Evaluation of Impacts of the Implementation of Tsehai Classroom Library and Read at Home Programs

Draft Report

By

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Executive Summary

Background: Whiz Kids Workshop (WKW) was implementing 'Tsehai Classroom Library and Read at Home Project' in 40 schools in the 10 sub-cities of Addis Ababa in collaboration with Rotary Addis Ababa and the Addis Ababa Education Bureau since October 2018 . The goal of the Project was to improve early learning school readiness and pre-reading skills in government preschools by providing classroom libraries for children and establishing and sustaining the first ever community-supported Tsehai Read at Home Program in Addis Ababa.

Objectives: the objective of this assessment was to determine the impacts of Whiz Kids program interventions by comparing post-intervention measures against pre-intervention data.

Approaches, methods, and tools: Pre-test-post-test control group design was employed for the assessment. Two types of intervention groups were used along with one control group for comparison purposes. The intervention groups were provided with Tsehay's learning resources along with training for personnel and manual as to how to implement the project, use the resources, and integrate them in the actual work plan.

Direct and indirect assessment tools were employed to generate data both in the baseline as well as endline assessments. The direct assessment employed was the standardized Measure of Early Learning Quality and Outcomes (MELQO) and administered to a sample of 270 preschool children drawn from ten preschools in three sub cities of Addis Ababa. MELQO contains four domains of children's learning and development: Early literacy skills, early mathematics skills, executive functions, finer motors, and socio-emotional measures. On top of MELQO, additional measure was also taken (indirect assessment) on socio-emotional development; as the one in MELQO was felt brief to capture development in this domain. Furthermore, although differences didn't happen from MELQO, additional literacy and numerical tests were also developed by researchers and used in the endline assessment.

Interview was conducted with primary school directors/ delegates and teachers to get an understanding of the implementation of Whiz Kids materials in the primary schools. The same version of interview was conducted in the six intervention preschools. A different version of

interview was also conducted with teachers in non-intervention preschool to learn about sources of support for the preschool and importance of such support.

Data collection was made for ten subsequent days in February for baseline and for another ten days for endline assessment two months later in May employing four trained ECCE graduate students and 1 undergraduate student.

MELQO and related data were statistically analyzed firstly by setting performance standards. Then, descriptive stat and visual graphs were employed to summarize data. Then, advanced inferential statistics were successively conducted to examine group differences (mainly the three types of intervention groups and gender). ANOVA and ANCOVA were employed for this purpose. Finally, the synthesis report of the interview data was included to show patterns of Whiz Kids implementation in primary schools.

Major findings: Greater proportion of children in targeted preschools seemed to have generally exhibited an intermediate to proficient level in almost all components of MELQO but one; backward counting. These levels of proficiency seemed to improve from baseline to endline assessments; though not statistically significant in many tests conducted. Furthermore, although again many of the stat tests conducted didn't reveal significant group differences, general patterns of raw data show the possibility that the impact of the intervention can't just be down played on mere ground that significant stat tests are not in place. First and foremost, some statistical tests were in fact noted showing that the intervention could be effective (e.g. letter identification component of the early literacy sub-scale and socio-emotional functioning). Rather more importantly, qualitative data from directors and teachers in the project-targeted primary and preschools gave, both in the baseline and endline assessment, a strong support to the effectiveness of the intervention at school, teacher, and student levels. Findings also suggested that the socio-emotional measure is consistently and strongly correlated with other measures. Lastly, qualitative data have shown that as in preschools, targeted primary schools have remarkably benefited from Whiz Kids support. However, the limited time elapsed between the two assessments, implementation problems of the planned intervention, and possible exposure of the non-intervention groups to equivalent sources of support from other NGOs might have suppressed the

impact the intervention would make on student learning outcomes. Hence, it is recommended that before any plan for scale up, attempts need to be made to check on the contents of materials, work out feasible strategy of implementation, train personnel on the ground, deliver resources well ahead of implementation, institute a feasible monitoring and follow up strategy and, more importantly, use this strategy in a manner to gauge daily engagements.

List of Acronyms and Abbreviations

AAEB: Addis Ababa Education Bureau

ANCOVA: Analysis of Covariance

ANOVA: Analysis of Variance

CCFA: Categorical Confirmatory Factor Analysis

CEO: Chief Executive Officer

CIPP: Context, Input, Process, and Product

df: Degrees of Freedom

ECCE: Early Childhood Care and Education

EGRA: Early Grade Reading Assessment

ELP: Early Learning Partnership

ESDP: Education Sector Development Program IV

F: Fisher's ratio

HTSK: Head-Toes-Shoulder-Knee test

InEHD: Institute for Education, Health and Development

KG: kindergarten

M: Mean

MELQO: Measures of Early Learning Quality and Outcomes

MLC: ?????

MoE: Ministry of Education, Ethiopia

MS: Mean Square

N or n: Number

r: correlation

READ M & E: Reading for Ethiopia's Achievement Developed Monitoring and Evaluation

RFP: Request for Proposal

RTI: Research Triangle International

SD: Standard Deviation

Sig: Significance

TCR-SED: Teachers' Child Rating on Socio-Emotional Development

ToR: Terms of Reference

WKW: Whiz Kids Workshop

χ^2: Chi Square

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1. Background Information

In as much as the Ethiopian education sector has documented remarkable strides in the last few decades, it has, however, been equally experiencing significant challenges of quality and poor educational gains (ESDP IV, 2010)[1] including critical reading problems in early grades. Research evidences have consistently revealed that scores of Ethiopian children were unable to properly read to learn because they didn't learn to read at the time first cycle primary school is completed (MoE, 2008; RTI International, 2010; Seid, 2015). For example, the 2010 Early Grade Reading Assessment (EGRA) indicated that 34% of students in Grade 2 were unable to read a single word of a grade-level text; while 48% were unable to answer a single comprehension question about a reading passage, and only 5% of students were able to meet the standard for their level[2]. Furthermore, the National Learning Assessment conducted as a bench mark for the Education Sector Development Program IV (ESDP IV, 2010) plan also portrayed a gloomy picture. It was originally targeted that the proportion of those scoring at least 50% shall be 70% of grade 4 students while those scoring at least 75% be 25% of the students. Achievements were alarmingly low; while only 25% scored 50%, only 2.3 % had scored 75% and above[3].

Cognizant of these problems, the Federal Ministry of Education has decided to prioritize quality concerns in its ESDP V program[4] with an explicit statement that special efforts will be made to improve the overall literacy and numeracy level of the school-aged population. According to ESDP V, one of the goals of the education sector for 2015/16-2019/20 is that of delivering quality education that meets the diverse learning needs of all children. More specifically, it promises to focus on the core foundational skills in early grades, as this affects all subsequent stages of the education system. As part of the race for quality, the Ministry has committed itself to improving teachers' pedagogical skills related, among others, to children' foundational literacy, numeracy and language skills through continuous professional development. Different actors and development partners have been joining hands with the government towards addressing these pressing and critically important concerns. One such initiative was an intervention project that

[1] See ESDP V for all the data referenced in this section.
[2] Cited in the ESDP V document
[3] Cited in the ESDP V document
[4] *In fact, these concerns have generated the need for national education overhaul and, hence, the government, Federal Ministry of Education in particular, is c currently engaged in designing educational road map of the country.*

focused on improving the teaching and learning of literacy in the first cycle of primary schools in the Amhara and Tigray regions of Ethiopia. The project aimed at helping teachers to diagnose, assess and remediate reading challenges through provision of reading tools (flashcards, small and big pocket charts, handbags, graphic organizers and record sheets) and training to teachers on the use of the tools (READ M & E, 2016). Impact assessments of the intervention project has shown that,despite some challenges emerging in the field during implementation, the early grade reading intervention was very promising and, therefore, was recommended to be scaled up (READ M & E, 2018). Obviously, this project and many others have made important contributions in showing the way forward for improving reading skills, but they appear to be curative interventions than preventive (as they are not dealing with the foundations of early grade reading including pre-reading skills, learning readiness etc.) and, hence, they are not only expensive for implementation but may have impacts that could be short-lived. Hence, there is a need to experiment on strategies and tools for appropriating the foundational pre-primary learning and development. The Whiz Kids Workshop(WKW) program could be one such, perhaps the first of its kind in Ethiopia, to our knowledge, to dealing with the task of improving learning from the foundation using media that are developmentally appropriate, culturally relevant, and appealing to the unique needs of each child.

Mass-media being child-friendly, cost-effective and immediate way to spark young children's imaginations and make impact on education, WKW is working to improve the lives of children through educational media. Currently, WKW is executing 'Tsehai Classroom Library Project' in 40 schools in in the 10 sub-cities of Addis Ababa in collaboration with Rotary Addis Ababa West. The goal of the Project is to improve early learning school readiness and pre-reading skills in government preschools by providing classroom libraries for children and establishing andsustainingthefirstevercommunity-supportedTsehaiReadatHomePrograminAddis Ababa based on take-home, full-color library books in Amharic of the highest international standards (ToR, 2018). The project is being implemented by providing 32 Fidel storybooks, each focusing on one family of Amharic letters, 17 leveled Amharic storybooks, 16 double-sided posters for all main Amharic letters, one flashcard set that includes 297 beautifully illustrated cards,32episodesoftheawardwinningseriesofTsehaiLovesLearning-eachassociatedwith oneofthe32Fidelstorybooks,ateachertrainingmanual,videoplayerandroiddevicethat carries all

videos with an application that monitors the frequency of viewed videos and also records the time of the videos that played.

Whiz Kids Workshop (WKW) has issued a Request for Proposal (RFP) for conducting a project evaluation of the effectiveness and efficiency of the activities and approaches applied by the Tsehai Loves Learning program in achieving its goal and this proposal is developed in response to this call for consultants.

2. Tsehai Classroom Library and Read at Home Programs

About Whiz Kids Workshop and the Project: Whiz Kids Workshop (WKW) is an Ethiopian-led social enterprise that focuses on improving the lives of children through educational media. With an understanding that first language literacy is critical in the educational development of young people and inability to read and write effectively in one's own language restrains children's thoughts (project proposal), Whiz Kids Workshop is aimed to transform reading comprehension levels of Ethiopian students and prepare millions for success in school. WKW has produced four television series that inspire, engage and empower Ethiopian youth from age 3 to 18, including Involve Me, Little Investigators, Tibeb Girls, and Tsehai Loves Learning. WKW is also involved in different research and capacity building activities in the field of educational curriculum development, health education and girls' empowerment projects5 (Progress Report a).

Tsehai Loves Learning is a local television and radio series of Whiz Kids Workshop designed to address the educational needs of children in Ethiopia[6]through technologies of media creation that are cost-effective, accessible, entertaining, relevant and sustainable[7]**(project proposal).** Tsehai's Classroom Library Project is designed to ameliorate the problems of children in this country in accessing educational materials and approaches by providing teacher training that empowers teachers to use international "best practices" for reading instruction. It creates reading corners in

[5] Visit our website at www.whizkidsworkshop.com to learn more.

[6] Despite the importance of first language literacy, there are few reading books in local languages available and most of these fail to engage readers.

[7] Mass-media is the most cost-effective and immediate way to spark imaginations of the young and make an impact on education. Tsehaiuses existing research on mass-media education, new lower-cost technologies for media creation, and booming growth in the reach of television to put that belief into practice. The educational materials are lower-cost and, thus, easily accessible and economically sustainable. Their content covers health education to character building to literacy, helping prepare children for life and school at an early age.

classrooms, establishes Tsehai's Girls Reading Clubs, and trains parents to facilitate the read-at-home program and clubs. Tsehai's Classroom Library Project is poised to dramatically transform the educational outcomes of thousands of children who lack access to other forms of appropriate reading and learning materials **(project proposal).** The project was officially launched in January, 2017, meaning in the second semester of the 2010 E.C. school year in Ethiopia. The following months, until the end of the year were spent on distribution of materials and furnishing classes with the materials. 338 classes in the 40 schools were furnished (Progress Report a).

Tsehai's Classroom Library Project aims: The general objective of the project is to help improve early learning among Ethiopian children in the government schools by increasing pre-literacy and reading skills through classroom libraries and, for kindergarten students, by creating access to the books at home(Progress Report a). *Tsehai's Classroom Library Project works to* create a new culture of reading for Ethiopian children in government schools by providing classroom libraries for students. It establishes and sustains the first ever community-supported *Read at Home Program* in Addis Ababa based on take-home, full- color library books in Amharic, published with the highest international standards (Report of **Materials' distribution).**

Project components: In order to meet improved literacy and reading objective, the project was organized in two major activities: setting up Tsehai Classroom Library and Read at Home program(Progress Report a). With respect to the Tsehai Classroom Library, all kindergarten classrooms in the 40 schools were furnished with shelves, books, flash cards with holders, and posters along with manuals for Amharic teachers illustrating how they ought to integrate the materials with the lessons. Children are expected to go to the common room where there is a TV set and a device for displaying videos of the 39 episodes of the Tsehai Loves Learning show with an application that monitors which class has viewed what episode, at what time and date. There is a schedule for the use of the common room and each class is expected to go as per this schedule. The materials are meant to serve dual purposes. The first purpose is making the teaching and learning process more enjoyable and fun for children. The second purpose is to make teaching easier and more enjoyable for teachers (Progress Report a).

The second component of the project, the Read at Home program, is a program in which students in upper kindergarten (KG) class take two of the storybooks home to read with their parents. The assumption behind this is that if children read with their parents they will develop a love for reading as they are interested in spending time with their parents and their parents are their models. This experience is also expected to help their readiness for primary school because in the course of reading with their parents their skills of letter identification, listening comprehension and reading comprehension will be improved. The good morals from the stories will also influence their behavior (Progress Report a). The way the program works is teachers will hand over two books (and they make sure they are not giving them the same books twice) every week in a bag with their names written on it. Parents or legal guardians will sign for the books every time the children take the books home. Along with the books, a note containing the dos and don'ts of reading the books is sent to the parents/guardians (Progress Report a).

Project direct beneficiaries: The direct beneficiaries of this project are 40 primary schools in Addis Ababa including Ediget Besira which is Rotary's target school. By involving 8 classes from grades one to four in 40 government schools, this project directly benefits over 23,000 students. Of these students, girls will especially benefit from participating in Tsehai's Girls Reading Clubs and the read at home program. This project also directly benefits 320 primary school Amharic teachers by providing training and empowering them in their important work. This project will benefit school directors, Sub-city Supervisors, Cluster Supervisors, and parents who are directly involved in managing the Tsehai's Girls Reading Clubs **(project proposal).**

The schools are distributed equally (4 per sub-city) in the 10 sub-cities of the city (except one sub-city with 3 schools and another with 5) (Progress Report a). The AAEB officials, the CEO and officer of WKW held discussion on issue regarding the selection of the schools for the Tsehai Loves Learning- Read at home program- WKW. The discussion was mainly focused on how to provide equal opportunities for all sub cities and which part of the schools should be selected. Thus, the officials agreed to address all the ten sub cities and to focus on the preschools where in every level the project can make a difference. Discussions also addressed issues of sustainability of the program and its visibility at this stage (Meeting Note: Date: March 23, 2017.).

What the schools received: Based on the distribution plan and the announcement, AAEB along with Whiz Kids, began the distribution to the sub cities on December 07/2017 and finished on December 12/2017. During the distribution, representatives of Whiz Kids Workshop and Curriculum Experts of Addis Ababa Education Bureau briefly explained how to use the materials before distributing them to the appropriate personnel from each school. Appropriate receipts were issued (Report of materials 'distribution).

Finally, Tsehai's Classroom Library Project delivered the following items to 338 sections within 40 schools (Report of materials 'distribution).

- Forty three thousand seven hundred seventy six (43,776) Supplementary Tsehai Reading books
- Twenty-seven thousand two hundred (27,200) Grade 1-4 leveled story books,
- Three hundred thirty-eight (338) posters, flashcards sets,
- Three hundred thirty-eight (338) flash card pockets and
- Three hundred thirty-eight (338) bookshelves.

The project is being implemented using the complete Tsehai Classroom Library set that included providing: 32 title Fidel storybooks, each focusing on one family of Amharic letters, 17 title leveled Amharic storybooks, 16 double-sided posters for all main Amharic letters, One flashcard set that includes 297 beautifully illustrated cards, 32 episodes of the award winning series of Tsehai Loves Learning-each associated with one of the 32 Fidel storybooks, a teacher training manualon how best to use the materials and incorporate the 5 components of reading in their daily lessons, video player android device that carries all videos with an application that monitors the frequency of viewed videos and also records the time of the videos that played. (**Project proposal**; Progress Report a).Each participating school received this complete Tsehai Classroom Library set in addition to teacher training and assistance in establishing and facilitating the Tsehai Girl's Reading Clubs (Progress Report a). The following pieces of infrastructure support the efficient functioning of the library set: 1. Tsehai and Rotary branded shelving area that holds and displays the books low enough for students to reach easily. Stickers of Tsehai with the words "Let's read - Tsehai Loves Reading" and logo of Rotary International. 2. Large hanging flashcard sleeve for use in storing and teaching with the flashcards. 3. TV and DVD player per participating school (project proposal).

Training was provided to critical stakeholders in two rounds (Project proposal). First Round ToT was given for Education Bureau Curriculum Experts and Sub-city Supervisors on April 04, 2018.Twenty five supervisors from the ten sub cities, 15 from education bureau, and 5 staff from Whiz Kids attended this training (**School Monitoring Mission)**. Second Round ToT was given October 27, 2018for teachers (n=58), Education Bureau (n=24), Whiz Kids staff (n=12) (**School Monitoring Mission**).

Whiz Kids Workshop distributed materials of the reading and health projects in the second half of the previous school year. Most schools Tsehai corner were not fully functional at the end of the school year and the schools have not established a habit of using the materials. Thus, Whiz Kids workshop planned several activities to get the schools get into the habit of using Tsehai materials daily in the teaching-learning process. The first of these activities was making sure the materials were still present and in good condition. This was done in the 40 schools with the help of AAEB (Set up Progress reportb).

Subsequently, WKW prepared a one day session involving the academic vice principals and KG directors of all the schools in the HWK project the aim of which was creating awareness about the project among important school officials that are key to the execution of the projects at school level. The third planned activity was going to all the schools and setting up the materials in Tsehai corners and KG classrooms in the schools where the reading project is being implemented and recording the state of the schools regarding implementation at the moment to help track the progress in each school. And it is with this activity that this report deals with. 80 schools (40 Kindergartens and 40 primary schools) have been set up by Tsehai mentors under this activity. In some schools where there were challenges like absence of Tsehai corners due to absence of an extra room, the mentors used alternative classes if any and reported the problem to the project officer. The mentors also gave explanations to the teachers present on how to use the materials as they set up the rooms. In addition, they filled out the checklists prepared. Set up Progress report (b)

Partnerships: Tsehai's Classroom Library Project is implemented by Whiz Kids Workshop (WKW) in close collaboration with Rotary Addis Ababa and Addis Ababa Education Bureau (AAEB).Whiz Kids Workshop currently enjoys a partnership with the City Government of Addis Ababa (AAEB) to pilot and test Tsehai Classroom Library Sets as well as A.A. Furthermore, the

Education Bureau has provided financial contribution for covering training expenses for teachers. More importantly, consensus was reached on how WKW can integrate its training plan with the bureau (Meeting Note: Date: March 23, 2017).With regard to Rotary, it is participating in all aspects of the project[8] including program development, establishment and management of reading clubs, project advisory group, monitoring teaching and parent performance, planning and participating in events like Read Aloud, International Children's Book Day and International Girls' Day **(Project proposal).**

Sustainability plan: The Addis Ababa Education Bureau has agreed to include the reading materials created by Whiz Kids Workshop in the official government mandated curriculum as well as assume responsibility for monitoring and evaluating the program. The support of the government will ensure the continuation of the program after its first year. The Rotary Club, in collaboration with Whiz Kids Workshop, is exploring the expansion and adoption of the materials beyond Addis Ababa and identifying other sources of funding with the Ministry of Education for the Federal Democratic Republic of Ethiopia **(project proposal).**

What has been achieved to date? (Progress Report a): So far, the following activities have been completed:

- Establishment of classroom libraries in 338 classes (in 40 KG and 40 primary schools) in Addis Ababa
- Distribution of Amharic 32 Fidel storybooks, each focusing on one family of Amharic letters, flashcards, posters, Grade 1-4 leveled reading books, (for the read at home program), flashcard display and book shelves.

[8]Key Rotarians GuenetGuebre-Chirstos and AzebAsrat will be available for ongoing consultation and guidance of the project. The host Rotarians will play an active role in the delivery and refinement of the project in the following ways **(project proposal).**
(1) Collaborate in the creation of the Advisory Group that will meet quarterly with the delivery team to participate in work plan development and assess the progress of the project.
(2) Suggest potential schools, and participate in the review and selection of actual sites. All schools selected must meet key criteria mutually agreed by Rotary and Whiz Kids Workshop and Addis Ababa Education Bureau
(3) Facilitate the activities of preparation, material distribution, installation, training, and participate in the ongoing reading club activities and reading events as appropriate.
(4) Receive and approve local invoices on a periodic basis as required and milestone achieved, and provide authorization to the Primary International contact for payment.
(5) Engage in inauguration ceremonies, including acknowledgement as a donor (both verbally and on visibly displayed donor plaques). Ensure appropriate acknowledgement and signage is in place for all systems, training materials, deliverables, and recognition signage financed by Rotary.
(6) Assist with the support of the long-term monitoring plan. Identify activities that visiting Rotarians can participate in.
(7) Review ongoing reporting on project success. Interview and collect data from beneficiaries to monitor project success and challenges. Promote the project's success within Rotary and the community. Provide key information for submission of final report.

- Preparation of manuals for teachers' training and integration of Tsehai materials with the standard curriculum.
- Design and delivery of training for teachers on how to use the materials listed above to strengthen their lessons, how to read aloud in the classroom and how to operate the video player device and select the right video for the week
- Pilot of the read at home program which included the testing of the program, designing a schedule, follow up notes of the progress made, taking feedback from students, teachers and parents, identifying challenges and incorporating lessons into the pilot.
- Monitoring the presence and condition of materials in the new school year and helping the schools set up the classrooms appropriately.
- Calling a meeting of academic vice principals and KG principals and creating awareness about the project among them.

Generally, a preliminary visit was made to all the 40 preschools by a monitoring team to check on the level of project implementations. The scores of the schools have shown patterns. Only nine schools have scored five out of five. Most schools have not integrated the materials into their lessons. And more than 60% do not have schedules for Tsehai corners. About 22% have not used the materials in any way. Sub cities variations were observed[9]. Additionally, activities of drawing schedules and integrating the materials into the yearly and weekly lesson plans were neglected in most schools. Although reasons may be different for this, it is clear that more guidance is needed in schools regarding these activities (Report on the set-up of 40 schools Set up Progress report (b), December, 2018).

Accordingly, all the preschools were rated and grouped into three levels (poor, good and very good). In a Meeting (Note 2: Date: June 09, 2018), it was also underscored that the monitoring

[9]Of the 10 sub-cities in Addis Ababa, on average, the schools in Yeka sub-city have performed better at the time of the set-up. Schools in Kirkos and Arada sub-cities also performed better than the rest. Schools in Gulele, KolfeKeranyo and NefasSelk had the lowest scores based on the data. However, this is based on the schools with empty checklists scoring zero. When the blank surveys are removed from the dataset, the results change slightly with Addis Ketema now becoming the highest scoring sub-city, followed by Arada and Yekka. And Gulele retains the bottom position with Nefas Silk, Lideta and AkakiKaliti assuming the next bottom positions. Report on the set-up of 40 schools Set up Progress report (b), December, 2018

team visited the target schools of Rotary project and observed the same issues in the schools and noted that in most of the schools the KG classroom furnished well.

Although the project is focused on 40 KG schools, each school has an extension of Primary schools that have its own administration. Therefore, Whiz Kids workshop has been working with 80 schools as an institution. School reports and visits indicated that the set up or Tsehai corner was done in 64 schools under Rotary project and the rest 16 schools have no set up or Tsehai corner; 52 schools have schedule for using Tsehai corner and 28 schools have no schedule or program for using Tsehai class and Tsehai materials; 24 schools have included Tsehai materials in their weekly and daily lesson plan and over 56 schools have not included Tsehai materials in their weekly and daily lesson plan (Summary Tsehai Classroom Library Project, December 2018).

Subsequent activities: The read at home program, in which upper KG students take Tsehai storybooks home every week to read with their parents, is now at piloting stage. Previously, the program has already been pilot tested in august on 17 grade 2 students. But considering the difference between upper KG and grade 2 students and the fact that the number of students in the first pilot was small, there was a need to pilot the activity again in some of the 40 schools on upper KG students. Of the necessary materials needed for the program, all the necessary books have been distributed. But bags, made especially for this purpose, in which students take the books home, have not been distributed yet. After the program will be piloted throughout in December and necessary adjustments are made according to the results of the pilot, the Read at Home program will be fully implemented in January (Progress Report a).

In addition to the read at home program, WKW will follow up on the usage of materials and the run of the two activities regularly in all the 40 schools with the two mentors assigned. They will monitor usage, provide support (like on job training) where needed, identify challenges in each school attempt to solve it if they can and report to the project officer if it is beyond their capacity and collect data for documentation and evaluation. (Progress Report a)

Challenges faced by the project: The challenges in executing the project were the problem of turnover of trained teachers. Although WKW has given trainings of trainers last April for two teachers from each school, in hopes that these two teachers will go back to their schools and train

the other teachers in their schools, the results of subsequent supervision showed that most of them did not. And in the visit at the beginning of the new school year in October, many school officials and teachers claimed that they didn't have knowledge about the program. And since there is high turnover in schools, it is very probable that teachers who have been trained might have left the school after the training or left the school this year. Thus, WKW trained the academic vice directors (principals) and the KG principals as they have more influence in schools (Progress Report a). The monitoring team visited the target schools of Rotary project and observed the same issues in the schools. The issues are that the trained teachers did not conduct a training for the other teachers, in every school the materials were not furnished well in Grade 1 classroom/library; the schools distributed most of the materials to the KG so that in Grade 1there are lack of materials (**Meeting Note 2:** Date: June 09, 2018)[10] implying that the KGs could be wrongly stuffed, use materials for the unintended goal which is used for students that have low performance in the classroom, most of them did not want to be visited by other supervisors.

3. Assessment Objectives

The overall goal of the evaluation is to assess the outputs, outcomes, and efficiency of the program.

The main objectives of the assessment are to:

1. examine whether children involved in the Tsehai Classroom Library Project have shown improvement in their pre-reading skills and in their overall learning at the end of the project.
2. assess if teachers' motivation and performances (communication, interaction, care and support, teaching strategies)are being significantly impacted by the intervention
3. draw future lessons for promoting early learning in the Ethiopian context

[10]When we compare kindergartens with primary schools, KG schools have shown better execution in every aspect listed. This is perhaps due to absence of teaching materials in kindergarten schools and hence a greater need. While primary schools have scored 1.94 out of 5, Kindergartens scored 2.92 based on the five parameters Report on the set-up of 40 schools Set up Progress report (b), December, 2018

4. Approaches and methods

4.1. Model of assessment

The landscape of assessment of this project is based on an approach to ECCE quality enhancement that is known as the "systems model" of ECCE or the "CIPP" model (Schreerens, Luytn and Ravens, cited in Abraha, 2018). The CIPP Model (Fig. 1), widely used in analysis and planning of systems, has evolved from a basic open system model that includes, among others, input, process, and output.

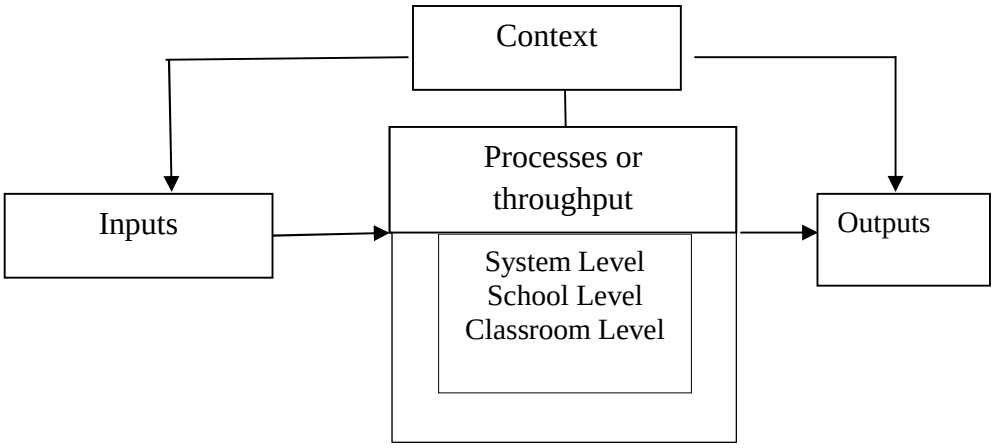

Fig. 1: The systems model of education quality enhancement (Source: cited in Abraha, 2018)

The input evaluation includes description of the program givens and resources, a comparison of how the program might perform compared to other programs, a prospective benefit/cost assessment, an evaluation of the proposed design of the program, and an examination of what alternative strategies and procedures for the program should be considered and recommended. The process evaluation includes examining how a program is being implemented, monitoring how the program is performing, auditing the program to make sure it is following required legal and ethical guidelines, and identifying defects in the procedural design or in the implementation of the program. And, the product evaluation includes determining and examining the general and specific outcomes of the program, measuring anticipated outcomes, attempting to identify unanticipated outcomes, assessing the merit of the program, conducting a retrospective benefit/cost assessment, and/or conducting a cost effectiveness assessment…

4.2. Study design

To respond to the objectives listed in this ToR, our research design involves a blend of quantitative and qualitative designs of data collection on the context, input, process and product. A pretest-posttest intervention design shall be employed in implementing the data collection process.

Table 1. Challenges and Mitigations in Using Experimental Design

Challenges	Solutions
1. Determining if the intervention has made significant impact on children's learning (and of course in teachers', parents', and children's motivations, engagements, and performances)	Take a pre-intervention measure (base-line data) and post-intervention measure (post-test data) and then compare the two measures; compare the gains
2. Pre-test measure being taken at time 1 (February) and posttest at time 2 (May), may show changes but because of maturation, or growth with mere passage of time	Use control group
3. Diffusion of treatment effects on the control groups	Selecting the three kindergarten groups from physically distant locations
4. When same measure is taken twice on the same participants, there is a recall (interaction) effect suggesting that performances can be improved from pretest to posttest by mere repeated exposure than because of intervention	Extended time span between the two measures woulderase the recall effect. Some modification in the language and phrasing shall also be made in the tools to counter transfer of knowledge from pretest to posttest
5. Contamination effect of the Healthy Whiz Kids reading project on the intervention: three optional solutions suggested- at the input level, process level, or product level	• Use those taking Healthy Whiz Kids reading project alone as a control group or • use those taking the intervention alone as an intervention group, or • monitor the process to discern extent of contribution of the Healthy Whiz Kids and the intervention or • Covariance effect of performance on Healthy Whiz Kids

	measure with the post-test
6. Comparability, equivalence of the three groups at baseline (i.e. equality of control, intervention, and healthy whiz groups)	• Draw groups at random, or • match the groups by parental, school, and teacher factors, or • use the statistical model of ANCOVA to make adjustments for initial group inequalities

There are different versions of this pretest-posttest intervention design and the variant to be considered for our present purpose is "Pretest-Posttest Control Groups Design". The challenges to be experienced in the assessment and how this design helps to address these challenges are presented in Table 1.

In the light of the discussions above, there are, therefore, three groups in the pretest-posttest control group design:

Pretest — **Control group**: the group not exposed to any one of the two materials; **Health Whiz Kids groups**: the group exposed to health reading materials; **Combined groups**: the group exposed health materials and whiz Kids reading program materials — **Posttest**

4.3. Study setting

This study is conducted in Addis Ababa sub cities where the Whiz Kids materials were distributed. There are ten sub cities and all were included in the intervention. But, only three were selected by default for inclusion in the assessment because control groups were only available in these three sub cities. Hence, our approach of selection followed a bottom-up approach in the sense that attempts were made to find preschools that didn't receive any treatment; only three such preschools were found in three different sub cities. Then, for comparability reasons, it was decided that the other sample groups (health and combined) had to be taken from these three sub cities.

4.4. Participants

The preschools in the three sub cities were stratified by type of intervention (health, combined,

and no intervention or control group) and level of performance of implementation of the intervention (good or more performance, and poor performance); hence five strata of preschools were potentially expected to be available in each sub city: health group with good implementation, health group with poor implementation, combined group with good implementation, combined group with poor implementation, and control group with no implementation. But, these strata may not be found fully in all the sub cities (e.g. health group with poor implementation misses in Lideta…). On the other hand, more than one preschool may be found in some of the strata; but when this happens we select only one at random. Accordingly, 9 preschools were finally selected from the three sub cities following this procedure. Table 2 depicts the three sub cities selected, and the corresponding preschools in each of the five strata.

Participants considered in each preschool were children and their teachers, and directors. Sample

Table 2. Sampled sub cities, preschools, and children by intervention type and level

Sub cities selected for the assessment				Name of preschool	Intervention given • Health Whiz Kids materials • Reading Whiz Kids materials • No Whiz Kids material	Implementation of Whiz Kids tools (type of group): • Good or more • Poor • No imp. (control group)	No. of sections in each preschool	Sampled children		
Name	Population of preschool children							M	F	T
	M	F	T							
Lideta	402	372	774	Tesfa Kokeb	Health & reading	Good	2	15	15	30
				Ediget Besira	Health & reading	Poor	2	15	15	30
				Meskerem One	Health	Good	1	14	11	25
				Africa Birhan	No interven.	No	1	15	15	30
Yeka	598	678	1276	Qey Kokob	No interven.	No	2	11	19	30
				Salayish	Health & reading	Good	3	16	14	30
				Hibret Fire	Health	Good	2	15	15	30
Akaki Kality	497	476	973	Kilinto	No interven.	No	2	15	15	30
				Gelan	Health	Poor	2	15	15	30
Total	1497	1526	3023	9	3	3	17	131	134	265 (8%)
Total for ten sub cities			10798							

size for children was determined following Drapper and Smith's formula, $n = 10[C_{f1} \times C_{f2} \times C_{f3} \ldots \times C_{fn}]$ (cited in Belay and Abdinasir, 2015) in which sample size ('n') is defined as a function of the stratifying factors and categories (C_f) involved in the research such that a minimum of 10 observations is required for each category of a factor. There are three stratifying factors in this study (sub city, type of intervention, and level of intervention) each having its own three categories and, hence, the minimum sample size required, 270 ((3 x 3 x 3) x 10), was considered

for this assessment. The distribution of children to be sampled from the 9 preschool were evenly distributed; i.e. an average of 30 children from each preschool. When there is more than one classroom in a preschool, then the allocated sample size was equally divided by number of classrooms and gender. There are 17 classrooms implying an average of 16 children from each classroom. Note here also that the corresponding main teachers (n=17) were also used for data collection.

4.5. Tools

Direct assessment tools and indirect assessment tools were for the purpose of this assessment. Note also that the table at the bottom discusses these tools along with their respective purposes, frequency of conducting assessments and time of assessments to be done, and data sources for which the tools are to be used to generate data.

4.5.1. Direct assessment tools

An attempt was used to measure children's learning through a standardized measure of early learning called Measure of Early Learning Quality and Outcomes (MELQO). The standardized tool is the major source of data that is used to measure children's early learning before and after intervention. This standardized tool to be used for our present purpose is MELQO (2016), which measures four domains of children's learning and development:

- **Early literacy skills** (alphabet knowledge, phonological awareness, expressive vocabulary, and listening comprehension),
- **Early mathematics skills** (verbal counting, set production, mental addition, numeral identification, spatial sense, measurement vocabulary),
- **Executive functions** (working memory and inhibition), and
- **Fine motor skills** (writing and copying)
- **Socio-emotional development** (self-regulation, social competence, emotional wellbeing, and social understanding).

The major problem in using standardized tools in general and that of early learning measures in particular is the problem of cultural fairness, linguistic differences, and the ensuing psychometric concerns of such tools. Hence, serious attention need to be paid about cultural relevance and psychometric properties of a standardized tool before picking it for use to measure a certain

attribute. However, **M**easuring **E**arly **L**earning **Q**uality and **O**utcomes (**MELQO**) was designed to generate locally-relevant and globally-comparable data on children's learning and development and pre-primary learning environments. Furthermore, in contrast to other relevant standardized tools, MELQO is different and preferable in five ways:

i. MELQO provides a conceptual frame for integrating the measurement of child development and learning with the measurement of early learning environments, to create a tool that can point to specific changes in learning environments and policies which could help promote children's development and learning.

ii. MELQO emphasizes the link between children's development at the start of school and their development in the early primary grades, by identifying the skills and competencies that promote children's development in the first few years of school.

iii. MELQO focuses on adaptability and scalability, with low-cost, easy-to-use materials that can be integrated into regular citizen-led assessments, national assessment systems, and monitoring and evaluation systems for learning environments.

iv. Validity and reliability of this tool are much better than other relevant standard measures of early learning. A pilot test of the MELQO tool with six Ethiopian local languages (Amharic, Afan Oromo, Aff Somali, Berta, Sidamu Affu and Tigrigna), especially the Measure of Development and Early Learning (MODEL) Direct Child Assessment showed that the tool was found to be reliable and valid. The three major components of the MODEL showed high internal consistency as measured by Cronbach's alpha (α):

1. Early Literacy Skills
   - Number of Items = 42 items
   - Valid cases, N= 892
   - Cronbach's alpha (α) = 0.933
2. Early Mathematics Skills
   - Number of Items = 24 items
   - Valid cases, N= 1025
   - Cronbach's alpha (α) = 0.892
3. Executive Functions
   - HTSK
     - Number of Items = 15 items
     - Valid cases, N= 1143
     - Cronbach's alpha (α) = 0.956
   - Forward Digit Span

    - Number of Items = 5 items
    - Valid cases, N= 1144
    - Cronbach's alpha (a) = 0.650
- Backward Digit Span
    - Number of Items = 5 items
    - Valid cases, N= 1144
    - Cronbach's alpha (a) = 0.912

Besides, the categorical confirmatory factor analysis (CCFA) also showed that the three factors were also found to be valid (Belay, et al, 2018).

This measure has been implemented and validated in eight developing countries including four African countries (i.e. Bangladesh, Kenya, Laos, Madagascar, Mongolia, Nicaragua, Sudan, Tanzania) and hence it is relevant to apply it in the Ethiopian context, too. In fact, what is best about this tool is that it was also adapted in Ethiopia in six languages with children aged 4 to 6 years in 2017 in the World Bank project (titled, 'Early Learning Partnership', ELP) that was conducted by international and local MELQO team of which one of the present consultants took part. Findings have indicated that MELQO is with very good psychometric properties in the Ethiopian setting.

Note also that learning from the baseline assessment that there is a need to measure a little more advances in children's learning, the researchers' prepared two additional tests to capture if there are more advanced learning outcomes that MELQO may not capture: additional literacy and numerical tests. The additional literacy tests involved 16 Amharic letters identification tasks having vowels this time around like lu (ሉ), bi (ቢ)…and 15 reading tasks ranging from single word to five word-sentences. As regards math, 10 tasks of addition (with results having two digits) were given in the left so that students would correctly match them with corresponding results on the right column. In fact, these special tools didn't behave differently from the MELQO ones.

4.5.2. Indirect assessment tools

These tools are used to collect information about children and their environment from sources other than the children themselves. Here are the specifics of the tools used.

- **Teachers' Child Rating on Socio-Emotional Development (TCR-SED)**: This is a rating scale with four domains of socio-emotional development: self-regulation, social cognition,

social competence and Emotional wellbeing. This scale is part of the MELQO module that is used to assess the socio-emotional development of preschool children as perceived by their regular teachers. The internal consistency or Cronbach's alpha, of the TCR-SED was found in this study to be 0.853, which is reasonably high and acceptable.

Table 3. Inter correlations among sub-scales of the measure of socio-emotional development

	Self-regulation	Social cognition	Social competence	Emotional well being	Socio-emotional Total Score
Self-regulation	1	---	---	---	---
Social cognition	.639**	1	---	---	---
Social competence	.553**	.655**	1	---	---
Emotional well being	-.297**	-.195**	-.251**	1	---
Socio-emotional Total Score	.806**	.813**	.782**	.081	1

**. Correlation is significant at the 0.01 level (2-tailed).

- **Interview with teachers and directors**: 17 teachers were interviewed about the support their preschools have received, sources of such support, and contributions, benefits and challenges/ gaps of using the Whiz Kids tools (for intervention preschools).
- **Data collectors' personal memo form**: data collectors were also given a format to recode their interesting and outstanding experiences during data collection in groups and individually focusing on classroom and outside classroom experiences.

4.5.3. Assessment tools for grades

The Whiz Kids project is not limited to preschools; it rather covers first cycle primary school (grades 1 to 4) as well. But, in the interest of time and resources, this impact assessment was more focused on documenting preschool experiences. This being the case it was, however, very much desired to get feedback about projects impacts in the grade levels; hence, we attempted to gather information regarding the implementation and possible impacts of the intervention for these later groups as well. Hence, an assistant was employed to entirely focus on fetching data on this latter

group; the purpose being exploring issues like ‘what services were given’, ‘how assistive they are to the teachers’, and ‘what possible contributions were noted to the learners’ and ‘challenges encountered’ in using Whiz Kids materials. Document review, consultation with administration, informal interview, and discussions were made with teachers in preschools having primary schools as well.

4.6. Procedures

Five data collectors (four PG and one UG students) were recruited, trained and deployed for data collection both for baseline as well as endline assessment. A total of ten days were devoted in each of the two assessments that were conducted in February for the baseline as well as in May 2019 for the endline assessment.

5. Findings

In this section, the baseline and end line assessment results were analyzed and presented on the sample preschool children’s direct performances on early literacy skills, early mathematics skills, executive functions, and socio-emotional developments as rated by their regular teachers. Attempts were also made to include in this report analysis of data obtained from preprimary and primary school directors/ delegates. But, we briefly discuss the general conditions of the sampled schools.

General Conditions of the Schools

All the surveyed schools are government owned and students are not paying school fee. In most cases, they are serving children from lower socio economic status. They have school feeding programs for some of the students who are selected as the most disadvantaged. In all schools, the pre-primary schools are accountable to the primary schools they are attached to. They have their own compounds with a small gate linked to the bigger compound. The preschools were around serving for a period ranging from 1 to 10 years with Hibret Fire, Qey Kokeb, and Africa Birhan having the lowest year of service. Student-teacher ratio ranged from a minimum of 1 to 14 in Meskerem One to a maximum of 1 to 29 in Salayish. While almost all the guards are males, the greater majority of academic and support staff is females. It is interesting to note that teachers are educated in ECCE; though predominantly at certificate and diploma level.

Table. Profile of the schools and the preschools

Name of the Pre-Primary School	Year of service	Number of staff and students					Teachers' education in pre-primary			
		Students	Teachers	Support staff			Diploma & above	Diploma	certificate	<1 year certificate
				Baby Sitters	Cleaners	Guard				
1. Tesfa Kokeb	9	222	12 (F)	6 (F)	2 (F)	1 (F)		1	11	
2. Ediget Besira	10	236	13 (1M)	4 (F)	5 (F)	1 (M)	1		12	
3. Salayish	9	738	25 (4 M)	3 (F)	3 (F)			4	21	
4. Klinto	-	335	14 (F)	3 (F)	3 (F)			2	10	2
5. Qey Kokeb	3	160	9 (F)	4 (F)	2 (F)	3 (M)		2	7	
6. Africa Birhan	1	245	7 (F)	4 (F)	2 (F)	3 (M)	1	1	5	
7. Hibret Fire	3	219	12 (F)	5 (F)	3 (F)	5 (F)			12	
8. Gelan No. 2	9	319	13 (1M)	6 (F)	2 (F)	1 (M)	6	1	6	
9. Meskerem One	8	88	6 (M)	2 (F)	2 (F)			1	5	

Teachers in the surveyed preschools have a wide range of experience ranging from as low as one year to as high as 20 years of teaching at pre-primary level. According to the interviewees, the majority of the teachers have an average of 4-5 years of experience in teaching at pre-primary level. Some schools (Tesfa Kokeb, Ediget Besira, and Salaysish) had reported that there were transfers of teachers from pre-primary level to the primary school upon their completion of their diplomas.In the other schools there was no experience of such transfer. On the other hand, the interviewees noted that the transfer from primary level to pre-primary school was not usual, and in one school (Klinto) it was unthinkable. This seems it is because the perception of teaching at primary compared to pre-primary level is considered as much better. Similarly, the interviewee in Tesfa Kokeb underscored that the task at pre-primary level is so much demanding that such transfer is not thought of. More data about the conditions of the preschools are attached in Annex 1 based on summarized data obtained from observations of data collectors.

MELQO Measures

There are two groups of intervention preschools and one group of non-intervention or control preschools. That is, the preschools that received combined intervention included Tesfa Kokeb, Ediget Besira and Salayish preschools. The preschools that received only healthy interventions were Meskerem 1, Hibret Fire, and Gelan No. 1 preschools. Preschools that did not get the stated interventions from Whiz Kids (or the comparison group) included Africa Berhan , Qey Kokeb, and Kilinto No. 2 preschools. In this section, descriptions of the groups shall be used, such as combined and only health intervention groups, and non-intervention groups, instead of the names of the schools.

Table 5. Descriptive statistics and standard scores used to determine cutoff scores

Descriptive Statistics							Cutoff Scores		Z-score for standard setting
MELQO Sub scales		N	Min. score	Max. score	Mean	SD	Min. for Proficient level	Max. for Low level	
1) Early Literacy	Baseline	252	0	56	41.73	7.64			0.5
	End line	249	0	59	46.00	6.97	47.18	37.34	
2) Early Math Skill	Baseline	184	0	45	40.26	3.64			0.5
	End line	243	20	54	41.85	3.72	43.90	36.62	
3) HTKS	Baseline	242	0	30	22.23	8.83			1.0
	End line	248	0	30	25.16	6.85	31.06	13.40	
4) Forward Digit Span	Baseline	263	0	5	3.30	1.14			1.0
	End line	255	1	5	3.58	1.04	4.44	2.16	
5) Backward Digit Span	Baseline	264	0	5	0.97	1.29			1.0
	End line	257	0	5	1.07	1.25	2.26	0.32	
6) Fine motor skills	Baseline	263	0	9	6.45	2.31			1.0
	End line	252	1	12	7.38	1.87	8.76	4.14	
7) Socio-Emotional	Baseline	262	10	90	74.76	7.45			0.5
	End line	216	45	89	74.75	8.76	78.48	71.04	

Besides, the standard setting of performances was first assessed using expert subjective judgments followed by statistical test item characteristics. As a result, three levels of performances were identified: proficient, intermediate or basic, and below basic or low levels of performances. Accordingly, the cutoff scores that determine the minimum score for the proficiency levels of performances are listed (see Table 5). As per these cutoff scores, it can be said that the majority of the sampled children have an intermediate proficiency in each of the seven MELQO sub-scales.

5.1. Early literacy skills

The baseline and end line results on early literacy skills are presented in this section. Early literacy skills were measured based on four components: letter identification (16 items), phonological awareness (8 items), expressive vocabulary (25 items), spatial receptive vocabulary (5 items) and listening comprehension (5 items). Total score on early literacy skills was calculated by adding the scores on the four components listed above, with a possible range of 0 to 59.

In this section, benchmarks and performance differences on early literacy skills of the three intervention types and for all interviewees in general shall be discussed.

Based on the standard set to determine the proficient, basic and below–basic levels of performances, about 34.5% of the sample preschool children performed during the baseline assessment at the proficient level with raw scores above 47.18. About 23.4% performed at the low level of standard with scores below 37.34 and the remaining 42.1% were with intermediate performance levels. Such performance levels were not significantly associated with the three groups of intervention (χ^2=5.363, df=4, p>.05).

Similar assessment was also carried out during the end line survey. It was found out that there was a general performance improvement on the proficiency level of the sampled children from about 34% to 59% at the proficient level although such improvements were observed across all three groups.

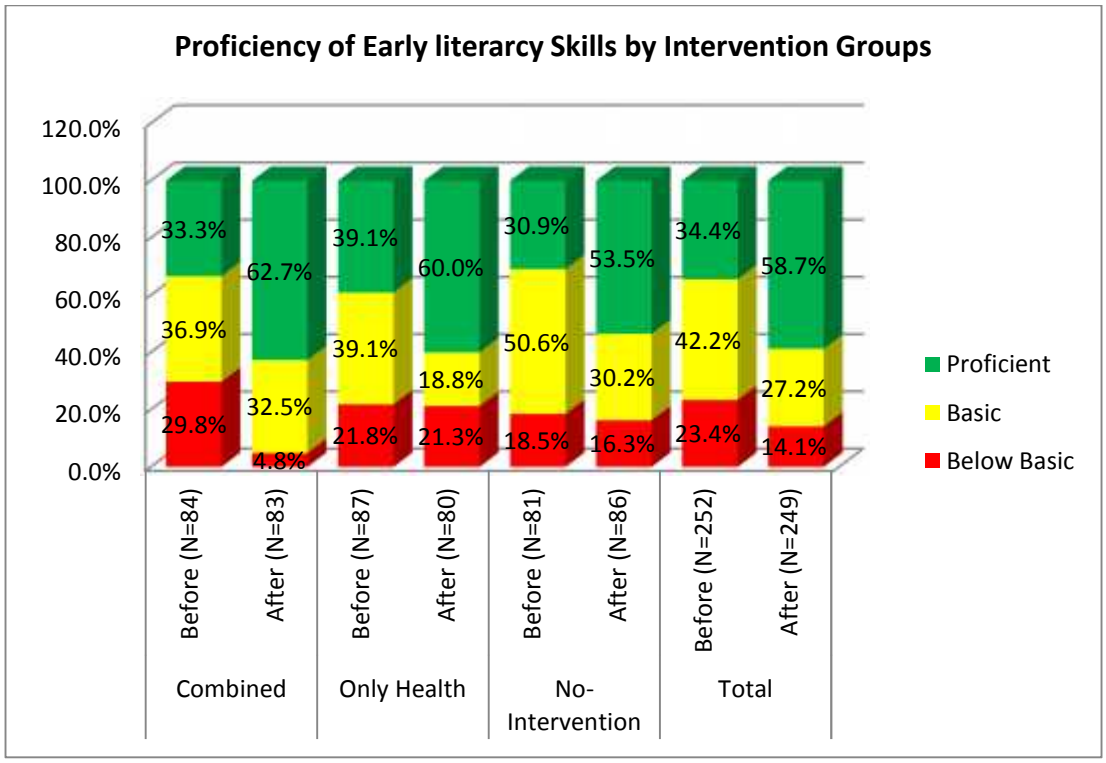

Figure 2. Benchmarks on early literacy skills by intervention groups

Furthermore, a two-way analysis of variance was run on a sample of 252 preschool children to examine the effect of intervention type and gender on scores of early literacy skills. The baseline results showed no statistically significant main effect of intervention type, $F(2, 246) = .260$, $p>.05$, such that the average score of early literacy skill for the combined intervention group (M=41.11, SD=8.49), the only healthy intervention group (M=42.38, SD=7.279) and the non-intervention group (M=41.68, SD=7.12) were not statistically significant. The end line assessment results also showed that the three groups were not statistically different where combined group (M=46.97, SD=5.798), only health group (M=45.99, SD=7.455) and the non-intervention group (M=45.54, SD=6.901.

A one way analysis of covariance was also conducted to determine whether there were statistically significant difference between the intervention and non-intervention groups on early literacy skills during the end line assessment after controlling any potential preexisting differences during the baseline assessment and gender. Results showed that there was no statistically significant difference among the combined, only healthy and non-intervention groups even after controlling for gender and baseline results $F(2, 232) = 1.277$, $p>.05$. However, the trend of improvement was observed in the combined intervention groups even though it was not statistically significant.

Table 6.Early literacy skills among intervention groups at baseline and end line assessment

Intervention Types	Assessment Period	Mean*	Std. Deviation	N
Combined Intervention	Baseline	41.11	8.488	84
	End line	46.97	5.798	75
Only Healthy Intervention	Baseline	42.38	7.279	87
	End line	45.99	7.455	79
No Intervention	Baseline	41.68	7.122	81
	End line	45.54	6.901	83
Total	Baseline	41.73	7.643	252
	End line	46.14	6.768	237

* Score ranges from 0 to 59.
** Non-significant mean difference on early literacy skills between children in intervention and non-intervention schools although there were learning gains over time.

Besides, during the baseline assessment, there was no statistically significant main effect of gender, $F(1, 246) = .199$, $p>.05$, such that the average score of early literacy skill for the males (M=42.08, SD=7.316) was not statistically significant different from that of females (M=41.40, SD=7.752). The interaction between intervention type and gender was not statistically significant, $F(2,246) = 2.859$, $p>.05$.

From these data, one could conclude that the three groups of schools categorized based on intervention types, or the intervention and non- intervention schools, were not statistically different on literacy skills during the end line survey even after statistically controlling the pre-existing differences.

5.1.1. Letter Identification (0-16)

Preschool children (n=262) were asked to identify selected high frequency sixteen Amharic letters and a two way analysis of variance was run. It was found out that there were no statistically significant main and interaction effects of intervention type and gender on letter identification scores. Those in the combined, only healthy and non-intervention groups respectively had mean scores of 12.88 (SD=4.663), 14.69 (SD=2.578) and 14.51 (SD=3.238). Similarly there was no statistically significant difference between the mean scores of males (M=13.89, SD=3.583) and females (M=14.19, SD=3.736) on letter identification. In general, the assessed preschool children during the baseline could identify 14 of the 16 letters correctly on the average.

During the end line assessment, the result of the letter identification assessment was better than it was for the baseline where the combined intervention group (M=15.60, SD=1.268), only healthy group (M=13.90, SD=3.984) and control group (M=14.82, SD=3.331). On average, the whole group managed to correctly identify close to 15 letters out of the sixteen. Analysis of covariance was carried out to identify the effects of the intervention by controlling preexisting differences including baseline results and gender. Results of the ANCOVA showed that there was a statistically significant difference between the combined intervention group and the other groups, where the combined group performed better, even after controlling differences at the baseline and

gender, F (2, 250) = 2.994, p<.05. In other words, the combined intervention made a difference in letter identification skills of preschool children.

5.1.2. Phonological Awareness (0-8)

Phonological awareness was assessed using five-letter sound identification and three-letter sound discrimination questions and the total score was calculated out of a total of the eight items. A two way analysis of variance showed no statistically significant main and interaction effects of intervention type and gender on phonological awareness. The recorded scores on phonological awareness were generally lower than expected for the combined group (M=2.93, SD=1.549), only healthy group (M=3.28, SD=1.462) and non-intervention group (M=3.21, SD=1.761) as well as for males (M=3.13, SD=1.496) and females (M=3.16, SD=1.698).

The results of the end line assessment on phonological awareness generally showed an improved trend for the combined group (M=3.47, SD=1.659), only healthy group (M=3.76, SD=1.876) and non-intervention group (M=3.36, SD=1.722). On the other hand, results of the ANCOVA showed that there was no statistically significant difference between intervention and non-intervention groups even when pre-existing performance differences at baseline and for gender was statistically controlled, F (2, 248) = 1.147, p>.05.

5.1.3. Expressive vocabulary (0-25)

Expressive vocabulary was measured by asking children to name five specific body parts, to utter up to ten names of specific food types, and up to ten names of animals. A two-way analysis of variance showed that there were no statistically significant main and interaction effects of intervention types and gender on the expressive vocabulary score during the baseline assessment. Children in the combined group (M=18, SD=4.129), only healthy group (M=16.84, SD=4.221) and non-intervention group (M=16.79, SD=3.767) had no statistically significant difference on the mean expressive vocabulary score during the baseline assessment. Likewise, there was no statistically significant difference between male (M=17.70, SD=3.935) and female (M=16.73.72, SD=4.150) children on the mean expressive vocabulary score.

During the end line assessment, an overall trend of gain in mean scores was observed on expressive vocabulary where the combined group (M=19.44, SD=3.596), only healthy group (M=19.18, SD=4.429), and non-intervention group (M=18.07, SD=4.098) did not show statistically significant difference. ANCOVA also showed that there was no statistically significant difference among the intervention and non-intervention groups in expressive vocabulary even after controlling the preexisting differences on baseline results and gender, $F(2, 245) = 2.285$, $p>.05$.

5.1.4. Listening Comprehension (0-5)

A short passage based on a story of the cat and the mouse was read to children by the enumerator to assess whether they could comprehend the message using a follow up five comprehension questions. A two way analysis of variance was run and it was found out that there were no statistically significant main and interaction effects of intervention types and gender on listening comprehension scores during the baseline assessment. The combined group (M=3.88, SD=1.023), only healthy group (M=4.09, SD=1.013), and non-intervention (M=3.61, SD=1.158) had mean scores on listening comprehension which were not statistically significant. Besides, the mean listening comprehension scores of males (M=3.81, SD=1.083) and females (M=3.91, SD=1.083) were not statistically significant. On the average, the assessed preschool children could answer 4 out of the 5 listening comprehension questions at baseline.

During the end line assessment of listening comprehension of the same story tested at baseline, analysis of covariance showed that there was no statistically significant difference [$F(2,250) = .131$, $p>.05$] among the combined group (M=4.27, SD=1.152), only healthy group (M=4.37, SD=.839), and non-intervention group (M=4.36, SD=.889), although there were trends of learning gains over time for all groups.

5.2. Early mathematics skills (0-26)

In this section, the baseline results on early mathematics skills will be presented. Early mathematics skills was measured based on sum of scores generated from the six domains: verbal counting up to 20 (1 item), sorting and producing asset of counters (3 items), number identification

(10 items), spatial relations (5 items), number comparison (3 items) and simple addition & subtraction (4 items). Total score on early mathematics skills was calculated by adding the scores on the six domains listed above with a score range of 0 to 26.

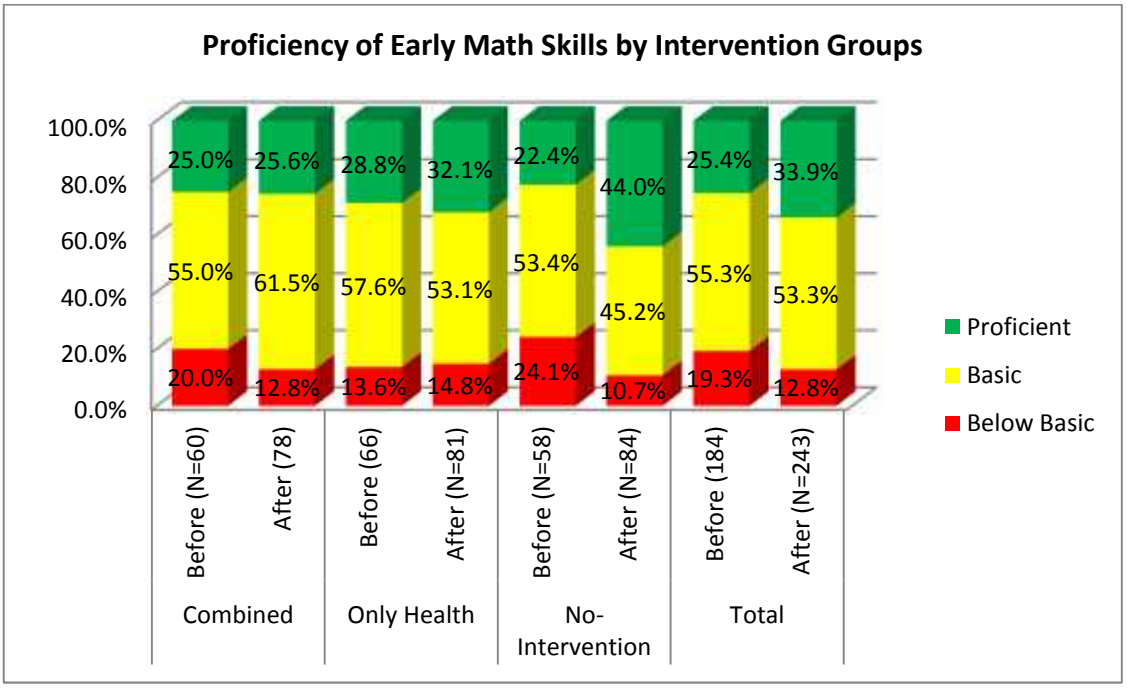

Figure 3. Benchmarks on early mathematics skills by intervention types

About 25.5% of the assessed preschool children were at the proficient level in terms of early mathematics skills while about 19% were at the low level of performance although 55.4% were intermediate. The percent of those that joined the proficient level on early mathematics skills increased from 25.4% to 33.9% (see Figure 2). However, there were no statistically significant difference between the three groups of intervention in early mathematics skills (X^2=2.434, df=4, p>.05).

Table 8.Descriptive Statistics on Early Mathematics Skills

Dependent variable: Early Mathematics Skills (0-26)

Intervention Type	Gender	Mean*	SD	N
Combined Intervention	Baseline	21.07	3.948	60
	End line	21.75	2.399	51
Only Healthy Intervention	Baseline	21.76	3.013	66
	End line	21.64	3.182	56
No Intervention	Baseline	21.00	3.574	58

	End line	22.44	2.391	61
Total	Baseline	21.29	3.514	184
	End line	21.96	2.692	168

*Score ranges from 0 to 26

Furthermore, a two-way analysis of variance was run on a sample of 184 preschool children to examine the effect of intervention type and gender on scores of early mathematics skills. Results showed statistically significant main effect of intervention type, $F(2, 178) = 25.554$, $p<.05$. On the other hand there were no main effect of gender, [$F(1, 178) = 3.779$, $p>.05$] and interaction effects of intervention types by gender [$F(2, 178) = .036$, $p>.05$]. The mean and standard deviation of early mathematics skills were found to be as follows: for the combined intervention group (M=21.07, SD=3.948), only healthy intervention group (M=21.76, SD=3.013) and non-intervention group (M=21.00, SD=3.574). On average, the preschool children could correctly answer 21 of the 26 early mathematics test items.

On a follow up assessment during the end line survey, analysis of covariance showed that the combined group (M=21.75, SD=2.399), only healthy group (M=21.64, SD=3.182) and non-intervention group (M=22.44, SD=2.391) did not show a statistically significant difference even after controlling the effects of previous performances during the baseline and gender, $F(2, 163) = .928$, $p>.05$.

Table 9.Tests of Between-Subjects Effects on Early Mathematics Skills

Dependent variable: Early Mathematics Skills							
Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	82481.685	1	82481.685	47316.158	.003	1.000
	Error	1.743	1	1.743[a]			
Intervention Type	Hypothesis	22.852	2	11.426	25.554	.038	.962
	Error	.894	2	.447[b]			
Child _Gender	Hypothesis	1.743	1	1.743	3.779	.183	.639
	Error	.984	2.133	.461[c]			
Intervention *	Hypothesis	.894	2	.447	.036	.965	.000

Gender	Error	2235.227	178	12.557[d]			
a. MS(Gender)							
b. MS(Intervention * Gender)							
c. .999 MS(Intervention * Gender) + .001 MS(Error)							
d. MS(Error)							

5.2.1. Verbal Counting (0-20)

Preschool children were asked verbally count up to 20 in serial order. On the average almost all children could count up to 20; any count more than 20 did not get any further scoring. The means and standard deviations of the scores on verbal counting for the combined group (M=19.87, SD=.793), only healthy group (M=19.98, SD=.220), and non-intervention group (M=19.98, SD=.151); and for males (M=19.92, SD=.576) and females (M=19.96, SD=.364) showed that almost all children could attain the target set for counting. The end line assessment showed that almost all children could verbally count up to the maximum number 20.

5.2.2. Producing set (0-3)

In this task children were given 20 counters, in this case water bottle caps and they were asked to sort three of these counters and push them toward the enumerator. The second and third questions were similar to the first question but with increased difficulty; the children were asked to sort 6 and 14 counters. The mean and standard deviations on producing set of counters for the combined group (M=2.62, SD=.771), only healthy group (M=2.76, SD=.570), and non-intervention group (M=2.78, SD=.536); and for males (M=2.72, SD=.623) and females (M=2.72, SD=.646) showed that male and female children in the three intervention types did not differ in the task on producing set of counters.

Analysis of covariance indicated that there was no statistically significant mean difference on producing set among combined group (M=2.88, SD=.473), only healthy group (M=2.89, SD=.381), and non-intervention group (M=2.92, SD=.277) even when the preexisting baseline performance and gender was statistically controlled, $F(2, 249) = .161$, $p>.05$.

5.2.3. Number identification (0-10)

Children were shown a stimulus that has a list of 5 single and 5 double digit numbers to identify and correctly name each. The 264 preschool test takers correctly identified 9 of the 10 numbers on the average. The mean and standard deviations were calculated on number identification for the combined group (M=8.99, SD=2.130), only healthy group (M=9.33, SD=1.565), and non-intervention group (M=9.14, SD=2.266); and for males (M=9.26, SD=1.921) and females (M=9.05, SD=2.091).

In the follow up study during the end line survey, ANCOVA result showed no statistically significant mean difference on number identification tasks among the combined group (M=9.84, SD=.814), only healthy group (M=9.35, 1.573), and non-intervention group (M=9.68, SD=1.214) even after controlling for the baseline results and gender, $F(2, 251) = 2.891$, $p > .05$. Nearly all numbers were correctly identified with an overall mean of 9.63 out of ten items.

5.2.4. Spatial relations (0-5)

Children were shown two shapes and were asked to mentally combine the two shapes to produce a new shape. There were five questions that test the mental transformation or spatial relations skills of preschool children. The mean and standard deviations were calculated on spatial relations skills for the combined group (M=2.61, SD=1.432), only healthy group (M=2.52, SD=1.366), and non-intervention group (M=2.47, SD=1.455); and for males (M=2.74, SD=1.482) and females (M=2.18, SD=1.38). Results showed statistically non-significant difference for both males and females in all intervention groups. Furthermore, analysis of covariance was carried out following the end line assessment and the combined group (M=2.90, SD=1.420), only healthy group (M=3.17, SD=1.404), and non-intervention group (M=3.24, SD=1.397) did not significantly differ even after controlling for gender and baseline results, $F(2, 246) = 1.409$, $p > .05$.

5.2.5. Number Comparison (0-3)

Preschool children were asked three questions to compare whether a given number is bigger or smaller than the other number. It was found out that the combined group (M=2.54, SD=.780), only healthy group (M=2.65, SD=.728), and non-intervention group (M=2.52, SD=.711) appear similar

on their performance on number comparison. Besides, the mean and standard deviations of the scores on number comparison sub-test for males (M=2.590, SD=.690) and females (M=2.55, F=.787) showed similar results.

End line assessment result showed that the combined group (M=2.82, SD=.470), only healthy group (M=2.67, SD=.665), and non-intervention group (M=2.80, SD=.591) were not statistically different on number comparison tasks even when gender and preexisting performance differences were controlled, $F(2, 249) = 1.814$, $p>.05$.

5.2.6. Simple mental addition and subtraction (0-4)

Three simple single digit mental addition and one subtraction questions were asked to preschool children and this sub-test was scored out of 4. The mean and standard deviations scores on simple addition and subtraction sub-test for the combined group (M=2.61, SD=1.150), only healthy group (M=3.01, SD=1.153), non-intervention group (M=2.80, SD=1.138) showed some differences, with the healthy group scoring higher. On the other hand, the overall means and standard deviations for males (M=2.82, SD=1.185) and females (M=2.82, SD=1.129) appeared more or less the same.

Results of the analysis of covariance showed that the combined group (M=3.19, SD=1.093), only healthy group (M=3.20, SD=1.123), and non-intervention group (M=3.38, SD=.926) were not statistically different on tasks related to simple mental addition and subtraction even after controlling for gender and baseline results, $F(2, 185) = .395$, $p>.05$.

5.3. Executive function (working memory and inhibitory control)

Executive functions were measured using Head-Toes-Shoulder-Knee (HTSK), Forward Digit Span (FDS), and Backward Digit Span (BDS) tests. As these are three different tests, scores will not be combined. As a result, the outcomes are measured independently.

5.3.1. HTSK, a measure of executive functions

Preschool children were tested the extent to which they efficiently used their working memory and manage inhibitions of adapted and routine behavior patterns and reset & adjust themselves to unusual circumstantial instructions. One way of assessing the executive functions is using the play based test called Head-Toes-Shoulder-Knee test (HTSK). The child is oriented by the enumerator on rule of the game where the child is instructed to respond in the opposite. For instance, if the enumerator says 'touch your head' the child is instructed to touch his/her toes by bowing down. The question could be the reverse of this such that the enumerator says 'touch your toes' and the child is instructed to respond by touching his/her head. The same instruction also applies for shoulder and knees where the instruction 'touch your shoulder' means the child is expected to touch his/her knees and vice versa. Correctly performing in the HTSK tasks means the child's executive functions (i.e., working memory and inhibitory control) are efficiently organized and functioning. Persons with high scores on executive functions are said to be well organized, effective and productive in many activities in life in general and in literacy and numeracy tests in particular.

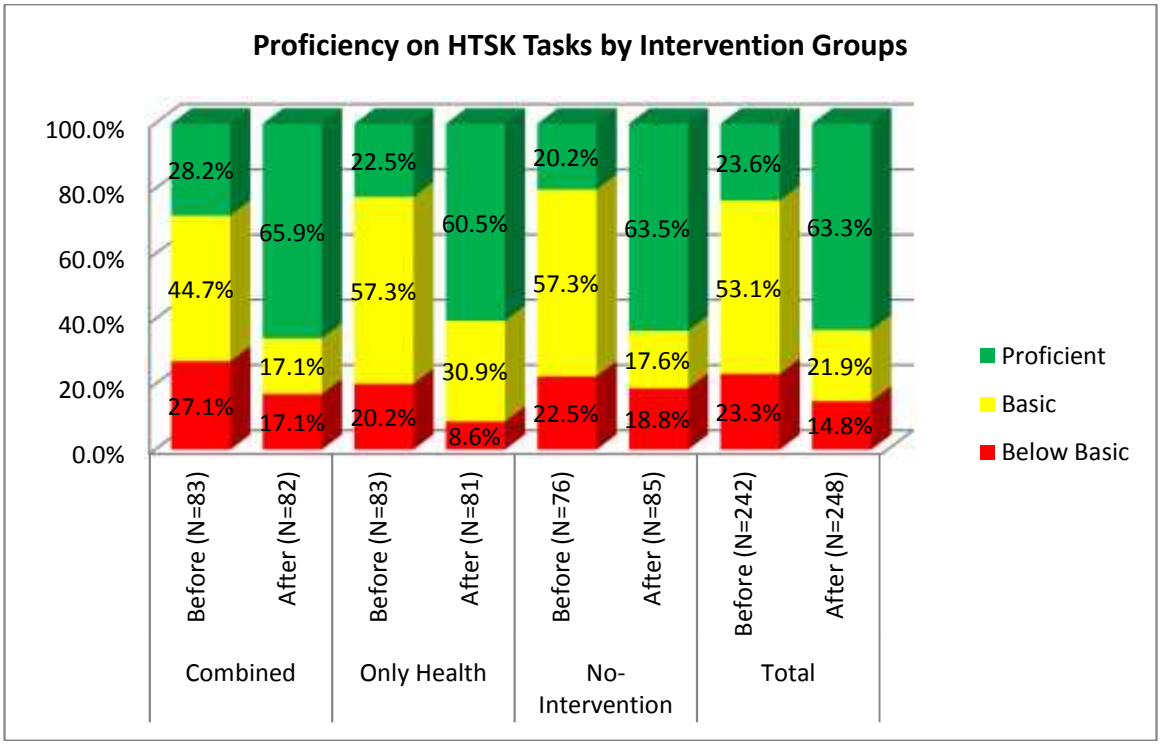

Figure 3. Benchmarks on HTSK by intervention types

During the baseline assessment, about 23.6% of the preschool children could achieve the proficient level and 23.2% at the low level while the majority (53.2%) were in the intermediate level of performance on HTSK test, with no statistically significant association with intervention groups (X^2=2.530, df=4, p>.05). Following the end line assessment, the proportion of children achieving the proficient level on HTSK task was improved from 23.6% to 63.3%. Such improvements were more or less similar across the intervention and non-intervention groups.

Preschool children (n=242) were tested using the HTSK tool that has 15 items with a scoring guide of '0' for incorrect response, '1' for self-corrected response, and '2' a fully correct response. Two way analysis of variance was run and results showed that there was no statistically significant main effects of the three intervention types [F(2, 236) = 4.967, p>.05] and gender [F(1, 236) =0.095, p>.05] on executive functions as measured by HTSK. Besides, there was no statistically significant interaction effect of intervention type and gender [F(2, 236) =0.315, p>.05] on executive functions scores. The mean and standard deviation scores on executive functions for the combined group (M=22.82, SD=8.828), only healthy group (M=20.83, SD=98.947) and non-intervention group (M=23.11, SD=8.626) showed differences that were not statistically significant. Similarly, the

Table 10.Descriptive Statistics: HTSK (Score ranges: 0-30)

Descriptive Statistics				
Dependent Variable: HTKS_TOTAL (score ranges 0- 30)				
SCHOOL Intervention Type	gender of child	Mean	Std. Deviation	N
Combined Intervention Group	Baseline	22.82	8.828	83
	End line	25.79	6.384	72
Only Healthy Intervention Group	Baseline	20.83	8.947	83
	End line	25.95	5.711	79
No Intervention Group	Baseline	23.11	8.626	76
	End line	25.71	6.919	79
Total	Baseline	22.23	8.829	242
	End line	25.75	6.331	230

* Score ranges from 0 to 30.

mean and standard deviations scores on the executive functions of males (M=22.16, SD=9.11) and females (M=22.23, SD=8.829) were not statistically significant.

ANCOVA results showed that the combined group (M=25.79, SD=6.384), only healthy group (M=25.95, SD=5.711), and non-intervention group (M=25.51, SD=6.919) were not statistically different on HTSK tasks even after controlling for baseline results and gender, $F(2, 225) = .051$, $p>.05$. However, the learning gain over time was high.

Table 11.Two-Way ANOVA: Tests of Between-Subjects Effects, Baseline HTSK

Tests of Between-Subjects Effects: HTSK							
Dependent variable: HTSK							
Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	118882.659	1	118882.659	50801.711	.003	1.000
	Error	2.340	1	2.340a			
Intervention Type	Hypothesis	244.997	2	122.498	4.967	.168	.832
	Error	49.324	2	24.662b			
Child _Gender	Hypothesis	2.340	1	2.340	.095	.787	.045
	Error	49.687	2.011	24.708c			
Intervention * Gender	Hypothesis	49.324	2	24.662	.315	.730	.003
	Error	18483.787	236	78.321d			

a. MS(Gender)
b. MS(Intervention * Gender)
c. .999 MS(Intervention * Gender) + .001 MS(Error)
d. MS(Error)

5.3.2. Forward digit span (0-5)

Another way of assessing executive function is using forward digit span where preschool children (n=263) were asked to say or reproduce the 2-5 digit numbers immediately after the enumerator utter them in the same order. Two way analysis of variance was run and the results showed that there were no statistically significant main effects of intervention types [F(2, 257) = 1.157, p>.05] and gender [F(1, 257) =0.016 , p>.05]. However, there was a statistically significant interaction effect between intervention types and gender [F(2, 257)=3.091, p<.05] with males scoring higher than females in the combined intervention group while females had higher scores than males in the healthy and non-intervention groups in the forward digit span task (see Tables 12 &13).

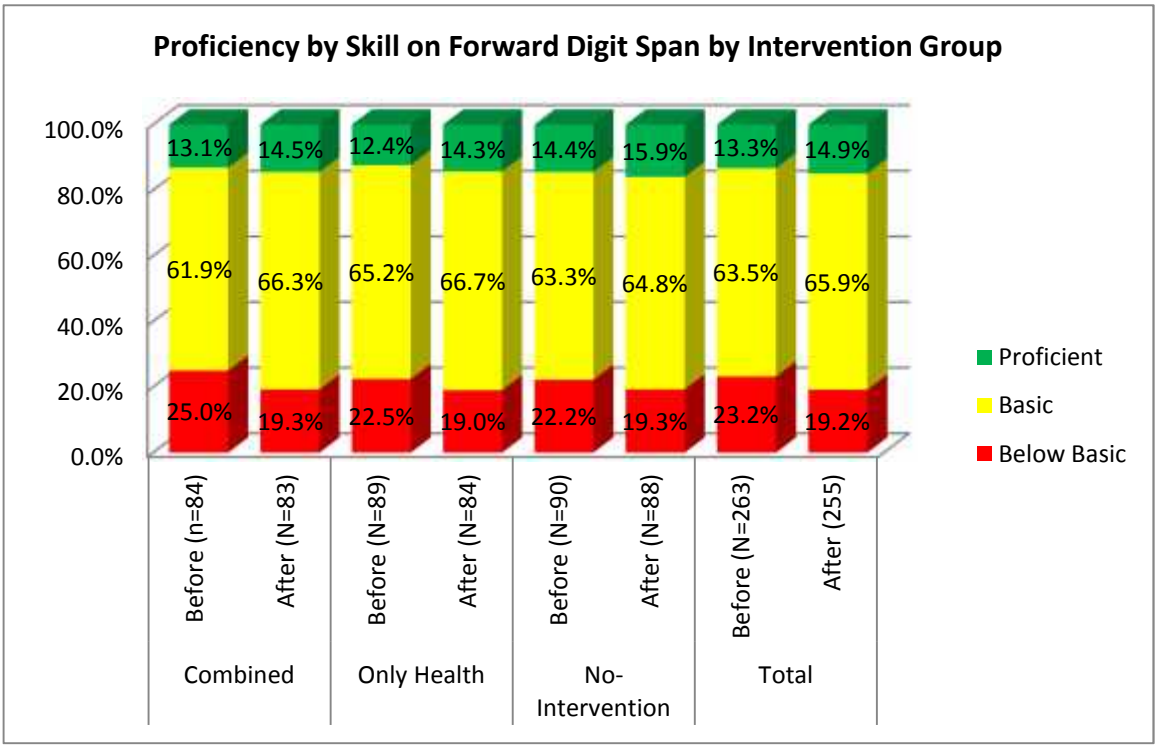

Figure 4. Benchmarks on Forward Digit Span by Intervention Types

About 13.3% and 14.9% of the preschool children performed at the highest level of functioning on forward digit span during the baseline and end line assessments respectively. About 23.2% and 19.2% of the children were respectively performing at the low level on forward digit span tasks during the baseline and end line assessment. The majority (63.5% to 65.9%) were found at the intermediate level.

Table 12.Descriptive Statistics: Forward Digit Span by intervention type and gender

Dependent variable: Baseline Forward Digit Span(Score ranges 0-5)				
Intervention Type	Gender	Mean*	Std. Deviation	N
Combined Intervention	Male	3.45	1.130	44
	Female	2.93	1.118	40
	Total	3.20	1.149	84
Only Health Intervention	Male	3.15	1.272	40
	Female	3.37	1.035	49
	Total	3.27	1.146	89
No Intervention	Male	3.30	1.113	46
	Female	3.52	1.151	44
	Total	3.41	1.131	90
Total	Male	3.31	1.167	130
	Female	3.29	1.119	133
	Total	3.30	1.141	263

*Score 0-5

Table 13. Two-way ANOVA on Forward Digit Span

Tests of Between-Subjects Effects: Baseline Forward Digit Span							
Dependent variable: Forward Digit Span							
Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	2827.251	1	2827.251	44198.376	.003	1.000
	Error	.064	1	.064[a]			
Intervention Type	Hypothesis	2.301	2	1.151	.289	.776	.224
	Error	7.958	2	3.979[b]			
Child-Gender	Hypothesis	.064	1	.064	.016	.911	.008
	Error	7.958	2.001	3.978[c]			
Intervention *	Hypothesis	7.958	2	3.979	3.091	.047	.023

Gender	Error	330.888	257	1.288[d]			
a. MS(Gender)							
b. MS(Intervention * Gender)							
c. 1.000 MS(Intervention * Gender) + .000 MS(Error)							
d. MS(Error)							

ANCOVA revealed that the combined group (M=3.60, SD=1.059), only healthy group (M=3.57, SD=1.084), and non-intervention group (M=3.61, SD=.969) did not statistically differ on forward digit span even after controlling for gender and baseline results, $F(2,248) = .250$, $p>.05$.

5.3.3. Backward digit span (0-5)

The task on backward digit span instructs children to tell the 2-5 digit numbers that the enumerator reads them in exactly opposite digit sequence, from last to the first digit. Children (n=264) were asked to listen to a sequence of numbers and reproduce the opposite sequence numbers. A two-way analysis of variance was run and found no statistically significant main effects of intervention types [$F(2,258) = .462$, $p>.05$], gender [$F(1,258) = .081$, $p>.05$] and interaction effects [$F(2, 258) = 2.585$, $p>.05$] on backward digit span. This task was found to be difficult for the children with low mean and standard deviation score for boys (M=1.00, SD=1.296) and for girls (M=.096, SD=1.286).

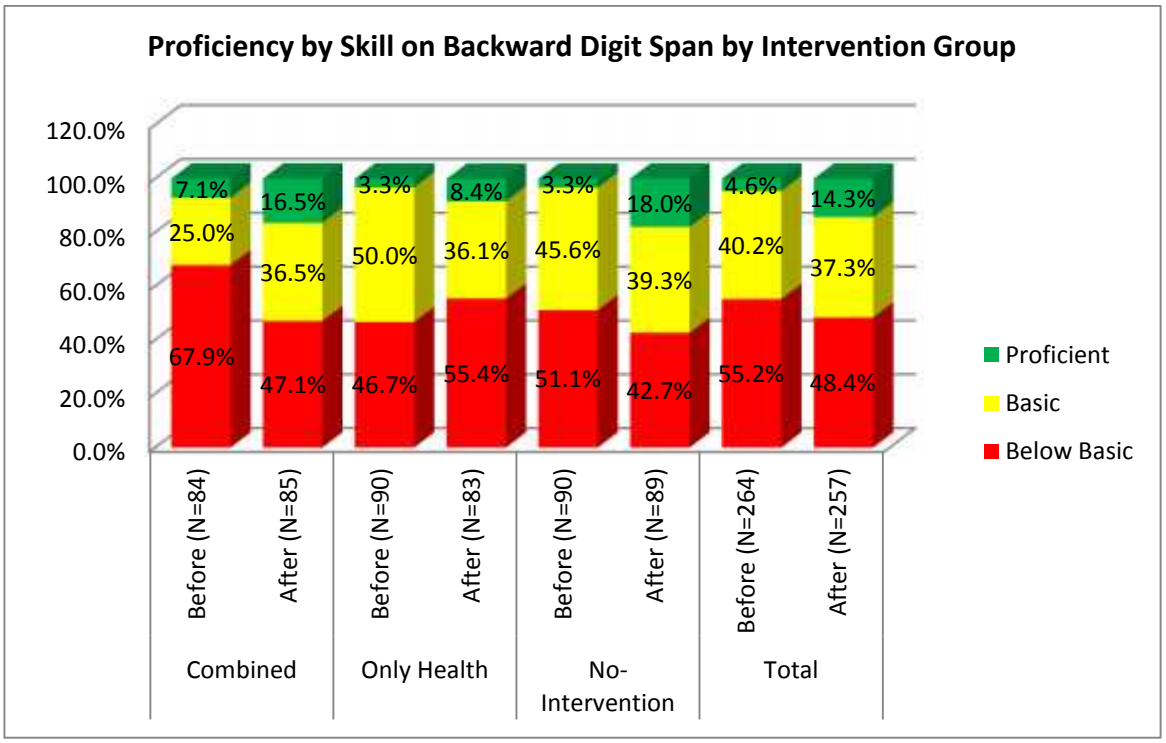

Figure 5. Benchmarks on Backward Digit Span by Intervention Types

The backward digit span task is relatively more difficult test to preschool children than the forward digit span. As a result, about 4.5% and 14.3% of the preschool children performed at the proficient levels during baseline and end line assessments respectively while the majority (48.4 to 54.9%) were performing at the below basic level.

Table 14. Descriptive Statistics on Backward Digit Span

Dependent variable: Baseline Backward Digit Span(Score ranges 0-5)				
Intervention Type	Gender	Mean*	Std. Deviation	N
Combined Intervention	Male	1.00	1.624	45
	Female	.59	1.117	39
	Total	.81	1.418	84
Only Health Intervention	Male	1.17	1.070	41
	Female	.94	1.248	49
	Total	1.04	1.170	90
No Intervention	Male	.85	1.115	46

	Female	1.27	1.404	44
	Total	1.06	1.275	90
Total	Male	1.00	1.296	132
	Female	.95	1.286	132
	Total	.97	1.289	264

*Score: 0-5

Table 15. Two-way ANOVA on Backward Digit Span

Tests of Between-Subjects Effects							
Dependent variable: Baseline Backward Digit Span							
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	246.996	1	246.996	717.219	.024	.999
	Error	.344	1	.344[a]			
Intervention Type	Hypothesis	3.933	2	1.967	.462	.684	.316
	Error	8.510	2	4.255[b]			
Gender	Hypothesis	.344	1	.344	.081	.803	.039
	Error	8.511	2.001	4.254[c]			
Intervention * Gender	Hypothesis	8.510	2	4.255	2.585	.077	.020
	Error	424.719	258	1.646[d]			
a. MS(Gender)							
b. MS(Intervention * Gender)							
c. .999 MS(Intervention * Gender) + .001 MS(Error)							
d. MS(Error)							

ANCOVA results also showed no statistically significant mean differences on backward digit span among the combined groups (M=1.09, SD=1.315), only healthy group (M=.89, SD=1.176), and non-intervention group (M=1.15, SD=1.248) even after controlling the effects of gender and the baseline results, $F(2,251) = .380$, $p>.05$.

5.4. Fine motor skills: Name writing and copying

Fine motor skills were measured using the tasks on name writing (1 item), copying a triangle, a rectangle, a circle and an X shape (i.e., 4 items with 2 scores for each), with a total score of 9. Fine motor skills of children (n=263) were assessed and two way analysis of variance was carried out.

Results showed that there were no statistically significant main effects of intervention types [F(2, 257) = .435, p>.05] and gender [F(1, 257) = 2.874, p>.05] on the fine motor skills. Besides, there was no statistically significant interaction effect of intervention types by gender [F(2, 257) = 1.661, p>.05].

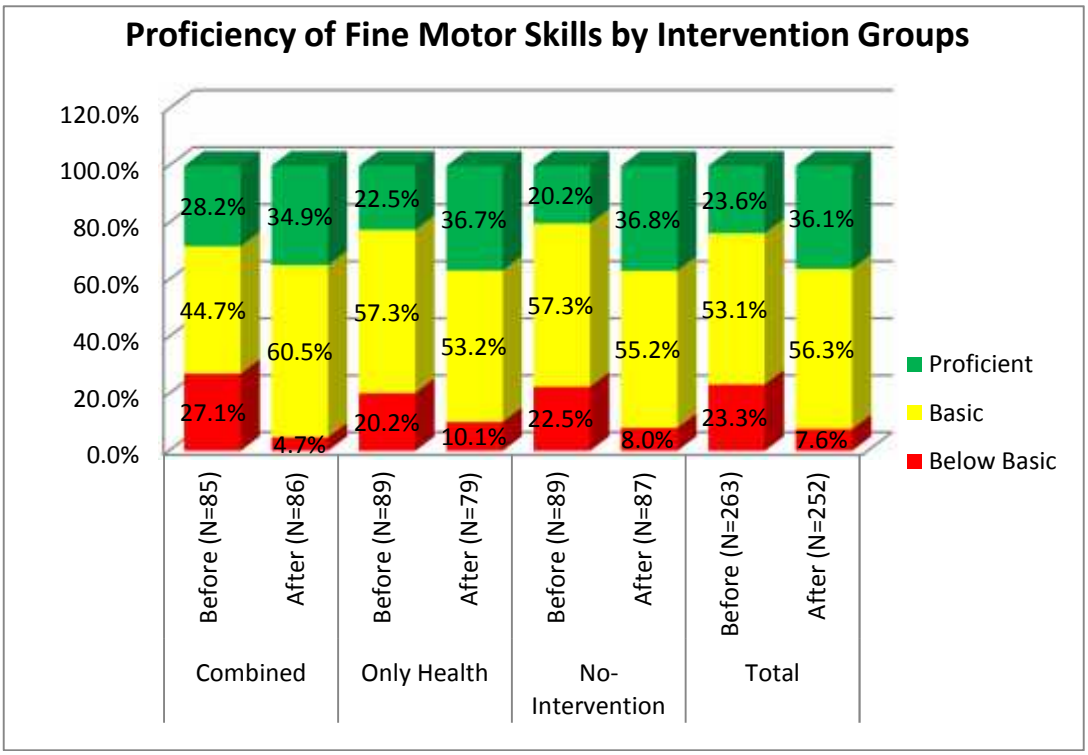

Figure 6. Benchmarks on Fine Motor Skills by Intervention Types

From among the participant preschool children only about 23.6% and 36.1% were at the proficient level of motor skills during the baseline and end line assessment respectively. The majority (53.1% to 56.3%) were at the intermediate level of performance.

Table 16. Descriptive Statistics: Fine motor skills

Dependent variable: Baseline Fine Motor Skills (0-9)				
Intervention Type	Gender	Mean	Std. Deviation	N
Combined Intervention	Male	6.33	2.722	45
	Female	6.35	2.237	40

	Total	6.34	2.491	85
Only Health Intervention	Male	6.03	2.402	40
	Female	7.31	1.770	49
	Total	6.73	2.163	89
No Intervention	Male	6.00	2.422	46
	Female	6.56	2.108	43
	Total	6.27	2.280	89
Total	Male	6.12	2.509	131
	Female	6.77	2.059	132
	Total	6.45	2.312	263

Table 17. Two-way ANOVA on Fine Motor Skills

Tests of Between-Subjects Effects

Dependent Variable: Baseline Fine Motor Skills

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	10810.838	1	10810.838	431.952	.031	.998
	Error	25.028	1	25.028[a]			
Intervention Type	Hypothesis	7.574	2	3.787	.435	.697	.303
	Error	17.417	2	8.708[b]			
Child-Gender	Hypothesis	25.028	1	25.028	2.874	.232	.590
	Error	17.420	2.001	8.708[c]			
Intervention * Gender	Hypothesis	17.417	2	8.708	1.661	.192	.013
	Error	1347.088	257	5.242[d]			

a. MS(Gender)

b. MS(Intervention * Gender)

c. 1.000 MS(Intervention * Gender) + .000 MS(Error)

d. MS(Error)

Following the end line assessment results of ANCOVA showed no statistically significant mean difference on fine motor skills for the combined group (M=7.45, SD=1.912), only healthy group (M=7.42, SD=1.809), and non-intervention group (M=7.29, SD=1.903) even after controlling for gender and baseline results, $F(2,245) = .245$, $p>.05$.

5.5. Socio emotional development

The socio-emotional development of preschool children was measured using a 30-item teacher child rating form (TCR-SED) where the teacher respectively assigned a score of 3, 2 or 1 when the statement truly described, somewhat described and did not describe the behavior of the child. Teachers in the nine schools who taught and knew the children (n=262) for at least the recent two weeks (during the data collection period) rated each child using the 30-item TCR-SED scale.

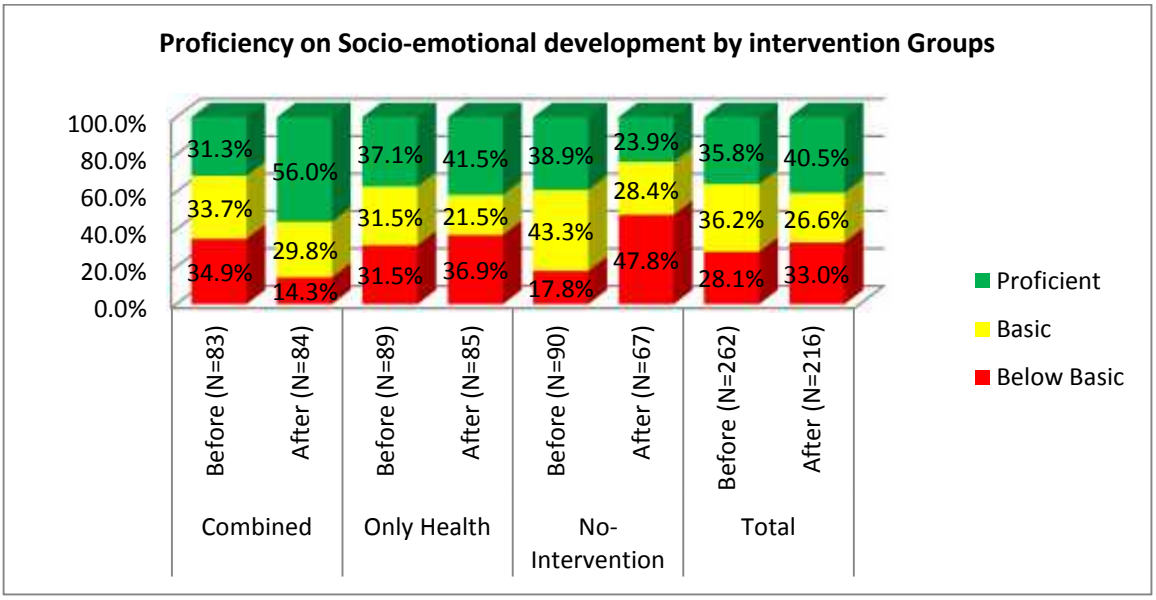

Figure 7. Benchmarks on socio-emotional skills by intervention types

About 35.8% and 40.5% were respectively found to be at the proficient level of performance on socio-emotional development during the baseline and end line assessment. About a third of the children are still below the required standard of socio-emotional development 9i.e., 28.1% at the baseline assessment and 33% during the end line assessment).

Two way analysis of variance showed that there were no statistically significant main effects of intervention types [$F(2, 256) = 12.094$, $p>.05$] and gender [$F(1, 256) = 5.864$, $p>.05$] on socio-emotional development. Besides, there were no interaction effects [$F(2, 256) = .404$, $p>.05$], (see Tables 18 & 19).

Table 18.Descriptive Statistics on Socio-Emotional Development

Dependent variable: Baseline Socio-Emotional Development (Score ranges 30-90				
Intervention Type	**Gender**	**Mean***	**Std. Deviation**	**N**
Combined Intervention Group	Male	73.00	8.696	44
	Female	73.54	7.044	39
	Total	73.25	7.920	83
Only Healthy Intervention Group	Male	73.65	7.523	40
	Female	74.82	7.373	49
	Total	74.29	7.421	89
No Intervention Group	Male	75.39	7.259	46
	Female	77.89	5.816	44
	Total	76.61	6.675	90
Total	Male	74.05	7.859	130
	Female	75.46	6.975	132
	Total	74.76	7.446	262

* Score ranges from 30 to 90.

Table 19. Two-way ANOVA on Socio-Emotional Development

Tests of Between-Subjects Effects: Baseline Socio-Emotional Development							
Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	1453653.038	1	1453653.038	11392.957	.006	1.000
	Error	127.592	1	127.592[a]			
Intervention	Hypothesis	525.782	2	262.891	12.094	.076	.924
	Error	43.473	2	21.737[b]			
Child-Gender	Hypothesis	127.592	1	127.592	5.864	.136	.745
	Error	43.655	2.006	21.757[c]			
Intervention * Gender	Hypothesis	43.473	2	21.737	.404	.668	.003
	Error	13779.528	256	53.826[d]			
a. MS(Gender)							
b. MS(Intervention * Gender)							
c. .999 MS(Intervention * Gender) + .001 MS(Error)							
d. MS(Error)							

Following the end line assessment, ANCOVA was conducted and results showed that there was a statistically significant mean difference on the socio-emotion development of preschool children that received interventions in the combined group (M=78.06, SD=7.365), only healthy group (M=73.65, SD=9.248), and non-intervention groups (M=72.05, SD=8.479), even after controlling for the effects of the gender and preexisting differences during baseline, $F(2, 208) = 5.089$, $p<.05$, partial eta squared = .047.

5.5.1. Self-regulation

The self-regulation sub-test of the socio-emotional test consisted of 9 items was scored with a minimum of 9 and a maximum of 27 possible scores. Following the ratings of the preschool children by their teachers on self-regulation, there was no statistically significant difference among those in the three intervention groups. That is, the mean and standard deviations on self-regulation for the combined group (M=22.1, SD=4.080), only healthy group (M=22.38, SD=3.505), and non-intervention group (M=23.67, SD=3.595); and for males (M=22.72, SD=3.967) and females (M=22.75, SD=3.590) showed that male and female children in the three intervention types did not differ in the task on producing set of counters.

Table 20. Descriptive Statistics on Self-regulation

Dependent variable: Baseline Self-regulation (score ranges 9-27)				
Intervention Type	Gender	Mean	SD	N
Combined Intervention	Male	22.34	4.345	44
	Female	21.82	3.797	39
	Total	22.10	4.080	83
Only Health Intervention	Male	22.55	3.404	40
	Female	22.24	3.614	49
	Total	22.38	3.505	89
No Intervention	Male	23.22	4.077	46
	Female	24.14	2.985	44
	Total	23.67	3.595	90
Total	Male	22.72	3.967	130
	Female	22.75	3.590	132
	Total	22.73	3.775	262

*Score: 9-27

Results ANCOVA showed that there was a statistically significant difference on self-regulation scores between the combined group (M=23.47, SD=3.769), only healthy group (M=23.01, SD=4.059), and non-intervention group (M=21.63, SD=4.005) even after controlling for variations due to gender and pre-existing baseline scores, $F(2,2, 229) = 4.403$, $p<.05$, partial eta squared = .037.

5.5.2. Social Cognition

Another sub-test of the socio-emotional test is social competence which consists of six items with minimum and maximum possible scores of 6 and 18 respectively. The means and standard deviations on social competence for the combined intervention group (M=16.00, SD=2.358), only healthy intervention group (M=15.84, SD=2.383), and non-intervention group (M=16.20, SD=2.012). There were no statistically significant differences in social cognition among the combined intervention, healthy intervention, and non-intervention groups. Besides, there were no statistically significant differences between male (M=15.65, SD=2.465) and female (M=16.38, SD=1.960)children on social cognition.

Table 21. Descriptive Statistics on Social Cognition

Dependent variable: Baseline Social cognition (Score ranges 6-18)				
Intervention Type	Gender	Mean	Std. Deviation	N
Combined Intervention	Male	15.98	2.592	44
	Female	16.03	2.096	39
	Total	16.00	2.358	83
Only Health Intervention	Male	15.13	2.503	40
	Female	16.43	2.131	49
	Total	15.84	2.383	89
No Intervention	Male	15.78	2.280	46
	Female	16.64	1.601	44
	Total	16.20	2.012	90
Total	Male	15.65	2.465	130
	Female	16.38	1.960	132

	Total	16.02	2.251	262

*Score: 6-18

Results of the analysis of covariance showed that there was a statistically significant mean difference on social cognition scores among the combined intervention group (M=16.41, SD=2.164), only healthy group (M=15.47, SD=2.649), and non-intervention group (M=15.64, SD=2.323) even after controlling for gender and baseline effects, $F(2, 232) = 3.451$, $p<.05$, partial eta squared = .029.

5.5.3. Social Competence

Social competence is a nine item sub-test of the socio-emotional test. There were no statistically significant between the combined intervention groups (M=23.35, SD=3.466), healthy intervention group (M=23.53, SD=2.849), and non-intervention group (M=24.79, SD=2.438) on social competence component of the socio-emotional test. Besides, there was no statistically significant difference between males (M=23.81, SD=3.242) and females (M=24.00, SD=2.732) on social competence scores.

Table 22. Descriptive Statistics on Social Competence

Dependent variable: Baseline Social competence (Score ranges 9-27)				
Intervention Type	Gender	Mean	Std. Deviation	N
Combined Intervention	Male	23.48	3.855	44
	Female	23.21	3.010	39
	Total	23.35	3.466	83
Only Health Intervention	Male	23.50	2.979	40
	Female	23.55	2.769	49
	Total	23.53	2.849	89
No Intervention	Male	24.39	2.777	46
	Female	25.20	1.972	44
	Total	24.79	2.438	90
Total	Male	23.81	3.242	130
	Female	24.00	2.732	132
	Total	23.90	2.992	262

*Score: 9-27

ANCOVA result showed that there was a statistically significant difference on social competence scores among the combined intervention group (M=25.50, SD=1.894), only healthy group (M=23.26, SD=3.512) and non-intervention group (M=22.58, SD=3.048) even after controlling for gender and baseline effects, $F(2, 230) = 15.449$, $p<.05$, partial eta squared = .118.

5.5.4. Emotional Wellbeing

The emotional wellbeing component of the socio-emotional test consisted of six items. There were no statistically significant difference between the combined intervention group (M=11.81, SD=3.221), only healthy intervention group (M=12.54, SD=2.211), and non-intervention group (M=11.96, SD=3.197). There was no gender difference between males (M=11.88, SD=2.944) and females (M=12.33, SD=2.878) on emotional wellbeing sub-test of socio-emotional test.

Table 23. Descriptive Statistics on Emotional Wellbeing

Dependent variable: Baseline Emotional Wellbeing (score ranges 6-18)				
Intervention Type	Gender	Mean	Std. Deviation	N
Combined Intervention	Male	11.20	3.203	44
	Female	12.49	3.145	39
	Total	11.81	3.221	83
Only Health Intervention	Male	12.48	2.386	40
	Female	12.59	2.081	49
	Total	12.54	2.211	89
No Intervention	Male	12.00	3.055	46
	Female	11.91	3.374	44
	Total	11.96	3.197	90
Total	Male	11.88	2.944	130
	Female	12.33	2.878	132
	Total	12.11	2.914	262

*Score: 6-18

ANCOVA results showed that there was no statistically significant mean difference on emotional wellbeing component of the socio-emotional development among the combined intervention group (M=12.70, SD=2.521), only healthy group (M=12.12, SD= 2.323), and non-intervention group (M=12.28, SD=2.623) even after controlling for gender and baseline effects, $F(2, 227) = 1.582$, $p>.05$.

5.6. Relationship between early literacy and numeracy skills, socio emotional development, and executive functions

From among several measures of early learning, early literacy and numeracy skills, socio-emotional development and executive functions have been selected as some of the major outcomes in early learning. In this section, we shall present how each of these outcomes are related.

a) The relationship between early literacy and mathematics skills

The scores on early literacy skills were found be positively and significantly related to the scores on early mathematics skills ($r=.342^{**}$). This shows that those that score higher on early literacy tests are also likely to score higher on early mathematics tests, and vice versa if they score lower. Even then, the relationship is moderate in degree.

b) The relationship between executive functions and early literacy and math skills

Executive functions are important organizers of the body and the mind which are develop during early learning. They have control over working memory and inhibition. In this study, it was found out that early literacy skills are positively and significantly correlated with measures of forward digit span ($r=.246^{**}$) and backward digit span ($r=.412^{**}$).However, no significant relationship between early literacy and HTSK ($r=.103$) was found. Although this is contrary to most studies, we shall explore in the post test if there is still no relationship between early literacy and HTSK test.

On the other hand, statistically significant relationships were found between early mathematics scores and forward digit span ($r=.257^{**}$), backward digit span ($r=.295^{**}$), and HTSK tests ($r=.244^{**}$).

c) The relationship between early literacy and math skills and socio-emotional development,

There were significant relationship between socio-emotional development and early literacy skills (r=.321**) and early mathematics skills (r=.441**) which shows that those emotionally regulated and socially matured children are more likely to score higher on literacy and mathematics tests and vice versa if the socio-emotional scores were lower.

Table 24. Inter correlations among measures of components of school readiness

		Correlations						
	N	Socio-emotional Total Score	Early Literacy Total	Early Math Total	Forward Digit Span	Backward Digit Span	HTKS Total	Copying Total
Socio-emotional Total	262	1	---	----	---	---	---	---
Early Literacy Total	250	.321**	1	----	---	---	---	---
Early Math Total	182	.441**	.342**	1	----	---	---	---
Forward Digit Span	261	.247**	.246**	.257**	1	----	---	---
Backward Digit Span	261	.337**	.412**	.295**	.379**	1	----	---
Forward & Backward Digit Span	260	.353**	.406**	.341**	.---	---	.239**	.232**
HTKS_TOTAL	239	.199**	.103	.244**	.169**	.222**	1	---
Copying Total	261	.103	.201**	.239**	.164**	.214**	.002	1

**. Correlation is significant at the 0.01 level (2-tailed).

d) The relationship between socio-emotional development and executive functions

Socio-emotional development and executive functions were also found to be statistically and positively related. HTSK (r=.199**), forward digit span (r=.247**) and backward digit span (r=.337**) were found to be related with a measure of socio-emotional development.

6. Qualitative data about Whiz Kids

Attempts were also made to explore the situation of Whiz Kids material provisions in the supported primary and pre-primary schools. To this end, interview was conducted both before and after intervention with nine sampled primary school directors/ or delegates and another nine preprimary school teachers on support received, perceived benefits of this support, challenges/ gaps experienced, and suggested areas of improvement. Below is a synthesis report of the individual interview results on these issues.

6.1.Support received

The interviewees from all the nine primary schools confirmed that they have received different support services from Whiz Kids by enlisting, for example, materials like the following:

- Story books for kids (Amharic and health)
- TV set with its decoder (software)
- Shelves
- Teachers' manual
- Training for focal persons on how to utilize the materials
- Follow up and support services

Whereas the response of all the interviewees regarding the materials received is similar, there are, however, some differences. For example, posters were not the materials that were received by all sampled schools. For example, the interviewees in five primary schools (Tesfa Kokeb, Qey Kokeb or Ms Ford School, Africa Birhan, Hibret Fire, and Meskerem One) reported that their respective schools didn't receive posters. The other material that was not received only in Tesfa Kokeb primary school was video part of the science lesson for grades 3 and 4. Similarly, interviewees indicated that the video part of the science lesson for grades 3 and 4 was not received.

In all the sampled schools, the materials were placed in MLC rooms where students and teachers accessed them on a schedule time. The only exception to this practice came from Salayish, and this was mainly due to security problem. All the interviewees in the nine schools believed that the importance of the Whiz kids support was beyond what they could express in words. They indicated that the support was extremely important and supporting the students in building their reading and

their initiative to learn in general. But, all of them emphasized that the materials supplied were not sufficient compared with the number of students in the schools.

In a similar way, interviewees in all pre-primary schools, where Whiz Kids support was provided, gave a little lengthier list that included the following:

- Story books for kids
- Posters
- Flash cards
- TV set with its decoder
- Book shelves
- Teachers' manual
- Trainings
- Health books for kids
- Follow up and support
- Chart board

The two lists above may not contain an exhaustive presentation of support received by Whiz Kids, but they show how interviewees were familiar to the items as they were mentioning without any reference. Note also that the list given by preschool group is longer possibly entailing that the Whiz Kids support could be better, as expected, at the lower levels. The table containing the list of problems suggests that this could be the case.

6.2.Benefits of Whiz Kids resources

During the baseline, interviewees were asked to list out any support their preschools were receiving from outside source, without mentioning Whiz Kids. In most cases, they mentioned the support from Whiz Kids among the different supports they enlisted. They usually mention Whiz Kids promptly compared to other support. The most remarkable comment that the interviewer encountered was at Gelan No.2 preschool in which, after having mentioned sources of support in one's preschool, an interviewee realized one missing support in the list given and expressed this saying, "How come I forgot to mention the most significant support of all-Whiz Kids!"

Accordingly, interviewees were asked to prioritize the different supports they got in terms of relevance to the teaching learning process, and all had rated Whiz Kids as number 1. The reasons included the following (names in parenthesis indicate the preschool from which interviewee mentioning the reason has come from):

- "It has amazing impression on the children. The children are fascinated by the stories that are accompanied by the movies. This program has motivated the children to read because it helps them use both their senses of sight and hearing" (Tesfa Kokeb).
- "The children are impressed by the books and the presentation with the videos and their changes are vivid as it was revealed in the feedbacks from the parents and teachers" (Salayish).
- "All other supports are important in the short- term and even lead to dependency. But, the support from Whiz Kids is shaping the generation of children, using both the combination of images and sounds in a way that initiates children to learn better. It also supports the teacher" (Ediget Besira).
- "The support from Whiz Kids is helping the children grow especially in cognitive abilities because the lessons are given in the form of stories coupled with videos. And this support is prioritized because it is a sustainable way of dealing with the problem rather than short- term handouts" (Klinto).
- "The presentation is well thought, easily catches children's attention, impressive for the children, and teaches important lessons in the way they enjoy. The lessons are simple, precise, and easy to understand by the children" (Hibert Fire).
- "It has enabled the children to learn while enjoying. This has taught us that even in the absence of proper facilities we can teach them with whatever is available while children are playing. Previously, we were criticized for the inability of the children to read when they reach at grade one, but now with the support of Whiz Kids, the feedback has been changed. Now they are reading better. The decision of Bureau of Education to incorporate Whiz Kids in government schools is a good decision" (Gelan No.2).
- "It has the power to attract children's attention and has led them develop important practical behaviors. For example, after the support of Whiz kids, especially the health lesson, the children brought with their own initiative a liquid soap to be used at school; afterwards parents

are bringing the soaps and this has been the norm since then. Also during the lunch time, it is common to see many children reading stories" (Meskerem One).

With regard to the relevance/ importance of the support to the teaching and learning process, all the interviewees in the nine sampled primary schools expressed how Whiz Kids is important in the following ways:

- It concretizes the lessons learnt
- It helps children learn while being entertained, and makes them learn enthusiastically. They also have a happy mood while learning. So it creates initiative to read and learn on the part of the children. Some of the interviewees relate this increased motivation to learn due to the fact that the design of the materials involved the integration of the use of the different senses such as the visual and hearing senses.
- It has greatly improved the children's reading ability. In relation to this, one of the interviewees in Qey Kokeb/ Ms. Ford Primary school has witnessed the following: " as the result of this intervention, the children's reading ability has greatly improved. This improvement is ascertained with the feedback from parents and teachers alike."
- The intervention has provided the children good role models in the video lessons. In the lessons it is children who read the stories and when our students watch they have good role models that motivate them to get engaged in reading. In relation to this, one of the interviewees in Hibret Fire said the following: "as the result of the intervention the ability of the children to accept new lessons quickly has very much improved".
- The intervention is highly relevant because the design is from simple to complex, supported with pictures and sound, it is attractive and artistic that the children likes very much.
- It has the power to catch children's attention and conveys important lessons while being entertained.

At the time end line assessment was made, attempts were made to check perceived benefits of Whiz Kids by interviewing other participants. That is, using semi structured interview, teachers teaching grades 1-4 and directors in all the nine sampled primary schools were asked about their perception of the benefits of Whiz Kids resources. All of them believed that Whiz Kids indeed had

important benefits for the children, the teachers and the teaching learning process as a whole. Out of the discussion with these teachers, the following benefits stood catchy:

- It has served as good supplementary for Science and Amharic lessons (all nine schools).
- It gave the learners the opportunity to practically observe what they have learned orally in class. And this makes things very much clearer for the learners (all nine schools).
- It has increased children's motivation to read and learn. They usually anticipate the session where they get Whiz Kids materials eagerly. It has helped the teaching learning process become clearer, inspired the learners to ask questions, and motivate them to experiment creative ideas as the result of what they see from the videos. (all nine schools).
- It gives for the children the opportunity to learn while being entertained, observe demonstrations of processes they learnt orally in class, observe role models in the lessons and increases their motivation to learn. (all nine schools)
- These resources are also supportive resources for teachers and served as a good model of teaching young children effectively (all nine schools). Following the examples of Whiz Kids teachers are preparing local stories and songs as teaching aids (Salayish).
- Effective o improve educational performance of children, as opposed to different initiatives like grouping 1 to 5 that were aimed at enhancing educational performance of children, the intervention from Whiz Kids has been found to be successful (Salayish).
- It helps the children learn better, they don't forget what they have learned. Thus it is serving as one means of teaching aid. (Meskerem One, Salayish)
- Enabled children to identify letters easily and helped them to read and write, even the slow learners who were supported easily with these resources (Ediget Besira, Klinto).
- This has helped to make the lessons clear and developmentally appropriate (Africa Birhan).
- It has been found to be most effective in supporting slow learners. One of the biggest challenges they had was the fact that there were many children who couldn't cope up with the good learners. (Klinto, Salayish)
- Positive feedback from parents on the improvement of children's progress. Prior to the utilization of the resources from Whiz Kids parents used to complain that their children were not learning properly. But now that has been changed and a positive feedback is becoming the norm. (Klinto, Ediget Besira)

- The program has increased the intimacy between teachers and students (Salayish).
- It gives young children the opportunity to read, learn life skills such as how they can be healthy, safe from danger, and how they can communicate with other people. The children are happy because what they learnt orally in class is demonstrated with the video lessons. It gives them the opportunity to relate the two lessons (Hibret Fire)
- It is effective in assisting slow learners (Hibret Fire)

In the same way, the pre-primary interviewees witnessed the following benefits of Whiz Kids resources:

- ***It is supportive for the teacher***. It gives teachers the advantage of teaching students with easier way (all the seven schools).
- It has ***aroused teachers' motivation*** to teach children. It has inspired teachers to modify their method of teaching following these resources in which children are learning with love, and own initiative (all the seven schools).
- The video lesson has also enhanced their ability to listen and speak very well. The overall intervention has ignited the enthusiasm for reading and also they strive to narrate what they read (all the seven schools).
- It has enabled the children to read and narrate the stories with self-confidence. As the result of this, they have also started reading other books.(Tesfa Kokeb)
- ***It has become supplementary books*** for teachers especially in the absence of proper books for KG level from the government (Tesfa Kokeb, Ediget Besira)
- It has ***served as a communication medium*** between teachers and parents (Tesfa Kokeb)
- It has ***created an atmosphere of discussion among the children*** on the reading and the movies (Tesfa Kokeb)
- ***It provides real learning***. Children like actions, they learn much better from what they see rather than what we tell them. This was evident in their change of behavior related to hand washing. They have made it their culture since they learnt it from the video of Whiz Kids." As the result of such intervention children become happy, enthusiastic to learn, develop their ability to relate what they see from the movie with what they learnt orally in class, it stirs up their creative abilities as they watch different creative processes, helps them

identify rules of games, and in overall it has important contribution in enhancing their thinking ability (Meskerem One).

- ***Supportive and insightful for the teachers***. Besides motivating the children, it has also positive implications for teachers as well. It has given me insight on how best I should handle and teach children" (Meskerem One)
- The students have developed the enthusiasm for reading and practically their reading ability has increased. (Ediget Besira)
- ***It has enabled the children to identify words easily*** because the material is with attractive pictures, written in their mother tongue, with simplistic way of presentation (Ediget Besira)
- ***It encourages children's creative ability***. She related this with the task of combining letters in the flash card to form words. (Ediget Besira)
- ***Children in preschool are able to read well*** which in some cases children in grade one or two may not be able to read well. (Ediget Besira)
- ***It has motivated parents.*** They usually take story books on loan basis and they return after reading it along with their children. Moreover, it has also motivated parents' interest to follow up and support the progress of their children which was hard to find. (Ediget Besira)
- ***The children prefer to read on their own initiative***. Some prefer to read during break times rather than playing. (Ediget Besira)
- ***The children are initiated to ask questions*** out of what they read. (Ediget Besira)
- ***It has helped children learn easily*** in an entertaining way with pictures, movies, and stories. It has helped them to internalize what they have learnt and they don't forget it easily. (Klinto)
- ***It gives them the opportunity to relate*** what they have learnt orally in class so they like it very much. (Klinto)
- The relationship between parents and their children and parents' follow up has increased because of the reading assignment (Gelan No.2)
- The parents' habit of buying supportive books has increased. They said these were evident from the feedbacks they usually get from parents. (Gelan No.2)
- It has helped children develop their speaking ability as they narrate along with the doll speaking in the movie. (Gelan No.2)

- It has enhanced the children's cognitive ability, develop reading habit, and ignited competition among peers (Salayish).

During this endline assessment, interviewees were also asked very specific questions regarding perceived impacts of whiz Kids materials. The responses summarized in the table indicates that all sampled primary and pre-primary teachers consider Whiz Kids resources to be able to significantly increase students' motivation to learn, improved reading skills and health knowledge, and were also perceived to be supportive of one's teaching, provided great contribution to students, loved all the students, had high quality and fit to student levels, and, therefore, were reported to be used by students. Only few expressed views antithetical to this; that they required additional labor, were of low quality and don't fit student levels, not convenient for use, and, therefore, were not used during teaching.

Preprimary and primary school directors/ vice directors and teachers (N=47) perceived benefits of Whiz Kids resources

Items	Responses	Freq.
General changes in students' motivation to learn	Has increased very much	47 (all)
	Has increased adequately	0
	No change	0
How much the Whiz Kids have impacted on students' reading skills and health knowledge	Has increased very much	30
	Has increased adequately	17
	No change	0
Teachers' general perceived attitude about Whiz Kids Materials: a. Supportive of my teaching; so I used them b. Provide great contribution to students, so I used them c. Students love the materials; so I used them d. Have high quality and fit student levels; so I used them e. Require additional labor; so I didn't use them f. Low quality and don't fit student levels; so I didn't use g. Not convenient for use; so I didn't use them	A	3
	B	1
	D	1
	f,g	1
	a,b,c	11
	a,b,c,d	27
	a,b,d	3
	Total	47

6.3.Challenges/ gaps encountered

Despite the perceived benefits above, a number of challenges/ gaps were also mentioned by interviewees both at baseline and endline assessments. Interviewees in all the nine primary schools had reported that the implementation of the intervention was not without challenges. The challenges they raised fall under the following themes:

***Challenges related to the contents of the materials*:** Although the interviewee highly appreciated the intervention, the interviewees pointed out the following limitations that need to be addressed in order for such program to thrive:

- Lessons for grade one is beyond their level and the video lessons are not graded as per their level.
- In the video lessons, Amharic lessons for the second semester are missed.
- Video lessons cover only some of the contents of the curriculum

***Challenges related to the delivery of the support materials*:** The interviewees reported that when the materials came some components of the package were missed and the delays had negative impacts in the course of implementation. For example, some interviewees in Hibret Fire reported that the software part of the video lesson was delayed. It was only the books and the TV set that were received. Similarly, the interviewees in Klinto said that the school did not receive teachers' manual and science books.

***Challenges related to lack of safe rooms to place the materials*:** The lack of secured rooms is one of the major challenges all the school had reported. They said they couldn't put the books in classrooms because the windows and doors are not safe and had to resort to MLC. In some cases, (such as in Salayish) even the MLC was not safe, too. They said they were forced to put the materials in the library which interferes with of other reading programs. In others like Klinto, they were forced for some time to move the materials like the TV set back and forth from the store. Some others like Hibret Fire expressed their concerns that the desks in the MLC are not comfortable for young children.

***Challenges related to the Training and Follow up Support Provided*:** Interviewees in all the schools had expressed their concern on the training provided in terms of content, identification of the persons to be trained, and the number of people to be trained. For example, the interviews in Klinto

argued that teachers, who are the main actors, were not informed about how to use the materials. They said it was other officials who participated in the training and didn't share what they got there and teachers had to rely on common sense. Similarly, interviewees in Gelan No.2 complained that the training was just an orientation where over 500 people gathered; it was not proper training. To make things worse, as some interviewees in Ediget Besira said, those who were trained didn't communicate properly and the follow up from Whiz Kids was not sufficient as it was reported by interviewees in Salayish.

***Challenges related to the Adequacy of the Materials*:** The interviewees in all nine schools surveyed reported that the materials they have received are not adequate for the number of students. The interviewee in Ediget Besira told us that the reason why they resort to MLC rooms rather than putting the books in the classrooms, besides the security problem, is the fact that the materials are not sufficient for all the classrooms.

Regarding the implementation of Whiz Kids, interviewees from pre-primary schools (e.g. Gelan No.2), too, have talked about the following challenges:

- In the health lessons, we have the video but we don't have the books and it is difficult for the teacher to follow. To make this up what we are doing is we are preparing the contents by watching the videos.

- The training was given to administrators, while the task is done by teachers. Those who have been trained haven't trained those under them. For example, we are using the manual as per our understanding.

- After long time, people from teaching and learning department tried to give us orientation training which was not sufficient.

Gaps identified by the primary school interviewees during endline assessment included the following:

- There are redundancies that need to be improved. What they have learned in grade 2 appears again in grade 3, and even in grade 4. And this has counterproductive effect in their motivation (Tesfa Kokeb).

- The supplementary materials do not match the curriculum well (Tesfa Kokeb).
- The focus is on science and it would be better if focus on Amharic is also broadened like science. Besides, it would be good if English language and Math were included using same methodology (Meskerem One).
- In the movies, they see some celebrities conveying important messages and that has given them the opportunity to have good role models (all nine schools).
- It doesn't match exactly with the curriculum (Ms Ford).
- There are repetitions as well as topics not covered (Ms Ford).
- The main focus is only on science lessons, better if Amharic lessons are also equally emphasized (Ms Ford).

The pre-primary interviewees also indicated the following intervention gaps in the end line assessment:

- There are redundancies that need to be improved. What they have learned in KG1 appears again in KG2, and even in KG3 (Meskerem One)
- The supplementary materials do not match the syllabus well (Meskerem One)
- Teachers were not trained well on how to utilize the resources. Most of them are handling it with their own initiative (all seven schools)
- The science lessons are not in line with the capacity of the children and it doesn't differentiate among the different levels within KG. And this has a counterproductive effect as it makes them bored when they get same materials again and again. (Klinto)
- The children have got the opportunity to observe role models conveying key messages in the video lessons (Hibret Fire)

Preprimary and primary school directors/ vice directors and teachers (N=47) were asked about problems encountered in using the whiz Kids materials and their responses are presented in the table. As indicated in the table, while only 7 were inclined to believing that 'no major problem was encountered', most of the interviewees from both groups expressed lack of adequate training as a major problem; space problem and inadequate supply of materials were the next major problems. Note here that inadequate supply of materials was more frequently reported by primary than pre-primary interviewees.

Problems encountered in using the Whiz Kids materials (Endline assessment)

Responses	Primary school interviewees (20)	Pre-primary school Interviewees (27)
Not getting adequate training	12	10
Narrowness of space	2	5
Materials inadequately supplied, disappeared	8	1
Other listed problems	See the list given	See the list given
No problem encountered		7

Primary school interviewees mentioned the following problems:

- More beneficial if the materials have continuity with the regular textbooks
- If displays are compatible with the title of the books
- If book corners are complete
- Contents are inadequate and confined only to the first semester
- Not compatible with student textbooks
- Makes it difficult to complete student textbooks as planned
- Power interruption
- One TV set inadequate
- Lack of adequate training to teachers and across all the grades
- Lack of materials allowing children to learn through touching and manipulation by their own hands
- If a program on 'reading in Amharic' is included in the displays, it will help children to easily learn reading
- Amharic lessons not included
- If children are helped to learn connecting Amharic alphabets
- Focused only on same lessons for example like environmental science
- Better to give focus also to other subjects the way focus is given to science

Pre-primary school interviewees mentioned the following problems:

- Shortage of time

- Although training is not a problem, giving additional training would help us improve our future performance
- Give more training
- Non-existence of TV set in every classroom; thus making loss of time while children move to and from TV room
- Problem of electric power supply
- Same materials being used for children in the three groups; better if they are age-graded
- TV set in every classroom so that children would attend as per their age-level
- Incompatible child TV set ratio (1 TV set for 462 children)
- Whiz Kids materials were supplied with delay, not adequately supplied even then, and we were not shown how to use them

6.4.Suggested areas of improvement

Along with challenges, interviewees from the schools have suggested different ideas which they saw as areas of improvement. These areas of improvement fall under different themes like content related, supply of materials related, training of teachers related, and follow up and support related:

Content Related:

- Better to put the lessons into levels as per their developmental level.
- Increase the coverage of ideas raised from 5-15 minutes into a 30 minutes lesson. They said, children like it most and this program has to be strengthened
- It is better if the lessons are well aligned with the contents of the curriculum

Supply of Materials:

- Better if the number of books increased so that we can lend for the students
- Better if the grade 3 & 4 lesson is supported with the video, the CD (or software) is lacking
- Like in the pre-primary school, it would be good if there are posters
- If the number of TVs could be increased.
- The quality of the materials like the shelves should be improved. It would be better if that is made from stronger material
- Increase supplementary books in type and quantity

- It would be good if inputs can be fulfilled for the center. For example, chairs for the children to sit on.
- It would be good if such program can be implemented in all schools
- It would be good if every classroom is organized with the resources of Whiz Kids

Training of Teachers:

- Increase the number of focal persons trained; better if all teachers area trained and it would be good if the content of the training embraces methodological aspects.
- Increase the follow up and implementation of the project on the ground.

Follow Up and Support:

- The follow up and support should be consistent. The frequency of the support (i.e. twice per semester) was inadequate

In a similar vein, the pre-primary school interviewees have suggested the following recommendations for a better implementation of the program:

- The training should be proper training, not just orientation (Gelan No.2)
- More number of people should be trained, and the major target to be trained should be teachers (all the preschools)
- The supply of the support (books and TV) should be comparable with the number of students (all the preschools), i.e., more is needed.
- More follow up and support is required (Salayish)
- Like the reading in Amharic, it would be good if there are supplementary books about numbers, and books that teach English letters and words in a simpler way (Gelan No.2)

The primary school interviewees suggested the following recommendations for the improvement of the program in the endline assessment:

- It would be good if teachers are given sufficient training on how to utilize the resources (all nine schools).
- The video lessons should be differentiated by grade level (all nine schools).
- It would have been great if it was designed in line with the text books (Gelan No.2)

- Better if there could be exercises after each lesson (Ms Ford)
- Better if the reading part is emphasized like the science. If children could see other children reading, where they read, and the overview of the outcome in later life (Hibret Fire)

The pre-primary interviewees suggested the following recommendations for the improvement of the program in the endline interviewing:

- The focus is on science and it would be better if English language and Maths as well were included using same methodology (Meskerem One)
- These resources are so invaluable that the intervention should also be extended to private schools (Ediget Besira)

7. Discussions, Conclusions and Way forward

The majority of the preschoolers seem to achieve an intermediate and above level of proficiency in the endline assessment showing that they have achieved a good status of readiness for primary schools. This appears very encouraging in terms of overcoming the serious early reading difficulties that commonly characterize first cycle primary school students in the Ethiopian classrooms. The question is, however, if these changes in patterns are the result of Whiz Kids intervention or other factors. We may say that mere attendance into a regular preschool alone would make important contributions of one kind or another for children's learning. In support of this skepticism, statistical tests seem of course to confirm that there are no significant endline improvements over the baseline as well as improvements of the intervention groups from the non-intervention ones.

Absence of significant statistical test results in themselves are not, however, significant evidences of absence of contributions of the intervention made. There are so many justifications in the numbers themselves as well as others that speak in support of the role of the intervention. First and foremost, the graphs show consistent patterns of increment from baseline to endline in all the measures and groups; suggesting that there could be one underlying factor that occurs across measures and groups. In fact, the changes in the patterns noted in the graphs seem in some cases to include even a shift for the majority of students from the intermediate level in the baseline to the

proficient level in the endline as in, for example, early literacy, HTSK, and socio-emotional subscales. Furthermore, evidences suggest that, though not to a significant level, patterns seem to consistently show that in these same four measures the combined group seems to achieve a bite higher than the other groups. Third, more importantly, there are some significant test results showing that the patterns seen would unfold themselves into significant results, say for example if enough time is given for maturation. Letter identification subscale of the early literacy component as well as the socio-emotional component measure yielded the intervention has b group frrough a significant impact even when the effect of the baseline were statistically partialled out using the UNCOVA model. Fourth, remarkable evidences rather seem to emerge from the qualitative data in which data collected both in the baseline and endline assessments by an uninformed assistants (about the intervention and the labels assigned to the groups to avoid bias) have underscored the perceived positive impacts of the Whiz Kids intervention on student motivation, learning, and achievement as well as how supportive, facilitative, and educative these resources were for teachers and the teaching-learning process at large both in the project preschools as well as primary schools. Data generated from the horse's mouth were presented as is with enough vignettes therein to help readers get a direct account of the feel of the target group. The concern of participants was not at all if Whiz Kids are useful but how to sustain them in the time ahead.

If this is the case, then why did statistical differences failed to unfold themselves in the analysis. There reasons could relate to assessment approaches, time factor, and implementation issues. First and foremost, the impacts of the intervention seem holistic than boiling specifically down to student learning alone. Impacts seem to range from micro (individual child) to macro (school) levels and hence the assessment was supposed to be designed to address a range of issues on top of student learning. Hence, taking a broader and global perspective would have enabled capturing the multi-faceted impacts of the assessment. But, because the purpose of the project was, at the end of the day, specifically geared to facilitating early reading, numeracy and development, MELQO was used to measuring child-related outcome alone. Second, the intervention package would obviously require a reasonable period of time to make differences. However, in a time span where the project was implemented nearly for one academic year (i.e. about ten months), the time span between the baseline and endline assessment was only two months. One would imagine how short such a span is to allow intervention unfold itself full scale. The third possible explanation, in fact proved to be

unworthy, is if the intervention has developed much higher skills and yet MELQO was not able to capture as it deals with measuring basic skills. Surly, the purpose of the project MELQO is to promote school readiness and MELQO aims at capturing school readiness data. Hence, what if students have achieved more than school readiness level. To ensure this, we developed additional literacy and numeracy skills (to MELQO) in the endline assessment and results showed that even when advanced versions of testing are used no significant difference still exists between intervention and non-intervention groups and hence this is not a worthy explanation. Fourth, a number of NGOs are working on early childhood care and education centers in Addis Ababa to provide technical, financial, material, and professional support that would possible offset absence of support from Whiz Kids. Assistant data collectors were oriented to document (in addition to conducting direct assessment on children) on kinds of NGO support services each preschool has obtained and their documentation suggested that there was no single preschool that didn't fail to receive assistance of one kind or another. Almost all of them received support at least from one NGO and this would then mean that they are getting equivalent intervention but a different source.

The fifth, and perhaps the most significant concern, relates to the extent to which intervention was implemented as planned-problem of implementation fidelity. Qualitative data suggested a host of concerns ranging from design (or content of intervention) to irregularities in deliver (delay, missing components in a package making usage impossible), storage problems (limiting access to the resources as required), and non-functional resources with nobody around to mend them, and lack of training among teachers on the ground to use the resources. Hence, despite the huge amount of resources invested in the schools, the actual take off from this investment or its return could be as much as it is desired if the frontline workers are not properly deployed, empowered, and supervised.

In a nutshell, the analyses of MELQO measures and related data have indicated the following major findings:

1. The majority of sampled children have generally exhibited an intermediate to proficient level in almost all components of MELQO except for backward counting. This suggests that they have achieved the requisite skills of school readiness to commence on formal education and if subsequent experiences will be able to build on these requisite skills, then the early reading

problems so rampant in Ethiopian primary schools could be solved at least in the schools targeted by the project.

2. Levels of proficiency seem to improve from baseline to endline assessments and between groups; though not significant in many of the statistical tests conducted therein. General patterns of figures and visual inspection of data through graphs shows the possibility that there are some indications suggesting for the impact of the intervention.
3. Some statistical tests have also shown that the intervention could be effective. For example, the letter identification component of the early literacy sub-scale has shown significant positive impact of the intervention from baseline to endline assessments.
4. Furthermore, it was found out that Whiz Kids was able to significantly and positively influence socio-emotional functioning even much better than reading, numeracy, and fine motor skills
5. Qualitative data from directors and teachers in the project-targeted primary and preschools gave, both in the baseline and endline assessment, a strong support about the effectiveness of the intervention.
6. However, the shorter time span between the pre-post measurements, possible low implementation fidelity, and possible exposure of the non-intervention groups to equivalent sources of support might have unduly suppressed the impact of the intervention on student learning outcomes.
7. Statistically significant correlation indices were found among the subscales suggesting that they are measuring similar constructs. In fact, it was surprising to note that even the socio-emotional skills were strongly correlated with other cognitive, literacy, and motor skills suggesting the established fact that development in the early years are interconnected.
8. Support from Whiz Kids to primary schools was found to be highly relevant and contributing a lot for children's learning as well as assisting the teachers; but a lot of problems were reported challenging the fidelity of project implementation.

It tune with our suggestion given earlier in our baseline observation, we still insist that the following action points be seriously attended to create a platform for optimizing impacts of the intervention as well as for scaling up the intervention to a wider context.

1. For the program owner: one more revision be made on the contents of the materials developed, training be given to frontline teachers in using and mending the Whiz Kids resource, delivery be made much earlier than the date of school commencement, more frequent supervision and

follow up be made to see to it that the program is being implemented as planned.

2. The program owner also needs to seriously address other concerns mentioned by preschool and school directors as much as possible before implementing Whiz Kids in the time ahead.
3. For preschools and primary schools: they all need to be advised, encouraged and assisted to do whatever it takes to properly utilize the resources provided to them and as per the manual as well as the trainings offered. It needs to be underscored that we can't, as a poor nation, afford to underutilize the meager resources at our disposal with different pretexts and yet complain that provisions are inadequate. It is worrisome that commitments, feelings of enthusiasm, and sense of responsibilities are either less evident or are not translated into action as it was informally commented by data collectors.

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Meeting Note 2: Date: June 09, 2018. Meeting venue: WKW office Participants: Rotarian Saba, Rotarian Yanet, Rotarian Mani, Rotarian Askale, RotractorKidanemarima, RotractorMekdim , Rotarian Brukty, Genet and Semhar. Agenda of the day: Discussion on the schools that are monitored by the team, Way forward on how to implement the project.

Meeting Note11: Date: March 23, 2017. Meeting venue: Addis Ababa Education Bureau . Participants: AmlakuTebeje, Solomon Wondimu, FirehiwotAssefa, BruktawitTigabu and JanitZerihun. Agenda of the day.

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Summary Tsehai Classroom Library Project 1st round follow up November –December 2018

[11]Discussion with AAEB on the detail work plan of Tsehai Loves Learning- Read at home program.Meeting Note.Discussion on selection of forty schools for the Tsehai Loves Learning- Read at home program.Discussion on A.A. Education bureau's financial commitment to give training for teachers and how WKW can integrate its training plan with the bureau.Discussion on the time frame for WKW to give the ToT and start the project.

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Tsehai Classroom Library Project (Global Grant GG 1415262) Progress Report (a), December 2018Report on the set-up of 40 schools Progress report (b), December, 2018.

Tsehai Classroom Library Project Global Grant GG1415262 School Monitoring Mission, Training Profile, As of December 12, 2018

Tsehai Classroom Library Project Proposal Global Grant GG 1415262

Tsehai Classroom Library Project, Distribution of Materials Report. February 8, 2018.

Annex 1. Summary of observations by data collectors about the preschools

School name	Over view of the school	About the children	About the teachers	About the administration	About parents	About the classrooms	About the playing materials and play	About educational aids and books
Tesfa kokeb 01	The compound is broad but it is not suitable for children to play outside the classroom	Most of the children came from low socio economic background. They have average academic ability sometimes they exhibit disruptive behavior and they participate in class and love to play outside.	The teachers were positive and happy to help us do our job and to fill the questionnaire . They have a good interaction with children. They use different strategy and methods as well as materials to teach children.	The principal was very positive and good person she was willing to help us and provide all the information for all of us.	Most parents live in poverty and most of them don't have the culture of visiting their children at school and communicate with teachers about their children.	The class room is enough for children to sit and do activities freely. The class is full of different learning equipment and it was sorted in attractive way.	The school doesn't have enough playing material and the children play in their free time. Sometimes they play in the class room and in the afternoon time they go out to play but the weather is not suitable for them.	Though the number of learning aids are not enough, they have lots of children literature and children took story books to read and return them back after reading.
Ediget Besira 02	The compound is very narrow and unsuitable. Doesn't have much play materials. There are different paints in the wall.	The children have interest for learning and they show some problematic behavior. Most children start to differentiate alphabet and numeric.	The teachers are supportive and positive. They give love for the children and support them. The teachers are very ethical and professionals .	The administration exerts much effort to support children. Though the school have deficit budget the school management manage to bullied a place for meal and receive 124 plastic packed milk for children.	The follow up of parents is very low and they don't give much attention about the education of their children because of the school feeding program the participation of parents to the school become less.	The classroom is broad and enough for children to learn and play but because of the dust the materials in the class room look dirty. But the classroom is very attractive and full of charts, flash cards and different equipment.	The playing materials are not enough comparing with the number of children. The tendency of teaching children through play is less. They teach the children as if they are in formal education setting.	Learning materials and books are available in the school compound but the dust became treat for its durability. The ground is not suitable for outdoor play.

School name	Over view of the school	About the children	About the teachers	About the administration	About parents	About the classrooms	About the playing materials and play	About educational aids and books
Salaysh03	The compound is very narrow and the ground is made up of stone and concrete which is very risky for children to play on. The toilet is not enough but it's neat	The children are from very low socio economic background and most of them are orphans. The learning ability is good. The school give meal service for those who are from very low socio economic background in the school.	The teachers have interest to help and support the children. They give love for children and they work in very difficult situation. The teachers are good understanding the behavior of the children.	The principal was very good and positive also supportive but because of budget constraint it become hard to implement what should be implemented . There is no problem related with managing the man power(teachers and other workers)	Sometimes the parents come to school to visit their children but not often.	The class rooms are not suitable for children and because of the shortage of classes children learn on temporary classes. There is no enough light and air. In some case 4 children sit in one chare	Though there are playing materials in the school compound, because of the space constraint they don't give service for children to play.	There are teaching aids that are purchased by the school, prepared by the teachers and collected form charity (story books).
Kilinto04	The space of the compound is enough. It's dusty and uncomfortable to for children play on.	The number of children is high(334). Most of them come from low socioeconomic background. The learning ability of the children is good.	Most of the teachers have a training on ECCE. There is peer supervision. They deliver the content using learning aids.	The management have budget deficiency and office equipment are not fulfilled. The administration is weak and the supervision of the process of teaching and learning is less.	Most of the parents were workers in governmental institutions. The napping room was built with parent's money and support.	The classrooms are broad and allow the children to move from place to place. The chair is suitable to sit. There is enough air and light for the class room.	There is lack of playing material in the compound specially the outdoor playing materials.	There are different teaching aids prepared by teachers like posters, alphabets, numbers and words using locally available materials.
Qey Kokob 05	The compound is very narrow and there was no enough play materials. There was also class room shortage.	The number of students were few and most of the students were from low socio economic background and the learning ability of the children was good.	The teachers were very positive and supportive. There were 2 teachers for each class and the way of teaching and playing with children was great.	The principal was very supportive for our stay in the compound. She was providing all the necessary information.	Parents who were selected for the interview were very positive and cooperative. Most of the parents are from low socio economic background.	Classrooms were narrow and not enough. It's difficult for children to do any activity in the classroom.	Shortage of indoor and outdoor playing materials. Because of the class room size its unable to play freely in the classroom.	There are story books but the number of story books and materials are not enough for the children to read and play with individually.

School name	Over view of the school	About the children	About the teachers	About the administration	About parents	About the classrooms	About the playing materials and play	About educational aids and books
Africa Birhan 06	The compound is very narrow and most of the play materials are out of service because of different reasons. There is also shortage of classrooms.	Large class size and because of that interest of children for learning is very less. Most students are from low socio economic background.	Because of the number of the students in the classroom the teachers got it difficult to help the children. The less teaching aids also made the teaching process very challenging.	The principal was supportive throughout our stay in the school. Some parents also said that there is a change after she (the principal) came to the position.	Though most parents are from low socio economic level, parents are positive to support the school using the potential and resource they have. The culture of visiting their children at school is law.	The classroom was very narrow and some chairs were broken and very risky for the children to sit on. It wasn't attractive and it lacks posted teaching aids.	No enough indoor and outdoor play material.	Though there is a shortage, they have story books. Most teaching aids are made up of the teachers using locally available materials.
Hibret Fire 07	The compound is attractive, suitable and enough to do the necessary activities.	Most of them were from low socio economic background and they were happy.	They were positive and welcoming. They were supportive	She was happy and very supportive to provide us all the materials and information we need.	Most parents don't follow up their children and mostly they don't have enough information about their children.	It is very neat and have average scope.	No enough outdoor play materials. The space has unnecessary buildings and that hinders the use of the space.	They have average number of story books from tsehaymemar tiwedalech.
Gelan 08	The compound is very broad and have lots of outdoor play materials	Comparing the children from their age mates, they were less active.	The teachers were positive and supportive.	The principal was helping us in providing information and she was taking the comments we give openly and positively.	The parents are from very low socio economic background and most of them are single parents.	Though the space is broad and enough There is a problem in its neatness.	The outdoor playing materials were good.	The school have lots of tsehaymemar tiwedalech story books.
Meskerem 1 09	Generally, the school has low achieving students compared to those in other preschools	Compared with their age mates, the children exhibit less performance in academics.	During observation the teachers were negligent and they were focused on tasks that exclude the children.	The principal was very helpful and supportive. She was giving all the information to us. Supervising the teachers was very low.	They weren't that poor compared with the other schools. And they sometimes visit their children in school.	Classrooms were very narrow and it's difficult to play and do activities in the class.	The compound is very narrow and doesn't have enough outdoor play materials.	There were posters on the wall for the purpose of learning.

Annex 2. Contact Details of Families of Target Children

Tesfa Kokeb

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
01001	Usman Abrar	13/2/2005	6y4m	76	A	M			Fayiza Shifa	0933302370
01002	Dawit Timhirtu	12/10/2004	6y8m	80	A	M	Timhirtu Wagiye	0922730282	Tadila Haile	0973071231
01003	Yohannes Ashebir	11/5/2005	6y1m	73	A	M			Etagegn	0910882858
01004	Natanim Girma	24/10/2004	6y8m	80	A	M				0922146310
01005	Tofiq Abdela				A	M			Leyla	0911888412
01006	Yeabsira Tesfa	7/10/2004	6y8m	80	A	M			Tgist Legese	0964610775
01007	Daniel Gete	12/6/2005	6y0m	72	A	M	Gete Zemene	0922147100	Aychesh Geta	0912659980
01008	Kaleab Fantaye	10/1/2004	7y6m	90	A	M			Selam Yilma	0934962277
01009	Hana Bedilu	19/11/2004	6y7m	79	A	F			Tigist Bekele	0978102140 / 0936965884
01010	Eldana Henok				A	F			Shitu Haile	0953137137
01011	Aklesiya Fanta	26/4/2005	7y2m	86	A	F			Shibre Dersie	0904148160 /0910794135
01012	Tsion Endalkachew	5/1/2004	7y5m	89	A	F	Endalkachew Kumulachew	0911716546/ 0911726546	Tigist Tesema	0911081975
01013	Mihret Abera	02/01/2005	6y5m	77	A	F	Abera Daba	0913629646	Birhanie Diriba	0923235571 /0931235571
01014	Wesenie Teshome				A	F			Kibie	0918211210
01015	Mistir Desta	03/3/2005	6y2m	74	A	F	Desta Moges	0910563876		
01016	Besufekad Fitsum				B	M				0912919318
01017	Sofoniyas Tariku	24/01/2005	6y5m	77	B	M	Tariku Mitiku	0946423097		
01018	Ahmed Wendimu	9/01/2005	6y5m	77	B	M			Amina Ahmed	0911692866
01019	Kidus Samson	25/3/2005	6y3m	75	B	M			Serkalem Hailu	0912170560
01020	Dagim Hagos	11/9/2004	6y9m	81	B	M	Hagos Kiros	0911608577	Tsega Embaye	0912179354
01021	Yonatan Netsanet				B	M				0913234162 /0913747938
01022	Michael Belete	12/3/2005	6y3m	75	B	M				0911646469
01023	Yosira Seid	29/9/2005	6y9m	81	B	F				0921664058
01024	Arsema Abinet	11/4/2005	6y2m	73	B	F			Abinet	0912918529
01025	Eman Negash	24/11/2004	6y7m	79	B	F	Negash Shamil	0911665263	Amelework Badu	0912918642
01026	Eman Nuru	20/11/2004	6y7m	79	B	F			Miwuba Jemal	0931729028

01027	Rahma Mubarek	23/01/2005	6y5m	77	B	F	Mubarek Mustefa	0913797760	Aysha Rahmeto	
01028	Yanet Wondimu	19/6/2005	7y0m	84	B	F				0913837979
01029	Rahmet Nuru	20/11/2004	6y7m	79	B	F			Miwuba Jemal	0931729028
01030	Hayat Abdi	30/12/2004	6y6m	78	B	F			Nesriya Negash	0910370652

Ediget Bsira

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
02031	Yehualashet Biyazin	29/8/2004	6y9m	81	A	M			Asefach	0920779720
02032	Tsion Lemma	21/3/2005	6y2m	74	A	F			Zinash Ejigu	
02033	Alebachew Chalew				B	M	Chalew Tegenu	0982024952		
02034	Kalkidan Alemie				A	F	Alemie Luelseged	0941922517		
02035	Eman Sherif	16/10/2004	6y8m	80	A	F	Serif Shikur	0919201559		
02036	Bontu Endale	5/2/2004	7y4m	88	A	F	Endale Regasa	0913479847		
02037	Helen Birhanu				A	F			Letay Weldesilasie	0962600715
02038	Yishak Zenebe	28/5/2005	6y0m	72	A	M			Shewashegere Zergaw	0920807627
02039	Dagim Mamush	14/6/2004	7y0m	84	A	M	Mamush Wondimu			
02040	Eniyew Bahiru	19/11/2004	6y7m	79	A	M			Melkam Tamiru	0910139178 6
02041	Mikyas Shiwadeg	12/11/2004	6y8m	81	A	M			Aselefech Tefera	
02042	Kongit Tesfaye	07/12/2004	6y7m	79	B	F			Genet Mulu	0934496165
02043	Kalkidan Fasil	27/9/2004	6y9m	81	B	F	Fasil Girma		Sintayehu Haile	
02044	Eliyab Kiflom	05/8/2005	5y10m	70	B	M	Kiflom Siyoum		Abeba Gebeyehu	
02045	Yosef Yohannes	26/4/2004	7y3m	87	B	M				
02046	Emiran Mustefa	12/8/2004	6y10m	82	B	M				0921930142
02047	Aliya Bediru	01/11/2004	6y8m	80	B	F	Bediru Umer		Fetiya Shifa	
02048	Yabsira Andinet	21/5/2004	7y2m	86	B	M				0921760208
02049	Amen Teklu	3/10/2005	5y9m	69	B	F	Teklu Jaleta	0943801232		
02050	Yared Getachew	22/2/2004	7y3m	87	B	M	Getachew Mengesh	0922414180		
02051	Redwan Siraj				B	M			Shifitie Reshad	0921353809
02052	Degarege Temie	9/2/2004	7y4m	88	B	M			Tiringo Dera	0937614339
02053	Yosira Abdulaziz				B	F				
02054	Dagmawit Abdi	15/1/2005	6y6m	78	B	F				0983307506
02055	Yonas Birhanu				B	M				
02056	Hasenya Sultan	21/9/2004	6y9m	81	B	F	Sultan Endris		Semira Shemsu	
02057	Yonas Tadesse	11/5/2005	5y11m	71	B	M				
02058	Fasika Abebaw				B	F			Manahlosh Amare	0961645874

02059	Firdos Taju	8/7/2004	7y1m	85	B	F	Tajudin Abdela		Elefu Awel	
02060	Nigist Abadi	25/9/2003	7y9m	92	B	F			Hamusu Assefa	0946793673

Family Contact Address_**Salayish**

Contact Person : Selamawit, Director Tel. 0942571218

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
03061	Zerubabel Sisay	21/12/2004	6y7m	79	A	M			Zenebech Tesfaye	0920812684
03062	Eden Zenebe	15/9/2005	5y9m	69	A	F			Adanech Fifa	0922363014
03063	Husniya Wabi	6/7/2004	7y1m	85	A	F	Wabi Sirur	0910198896	Seada Ledi	0910198896
03064	Umer Reshid	23/10/2004	6y9m	81	A	M	Abdela Malik	0920567924	Gete Reshid	0924306434
03065	Yordanos Yohannes	12/4/2004	7y2m	86	A	F			Senait Muletaw	0912392037
03066	Habtamu Wendimu	9/10/2004	6y9m	81	A	M			Hizbayush Fanta	0949359874
03067	Sila Mustefa	16/7/2005	6y1m	73	A	F			Tibika W/Agegn	0906900455
03068	Abnet Hailu	20/1/2004	7y6m	90	A	M	Hailu Gunchie	0947347811	Abebech Meta	0939596046
03069	Abel Moges	18/5/2004	7y3m	87	A	M	Moges Genetu	0934472047	Emebet Addis	0924146402
03070	Meleikte Yohannes	22/7/2004	7y1m	85	A	M	Yohannes Mamo	0913349517	Wubit Shitaye	0920224148
03071	Meklit Gizaw	17/5/2004	7y3m	87	C	F			Tigist Zewdu	0118929875
03072	Eyerus Birhanu	23/7/2004	7y1m	85	C	F	Birhanu Kumsa	0911095339	Mulu Guta (guardian)	0911095339
03073	Mulugeta Teshome	07/11/2004	6y8m	80	C	M			Chaltu Muhe	0913327725
03074	Elshaday Hailemeskel	7/10/2005	5y9m	69	C	M			Werkie Yalew	0920654460/ 0910722127
03075	Micheal Gidey	23/7/2005	6y1m	73	C	M	Birhanu Asefa	0910038912		
03076	Natnaeil Chalie	4/12/2004	6y7m	79	C	M	Chale Abera	0913001632	Ageritu Tibebu	0920936765
03077	Behailu Emishaw	8/8/2005	5y10m	70	C	M	Emishaw Balkew	0927704128		
03078	Birtukan Abiyot	5/3/2004	7y3m	87	C	F	Abiyot Ayele	0942188411 /0913631626		
03079	Ayisha Abdela	28/4/2004	7y2m	86	C	F			Zeyda Sani	0911963914
03080	Tsigereda Semane	17/2/2005	6y4m	76	C	F			Alem Asmare	0910656984
03081	Yonas Tasew	21/9/2004	6y9m	81	B	M			Werke G/Meskel	0970368510
03082	Yared Tasew	21/9/2004	6y9m	81	B	M			Werke G/Meskel	0970368510
03083	Samuel Nibret	12/8/2004	7y0m	84	B	M	Nibret Tsegaw	0930531375	Meseret Ambaw	0930531375
03084	Daniel Alemayehu	9/11/2004	6y10m	82	B	M	Alemayehu Gibo	0939258501	Zinash Zewdu	0939258501
03085	Mesay Bum	8/5/2004	7y1m	85	B	M	Bum Tem	0930795952	Sara Gnawak	0910091369
03086	Eden Mamushet	13/10/2004	6y9m	81	B	F			Senait Mengistu	0906652426

03087	Tinzila Engida	11/2/2005	6y4m	76	B	F			Aselefech Abera	0910973320
03088	Bahir Dereje	12/5/2005	6y2m	74	B	F			Gadisa Guta	0945974376/ 0914679392
03089	Redeit Alemu	14/3/2005	6y2m	74	B	F			Buzayehu Fantaye	0936960263
03090	Hana Eshetu	30/1/2005	6y5m	77	B	F			Tsehay Tolesa	0939603884

Family Contact Address_ **Kilinto** Preprimary School

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
04091	Dagim Terefe Kebede	8/1/2005	6y6m	78	B	M	Terefe Wedaj	0913492566		
04092	Eyerusalem Yohannes	7/7/2005	6y1m	73	B	F			Tarikua Sibilo	0983384295
04093	Daniel Luel	17/5/2004	5y11m	71	B	M			Fentesa	0910496730
04094	Yosef Demeke	01/8/2006	4y11m	59	B	M			Belaynesh Mamo	0912460804
04095	Samuel Chala	15/5/2005	6y1m	73	B	M	Chala Moti	0912722152		
04096	Surafel Abebe	8/4/2005	6y2m	74	B	M	Abebe Yimer	0911549224		
04097	Amir Kemal	21/12/2004	6y6m	78	B	M	Kemal Jemal	0912007298		
04098	Bethelihem Mitiku	29/5/2005	5y6m	66	B	F			Meseret Mitiku	0910878578
04099	Tirsit Leul	18/11/2004	6y7m	79	B	F			Fentesa	0910496730
04100	Yohannes Fikadu	4/1/2005	6y6m	78	B	M			Hiwot G/Medhin	0921334307
04101	Kalkidan Tadesse	29/5/2004	7y0m	84	B	F	Taddese Nega	0920739060		
04102	Rediet Abdirazak	8/4/2005	6y2m	74	B	F			Gezesh Demissie	0919901907
04103	Hiwet Meles	13/7/2005	5y11m	71	B	F			Emebet Bekele	0926427370
04104	Birtukan Jemberu	21/1/2005	6y5m	77	B	F	Mengesh Wubetu	0943171318		
04105	Ruth Getachew	01/5/2004	7y1m	85	B	F			Tsehay Tesfu	0911059644/ 0978131267
04106	Kalkidan Eshetu	16/10/2005	5y8m	68	B	F	Eshetu Megeresa	0941913532	Tseganesh Markos	0927436722
04107	Biruk Dawit	01/11/2005	5y8m	68	B	M	Dawit Dana	0910886138		
04108	Yeabsira Ephrem	5/4/2005	6y2m	74	A	M	Ephrem Gebeyehu	0913288518		
04109	Dagim Terefe Weyecha	8/01/2005	6y6m	78	A	M	Terefe Weyecha	0913492566		
04110	Kaleb Yehualawork	19/7/2004	6y11m	83	A	M			Muluemebet Abebe	0936964070
04111	Mubarek Aman	28/7/2005	5y11m	71	A	M			Dire Jira	0921708033
04112	Dereje Husen	21/5/2004	7y0m	84	A	M			Birkie Ababu	0921616217
04113	Markan Addisu	17/10/2005	5y7m	67	A	F			Merinat Fekadu	0913643558
04114	Kidist Mulugeta	7/7/2004	7y0m	84	A	F			Meseret Abebe	0947393689
04115	Mastewal Amanuel	27/5/2005	6y0m	72	A	F		0924045872		

04116	Hanan Yirgalem				A	F	Yirgalem Gebru	0914444012		
04117	Meron Demissie				A	F	Demissie Dagne	0922448437		
04118	Bilen Yewubneh				A	F	Tefera Weycha	0913492566		
04119	Michael Hagos	21/4/2004	7y2m	86	A	M				
04120	Burakie Tesfaye	11/10/2004	6y9m	81	A	M	Tesfaye Taddese	0911973349		

Family Contact Address_ **Qey Kokeb** Preprimary School

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
05121	Amanuel Tekeste	14/10/2004	6y9m	81	A	M	Tekeste Gebre	0913069836	Netsanet Tefera	0920312043
05122	Beimnet Werku	15/03/2005	6y4m	76	A	F	Worku Abiko	0912107425	Sisaynesh W/Medhin	0921020013
05123	Dagim Hagos	22/06/2004	7y0m	84	A	M	Hagos Abera		Muna Admkew	0920641265
05124	Fikir Ashenafi	29/3/2004	6y9m	81	A	M	Ashenafi Hailegiworgis	0911658292	Meaza Niguse	0920276162
05125	Henos Fireseam	12/2/2005	6y3m	75	A	M	Fireselam Tesfaye	0913102413	Demekech Getnet	0912847104
05126	Kidus Samson				A					
05127	Nebiyat Isayas	15/1/2005	6y5m	85	A	M	Issayas Habtemariam	0912888911	Tinbit Isayas	0912041773
05128	Rihana Mitiku	08/11/2004	6y8m	80	A	F			Fikirte Biruk	0910554322
05129	Natnaeil Shiwangizaw	29/12/2004	6y6m	78	A	M	Shiwangizaw lemma	0911737855	Eyerusalem Haile	0919386439
05130	Yididya Wendwesen	20/3/2005	6y3m	76	A	F			Abaynesh Desta	0910608231/ /0922582853
05131	Samuel Tamiru	01/4/2005	6y2m	74	A	M			Belaynesh Teni	0911661041 / 0913003368
05132	Yonatan Girma	12/6/2005	6y0m	72	A	M			Alemtsehay Sisay	0912731843
05133	Yabisira Kibatu	9/8/2004	6y11m	83	A	M	Kibatu Kenaga	0913786381	Alem Arga	0920804373
05134	Yarom Demelash	17/7/2004	6y11	83	A	M	Demsash Asfaw	0913500505	Asnakech	0910991260
05135	Arsema Michael	24/4/2005	6y1m	73	A	F	Michael Hunegnaw	0922854570	Meron Woldie	0945354999
05136	Arsema Haymanot	06/5/2005	6y1m	73	A	F	Gebeyehu Melese		Aregash Asfaw	0911336160
05137	Lidya Mesfin	20/10/2004	6y8m	80	A	F	Mesfin Ajeme	0911570292	Rahel Getachew	0910149627
05138	Eldana Tewodros	05/4/2005	6y2m	74	A	F	Tewodros Matewos	0913632826	Etif Abreham	0913626963
05139	Edilawit Mesafint	10/4/2005	6y2m	74	A	F	Mesafint Wubshet	0913101278	Birhane Badizi	0910588996

05140	Eyerusalem Wabi	9/10/2005	5y9m	69	A	F	Wabi Ashebir	0920603328	Amarech Demsis	0921598933
05141	Bilen Taye	25/4/2005	6y1m	73	A	F	Taye getachew	0913092023	Sara Kedir	0913598236
05142	Betselot Maeireg	17/10/2004	6y8m	80	A	F	Maereg Getnet	0911000335	Mastewal Dagne	0913558032
05143	Bezawit Girma	16/05/2005	6y0m	72	A	F	Girma Tadese	0911654701	Yetnayet Semunigus	0911444073
05144	Fitsumawit Tezera	16/2/2005	6y4m	76	A	F	Tezera Reta	0911959617	Hawa Molla	0910525253
05145	Hilina Selomon	30/6/2004	7y0m	84	A	F	Solomon Biyadglign	0913541317	Sasahu Alemu	0920958088
05146	Kalkidan Nebiyou	05/10/2004	6y9m	81	A	F	Nebiyou Alemayehu	0911699925	Like Megersa	0910526487
05147	Mariyamawit Assefa	22/10/2004	6y8m	80	A	F	Assefa Sase	0922095985	Beletu Tadese	0922095985
05148	Maya Abiy	23/11/2004	6y7m	79	A	F	Abiy Mekonnen	0911404838	Amina Arebo	0924953923
05149	Rodas Ermiyas				A	F				
05150	Soliyana Endalkachew	03/5/2004	7y1m	85	A	F	Endalkachew lemma	0912150323	Menbere Tilahun	0913003376

Family Contact Address_Africa Birhan Preprimary School

Contact Person : Mihret T/Mariam, Director Tel. 0945721515

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
6151	Natanim Shiferaw	16/8/2005	5y10m	70	A	M	Shiferaw Deme	0920019314		
6152	Seid Abrar	2/2/2004	7y4m	88	A	M	Abrar Akmel	0910468374		
6153	Niftahie Deta	13/12/2004	6y7m	79	A	M	Deta Batu	0913211230		
6154	Daniel Workneh	9/4/2004	7y4m	88	A	M	Werkneh Lemma	0910615707		
6155	Umer Kalid	12/9/2005	5y9m	69	A	M	Umer Mehammed	0920383322		
6156	Eyob Adane	15/01/2005	6y6m	78	A	M	Adane Welana	0920337712		
6157	Natanim Mussie	6/10/2005	5y9m	69	A	M	Mussie Shefa	0920050084		
6158	Nahom Sintayehu	03/6/2005	6y0m	72	A	M	Sintayehu Haile	0946410300		
6159	Abenezer Wendwesen	13/4/2005	6y4m	76	A	M	Wendwesen Mesfin	0989113988		
6160	Biniyas Towfik	27/4/2005	6y1m	73	A	M			Meron Belete	0936634558
6161	Naol Amsalu	20/2/2005	6y4m	76	A	M	Kumsa Soboka	0920567291		
6162	Bisrat Mulugeta	19/7/2004	6y11m	83	A	M	Mulugeta G/Selassie	0913732050		
6163	Surafel Mekonnen	03/2/2005	6y4m	76	A	M	Mekonnen Taddese	0946764574		

6164	Bereket Habtamu	03/9/2004	6y10m	82	A	M			Yirgalem Haile	0909781266
6165	Kidus Mekonnen	29/11/2004	6y7m	79	A	M	Mekonnen Tarekegn	0924844280		
6166	Etsubdink Tarik	27/6/2005	6y0m	72	A	F	Tariku Markos	0921467052		
6167	Soliyana Desalegn	07/10/2005	5y9m	69	A	F	Desalegn Wegere	0911465783		
6168	Kalkidan Tsegaye	30/1/2005	6y5m	77	A	F	Tsegaye Enberi	0960228372		
6169	Afomiya Samuel	28/8/2004	6y10m	82	A	F	Samuel Tuji	0912064630		
6170	Selam Shewanes	20/01/2005	6y5m	77	A	F			Tsehay Debele	0913163897
6171	Maryamawit Wendwesen	21/7/2004	6y11m	83	A	F	Wendwesen Arega	0922579928		
6172	Redeit Henok	27/12/2005	6y6m	78	A	F	Henok Kebede	0913130171		
6173	Kalkidan Mekonnen	29/11/2004	6y7m	79	A	F	Mekonnen Tarekegn	0924844280		
6174	Rim Dino	21/11/2005	5y7m	67	A	F	Dino Muzemil	0913783277		
6175	Hafsa Abdela	10/9/2005	5y9m	69	A	F	Abdela Jafir	0911929755		
6176	Selam Daniel	05/2/2005	6y4m	76	A	F	Daniel Elala	0912052553		
6177	Kristina Sisay	03/9/2005	5y10m	70	A	F	Sisay Bogale	0912984101		
6178	Mihret Ephrem	16/3/2005	6y2m	74	A	F	Ephrem Zeleke	0941399015		
6179	Firdos Yesuf	16/3/2005	6y2m	74	A	F	Yesuf Toti	0910979624		
6180	Tsinat Endale	07/3/2005	6y1m	73	A	F	Endale Kefyalew	0932284101		

Family Contact Address_Hibret Fire Preprimary School

Contact Person : Fasika Yigez, Director Tel. 0911821266

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
7181	Samrawit Dereje	04/13/2004	6y6m	78	A	F			Zewdie Hasen	0912070272
7182	Erona Alemu	30/01/2005	6y5m	77	A	F			Emebet	0910512574
7183	Lidet Kinfe	28/4/2005	5y11m	71	A	F			Hana	0920552661
7184	Sara Gezahegn	18/11/2004	6y7m	79	A	F	Gezahegn Tesfaye		Addis Dubale	0920281623
7185	Edom Abiy	18/01/2005	6y5m	77	A	F			Belaynesh	0920712242
7186	Pinael Mesfin	03/9/2004	6y10	82	A	F	Mesfin Alemneh	0910294887		
7187	Liya Adisu	7/12/2004	6y7m	79	A	F	Addisu Bekele		Birhane Ayichew	0911062401
7188	Ruth Ermiyas	27/2/2005	6y4m	76	A	F			Hasabnesh Getnet	0913767148
7189	Eyuel Temesgen	11/3/2005	6y2m	74	A	M			Alemnesh	0913048330

									Kasahun	
7190	Amanuel Tesgaye	28/4/2005	6y2m	74	A	M	Tsegaye Mengistu		Alem Teshome	0946595876
7191	Kidus Yohannes	28/11/2004	6y7m	79	A	M			Ejigayehu Mengistu	0920713694
7192	Eyob Mekibib	23/10/2004	6y8m	80	A	M	Mekibib W/Aregay		Bekelech Hailu	0913042447
7193	Alhamdu Temam	20/10/2004	6y8m	80	A	M	Temam Chemaq		Tuma Temam	0910809455
7194	Abel Emegnu	19/9/2004	6y9m	81	A	M	Emagnu Melese		Tizita Asefa	0911739763
7195	Biniyam Getachew	18/01/2005	6y5m	77	A	M	Getachew Mesfin	0910350552		
7196	Rina Samuel	11/11/2004	6y7m	79	B	F			Hana Mamo	0923119224
7197	Emanda Zekarias	23/11/2005	5y7m	67	B	F			Emebet Maeregu	0921605221
7198	Kidist Bizuneh	06/8/2005	5y10	70	B	F	Bizuneh Tamiru		Zerfiye Mengistu	0910880908
7199	Bethelihem Tamene	11/2/2005	6y4m	76	B	F	Tamene Haile		Genet Bakalu	0927818820
7200	Bezawit Gutema	29/4/2005	6y1m	73	B	F			Zeritu Yimer	0913428650
7201	Bezawit Simon	26/7/2004	6y11	83	B	F	Simon Teklu		Helen G/Meskel	0920746804
7202	Saron Ayalew	17/6/2005	6y0m	72	B	F	Ayalew Degu		Meskerem Lemma	0913390451
7203	Kidus Yonas	18/8/2005	5y10m	70	B	M	Yonas Bogale	0913319072		
7204	DagmawiSileshi	29/10/2004	6y8m	80	B	M			Firehiwot Ashenafi	0911884396
7205	Ami Lema	16/5/2005	6y0m	72	B	M			Mulunesh Abreham	0915768645
7206	Bitaniya Zelalem				B	M			Emebet Kebede	0912188555
7207	Masresha Misganaw	3/8/2004	6y11	83	B	M			Fanta Endalew	0920719155
7208	Abubeker Mehammed	18/3/2005	6y3m	75	B	M	Mohhamed Shafi		Zulfa Abdela	0913066616
7209	Eyassu Waqgari	9/10/2005	5y9m	69	B	M			Genet Tilahun	0910155811
7210	Ermiyas H/Gebriel	10/6/2004	7y0m	84	B	M			Alemnesh Gebru	0921324758

Family Contact Address_Gelan No 2 Preprimary School

Contact Person : Shiwangizaw Abera, Acting Director Tel. 0912792751
A. Semegn Megersa 0913150417
B. Mekdes Getachew 0911074666

Among the sampled children, the teachers confirmed that non had reported the occurrence of any form of abuse by parents or others.

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
8211	Yajib Abdirazaq	5/2/2005	6y4m	76	A	M			Bircha Arebu	0910509838
8212	Biruk Niredin	13/5/2004	6y1m	73	A	M			Aster Negash	0986546886
8213	Samuel Henok	6/10/2005	5y9m	69	A	M	Henok Estifanos	0912463810	Tsehay Tesfaye	
8214	Abay Estifanos	25/7/2005	5y11m	71	A	M				
8215	Mehammed Tewfiq	1/9/2004	6y10	82	A	M			Munira Shikur	0922579168
8216	Abdulmelik Mohammed	12/7/2005	5y11m	71	A	M	Mohammed Sirur	0912463511	Sinko Mohammed	
8217	Yabsira Asegid	26/12/2004	6y6m	78	A	M	Asegid Ayele		Hana Endale	0910501356
8218	Mihret Yisfalem	17/10/2004	6y8m	80	A	F	Yisfalem Temam	0912136245	Weynishet Angim	
8219	Meskerem Wendimu				A	F	Wendimu Semehitu	0912151271	Haymanot Tadese	
8220	Bethelihem Addis	9/2/2004	7y4m	88	A	F			Asnakech Legese (0913492436)	Werknesh Angasa (0946403365)
8221	Ahlam Birhanu	4/12/2004	6y7m	79	A	F	Birhanu Abera	0902688422/ 0911893665		
8222	Beeimnet Yehualawerk	13/8/2004	6y11	83	A	F			Haregua Kasu	0913790070
8223	Fikirte Werkneh	3/9/2005	5y10	70	A	F	Werkneh Eticha	0913092457	Meaza Bekru	0912150599
8224	Bitaniya Belachew	22/8/2004	6y10m	82	A	F	Belachew G/Michael	0910255400	Kidist Nigatu	0942162863
8225	Gelanie Terefe	02/12/2004	6y7m	79	A	F	Terefe Duresa	0920177319	Sinke Gebisa	
8226	Eyob Abebe	7/3/2004	7y3m	87	B	M			Atsede Tura	0913971012
8227	Natnaeil Haftamu	21/1/2005	6y5m	77	B	M			Mulunesh Shiferaw	0946407274
8228	Yonas Tola	26/11/2005	5y7m	67	B	M			Bosena Asegdie	0965612820
8229	Edoniyas Fantahun	18/12/2004	6y7m	79	B	M	Fantahun Hayludie	0911145786/ 0937912000	Mekdes Demisie	
8230	Adonay Gizaw	5/5/2005	6y1m	73	B	M	Gizaw Birhanu	0919155805		
8231	Natnaeil Derese	15/12/2004	6y7m	79	B	M	Derese Toma	0920737935	Bethelihem Kelta	
8232	Kalid Abrar	21/1/2004	6y5m	77	B	M			Fetiya Dino	
8233	Musie Beyene	22/1/2005	6y5m	77	B	M			Kidusan W/Gebriel	0948503111
8234	Haftam Simegn	9/8/2002	8y10	106	B	F	Simegn Kesete	0909547122	Birke Asmare	
8235	Hilina Teka	18/1/2003	8y6m	102	B	F			Dawi Ayele	0933585729
8236	Feven Melake	1/4/2004	7y4m	88	B	F	Girmay Equbaselasie	0948503219		
8237	Abebu Hundie	13/7/2005	5y11m	71	B	F	Hundie Lemeshe	0934396806	Meseret Abera	
8238	Kedawit Endbirhan	7/8/2003	7y10	94	B	F			Mebrehit Asemelash	0943698024
8239	Hana YeshiTila				B	F			Abebech Beneberu	0912725489
8240	Meklit Legese	17/8/2005	5y10m	70	B	F			Tigist W/Mariam	0913534780

Family Contact Address_Meskerem Preprimary School

Contact Person : Tsehay Simegn , Director Tel. 0921024813

A Yengus Tel. 0913628998

Among the sampled children, the teachers confirmed that non had reported the occurrence of any form of abuse by parents or others.

ID		Date of Birth	Year	Months	Section	Sex	Father's Name	Father's Tel	Mother's Name	Mother's Tel
9241	Bilen Kumela	03/8/2004	6y10	82	A	F			Zerthun Teshome	0924844360
9242	Eyob Yitagesu	08/01/2005	6y5m	77	A	M			Meseret Asefa	0920331304 /0922587729
9243	Abenezer Mekuriya	05/10/2004	6y9m	81	A	M			Askale Tola	0922884146
9244	Abel Ashenafi	17/4/2005	6y2m	74	A	M			Werkafera hu Bantwalu	0921547621
9245	Dagim Amare	9/12/2004	6y5m	77	A	M			Sara Teklu	0910308752
9246	Lidet Mekonnen	01/11/2004	6y7m	79	A	F			Birtukan Aba	0920587102
9247	Rahma Ibrahim	19/7/2005	5y11m	71	A	F	Ibrahim Wujira	0910609718		
9248	Bethelihem Birhanu	19/5/2005	6y1m	73	A	F			Fikirte Akal	0910613079
9249	Lihan Bahiru	02/6/2005	7y0m	84	A	F			Adanech Dalbeza	0920109407
9250	Bisrat Sintayehu	18/01/2005	6y5m	77	A	M			Fanaye Alemu	0920344946
9251	Bereket Bilehabil	2/13/2004	6y6m	78	A	M			Tsehay Asefa	0911115273
9252	Melaku Tigistu	20/9/2005	5y9m	69	A	M			Hadas Welday	0921386323
9253	Saron Asfaw	24/6/2005	5y11m	71	A	F	Asfaw Kebede	0912728761		
9254	Eldana Tewodros	12/3/2005	6y3m	75	A	F			Marie Bargie	0924467316
9255	Abdrazak Mudin	5/8/2004	6y10	82	A	M			Rawda Husien	0923583844
9256	Biruk Tewodros	3/1/2005	6y6m	78	A	M				0920339682
9257	Mekdes Shimelis	23/3/2005	6y3m	75	A	F			Mintiwab G/Egziab hier	0928667766
9258	Arsema Birhanu	26/11/2004	6y7m	79	A	F			Aregay Gidey	0913063550
9259	Bereket Birhanu	26/2/2005	6y4m	76	A	M			Abebech Gunagul	0910331048
9260	Abubeker Akmel	05/11/2004	6y8m	80	A	M			Zahra Shemsu	0925273152
9261	Dagim Selomon	16/01/2005	6y5m	77	A	M	Fekadu Habtamu	0927225885		
9262	Minale Shewaye	30/4/2005	6y2m	74	A	M				0966809505
9263	Tsigereda Abebe	28/5/2005	6y1m	73	A	F			Dinkalem Tazebew	0920802646
9264	Eyob Tasew	18/6/2005	6y0m	72	A	M			Aynengda Asefa	0924034581
9265	Bilen Girma	23/6/2004	5y11m	71	A	F	Daniel Nigusie	0921379005	Sara Bekele	0911705220

Annex 3. Reliability of Teacher Child Ratings of Socio-Emotional Development for Kindergarten Children

Item Statistics			Item-Total Statistics				
Item	Mean	Std. Deviation	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	N
1	2.61	.614	72.15	49.514	.643	.804	262
2	2.61	.627	72.15	49.295	.655	.804	262
3	2.69	.552	72.06	52.084	.384	.814	262
4	1.66	.740	73.10	59.403	-.395	.846	262
5	1.54	.652	73.22	60.663	-.555	.848	262
6	2.73	.519	72.03	51.528	.490	.811	262
7	2.79	.461	71.97	51.938	.496	.812	262
8	2.81	.442	71.95	52.396	.446	.813	262
9	2.21	.842	72.55	53.673	.086	.829	262
10	2.62	.516	72.14	51.514	.495	.811	262
11	2.53	.670	72.23	49.056	.633	.804	262
12	2.37	.622	72.39	50.959	.462	.811	262
13	2.30	.729	72.46	50.518	.424	.812	262
14	2.18	.659	72.58	51.287	.395	.813	262
15	2.50	.648	72.26	51.601	.368	.814	262
16	2.76	.456	72.00	51.521	.568	.810	262
17	2.89	.338	71.87	53.010	.472	.814	262
18	2.81	.425	71.95	52.320	.480	.813	262
19	2.56	.639	72.20	51.495	.386	.814	262
20	2.59	.605	72.17	51.936	.361	.815	262
21	2.44	.690	72.32	51.722	.327	.816	262
22	2.60	.597	72.16	50.352	.559	.808	262
23	2.67	.540	72.09	51.264	.503	.810	262
24	2.66	.527	72.10	51.236	.522	.810	262
25	2.71	.525	72.05	51.235	.524	.810	262
26	2.60	.570	72.16	52.411	.328	.816	262
27	2.64	.541	72.12	50.971	.542	.809	262
28	2.17	.824	72.59	52.803	.164	.825	262
29	2.22	.824	72.54	53.422	.112	.827	262
30	2.31	.769	72.45	52.853	.179	.823	262
Scale			**74.76**	**55.45**		**.853**	**30**

	Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	72.15	49.514	.643	.804
2	72.15	49.295	.655	.804
3	72.06	52.084	.384	.814
4	73.10	59.403	-.395	.846
5	73.22	60.663	-.555	.848
6	72.03	51.528	.490	.811
7	71.97	51.938	.496	.812
8	71.95	52.396	.446	.813
9	72.55	53.673	.086	.829
10	72.14	51.514	.495	.811
11	72.23	49.056	.633	.804
12	72.39	50.959	.462	.811
13	72.46	50.518	.424	.812
14	72.58	51.287	.395	.813
15	72.26	51.601	.368	.814
16	72.00	51.521	.568	.810
17	71.87	53.010	.472	.814
18	71.95	52.320	.480	.813
19	72.20	51.495	.386	.814
20	72.17	51.936	.361	.815
21	72.32	51.722	.327	.816
22	72.16	50.352	.559	.808
23	72.09	51.264	.503	.810
24	72.10	51.236	.522	.810
25	72.05	51.235	.524	.810
26	72.16	52.411	.328	.816
27	72.12	50.971	.542	.809
28	72.59	52.803	.164	.825
29	72.54	53.422	.112	.827
30	72.45	52.853	.179	.823