use of digital technology in the classroom. However, they often faced the power problem to connect tablets with the internet. According to the teachers, both girls and boys equally participated in the Elevate learning.

7. Recommendations

Digital learning can be scaled up and learners observed for a longer period of time with rigorous methodology applied to allow plausible results that can be attributed to the interventions. Digital learning can potentially bridge the inequality gap for learners with disability as evidenced by the findings of these evaluation-learners with disability-attended class more in intervention than control sites, and literacy outcomes were better.

Training of teachers in digital proficiency can contribute to their confidence in teaching and engaging with learners with difficulty. In addition, increased investment in teacher professional development in the refugee camps will build the capacity of the teachers and improve the quality of teaching.

Continuous improvement in school learning spaces to ensure that children are safe, healthy and protected from all forms of violence.

Support the home learning environment by providing books and materials to all children so that learning can also continue at home and not just at school. This can be leveraged on the fact that 92% of households have access to a mobile phone to extend digital learning at home. We need to establish the nature of phones that households possess to determine the digital platforms used and increase public investment in early childhood education, climate resilience, action and justice.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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