



Evaluation of the Quality of Community Based Child Care Centers:

**A multi-Method Multi-Informant Study in
Morogoro Tanzania**

**A report for
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Abstract

Millions of children in Sub-Saharan Africa (SSA) are at risk of poor developmental outcomes due to exposure to various potentially debilitating conditions such as malnutrition, chronic poverty and infectious diseases. Quality Early Childhood Education (ECD) and Learning experiences could potentially ameliorate against these childhood disadvantages. Firelight Foundation, an international non-governmental organization has been working with various community based organization in Tanzania to contribute towards the improvement of the quality of the preschools. This report presents the results of a cross-sectional, multimethod and multi-informant work to evaluate the quality of ECD programmes supported by Firelight Foundation in Morogoro. A total of 3 ECD centres were evaluated. Additionally, 27 children were assessed, 3 caregivers were involved in in-depth interviews and 9 key informants (including 3 caregivers) were involved in a qualitative sub study. A set of measures were administered including the Measuring Early Learning Environment, Adapted Version of Parental Evaluation of Developmental Status, a teacher interview, a measure of the early environment at home and a semi-structured qualitative interview guide. We also evaluated the extent to which each of the ECD centers aligned with the government requirements. Our results indicated that all the ECD centres did not met the criteria for high quality ECD care. The ECD has had high scores on physical environment. Unfortunately, were distinct challenges in all the other domains including the teaching of numeracy, and literacy. We observed that the caregivers had limited training and that the key challenge facing these ECD centres was the lack of resources. In the survey on home environment, it was noted that very few children had opportunities for early learning and that there was distinct lack of paternal involvement in stimulating the children. Implications of these observations were discussed and recommendation for future programme work are made.

1.0 BACKGROUND

Approximately 250 million children in Low and Middle-Income countries (LMICs) are at risk of not achieving their developmental potential (McCoy et al., 2016). This is largely due to exposure to multiple risk factors including malnutrition, infectious diseases, lack of cognitive stimulating materials at home and chronic poverty among other risk factors (Frangillo, Kulkarni, Basnet, & de Castro, 2017; Walker et al., 2007; Walker et al., 2011). High quality Early Childhood Development (ECD) Centres has been associated with can mitigate against exposure to various risk factors (Engle et al., 2007; Irwin, Siddiqi, & Hertzman, 2007; Martinez, Naudeau, & Pereira, 2012; Melhuish et al., 2008). Given this, Firelight Foundation has partnered up with community based organisation (CBOs) across Malawi, Zambia and Tanzania to reach young children and families in large numbers. The foundation identifies, funds, and strengthens promising CBOs that support the health, resilience, and education of children in Africa. With the support of the Conrad N. Hilton Foundation, they began the implementation of a three-year early childhood development (ECD) initiative since 2012. In Morogoro Tanzania, Firelight Foundation has patterned up with Safina Women's Association (SAWA) to provide enhanced SAWA led ECD programmes.

However, to be able to provide adequate technical support Firelight Foundation systematically collects monitoring and evaluation data through independent research consultancy. As part of baseline evaluation that will inform a planned intervention programme, the foundation commissioned a team of independent researchers to evaluate the quality of the current ECD education offered at SAWA supported ECD centres. The research study aimed to address the following research questions:

- a) What is the quality of pre-schools run by CBOs supported by Firelight Foundation in Morogoro?
- b) What are the school readiness score for children attending these ECDs? How are these associated with the quality of ECD?
- c) What are the qualifications and skill sets of the caregivers in this ECD centers
- d) What is the home environment of the children and the early learning opportunities at home?

- e) What is the perception of the members of the community on the challenges faced by the ECD centers in their communities?

It is expected that the results from this kind of analysis will provide Firelight and relevant stakeholders with a holistic view of the ECD services being provided by the CBOs in Morogoro. This information will be key in designing targeted interventions to support the CBOs in providing quality ECD education.

2.0 METHODS

2.1 Study site: The study site was carried out in Morogoro District, Tanzania.



2.2 Study design: We used a cross-sectional study design involving multi-informants and multi-methods of data collection.

2.3 Study population: A total of 3 ECD centres took part in this study, we also interviewed 3 caregivers in these ECD centres and 27 children and their caregiver were involved in the study. Qualitative interviews were carried out with 9 key informants

2.4 Sampling Procedure : All preschools supported by SAWA were involved in the study. Following the selection of the pre-schools,

random stratified sampling was carried out in those schools with the aim of selecting 5 boys and 5 girls in each school. The first five randomly picked names were recruited into the study. Where the number of boys/girls (going to primary school the following study year) could not reach 5, we substituted this with the opposite gender. Children were randomly selected from those available in school on the day that schools were visited for assessment.

Table 1. Summary of data collection activities, aims, tools, and sample used in study

Activity	Aim	Tool	Sample
Classroom observations	Measure quality of environment, interactions, and activities in CCBC classrooms	Measure of Early Learning Environment	Classrooms at 3 ECD centres
Caregiver interviews	Assess CBCC caregivers' background training, working conditions, and perceived competencies	Teacher questionnaire	3 CBCC caregivers
Child Assessment	Evaluate the children's developmental outcomes	Parent Evaluation of Developmental Status	27 children
Parent interviews	Get parental socio-economic status and early learning environment of children	SES and MISC Items	27 parents
Qualitative interviews	Elicit key informants' perceptions of challenges facing CCBCs	In-depth semi-structured interviews	3parents
			3ECD caregivers
			3 members of the CBCC management team

2.5 Measures:

1. *Measure of Early Learning Environment*: includes a 50-item observation measure of the pre-primary setting to be conducted by trained local research assistants(Raikes, 2017). The measure has recently been developed by experts under the sponsorship of international organizations such as Brookings Institute, UNESCO, UNICEF, and World Bank. The items are adapted versions of other commonly used quality measures, modified for use in low- and middle-income countries (LMICs). Observers are trained to watch and rate ECD activities over the course of a 3-hour morning pre-school session. The measures has previously been used in other SSA countries(Shallwani, Abubakar, & Kachama, 2018) including Tanzania (Anderson & Sayre, 2016).
2. Community informants were administered a semi-structured interview asking for their own and others' opinions on the schooling situation in their village.
3. *Measure of school readiness*: An adapted version of the Parental Evaluation of Developmental Status: Developmental Milestones was administered. Data were collected based on direct evaluation of the child. The measure which has previously been used in

other low and middle-income settings evaluates the students' knowledge in terms of numeracy, literacy, receptive and expressive language among others. The items take around 5 minutes to administer.

4. *Checklist on minimum government requirements:* Based on a review of the minimum standard for quality ECD in Tanzania, a checklist was developed to be used in every pre-school to evaluate the extent to which each pre-school meets the minimum requirements suggested by the Tanzanian government for a preschool to be allowed to function for this questionnaire.
5. *Familial Characteristics:* Using a semi structured interview guide, the family's SES and the opportunities for early learning within the home environment were enquired.

3.0 RESULTS

3.1 ECD quality results

Data collected on the ECD centers were rated on a scale of 1-4, with 1 representing very low quality and 4 indicating the highest quality desired. A rating of above 2.5 which is slightly above the average score is considered acceptable quality while any score above 3 is good quality. Overall, the mean quality was slightly below what is considered acceptable quality (i.e. 2.5). The means for each ECD centers were all below the cut-off scores (see table 2).

Table 2: Mean Total Quality Scores Per Center

	<i>Preschool centre</i>	<i>Mean Score</i>
1	<i>Vianzi ECD</i>	<i>1.84</i>
2	<i>Matangani ECD</i>	<i>2.10</i>
3	<i>Leena ECD</i>	<i>2.38</i>

Physical environment

Overall, this domain presented an area of distinct strength with most of the items being scored as high or very high quality. Areas presenting concern were hand washing practices and display of individual children's work. Student's drawings art work and writing were rarely observed in the classroom and this needs to be encouraged. In terms of hand washing, as a main concern,

most ECD centers were not observed to encourage the use of soap when children were washing their hands. Also, the washing of hands after toilets for all the children was not done systematically. The inclusion of good handwashing practice in the ECD centers activities would be highly encouraged. Caregivers need to be sensitized more on the need for proper hygienic practices in these centers.

Table 3: Means scores for the items on physical environment

	Mean (SD)	Minimum	Maximum
Hygiene/cleanliness around the school	4.00 (0.00)	4	4
Adequacy of toilet facilities for both boys & girls	4.00 (0.00)	4	4
Availability of safe drinking water	3.00 (1.73)	1	4
Hand washing practise	1.33 (0.58)	1	2
Children have access to seating materials	4.00 (0.00)	4	4
Protection from hazards outside classroom	2.67 (0.58)	2	3
Protection from hazards within classroom	4.00 (0.00)	4	4
Space in classroom enough for children	4.00 (0.00)	4	4
Display of child's individual or group work	1.00 (0.00)	1	1
Print displays on the wall	3.67 (0.58)	3	4
<i>Physical environment</i>	3.17 (0.32)	2.80	3.40

Adult-Child Interaction

This domain was another area which had a relatively weak strength with a mean score of 2.29 which is below the expected cut-off of acceptable ECD quality. Areas of distinct concerns were the teachers limited use of open-ended questions and a lack of scaffolding. We observed that teachers rarely provided guidance and opportunity for students to learn new things when faced with a situation where they could not get the answer right. Instead of the caregivers providing help for the child to learn what they did not know, the caregiver either provided the correct answer or selected another child to respond to the question. A surprising observation was the fact that the use of praise to encourage children was also very rare. The caregivers in these ECD centres need to be encouraged to praise individual efforts of children.

Table 4: Mean scores for items on adult-child interactions

	Mean (SD)	Minimum	Maximum
Waiting time	3.33 (0.58)	3	4
Teacher's response to child initiated questions or comments	2.00 (0.00)	2	2
Teacher's use of open-ended questions	1.33 (0.58)	1	2
Scaffolding by teacher	2.00 (0.00)	2	2
Disciplining approach	2.67 (0.58)	2	3
Behavioural indicators of teacher-child positive environment	1.67 (0.58)	1	2
Encouragement of positive environment among children	2.00 (1.73)	1	4
Behavioural indicators of teacher-child negative environment	3.33 (1.15)	2	4
<i>Adult-Child interactions</i>	2.29 (0.51)	1.75	2.75

Inclusiveness

The mean score for this domain was slightly below the expected cut off 2.50. This below par-performance can largely be attributed to low levels of enrollment of children with disability. Moreover, in almost all the classes observed, the caregivers did not pay attention to individual needs of children. Most of the activities were uniform without considering any differences based on age, ability or interest. These implies that the ECD caregivers need to be sensitized to take time and address the needs of each child and structure classroom activities in a way that is suitable to the children's new learning. Another area of weakness in this domain was the lack of activities to raise awareness of ethnic and religious diversity.

Table 5: Mean scores for the items on inclusiveness

	Mean (SD)	Minimum	Maximum
Ethnic, religious and gender diversity	3.33 (1.15)	2	4
Enrolment and participation of disabled children	1.67 (1.15)	1	3
Catering for different learning needs	1.67 (0.58)	1	2
Gender equality in class participation	3.00 (0.00)	3	3
Gender equality in play activities (indoor & outdoor)	4.00 (0.00)	4	4
Activities raise awareness of ethnic and religious diversity	1.00 (0.00)	1	1
Inclusiveness	2.44 (0.35)	2.17	2.83

Daily Routine



This area was scored very poorly. It was observed that children spend a lot of their time in teacher lead activities. There was an absence of curriculum or lesson planning, and group learning did not take place. Given the salient benefits of having a varied student centred learning environment, there is a need for these ECD centres to be advised to change the way they programme their day to day activities so as to provide the children with a more

child centred curriculum. Especially useful here would be a curriculum that involves a lot more of play and arts.

Table 6: Mean scores for the items on daily routine

	Mean (SD)	Minimum	Maximum
Curriculum outlining competencies and lesson plans available	1.33 (0.58)	1	2
Activities in a daily routine	2.33 (0.58)	2	3
Small group learning	1.00 (0.00)	1	1
Daily routines	1.56 (0.38)	1.33	2.00

Learning Activities.



Learning activities e.g. numeracy, literacy and technology were poorly scored across the board. This is despite the observation that children were being taught numeracy and literacy as part of teaching. We also observed that children are taught using locally available materials such as writing on the ground. There is therefore a need to interrogate

the source of poor performance.

Table 7: Mean scores for the items on literacy

	Mean (SD)	Minimum	Maximum
Use of writing implements	1.33 (0.58)	1	2
Reading and/or writing letters by children	3.00 (0.00)	3	3
Reading age-appropriate illustrated storybooks	1.67 (1.15)	1	3
Introduction to new vocabulary	1.00 (0.00)	1	1
Language/literacy learning connected to past learning	1.00 (0.00)	1	1
Language & Literacy	1.60 (0.20)	1.40	1.80
Counting and enumeration	2.00 (1.00)	1	3
Reading and/or writing simple numbers	3.33 (0.58)	3	4
Activities teaching about shapes	1.00 (0.00)	1	1
Use of objects for math concepts not simply for enumeration	1.00 (0.00)	1	1
Addition and subtraction of numbers	1.00 (0.00)	1	1
Numeracy learning connected to past learning	1.00 (0.00)	1	1
Numeracy	1.56 (0.25)	1.33	1.83
Accessibility of materials from natural or technological world	1.67 (0.58)	1	2
Learning and exploration of natural or technological world	1.33 (0.58)	1	2
Nature or technological world	1.50 (0.50)	1.00	2.00

Group Activities.

In this domain, there are four items, two of the items were generally very well scored. A lot of singing and dancing was observed in different ECD classrooms. However, in 2 areas i.e. artwork and use of rhyme in songs and poems lagged most centers. These two areas need more work to enhance quality and diversity of group activities in these ECD centres. Poor performance on these two items may imply the caregiver's lack of awareness on how to implement them in a teaching situation.

Table 8: Mean scores for the items on group activities

	Mean (SD)	Minimum	Maximum
Age-appropriate gross motor activities led and supervised by adult	3.00 (1.00)	2	4
Singing and movement	3.00 (1.00)	2	4
Use of rhymes in songs and poems	1.33 (0.58)	1	2
Artwork done such as drawing, coloring, clay, painting	1.00 (0.00)	1	1
Group Activities	2.08 (0.58)	1.75	2.75

Free Play

This was an area of general weakness in all ECD centers that were observed. All the items in this domain were poorly scored and special attention needs to be put into enhancing this area.

Table 9: Mean scores for the items on free-choice indoor play

	Mean (SD)	Minimum	Maximum
Time for indoor play given	1.00 (0.00)	1	1
Children free to choose from different interest centres	1.00 (0.00)	1	1
Accessibility of dramatic or imaginative play materials	1.00 (0.00)	1	1
Accessibility of blocks or block-like objects for construction	1.00 (0.00)	1	1
Children have access to 5 or more different books	1.00 (0.00)	1	1
Adult-supervision and adult-child interaction during free play	2.33 (0.58)	2	3
Free-Choice Indoor Play	1.22 (0.10)	1.17	1.33

3.2 Alignment to Tanzanian government policy

All the schools had parent committee that had been elected by the standards and guidelines offered by the Tanzanian government. This implies that in terms of the management of the ECD's, they met the basic requirement set by the government.

However, the ECD centres were doing less well in implementing some of the measures that had been proposed to protect the children. These measures included having children escorted to and from school as well as having available and reliable contact information of emergency services such as the contacts of the nearest health facility doctors and security services, mainly the police. In one of the schools, for example, there was a report of a child getting hurt in the school context to the extent that the child bled after hurting their teeth. Such a case requires immediate linking with health facility for appropriate action. The available school structure largely seemed to be adequate with all the schools were observed to have adequate facilities.

It was observed that the ECD centres largely lacked age appropriate play materials. This is a major area of concern that needs to be addressed. A potential solution would be to sensitize caregivers and parents on how to use local materials for developing play materials for children.

The Tanzanian government provides guidelines on ECD feeding programmes. One of ECDs reported to provide meals as advice. However, this was porridge only hence not a balanced diet. Moreover, the Tanzanian government provides guidelines on how the meals should be handled e.g. those cooking need to cover their hair which seem to be adhered to in the school that reported providing a meal.

Another area of weakness in the observed ECD centres, according to the Tanzania government requirement, was the lack of inclusion of children with disability in their programmes. The Also, the Tanzanian government requires that ECD centres follow a structured curriculum. However, there seems to be a lack of awareness among the CBO management (who run these ECD centres) on the curriculum they should be using and how to implement it.

Table 10: A summary of the ECD centre compliance with the Tanzanian Government ECD education requirements

Minimum levels of child protection measures	Yes or n (%)	No (%)
Children accompanied to ECD centre	0 (0.00)	3 (100.00)
Contact with health centre or police	1 (33.33)	2 (66.67)
Cases of violation of children rights in the past 3 months		
Reports of child abuse?	0 (0.00)	3 (100.00)
Reports of children being hurt in school context?	1 (33.33)	2 (66.67)
Availability of trained teachers at ECD		
Presence of trained teachers at the ECD	1 (33.33)	2 (66.67)
Certification such as MMMAM	1 (33.33)	2 (66.67)
2 or more weeks of ECD training to the caregiver	1 (33.33)	2 (66.67)
Ratio of caregivers and children is 1:25	2 (66.67)	1 (33.33)
Structure and layout of ECD centre		
Unhygienic environment	0 (0.00)	3 (100.00)
Size of school compound*		
Almost half an acre	1 (33.33)	
More than one acre	1 (33.33)	
Quarter an acre	1 (33.33)	
Any window	3 (100.00)	0 (0.00)
How large are the windows*		
Large	2 (66.67)	
Very large	1 (33.33)	

Class roof	3 (100.00)	0 (0.00)
Safety of the ECD location		
Hazardous environmental factors around the schools	2 (66.67)	1 (33.33)
Sanitary facilities		
Availability of suitable sanitary facilities for young children?	3 (100.00)	0 (0.00)
Availability of age appropriate play items and equipment		
Availability of local play materials	0 (0.00)	3 (100.00)
Are the play materials age appropriate?	-	-
Do the play materials encourage physical, cognitive and social emotional development?	-	-
Are the play materials safe and healthy for children?	-	-
Meal plan		
Meal provided to children at the centre	1 (33.33)	2 (66.67)
If provided, is the meal a balanced diet +	0 (0.00)	1 (100.00)
If provided, do the cooks cover their heads +	1 (100.00)	0 (0.00)
Do the cooks have an ECD card +	1 (100.00)	0 (0.00)
Does the ECD make use of structured curriculum	1 (33.33)	2 (66.67)
Are there children with disability at the centre?	1 (33.33)	2 (66.67)
If yes, is the environment adapted to the needs of disabled children?	1 (100.00)	0 (0.00)

* Not exact. Based on mere observational estimate

+ Numbers restricted to where a meal was provided

-No observation

3.3 Teacher/ Caregiver Interview

We interviewed 4 caregivers in the 3 ECD centres. We looked at teacher characteristics, experience and teaching practices and observed that only 2 caregivers had some training in early childhood care and development.

When we inquired about their welfare, majority (three out of the four caregivers) reported they got some pay which was typically given on time.

Table 11: Teacher characteristics – qualification, experience and teaching practices

Education level	n (%)		
Less than form 4	2 (50.00)		

Form 4-6	2 (50.00)		
Certification	Yes (%)	No (%)	
ECD certification or other formal courses	2 (50.00)	2 (50.00)	
Experience	Mean (SD)	Min	Max
Years worked in current pre-primary school	6.00 (2.71)	4.00	10.00
Years as a teacher overall	8.00 (3.56)	5.00	12.00
Years teaching children <7 years	7.00 (2.45)	5.00	10.00
Teaching & Professional development	n (%)		
Do you use lesson plans?			
No	2 (50.00)		
Yes, a couple of times a week	1 (25.00)		
Yes, everyday	1 (25.00)		
Attended any in-service training in the last 12 months?	n (%)		
No	1 (25.00)		
Yes, multiple sessions on 2-3 days	3 (75.00)		

There was a significant variation in teachers experience in ECD programmes, with some reporting five years of experience while the maximum experience reported was 12years. All the interviewed caregivers in these ECDs reported that they had been observed once to 3 times in the last 12 months. They all reported to have received feedback following observation, which they found very useful.

Table 12: Teacher supervision, monitoring and feedback in the last 12 months

Being observed in classroom while teaching as a part of supervision, monitoring or training	n (%)
Once to 3 times	4 (100.00)
Frequency of feedback after supervision or monitoring	
Never	1 (25.00)
Once or twice a year	2 (50.00)
Three to five times a year	1 (25.00)
Usefulness of feedback (teacher's perception)	
Very useful	3 (100.00)

As can be seen on table 13, it seems like the ECD caregivers actively engaged with parents by providing some feedback on the child's performance, providing information on parenting behaviour and having home visits. However parental involvement in school activities seemed very low and there is an urgent need to get parents more involved with the ECD activities.

Table 13: Parents and community Engagement

Informing parents about child performance	n (%)	
Yes, to some parents when there is a problem	1 (25.00)	
Yes, to most parents once a year	3 (75.00)	
Providing information to parents about parenting	n (%)	
Yes, by talking with some parents	4 (100.00)	
Providing a group session on parenting or home visits	n (%)	
Never	2 (50.00)	
Once or twice a year	1 (25.00)	
Six or more times a year	1 (25.00)	
Involving parents in school-based activities	Yes (%)	No (%)
Cooking food	0 (0.00)	4 (100.00)
Make or buy material for preschool	1 (25.00)	3 (75.00)
Help with school garden or grounds	1 (25.00)	3 (75.00)
Monitor attendance of children or teachers	2 (50.00)	2 (50.00)
Monitor the spending of preschool budget	0 (0.00)	4 (100.00)
Community participation in decision making	n (%)	
No, decisions are made only by the program staff	2 (50.00)	
Yes, most decisions are made with input from parents	2 (50.00)	

3.4 Childhood Outcomes

To evaluate childhood outcome of interest, we used an adapted version of Parent Evaluation of Developmental Status (PEDS). In this section we will present a summary of performance based on an item by item basis. We will use the subdomains to structure the discussions.

FINE MOTORS

Table 14 presents the results of the fine motor section of the PEDS. As can be seen from the table, a significant number of children were capable of drawing with more than 80% being able to use crayons. Also, most of the children were able to draw a person with body parts being indicated. We observed the children had significant difficulties with writing of alphabet and words.

Table 14: Fine motor

Does the child try to draw using crayons or mark pens?	n (%)
No He/she has never tried	5 (18.52)
Yes	22 (81.48)
Does a child draw using crayon or a mark pen without drawing outside the paper?	
No	5 (18.52)
Yes	22 (81.48)
Can the child draw a person's image/picture having one of these parts "head, legs, hands, eyes"?	
No	6 (22.22)
Two or more parts	21 (77.78)
Can the child draw a person's image/picture having one of these parts "head, legs, hands, eyes, body, nose, ears, fingers"	
No	6 (22.22)
1-3 parts	5 (18.52)
Four or more part	16 (59.26)
Request the child to draw a triangle. Can he/she draw?	
No	22 (84.62)
Yes	4 (15.38)
Can the child write any of the alphabetical letters?	
No	24 (88.89)
One letter	1 (3.70)
Two or more alphabetical letters	2 (7.41)
When you tell the child to write number (1, 2, 3, 4 ... and so on), how many numbers can he/she write?	
None	4 (14.81)
Number 2	3 (11.11)
Number 3 or more	20 (74.07)
Request the child to write alphabetical letters starting from "A". How many letters can he /she write in order?	

None	25 (92.59)
1-2 letters	1 (3.70)
3 or more letters	1 (3.70)
Show the child the shape of the Δ then say, “draw this.” Is he/she able to draw?	
He/she could not	17 (62.96)
All lines are joined	10 (37.04)
Tell the child, “Please write the following words” (ensure that he/she doesn’t see them when you are reading, and give him/her time to write every word): “give ... , book...,hope.... , use..., put together” How many words can he/she write correctly?	
1	27 (100.00)

Receptive Language.

In a naming task, most children (88.89%) could name more than 2 body parts. Few children (about 29.63%) understood basic concept of space i.e. front, behind, bottom, among others (see table 15). Most of the children (more than 84.60%) understood the basic concept of size. Also, most children could adequately follow instructions, and recognise body parts. Tasks on colour recognition was poorly performed with almost 63.33% being unable to recognize any colour.

Table 15: Receptive language

Item	n (%)
How many body parts can your child show/touch when you utter, “Where are your eyes?” ... “Where is your nose?” “legs” ... “hair” ... “ears”	
None	2 (7.41)
One	1 (3.70)
Two or more	24 (88.89)
Show the book to the child and say “show me the front of the book” or “where is the front?” Try again with the “back”, “top” and “bottom”. How many parts did your child know?	
Not even one	19 (70.37)
Some	8 (29.63)
How many body parts can a child show when you say, “where is your head” “Where are your legs” “Hands?” ... “Fingers?” “Teeth?” “thumbs” ... “toes”	
Not even one	2 (7.41)
1-2	3 (11.11)
3 or more	22 (81.48)

Point at the image of a cow and a tree and say, “Show me the one that is big. Now show me the one that is small” What does your child know?	
He/she don’t know	2 (7.69)
He/she knows big or small and not all	2 (7.69)
Knows all	22 (84.62)
If you tell the child to do two things together, does he/she remember to do all? Try with these instructions “Stand up and place the toy on the chair” or “ give me the book and put your hands on the head”	
No	2 (7.41)
He/she does one	11 (40.74)
Yes, he/she does all	14 (51.85)
If you tell the child to do three things together, does he/she remember to do all? Try with these instructions “stand up, clap and sit down” or “Touch your nose, give me the book and place the toy on the book”	
No	3 (11.11)
He/she does one	6 (22.22)
He/she does two	3 (11.11)
He/she does all	15 (55.56)
Point at the charts which are colored and tell the child, “Show me something which is red” then say “Show me something that is blue “Again try with these: green, yellow, orange, purple, white and black. How may has he/she gotten right?	
None	11 (40.74)
Few	8 (29.33)
A lot	8 (29.33)
Tell the child “Point at your knees” or “Where are your knees?” Try again with the chin and finger nails? How many has he/she gotten right?	
None	4 (14.81)
One	2 (7.41)
Two or more	21 (77.78)
Tell your child “Put your hands on the head” then “Put your fingers below the eyes” now show with a finger one of the page in the book and say, “Point at the center of the page” then “Point at the edge of the book” How many has he/she gotten right?	
None	4 (14.81)
Not all/Some	22 (81.48)
All	1 (3.70)
Ask the child, “Where are your heels” “Ankles”... “Shoulders” ... and “elbows?” Which parts does he/she know?	
None	5 (18.52)
1	18 (66.67)
2	4 (14.81)
Tell the child, “Point at your pelvis/thighs ... wrists ...waist.” Which parts does he/she know?	
None	5 (18.52)
1	21 (77.78)
2 or more	1 (3.70)

Table 16: Expressive Language.

Most children (96.30%) could correctly name 2 or more household goods. Similarly, most (96%) could speak an understandable speech. The children were also able to repeat sentences with minimal errors, and identify items in a picture. However, most could not identify alphabets. This shows that while many were on track about speech acquisitions, the high language acquisition and pre-literacy skills need more attention.

Table 3: Expressive Language

If you ask the child “What is this” and show him/her things like spoon, a cup, a doll, a lorry, a chest, crayon, biscuit, chair, lamp. Which names is he/she able to mention of these items or others?	
None	1 (3.70)
2 or more	26 (96.30)
When the child is talking, how many words does he use altogether?	
None	1 (3.70)
2 or more	26 (96.30)
When the child is talking to other people, in what he/she is conversing/saying, to which level do they understand him/her?	
None	1 (3.70)
More/A lot	26 (96.30)
Ask the child, “We use scissors for what purposes?” then “What is the work of the pot?” Does he/she use words such as “to cut things” or “storing cold water”	
No	16 (59.26)
One right	10 (37.04)
All are right	1 (3.70)
Please show the child the story that is on the left hand side and say “Please point at the first word” then “Please point at the last work” What does your child know?	
Doesn’t know at all	12 (44.44)
He/she knows “beginning” or “the end”	13 (48.15)
He/she knows “the beginning” and “the end”	2 (7.41)
Does the child use words which tell more about time such as morning, during the day, at night, yesterday or tomorrow?	
No	16 (59.26)
One	5 (18.52)
Some	6 (22.22)

Tell the child, “Repeat after me: Jane likes throwing and clutching the ball” If your child has wronged/errors, try this again “Repeat after me: Bob reads the books well when he gets time”. How did your child perform?	
Many errors	6 (22.22)
Some errors	4 (14.81)
No errors even in one sentence	17 (62.96)
Point at the image/picture of a cow, tree or child legs. Ask your child “What is this?” Does the child use words which the adults usually use?	
No	3 (11.11)
Some	2 (7.41)
Yes	22 (81.48)
Tell the child, “I want you to say A, B, C e.t.c” How many letters can he/she recite or sing before/without making an error?	
None	8 (29.63)
1-8	9 (33.33)
9-15	2 (7.41)
16-25	4 (14.81)
All	4 (14.81)
Point at a puppy, and tell your child, “Repeat after me: The puppy is supposed to be a pet animal but it needs more love” If there are errors, try with this again: “Repeat after me: The girl went to swim with her friends at the lake.” How does your child perform?	
Many errors	6 (22.22)
Some errors	4 (14.81)
There is no error even in one sentence	17 (62.96)

Pre- numeracy

There was generally poor performance in pre- numeracy section. Most (96.30%) children could recognise a coin and most could do some basic counting. Additionally, many could recognise numbers although they were behind when it comes to basic additions. See table 17 for the results.

Table 17: Results of the performance in pre-numeracy

Item	n (%)
When you show your child a coin and then you ask him/her “What is this?” does he/she responds that it’s a shilling or cent?	
He/she says shilling or cent	26 (96.30)
No	1 (3.70)
Tell your child, “I want you to count for me. Are you ready? One ...!” (Don’t say another thing). To which number can your child count up to?	

Has not counted yet	1 (3.70)
3 or more	26 (96.30)
Ask the child to give you two items (such as toys, a coin or books). Then request one item, items 2, 3, 5 and 4. Does he/she give you the number of things/appropriate items every time?	
No	4 (14.81)
Sometimes	7 (25.93)
Yes	16 (59.26)
Point at the blocks, then point at number 5 while saying “tell me this number”. Repeat by pointing at number 6 then number 7. How many has he/she gotten right?	
None	7 (25.93)
Some	5 (18.52)
All	15 (55.56)
Point at number 8 and ask your child: “What is this?” Then point at number 7 ... 9 ... and 10. How many has he/she identified/said?	
None	8 (29.63)
1-2	4 (14.81)
3 or more	15 (55.56)
Tell your child, “Susan has got three big fish and five small fish,” How many fish does she have? What does your say?	
8	1 (3.70)
Another number	20 (74.07)
None of the numbers	6 (22.22)

Literacy.

Similarly, with reading, children could not recognise or differentiate letters or read words. However most could remember at least parts of the story told to them and present back to the person administering.

Table 18: Reading

Item	n (%)
Tell the child, “Listen to these words whether they are the same or not?” then say, “ Saa-taa: are they the same/alike or not?” Then say, “word-word: are they the same/ alike or not?” Then say, “pipi-bibi: are they the same or not?” Then say “sisi-zizi: are they the same or not?” How many has he/she gotten right?	
None	16 (59.26)
Some	9 (33.33)
All	2 (7.41)

Point at a letter and ask, “Where is letter A?” “Where is letter X” “Where is letter O” Continue trying then observe if he/she will be able to identify two or three letters correctly. How has your child performed?	
He/she has identified but not correctly	12 (44.44)
He/she has identified one correctly	6 (22.22)
He/she has identified two or more correctly	9 (33.33)
Point at the alphabetical letter and ask your child, “What is this?” Try again with another letter; observe if your child can mention at least one letter correctly. How has he/she performed?	
Doesn’t know the names of the letters	13 (50.00)
Has mentioned a letter but incorrectly	4 (15.38)
Has mentioned one or more correctly	9 (34.62)
Point at alphabetical letters and ask “what is this?” How many letters can your child mention?	
None	17 (62.96)
1-7	2 (7.41)
8 or more	8 (29.63)
Tell your child, “I will read for you a story. When I am through, I want you to narrate to me.” Then read for him/her the story (about a duck) and tell him/her, “ Narrate to me the story that you have heard.” What can your child narrate?	
Nothing	1 (3.70)
The beginning	3 (11.11)
The middle	3 (11.11)
The end	4 (14.81)
All three parts	16 (59.26)
Point at the word “FROM” and say “What does this mean?” then point at the word “DANGER”, “PRECAUTION” and “POISON” and tell your child to read them. How many words can he/she read?	
0	26 (96.30)
1	1 (3.70)

3.6 Home Environment Of The Children In The ECD Centres

3.6.1 Parental characteristics

Most of the parents for the children assessed in this study had completed primary education or less in terms of highest educational achievement. Only 2.3% of the interviewed parents were professionals. Majority of the parents were small-scale farmers and owners of small scales business, thus putting them in the low-income groups within this setting. More than 70% of the parents reported that they were married while the remaining were either cohabiting (14.87%), or never married (14.8%) and the remaining were either separated, divorced or

widowed. Table 19 presents all the results regarding parental socio-demographic characteristics.

Table 19: Parental sociodemographic characteristics

Characteristic	n (%)
Parental education level	n=27
None	10 (37)
Primary complete	7 (25.9)
Primary incomplete	7 (25.9)
Secondary	1 (3.7)
Other	2 (7.4)
Parental religion	n=27
Christian	24(88.90)
Islam	3(11.1)
Parental occupation	N=27
None	12 (7.02)
Farmer (both crops and livestock)	72 (42.11)
Trader/Business	64 (37.43)
Casual labourer	9 (5.26)
Fisherman	4 (2.34)
Professional e.g. teacher	4 (2.34)
Other	6 (3.51)
Parental marital status	n=27
Never married (single)	4 (14.8)
Cohabiting	4 (14.8)
Married	19 (70.4)

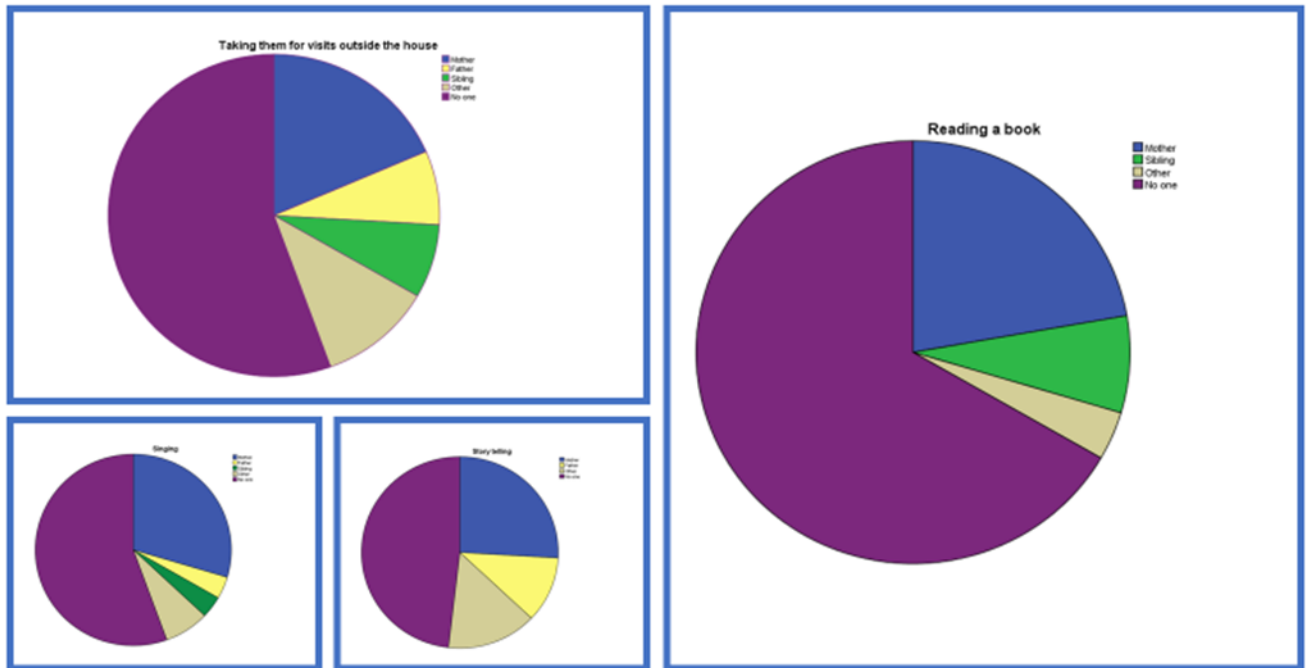
3.6.2 Child home learning environment

Most of the children (n=15; 55.6%) did not have picture books at home. For those who had picture books the most had between one and five books. Only a few of the children were reported to have access to toys whether homemade or bought at the market place/shops. However, a significant percentage of the children (n=15; 55.6%) were reported to have access to play materials that were either naturally occurring in the environment (sticks, shells and leaves) or those that were household items such as bowls and cups.

An alarming observation is that most of the children did not have anyone participate in early learning and stimulating activities with them at home. As can be seen from Figure 1 below, in

all activities asked, the highest percentage of children had not had that activity in the past three days.

Figure 1: A summary of the person who has been involved with the child in any of the activities in the past three days



*Figure legend: **Blue-** Mother, **Yellow** -father, **Green**-Sibling, **Brown**-another person, **Purple-** No one*

3.7 Results from the Qualitative Sub-study

To complement the quantitative data, we carried out qualitative interviews to provide us with a better understanding of community perspectives on some of the challenges faced by the ECD centres and an insight on community goals and expectations from the ECD centres. During our qualitative analysis, we sought to answer two main questions (a) what are the goals of ECD learning and b) challenges faced by the ECD centres. These questions guide the presentation of our findings, supported by selected excerpts from key informants. Three in-depth interviews (with a parent, a school committee representative and a teacher/caregiver) were carried out in each of the ECD centres, resulting into 9 interviews in total. During analysis, the data from the ECDs were collated. During the thematic analysis, we checked to confirm that this collapsing of

data did not lead into the loss of any important information specifically related to specific ECD centres. Our analysis indicated that most of the experience were quite common cross all 3 ECDs centres.

3.7.1 Goals of ECD

We started by asking each interviewee why people in that community took their children to the ECD centres and what they hope to achieve by bringing the children to the ECD centres. Our results indicated that educational related goals such as “getting ready for primary school”, “language development” and “getting a good education” were some of the most frequently mentioned reasons for parents taking their children into the ECD centres.

Table 20: Perceived reasons for taking children to the ECD centres

Why parents take children to school	Caregivers (N=3)	Committee Members (N=3)	Parents (N=3)
For children not to carry out home activities e.g. grazing	1	0	0
Get prepared for primary school	2	2	1
Get good education	2	0	3
To read	1	0	2
Language development	1	2	0
To learn many things	1	0	0
Children in the ECD understand better than other children	0	1	0
It's the nearest school	0	1	0
For brain development	0	1	1

Challenges faced by the ECD centres

Our findings following discussions with the key informants indicated a diversity on perceived challenges faced by ECD centres. Given the small number of interviewees, making generalization is difficult, but it seems like some of the key challenges include: lack of parental involvement, low and irregular pay for caregivers, and insufficient resources (including teaching staff) for the ECD centres. Table 21 presents a summary of the results.

Table 21: Perceived challenges that ECD centres face

Challenges	Caregivers (N=3)	Committee Members (N=3)	Parents (N=3)

Parents do not understand or they do not see the importance of education	2	1	0
Long distance to ECD centre	1	0	1
Irregular attendance by children	2	0	0
Lack of porridge	1	0	0
Low and irregular pay for caregivers	2	0	0
Limited resources in school	1	2	0
Difficulties in paying school fees	0	1	0
Teachers are not enough	0	2	1
Lack of school facilities e.g. chairs, classrooms	0	1	1
Lack of food	0	0	1
Parents are not cooperative e.g. they are not attending meetings	0	0	1
Parents do not have time to check going through their children work	0	0	1

4.0 DISCUSSION

We carried out a multi-method multi-informant study to evaluate the quality of ECD centers in Morogoro Tanzania. Three ECD centers were evaluated, teacher interviews were conducted, 9 key informants were interviewed, and 27 children were assessed and their parents interviewed. Results indicated that the ECD centers were all in need of strengthening in various key domains of learning. Additionally, we observed that the home environment for most of the children surveyed did not offer enough opportunities for early learning. In the next section we discuss these results and present some key recommendations.

4.1 Quality of ECD centers

We evaluated the quality of ECD centers based on the Measure of Early Learning Environment (MELE). This measure was specifically selected because it was developed for use in low and middle-income countries, has been used in Tanzania and other East African countries. Additionally, the measure captures important aspects considered to be key to quality pedagogical practices.

Highlighting these pedagogical practices as part of the monitoring, evaluation and learning process is an important part of capacity building for the CBOs and enhancement of quality within the CBOs. Our results indicated that all ECD centers were observed to have very low scores on the measure of quality. Of the nine domains assessed, these preschools were only

doing well in one domain i.e. that of physical environment. These results indicate that there is need to put in a lot more effort to strengthen the early learning opportunities in these ECD centres.

Recommendations associated with the quality sections are;

- i. The CBOs running these ECD centres need a lot of support to enhance general quality. Specifically, they need support in developing child centred programmes as suggested by findings from this study. We recommend that SAWA receives mentoring on child and play based learning from other CBOs like TAHEA which has a much stronger child-centered programme.*
- ii. Literacy and numeracy needs to be incorporated within play activities but also need to be taught formally. This formal teaching could take the form of 20-30 minutes for literacy and numeracy. The caregivers can be trained in age appropriate and child centred ways to teach children pre-numeracy and pre-literacy skills.*

4.2 Challenges experienced by ECD centers.

The ECD's seem to experience a series of challenges many of which were around the issue of resources. Unlike the ECDs in Mwanza, we did not see any indication of potential conflict between what parents wanted and what was being offered by the ECD centre. The key challenges for these ECDs in Morogoro seems to be resource related. *We would therefore like to recommend that CBOs work closely with the community members to mobilize more resources into the school.*

4.3 ECD alignment with Tanzanian government.

Based on our observations, there were several key areas of the government requirements that were not being met by the ECD centres in Morogoro. Some of these areas may be difficult to attain such as the amount of space required for an ECD to operate. However, others are easily implemented such as having reliable contacts of nearest health facility or security services, providing a balanced diet meal whilst ensuring cooks are certified and properly dressed. *It is therefore recommended that the ECD centres familiarize themselves with the government requirements and aim to ensure that requirements related to pedagogy and child safety are implemented.*

4.4. Home Environment.

We observed that most of the children from this sample came from low S.E.S homes. It was however alarming to observe the fact that the children in this sample had very few play materials and had very limited opportunities for early learning experiences. Another, very striking observation, is the fact that paternal involvement was very low. There is a lot of literature from various parts of the world indicating the value of paternal involvement (Cabrera, Volling, & Barr, 2018; Im & Vanderweele, 2018; Jeong, McCoy, & Fink, 2017). Two key recommendations arise from our observations. One, *there is a need to come up with programmes that encourage paternal involvement in the early learning experiences of children in this setting.* Secondly, *there is a need to get a programme that does some training in the community to encourage parents to provide more early learning materials for their children one such opportunity is actively involving them in developing play items from locally available materials, this would provide materials for use both at the ECD centers but also at home.*

4.5. Teacher characteristics

We observed that the teachers needed more training especially in terms of best practices in providing play based learning. Skilled personnel are central to the implementation of high quality early childhood programmes. There is therefore a need to develop programmes at enhancing their skill levels.

4.6 Conclusions

We observed that community-based early childhood learning centres in Morogoro were providing an important service to underserved and vulnerable communities. However, there is a lot of work to do to strength both the ECD centres and the early learning environment for these children to optimize on their outcomes. Therefore, the development of a targeted, multi-faceted intervention programme that addresses the different challenges faced by these ECD centres is recommended.

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