



**STUDY ON EFFECT OF
INTERACTIVE RADIO INSTRUCTION IN
IMPROVING ECD**

2017-FINAL REPORT (SEPT 2015 – SEPT 2017)

Table of Contents

LIST OF ACRONYMS	2
List of Figures.....	3
GLOSSARY.....	4
Executive Summary.....	5
Summary of Results in the two Years	6
Conclusion.....	7
Recommendations	7
1.0 Background.....	8
2.0 Study Design.....	10
2.1 Treatment Group	10
2.2 Control Group.....	11
2.3 Study Objectives	12
2.4 Data Collection Methodology in the study.....	13
3.0 Study Sample	13
4.0 Study Findings.....	14
4.1 IRI influence on Communities' attitudes and support to ECD and learning:.....	14
4.2 IRI Helps Improve ECD Caregivers' Facilitation Skills:	17
4.2.1 Child Assessment at the End of an Activity.....	20
4.2.2 Availability and Upkeep of Attendance registers.....	20
4.2.3 Presence of Age Segregated Classrooms in CBCCs	21
4.3 IRI better prepares ECD children for primary school education:.....	21
4.3.1 Children Assessment Results	23
4.3.1.1 Assessment of Motor Development skills- Shape identification	23
4.3.1.2 Assessment of Children ability to Copy and Draw shapes	24
4.3.1.3 Early Literacy Scores by Sample Group.....	25
4.3.1.4 Numeracy Skills among Children (counting, addition and subtraction)	26
4.3.1.5 Socio-Emotional Development Skills.....	27
4.3.1.6 Enrolment and transition trends.....	30
5.0 Conclusion	30
6.0 Recommendations	32
7.0 Proposed Scale up of Intervention.....	32
Appendix: Mchinji District Chiefs Strengthen ECD.....	35

LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CBCC	Community-Based Childcare Centers
DEM	District Education Manager
ECD	Early Childhood Development
EDC	Education Development Center
EDM	Education Division Manager
HIV	Human Immune Virus
IDELA	International Development Early Learning Assessment
IRI	Interactive Radio Instructions
PEA	Primary Education Advisor

List of Figures

Fig 1: Community perspectives on enrolling children in CBCCs

Fig 2: Class management and lesson delivery

Fig 3: Availability and Use of the Eight Learning Areas

Fig 4: Follow up 2016 IRI CBCC Graduates

Fig 5: Percentage scores on identification of different shapes by group

Fig 6: Ability to copy and draw shapes by group

Fig 7: Average percent scores in basic literacy skills, letter identification and Comprehension

Fig 8: Numeracy Skills by Group (counting, addition and subtraction)

Fig 9: Personal awareness by group: Self-identification

Fig 10: Empathy skills by group: identifying sad emotions

Fig 11: Empathy skills by group: identifying happiness

Fig 12: Enrolment Trends for 2015 and 2017

Fig 13: IRI Graduates 2016 and 2017

GLOSSARY

1. **Basic ECD Training** is an initial training offered to new or practicing volunteer caregivers who support child cares and facilitates early learning in children. It is based on a government certified manual, runs for 12 days and is conducted by government certified facilitators. This was offered to both control and intervention sites
2. **Hypothesis:** It is an assumption which is being tested to be true or not. Null hypothesis assumes that there are no differences in the samples being tested while the alternative hypothesis assumes that there are differences.
3. *Tiyende!* It is a Chichewa (national language) word that means “let us walk.”
4. **IRI:** This stands for Interactive Radio Instructions where caregivers use instructions from the radio to facilitate teaching and learning.
5. **IRI Training:** It is a three day, residential training for caregivers who have undergone basic caregivers training but are now equipped with skills on using radio in teaching and learning; the radio teacher acts as a mentor. This training was only done in intervention sites.

Executive Summary

The study on the effect of Interactive Radio Instructions (IRI) in improving Early Childhood Care and Development (ECD) in Malawi was conducted in Mchinji and Kasungu districts. In the study Mchinji district was a treatment district while Kasungu was a control district. The study had three key objectives, namely:

- 1) Explore the extent to which IRI helps to prepare children for primary school education;
- 2) Assess the effectiveness of IRI in improving caregivers' facilitation skills; and
- 3) Determine the effect of IRI in influencing communities' attitudes and support towards ECD.

In order to effectively carry out the study, Save the Children partnered with Mudziwathu Community radio station to broadcast a radio program locally called *Tiyende!* The radio program targeted twenty ECD communities' centres in Traditional Authorities of Zulu and Mlonyeni in Mchinji district. Mudziwathu Community radio station has coverage of about 100 KM radius. On the other hand another a set of twenty ECD communities in Sub-Traditional Authority Mnyanja in Kasungu District was set aside as a control in the study. The Kasungu communities did not have access to the *Tiyende!* radio programs.

In the study a radio programme was used to deliver lessons to targeted CBCC children in the treatment district at the same time. In the treatment district sixty Caregivers from twenty CBCCs were trained to facilitate learning using the radio program. The intervention was applied for two years. In this report, an effort has been taken to compare baseline data to end-line data in order to assess the impact of the radio program on child preparedness for primary education, improvement of caregiver skills

and change of attitude towards the support of ECD.

Summary of Results in the two Years

The radio program in the study has demonstrated that it contributed to better preparation of children for primary education. Findings in the study demonstrate that the program has not only resulted in an increase in number of children enrolled and attending CBCCs or an increase in number of children transitioning to primary schools but also equip the children to perform better at primary level. The radio program broadcasting attraction among children resulted in an increase in enrolment among children aged 3-5 years in the study area. For example, Mchinji district at the start of the study had an enrolment of 613 children (Male: 272 Female: 341). Enrolment in the district grew to 1,648 (M 740 F 908) at end line, making a total gain of 1035. For Kasungu, the baseline enrolment data was 892 (M 425 467F) and the end line enrolment was at 949 (M434 515F) making a gain of 57. The proportion of children graduating from CBCCs in Mchinji consequently doubled (225.2% increase) from baseline to end line periods. Notably, there a 94.2% increase in the control district. Specifically, in Mchinji five year old children in the transition class increased from 369 (Male; 151, Female; 218) in 2016 to 1200 children (Male; 552, Female; 648) in 2017 as compared to an increase from 274 (140 Females, 134 Males) in 2016 to 532 (Males; 242, Female; 290) in 2017 in the control CBCCs. Furthermore, the children in Mchinji, unlike in Kasungu, demonstrated significant gains in a number of developmental skills when they were assessed using a standardized tool called International Development and Early Learning Assessment (IDELA). The developmental differences were reflected in the performance differences that were observed during a cohort tracking exercise that was done in both the control and treatment districts. In the performance tracking exercise 73 percent of the CBCC graduates passed their Standard 1 final examination in Kasungu while 83 percent of the CBCC children passed their standard 1 final examinations in Mchinji.

Unlike caregivers in Kasungu, caregivers from Mchinji showed an improvement in preparation and use of the eight learning areas when interacting with children. As a

result, caregivers in Mchinji were observed delivering better quality lessons than their counterparts in Kasungu. The radio program in Mchinji also helped to sensitize parents and other caregivers on the content that children underwent in the community based childcare centers (CBCCs). As a result, there was increased interest and participation of parents and other caregivers in supporting children in the learning processes in CBCCs compared to those in control sites.

Furthermore, since the Interactive Radio Instructions (IRI) were accessed by other CBCCs in the treatment district, over 88 additional CBCCs that were not specifically targeted by the study joined the *Tiyende programmes* (radio programme). This seems to suggest that the radio programme is appreciated and sustained by the general public at a manageable cost. This also demonstrates that the impact of the radio program can go far beyond the limits without increasing costs.

Conclusion

Based on the findings, it can be concluded that the Tiyende! radio program was better able to prepare children for primary schooling, it helped to improve caregivers' facilitation/teaching skills and influenced communities' attitudes and support towards ECD. The finding that an additional 88 CBCCs got attracted into the project yet they were neither mobilized nor provided with any resources gives a clear picture that Tiyende! IRI it appreciated by the masses, and that it can easily be replicated as communities can mobilize resources on their own to get radio sets and batteries to listen to the programs. The result also shows that many more children can be reached with standardized quality lessons with limited resources and that the program can be implemented with little resources as communities can complement the effort.

Recommendations

- 1) The overwhelming response in Mchinji district points to the fact that the intervention needs to be scaled up so that more children and communities can benefit from it.

- 2) The fact that caregivers work on voluntary basis calls for a need to institute a cost effective capacity building mechanism that would ensure and sustain quality delivery of lessons in CBCCs in order to continue benefiting the last children. Scaling up the radio program is therefore recommended as it would ensure continuity on the service.
- 3) From an ethical point of view it will be rational to introduce the radio program in Kasungu which was denied access to the IRI program as a control district. Kasungu district also has a community radio that can be engaged.

1.0 Background

Despite having been one of the key focus areas in the 1990-2000 Jomtien and the 2000-2015 Dakar Education for All (EFA) agenda, access to and quality of Early Childhood Development (ECD) in Malawi still remains dismal. Net enrolment is at 45.43%, which means that more than 50% of eligible children are not able to access Early Childhood Care and Development (ECCD) services, with the majority of children accessing the services coming from urban areas. In rural areas, ECD services are predominantly provided by Community Based Childcare Centres (CBCCs), mostly run by Community Based Organizations (CBOs). Activities in the CBCCs are led by volunteer caregivers who more often than not lack the necessary qualifications to implement the national ECD curriculum with confidence and professionalism. Their work is often uncoordinated, with limited supervision and support is provided by the Ministry of Gender, Children, Disability and Social Welfare that is in charge of ECD in Malawi. As a result of inadequate training, caregivers provide lessons that do not fully stimulate the children since the lessons are

not professionally presented (lessons are often less age-appropriate, less child-centered, and not well aligned with the ECD curriculum).

Existing literature shows that Interactive Radio Instruction (IRI), when well utilized, has the potential to significantly improve children's access to learning opportunities, and to improve their learning and developmental outcomes. For example, through the use of radio broadcasts, IRI would reach a larger number of Community Based Childcare Centres (CBCCs) and communities, hence a greater number of children, caregivers and parents than classroom based caregiver facilitated lessons or programs would. Furthermore, by broadcasting standard lessons, IRI provides caregivers with model lessons and focused guidance on how to deliver lessons – that enables the otherwise less qualified caregivers to be able to deliver lessons with a greater measure of quality. This qualifies IRI as a tool for caregivers' on the job professional development.

In many communities, IRI has also been used to rally parental support to education as parents get to listen to lessons “live” whenever they tune in to radio broadcasts. IRI also has the advantage of preparing children for school since it attracts and sustains children's interest in learning because they learn out of fun and not obligation. Ultimately, IRI has the potential of contributing towards improving access to ECD, transition of children to and retention in lower primary school thereby ensuring the realization of quality basic education for all (Sustainable Development Goal 4).

Save the Children in Malawi piloted IRI in Community Based Child Care Centers (CBCCs) and tested its feasibility in increasing access to and quality of ECCD in Zomba. However, while the initial pilot in Zomba district successfully demonstrated the feasibility and the potential of IRI to increase access to ECCD in Malawi, there remained a gap in determining whether IRI improves quality and effectiveness of ECD. It is with this background that Save the Children conducted this IRI study to generate evidence that will be used to inform ECD programming in SC Malawi' and beyond. The results of this

study will therefore also contribute to the ongoing national level discourse around strategic investment in Early Childhood Care and Development (ECCD) in Malawi.

2.0 Study Design

A quasi-experimental design was followed to implement an IRI study project in the two districts of Mchinji and Kasungu. The study involved an intervention group of 20 rural communities with CBCCs that had access to Interactive Radio Instruction (IRI) broadcasts from Mudziwathu Community Radio in Mchinji district on the one hand and a control group, comprising another 20 communities with CBCCs but with no access to the IRI broadcasts. Apart from the CBCCs the study also involved primary schools to which children who graduated from both the intervention and control CBCCs went to start primary school education in the 2016/17 school session. Primary schools teachers; two infant class teachers and the head teacher were involved in this program. The teachers were involved in transition activities that aimed at preparing the 5 year olds in CBCCs for primary school as well as making the primary schools ready for children coming from CBCCs. From the second year, the primary school teachers were also involved in monitoring performance of children who graduated from the intervention and control CBCCs to determine whether IRI had any impact on children's long-term learning outcomes, i.e. continued strong performance in early grades of primary school.

2.1 Treatment Group

Twenty CBCC in Mchinji district were selected to participate in the study. Mchinji district was selected because it is one of the few districts in Malawi that has a community radio. Mchinji district borders Lilongwe district, and sits approximately 110 kilometres away from Lilongwe City where the SC Malawi Country Office is located. The close proximity of Mchinji to Lilongwe allowed for a more focused supervision of the study by SC staff based at the Lilongwe office to ensure robustness of the study and evidence generation. The intervention group in Mchinji received "Tiyende" IRI programmes from a local community radio station which broadcasted pre-recorded ECD lessons on Monday, Wednesday and Friday every week. The "Tiyende" IRI content targeted five-year old children attending CBCCs who were preparing to transition to primary school at the beginning of the following academic year. The project subcontracted a

community radio station in Mchinji, Mudziwathu, to broadcast “Tiyende” IRI programs/lessons for two academic years (2015/2016 and 2016/17 academic years). Intervention CBCCs in Mchinji were provided with radios that they were used to listen to the regular Tiyende broadcasts. Caregivers in intervention CBCCs were also trained to facilitate listening and participation by learners to the Tiyende broadcasts.

2.2 Control Group

The control group, like the intervention group, received basic ECD training for their caregivers – and an additional training for Center Management Committees (CMC) focusing on how to run an ECCD program. However, the CBCCs in the control group did not have access to the Interactive Radio Instruction (IRI) broadcasts. Equally, caregivers in control CBCCs were not trained in IRI facilitation. Control CBCCs were drawn from an area free from the community radio airwaves to ensure that the impact of IRI experienced by the intervention CBCCs was not received.

SC ensured that the capacity of caregivers and center management committee members to deliver quality ECD was up to date throughout the period of the study by conducting refresher trainings for both caregivers and CMC members in the second year of the study.

Caregivers and centre management committee members from both the intervention and control CBCCs met on a monthly basis to reflect on the implementation of their activities to ensure that challenges affecting program activities were dealt with on time. In the second year of the study, SC monitored the performance of CBCC graduates in primary schools from the year one cohort of IRI intervention sites as well as those from the control sites to determine the impact of IRI on learning outcomes. SC also monitored changes in caregiver skills and community attitudes towards ECD. Furthermore, different stakeholders were able to meet on a quarterly basis to review implementation of the study and draw lessons that informed the implementation process.

2.3 Study Objectives

The overall study objective was “to strengthen participation of communities and children in quality ECD programs”. The Specific objective (SO) of the study was “to assess the extent to which “Tiyende” (IRI) helps improve the quality of ECD services in Malawi”.

The study tested the following assumptions:

2.3.1 IRI better prepares ECD learners for primary school education: SC Malawi, through this study, wanted to generate further evidence on the benefits of using Tiyende IRI to deliver standard ECD lessons and to better prepare learners for primary education in resource constrained contexts. Learner performance across a variety of learning and developmental indicators were assessed in the course of the study to determine the “added value” of IRI in better preparing ECD learners to enter and succeed in primary school. The IDELA tool was utilized to conduct these assessments.

2.3.2. IRI helps improve ECD Caregivers’ facilitation/teaching skills: SC Malawi through this study assessed the effectiveness of IRI as an on the job mentorship intervention aimed at helping caregivers (CBCC teachers) to internalize appropriate methodologies for facilitating learning and play among Early Childhood Development (ECD) children. Through regular lesson observations and actual performance of learners in intervention and control CBCCs, SC was be able to evaluate the efficacy of IRI in helping improve caregivers’ facilitation/teaching skills.

2.3.3 IRI helps positively influence communities’ attitudes and support to ECD and learning: SC Malawi examined to what extent IRI broadcasts serve to influence parental and community attitudes towards children’s learning – and, of course, participation in ECD. SC used Focus Group Discussion (FDG) with parents and community members to assess changes in attitudes over the course of the study.

2.4 Data Collection Methodology in the study

Data collection in the study used a mixed-method approach that included both qualitative and quantitative methods. Baseline, mid line and end line assessments used the same approach. In the study four main tools were used; the IDELA Child Assessment, Caregiver Lesson Observation, Community Focus group Discussion (FGD) and Key Informant Interviews (KII). Key Informant interviews were conducted with District Socio Welfare Officers Community Radio Station staff, Member of Parliament and Ward Councilor in Mchinji. The KII were done to triangulate data that was captured from various sources. The IDELA Child Assessment was used to measure children's early learning and development. Key items that are included in IDELA, Caregiver lesson observation and Community FGD are presented in Table 1.

Table 1: Key Areas of the study in the IDELA

Assessment Area	Description
Child Assessment	
Motor Development	Included folding of papers, copying and drawing items
Emergent Literacy	Included print awareness, phonetic awareness, writing, letter identification, vocabulary and comprehension.
Emergent Numeracy	Included number identification, shapes, measurement, simple operations, sorting and puzzle completion
Socio-Emotional Development	Included personal information awareness, friends listing, preference stating, empathy and conflict solving.
Caregiving Lesson Observations	
Lesson planning	Play and learning materials availability, availability of written lesson plans, methods identified, lesson sequencing.
Lesson delivery	Lesson plan reference, sequence referencing, use of varied methods, use of relevant materials, assessment of children
Community FGD	Discussions focused on Knowledge, practice and attitude towards ECD in the visited communities.

3.0 Study Sample

Both treatment and control groups were targeted in the data-collection exercise of the study. A sample of 32 CBCCs (16 from each site; treatment and control) were visited from a pool of a combined total of 40 CBCCs in the IRI study in both Mchinji and Kasungu districts. In the study all children were given the opportunity to participate or decline participation in the study without any penalty given to them.

4.0 Study Findings

This section presents results of the study. The results are presented alongside the three key research objectives of the study namely:

1. Explore the extent to which IRI helps to prepare children for primary school education;
2. Assess the effectiveness of IRI in improving caregivers' facilitation/teaching skills; and
3. Determine the effect of IRI in influencing communities' attitudes and support towards ECD.

4.1 IRI influence on Communities' attitudes and support to ECD and learning:

To assess the influence of IRI on parental and community attitudes towards children's learning and participation in ECD, Save the Children conducted Focus Group Discussions (FDG) with parents and community members to assess changes in their attitudes over



Community members and caregivers making play and learning materials for CBCCs

the course of the study. From the FGD it was established that since the introduction of the radio program in Mchinji on January 25th, 2016 when Mudziwathu Community Radio started

broadcasting, parents followed what children were learning through the radios from their homes. The radio programs motivated parents to start participating in monitoring of their children in the CBCCs and eventual support in the running of CBCC such as buying radios, batteries and provision of food and play/learning materials. It was also established that over 88 CBCC communities which were not part of the 20 treatment CBCC communities in Mchinji district further developed interest in the radio programs. These communities procured their own radios and introduced IRI in their CBCCs although they were not formally trained in the concept. They also went further to participate in phone-in feedback programs that the community radio station aired. The

volunteer caregivers from the CBCCs that voluntarily joined the IRI program went further to request for participation in the regular review meetings that the study instituted. Participation in the review meetings made the untargeted CBCCs learn from the targeted CBCCs how best to participate in the aired *Tiyende!* programmes. The FGD revealed that the phone-in programs that were introduced by Mudziwathu Community Radio as a feedback mechanism on how the IRI study was running, provided space for communities to suggest areas for improvement and also motivated parents, volunteers and organizations to introduce *Tiyende!* IRI in CBCCs away from the SC study areas.

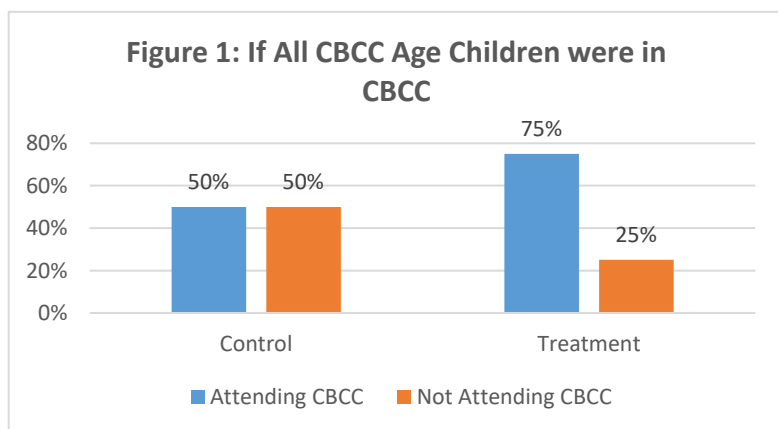
Apparently, throughout the study period, CBCCs in Mchinji received greater support than their counterparts in Kasungu. Motivated parents and guardians, mobilized communities to support and promote ECCD in Mchinji. For example, Members of Parliament (MP) donated salter scales for growth monitoring, vita meal as food supplements and CBCC construction materials. This resulted in flagging out the importance of supporting ECD through the Area Development Committee to District Executive Committee meetings in the Mchinji. Consequently, unlike Kasungu, Mchinji managed to influence politicians like members of parliaments and Ward Counselors who are now ambassadors of ECD in different forums such as District Executive Committee (DEC) and Council meetings. This further resulted in Ministry of Education officials in the district commending the initiative as the best way of supporting the transitioning process of



The Primary Education Advisor addressing community members on proper transitions

children from CBCC to primary schools in a cost effective manner. However, this was not the case with Kasungu district where communities did not manage to reach out to other supporters like MPs. This was the case possibly because there was no means of reaching out to the general masses of different cadres in the district. This limited the opportunities for reaching out to key supporters who could follow what the children learned in the CBCCs and probably provide support.

From the key informant interviews, it was further established that all Centre Management Committees members and parents that were sampled in the study understood the importance of sending children to CBCCs. This resulted in the development of by-laws in both districts (control and treatment) which compelled parents to ensure that their children went to school and CBCCs. Notably, however in the period of the study, Mchinji district through Tiyende program, registered more children than Kasungu. The number of children who transitioned to primary school in the Mchinji district during the period more than doubled (225.2% increase) while there was only a 94.2% increase in the control district. Specifically, five year old children in the transition class in treatment CBCCs in Mchinji increased from 369 (Male; 151, Female; 218) in 2016 to 1200 children (Male; 552, Female; 648) in 2017 as compared to an increase from 274 (140 Females, 134 Males) in 2016 to 532 (Males; 242, Female; 290) in 2017 in the control CBCCs. FGD revealed that the radio program played a role of attracting and retaining children to CBCC as jingles were slotted in different program. Interviewed parents acknowledged that CBCCs played an important role in preparing children for primary school and future life in general.



Although all the sampled community members who were interviewed in the study acknowledged the importance of sending children to CBCCs, there were still some age-appropriate children in both districts who were not in

CBCCs. The proportion of parents who indicated that some children who were not in CBCCs is higher in Kasungu than in Mchinji as presented in the figure 1 above. Notably, for Mchinji 75 percent of those interviewed indicated that their children attended CBCC

because of the sensitization that the radio program played where most families are reached.

Further evidence of community change in attitude towards support ECD was noted when community members in T/As of Zulu and Mulonyeni in Mchinji district reported of strengthened community structures such as ECCD networks, community leaders, Village Development Committee, Area Development Committee (ADC) and community police. It was reported that ADC members in the district agreed to work together with CBOs in support of ECD. It is not common in Malawi for ADCs to include ECD issues on their development agenda. FGD attributed the community member support to CBCCs to the general change in attitude in the district. Communities in Mchinji supported CBCCs in the following areas:

1. Providing committed CMC members and caregivers to CBCCs
2. Championing ECD networks that initiated ECD activities
3. Making of play and learning materials
4. Establishing of new centres
5. Conducting community and resource mobilization
6. Chiefs appealing to communities to make bricks for CBCC shelters

All the above were not only observed in the targeted CBCC intervention sites but were also witnessed in the other 88 CBCCs in Mchinji.

4.2 IRI Helps Improve ECD Caregivers' Facilitation Skills:

With an aim of ensuring that all caregivers both in intervention and control sites have similar knowledge and skills on how to work with children, the study project conducted two residential basic ECD caregiver training sessions. The basic caregivers' training sessions were to equip caregivers to promote a comprehensive approach to ECD programs for children aged 0-8. The training covered the following modules: child development; child health and care; child nutrition and care; child protection and care; child hygiene, water and environmental sanitation and care; HIV and AIDS and ECD management. Both trainings were facilitated by a team of trainers certified by the Ministry of Gender, Children, Disability, and Social Welfare and Save the Children.



Children in a CBCC following radio instructions

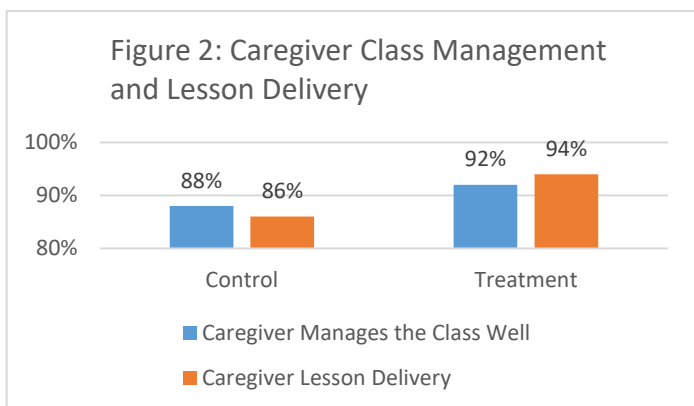
SC further trained caregivers from the intervention site in *Tiyende!* IRI course. The training was aimed equipping caregivers with IRI knowledge and skills to enable them support radio lessons that would enhance the development of children in all domains. The training also offered caregivers the opportunity to know and participate in Community Based Child Care Centers (CBCC) related activities. During the training, caregivers were provided information on the background to IRI, how IRI fits into ECD, the *Tiyende!* program structure and characters. After the training, the caregivers practiced the facilitation of IRI *Tiyende!* radio lessons which further strengthened their capacity in lesson delivery.

This study assessed therefore the effectiveness of IRI as an on the job mentorship intervention aimed at helping caregivers (CBCC teachers) to internalize appropriate methodologies for facilitating learning and play among Early Childhood Development (ECD) children. Through regular lesson observations and actual performance of children in intervention and control CBCCs, SC was able to evaluate the efficacy of IRI in helping

improve caregivers' facilitation skills. This evaluation showed that caregiver efficacy in the treatment was better than those of the caregivers in the control CBCCs in a number of areas. To capture data on caregiver efficacy a total of 32 caregivers were observed playing with the children. As such sixteen lessons were observed in each district. The caregiver observation instrument was split into several sections ranging from lesson planning to lesson delivery. The caregivers were observed by trained observers who checked on the portrayed skills and rated them.

When class management and lesson delivery was observed in both the control and treatment districts it was noted that caregivers in the treatment district were able to manage classes and deliver their lesson better than in the control district.

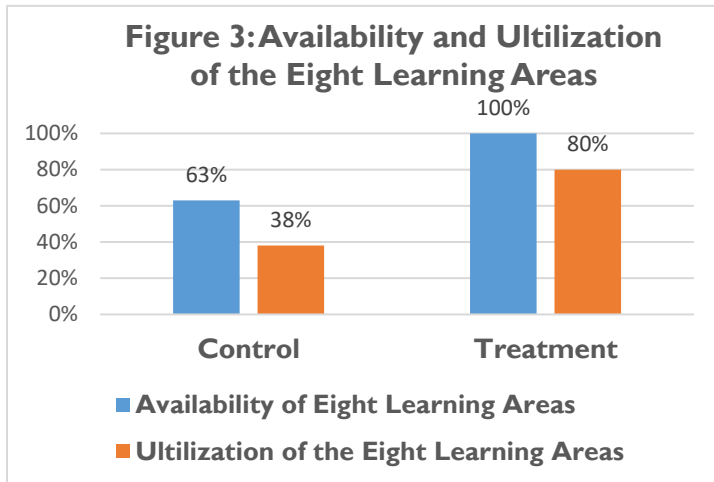
Significant differences (at 0.03 alpha value) were noted in lesson delivery where 94



percent of caregivers in Mchinji district delivered better lessons compared to 86 percent of the caregivers in Kasungu district. See details in figure 2. Lesson delivery in this case meant use of relevant play materials, following of lesson plans in sequential order and

sharing experience with the children to enhance learning.

The evaluation also looked at the availability and utilization of eight learning areas in the CBCCs namely: 1) Imaginative and dramatic play, 2) Blocks and building, 3) Reading, 4) Learning and manipulative 5) Art, 6) Nature corner, 7) Music, 8) Outdoor play. The eight learning areas are very crucial to the development milestones in children.

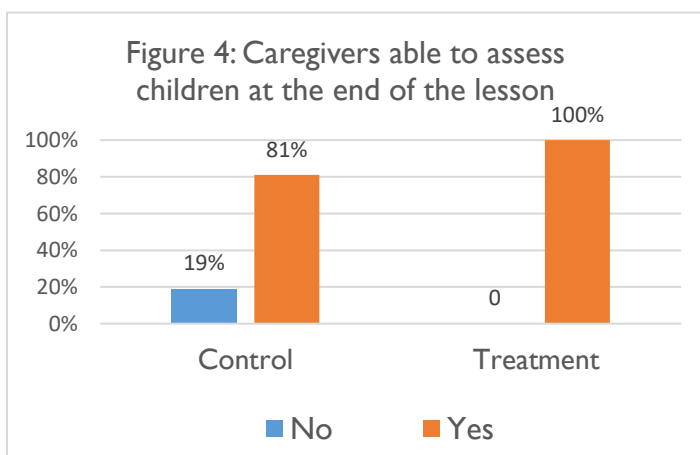


As presented in figure 3, the study established that all the CBCCs (100%) in the treatment district had all the eight learning areas set for children to interact with while 63 percent had eight areas in the control district and this difference was tested significant. Out of the eight learning areas available in the

treatment sites, 80 percent of the CBCCs were able to utilize them while only 38 percent of those available in the control were able to use them. This also demonstrated a significant difference between the two districts.

4.2.1 Child Assessment at the End of an Activity

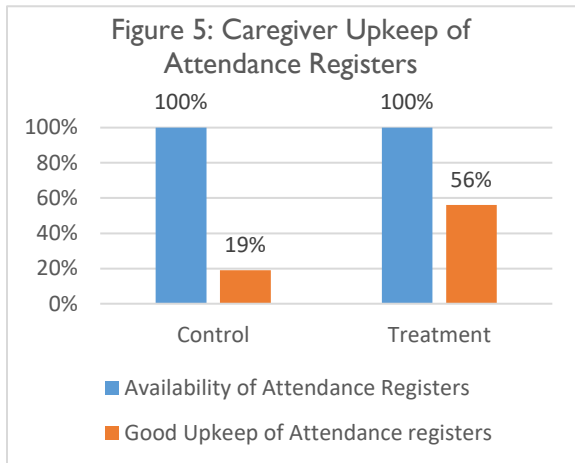
Significant differences (alpha value 0.03) were observed in caregiver child assessment at the end of the lesson. In the treatment centres all caregivers who were observed (100%) gave assessment to the children in various ways at the end of the lesson while in the control centres only 81 percent of the caregivers gave assessments (see figure 4). The assessment included questions, children asked to sing on what was learnt and in some instances children were also asked to say a bit of what the lesson was all about.



Assessments at the end of a lesson delivery are very important as they help to consolidate what has been covered in the activity.

4.2.2 Availability and Upkeep of Attendance registers

One of the classroom management issues that was assessed was availability and upkeep of attendance registers. It was noted that both the control and treatment centres had attendance registers. However differences were significant when utilization was assessed.

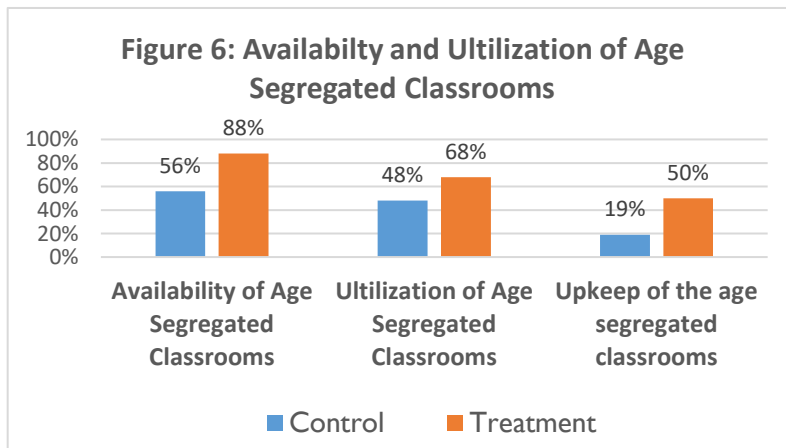


The upkeep in terms of checking attendance remained a challenge especially in the control centres where only 19 percent of the caregivers observed had registers that were regularly checked as opposed to the treatment where 56 percent presented registers that were regularly checked. More details are presented in figure 5.

4.2.3 Presence of Age Segregated Classrooms in CBCCs

Age appropriate classes are key to CBCC running. Such classes facilitate play and transition into primary school as they take recognition of the fact that children of different age groups have different interests and needs. The classroom observations also aimed at checking how different centres segregated children according to their age and how the segregation was utilized.

As presented in figure 6 the observation revealed that 88 percent of CBCCs in Mchinji



had age-segregated classrooms while in Kasungu only 56 percent of such classes. This represented a significant difference at 0.03 alpha value. The CBCCs were also assessed on the utilization of the segregated classes and on the

day of the visit, 68 percent of the CBCC in Mchinji and 48 percent in Kasungu were observed utilizing age segregated classes.

4.3 IRI better prepares ECD children for primary school education:

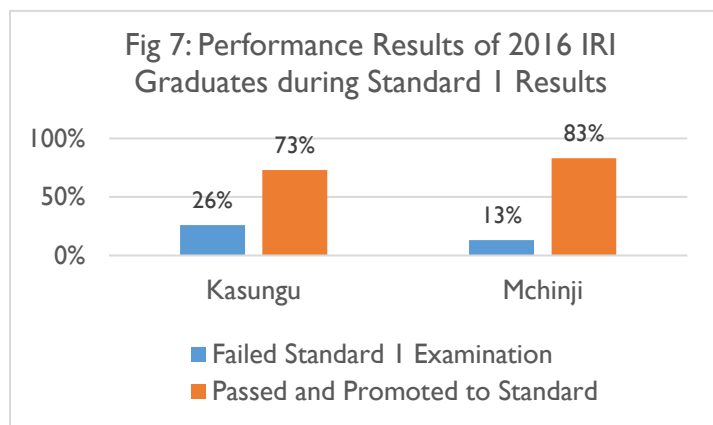


Left to right: DSWO, Chief of Directors, Director Child affairs, SCI Area Operations Manager, Primary Education Advisor sending off children to primary schools

World Bank Development Research Group (2005) toolkit, *“Improving Educational Quality through Interactive Radio Instruction,”* (IRI) indicates that the radio has emerged to be an important option for improving educational quality in primary school classrooms in developing countries around the

world. Other studies on IRI experience in more than two dozen countries during the past 25 years have also shown that the use of IRI has led to significant and consistent improvements in school achievement and has helped overcome equity gaps between urban and rural children and between boys and girls (World Bank Research Group; 2005). Results from the IRI *Tiyende!* project attest to this finding. In the study, 277 children who graduated from targeted CBCCs in both Kasungu and Mchinji to standard one in 2016 were followed up in 2017 to explore on their performance in the Standard 1 final examinations. One hundred and fifty seven (157) children were followed in Mchinji while 119 children were tracked in Kasungu district.

In Kasungu, the follow up established that 73 percent of the CBCC graduates passed their Standard 1 final examination and got promoted to Standard 2. In Mchinji 83 percent of the CBCC children passed the standard 1 final examinations and got promoted to



Standard 2. Details are presented in figure 7. Notably, more children (at an alpha value of 0.04) from Mchinji passed the standard 1 examinations and got promoted to standard two. Although the examinations that were administered to the children in standard 1 in

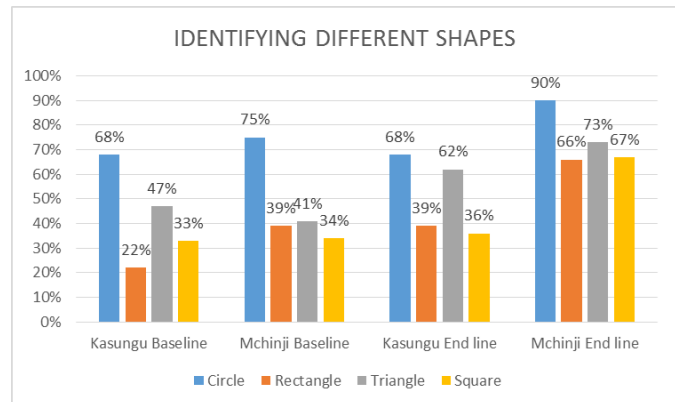
the two districts were not standardized but in relative terms more learners in the treatment district did well than those in the control district. The difference could be associated to the quality of delivery of the lessons in the IRI CBCCs in the treatment district which prepared the learners better than in the non IRI district.

4.3.1 Children Assessment Results

In order to explore any developmental changes among the children in both treatment and control districts, a standardized assessment tool called International Development and Early Learning Assessment (IDELA) was used. Areas of assessment included emergent literacy and numeracy and socio emotional development. A summary of the results of the assessment shows that children in Mchinji demonstrated more developmental gains than their counterparts in Kasungu in a number of areas. Details are presented in the subsequent paragraphs.

4.3.1.1 Assessment of Motor Development skills- Shape identification

Shape identification was used to assess cognitive development skills. In the assessment children were asked to name different shapes presented to them. Findings of the study were compared to baseline findings. The results in the figure show that in Kasungu 68% of the children correctly identified a circle during both



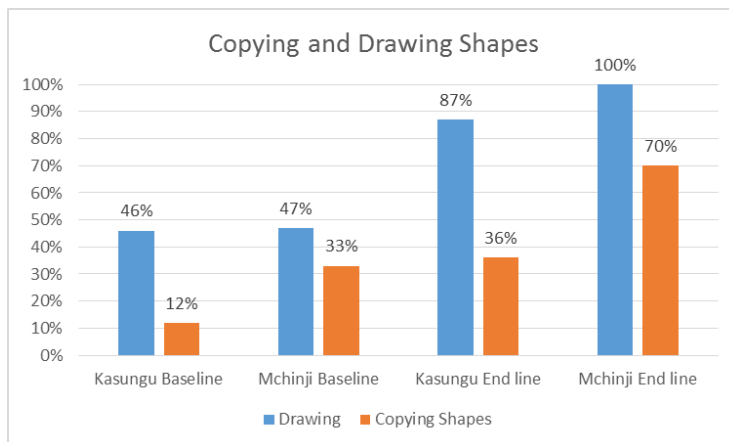
baseline and end line. In Mchinji, during baseline, 75% of the sampled children correctly identified a circle and 90% identified a circle during the end line. Notably, there was a 15% increase on the percent of children who were able to identify a circle from 75% at baseline to 90% during end line in Mchinji. The difference between Kasungu and Mchinji was noted significant.

During baseline in Kasungu 22% of the children ably identified a rectangle and the percentage increased to 39% at end line, registering a 17% increase. Mchinji registered a

27% increase in the percent of children that ably identified a rectangle at end line (from 39% at baseline to 66% at end line). Similarly more children in Mchinji were able to identify a rectangle than in Kasungu. These results reflect a significant difference. Furthermore, Kasungu registered a 15% increase in the percent of children able to identify a triangle (from 47% at baseline to 62% during end line) while Mchinji registered a 32% gain in the percent of children who were able to identify a triangle from 41% during baseline to 73% at end line. Similarly, Kasungu registered a 3% increase in the percent of children able to identify a square (from 33% at baseline to 36% during end line) while Mchinji registered a 33% gain in the percent of children able to identify a square from 34% during baseline to 67% at end line. In summary, the results show that children in Mchinji registered significant gains in shape identification. The gains were demonstrated in all the 4 shapes that were assessed.

4.3.1.2 Assessment of Children ability to Copy and Draw shapes

In this exercise, children were instructed to reproduce shapes that the enumerator had sketched on a piece of paper. This was done to assess motor skills development. One of the shapes that the children were asked to reproduce was a triangle.



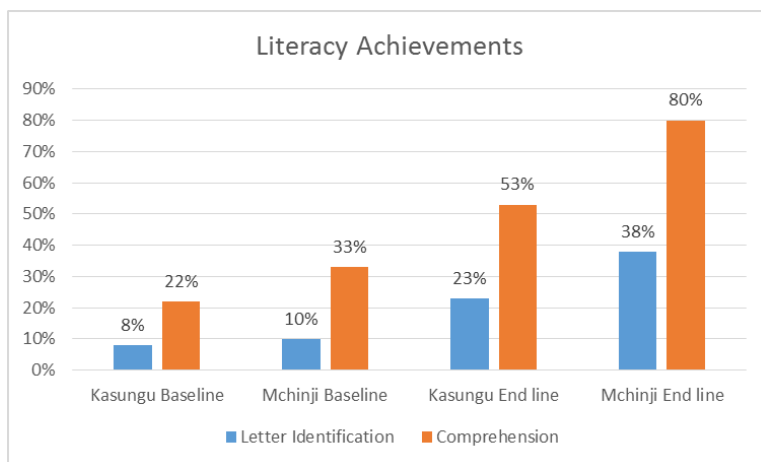
Results in the figure show that 36% of the children sampled in Kasungu were able to copy a shape correctly at end line compared to 12% during baseline. In the same group, 87% were able to draw a shape at end line compared to 46% during baseline,

translating into a 34% gain in percentage of children able to draw a shape. In Mchinji, 70% of the sampled children were able to copy a shape at end line compared to 33% during baseline. In the same group, all sampled learners (100%) ably drew a shape compared to 47% during baseline, translating in a 53% gain in percentage of children able to draw a shape. The results also show significant gains in percent scores of

children able to copy and draw shapes for both groups be it control or treatment areas. Nevertheless, the results illustrate greater gains in shape copying and drawing for children in Mchinji than in Kasungu.

4.3.1.3 Early Literacy Scores by Sample Group

The study also assessed the learning gains or outcomes in literacy skills among children. The literacy skills that were assessed were letter identification, letter pronunciation or sounds, print awareness and comprehension.



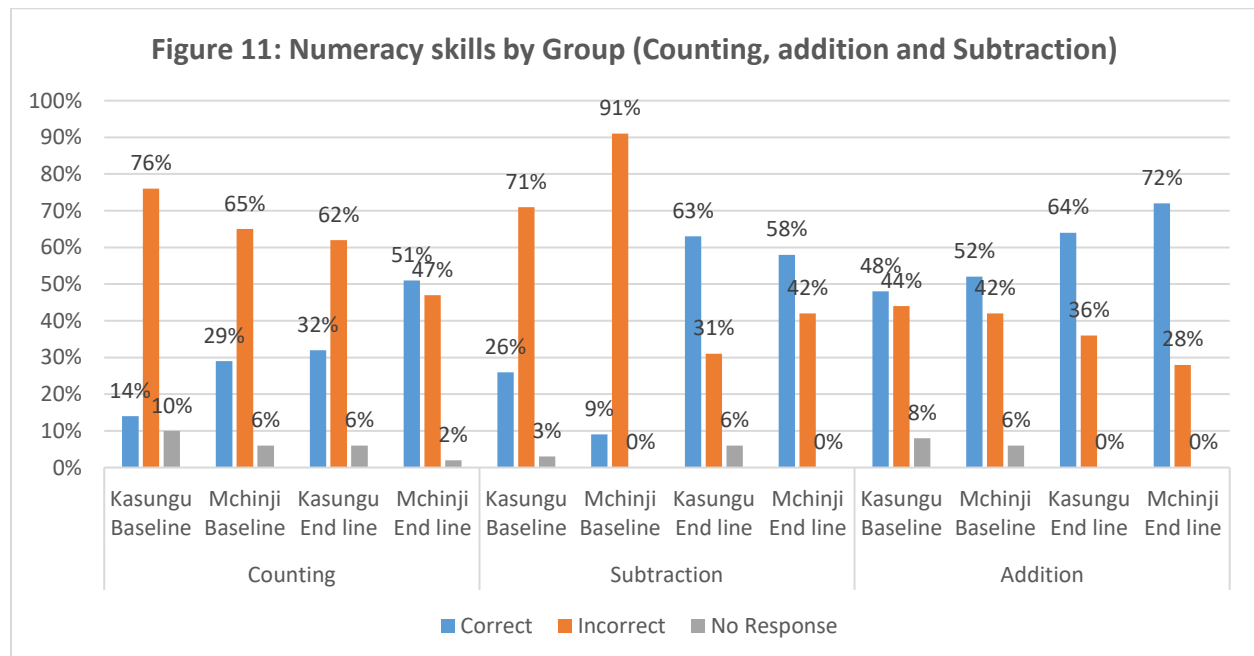
The results in the figure show that there were gains on average literacy scores from baseline to end line for children in the two groups. For example, in Kasungu, there was a 15% gain on average percent scores on letter identification from 8% at baseline to 23% during end line.

In Mchinji, there was a 28% gain in average scores for letter identification. Children achieved 38% in average percent scores during end line in Mchinji as compared to 10% at baseline. Apparently, the results show a significant difference in the gains between the two districts with Mchinji having more children gaining on the skills.

There was also a lower gain on average percent scores in comprehension skills in Kasungu (from 22% at baseline to 53% at end line). In Mchinji, the average percent scores for comprehension increased from 33% to 80%, translating into a 47% gain on average percent scores. The results illustrate greater gains in percent scores on literacy for children in Mchinji as compared to those in Kasungu. The results demonstrate a significant difference between the two comparison districts with Mchinji having more children gaining on the skills.

4.3.1.4 Numeracy Skills among Children (counting, addition and subtraction)

To assess numeracy skills, children were given basic addition and subtraction problems to work out. They were also provided beans to count. The counting level challenge would be increased depending on how the child had progressed on the first task given. Results in figure 11 show that 14% of the children were able to correctly complete the counting task during baseline in Kasungu. At end line, 32% of the children were able to complete the counting task. This translates into 18% gain on average percent scores for children with counting ability. For Mchinji, children registered a 22% gain on average percent scores on the counting task from 29% at baseline to 51% at end line. The results reflect a significant difference in the gain of the skills among children on the counting skill in Mchinji and Kasungu districts.



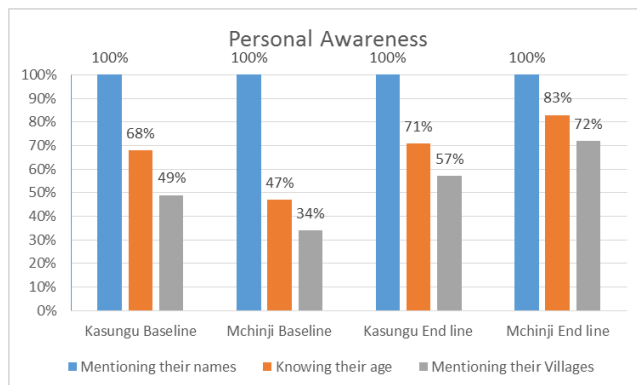
On Arithmetic addition and subtraction (simple mathematical operations), children had to compute an arithmetic problem and provide a correct response or solution. Children in both groups registered percent gains in the numeracy scores. Kasungu, for example, gained 16% on average percent scores on addition from 48% during baseline to 64% at end line. Notably Mchinji gained 20% on average percent scores on addition from 52% during baseline to 72% at end line. The percentage scores for children that correctly

worked out subtraction problems increased from baseline to end line in both groups. In Kasungu children had a 37% gain from 26% during baseline to 63% at end line while Mchinji gained by 47% from 9% during baseline to 58% at end line. Comparatively, the results show that in Mchinji, children achieved more gains in average percent scores in numeracy skills as compared to Kasungu.

4.3.1.5 Socio-Emotional Development Skills

Two elements of socio emotional development that were assessed in the study were personal awareness and empathy. On personal awareness, the children were assessed on whether they could identify themselves and be able to mention basic attributes that could be used to identify them, for instance, mentioning their names, their age and village of residence.

Results show that all children were able to mention their names in both groups at baseline and end line. In Kasungu, 68% of the children were able to mention their correct age at baseline and 71% did the same during end line. In Mchinji, 47% of the children were able to mention their

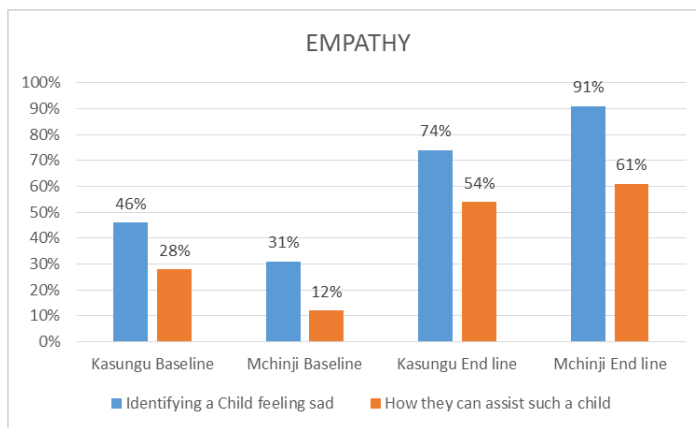


correct age and this increased to 83% at end line. On village of residence in Kasungu, the percentage of children who were able to identify themselves increased with 8%, from 49% at baseline to 57% during end line. In Mchinji the percentage of children almost doubled from 34% at baseline to 72% at end line. The results reflect a significant difference. The results also show that Mchinji relatively registered more gains in percent of children that were able to identify themselves with basic attributes of age and village of residence as compared to Kasungu.

On empathy, the children were provided with an emotional case in a pictorial presentation. It was a picture of either a sad child or a happy child. The children were

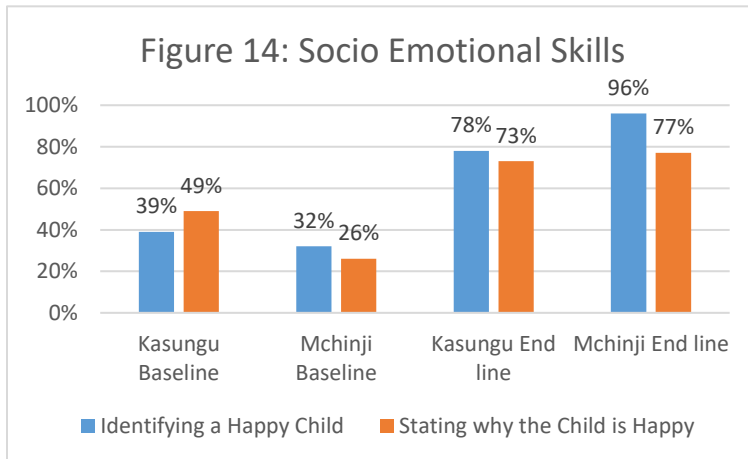
asked to explain the correct emotion, portrayed the causes of such an emotion and how they can assist a child in that scenario using the culturally acceptable means. Analysis of the results shows that in Kasungu, 46% of children were able to identify a sad emotion, and interpreted the image provided at baseline. The percentage of children correctly identifying and interpreting the image increased to 74% at end line. In Mchinji 31% of the children at baseline ably interpreted the image compared to 91% at end line, translating into a 60% increase in percent of children identifying a sad emotion. Results on emotion identification for the two groups as presented in this report were reflect a significance difference.

Fig 13: Empathy skills by group: identifying sad emotions



Children were also able to reason and provide culturally acceptable means of assisting a colleague who was crying. In Kasungu, the percentage of children who were able to provide culturally acceptable solutions on how to assist a colleague increased with 26% (54% at

end line from 28% at baseline). In Mchinji, the children who provided culturally acceptable solutions to help a colleague that was crying increased from 12% at baseline to 61% at end line, representing a 49% increase. Refer to details in figure 13. The results also reflected a significant difference. So while the results showed that both districts registered significant gains on the skill, Mchinji district relatively registered more gains compared to Kasungu.



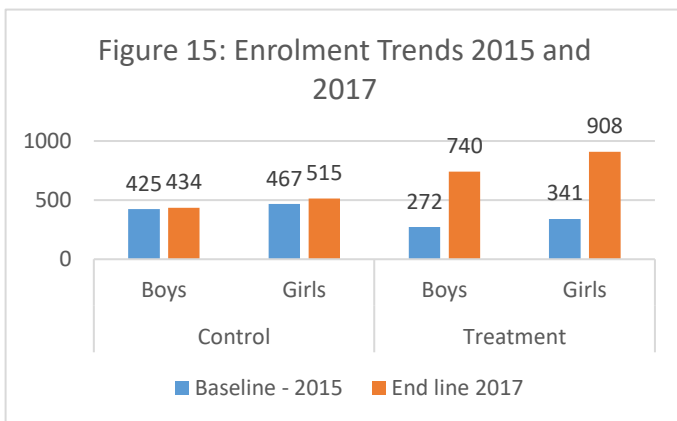
In addition to identifying a sad child, children were also presented with an image of a happy child which they had to correctly interpret by stating the emotion portrayed and they had to provide reasons as to why the child could be happy.

The figure 14 shows results of this exercise. In Kasungu 39% of the sampled children correctly identified the happy emotion presented at baseline and 78% of the children in the same group ably identified the happy emotion at end line. At Baseline, 49% of the children suggested culturally acceptable reasons as to why the child was happy with 73% ably doing the same at end line. For Mchinji, 32% were able to identify the happy emotion during baseline, and 96% did the same during end line. Seventy seven percent of children at end line in Mchinji were able to provide culturally acceptable reasons as to why the child may have been happy. This was an increase from 26% at baseline.

The results show that both groups registered gains in percent of children able to identify a happy emotion and reason or infer on the causes of happy emotions. Kasungu registered 39% increase in percentage of children able to identify the happy emotion and 24% on those able to infer on causes of happiness. Mchinji registered 64% increase in percentage of children able to identify with a happy emotion and 51% on those able to infer on causes of happiness. The results illustrate that there were more gains in percentage of children correctly completing this task in Mchinji compared to Kasungu.

4.3.1.6 Enrolment and transition trends

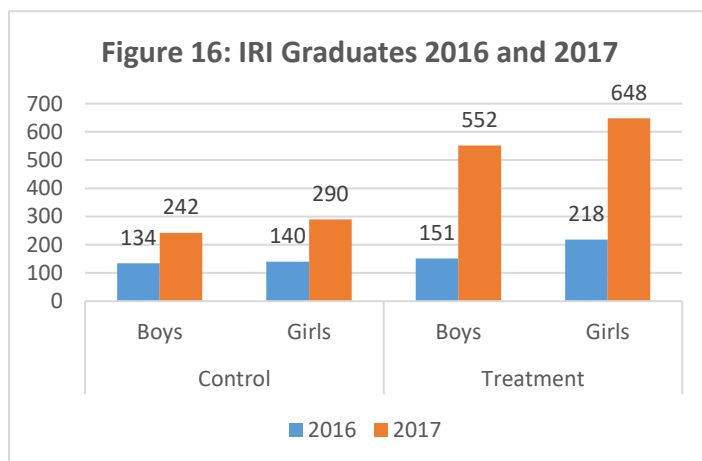
Analysis of the enrolment data in the participating CBCCs showed that there were some gains in terms of enrollment within and between the two districts. As presented in figure 15, for example, Mchinji district baseline enrolment data was 613 (Male: 272 Female: 341)



and the end line enrolment data was at 1,648 (M 740 F 908) making a total gain of 1035. While for Kasungu, the base line enrolment data was at 892 (M 425 467F) and the end line data is at 949 (M434 515F) making a total gain of 57. The increase in enrolment denotes the impact of IRI in terms of

attracting children to the CBCCs.

Similarly, while both the control and the intervention sites experienced an increased in transitioning graduates in 2016 and 2017, Mchinji district registered more transitioning graduates than Kasungu. For example in Mchinji graduates increased from 369 (M151 F 218) children in 2016 to 1200 (M552



F648) children in 2017 while in Kasungu it increased from 274 (140 F 134 M) in 2016 to 532 (M 242 F 290) in 2017.

5.0 Conclusion

Based on the findings, it can be concluded that the Tiyende! radio program was better able to prepare children for primary schooling, improved caregivers' facilitation skills; and influenced communities' attitudes and support towards ECD. Regardless of

children's educational backgrounds and the caregivers' facilitation skill set, the Tiyende! IRI program helped to level the ground for all children's development in key milestones, caregiver's skill set development and wooing community participation in ECD development work such as constructing ECD centres and making of play materials. The results further point to the fact that if the intervention can be implemented in collaboration with other partners implementing ECD activities in a district, it (IRI) can help to improve access to quality and standardized ECD lessons resulting into achievement of quality learning outcomes.

The mere finding that within two years of study there has been a great change in community perception towards ECD, as demonstrated by the massive support and improved integration into government planning structures, seems to point to the fact that if more community media houses can be involved in similar efforts, more children will have access to quality ECD services in Malawi. This will eventually enable slightly more than the current 42% of children to have access to ECD services. On the other hand the finding that other players would like to implement Tiyende! in their impact areas is evidence enough that the intervention can easily be scaled up in an appreciation of its impact on ECD programming.

Another very important finding from the results is the underlying effect of parental involvement in ECD activities resulting from their understanding and appreciation of the content that the children undergo in CBCCs in the IRI intervention sites. This result is very critical since it has ripple effects over time as parents will continue to understand ECD better and support their children to register with CBCCs.

The fact that the IRI implementation in Mchinji district attracted an additional 88 CBCCs, which were neither mobilized nor provided with any resources by SC, or any other organization, gives a clear picture that Tiyende! IRI can easily be replicated at a minimal cost as communities mobilize resources to get radio sets and batteries. The result

clearly point to a fact that the program can be implemented with limited resources as communities can complement the effort.

6.0 Recommendations

1. The overwhelming response in Mchinji district points to the fact that the intervention needs to be scaled up so that more children and communities can benefit from it.
2. The fact that caregivers work on voluntary basis calls for a need to institute a cost effective capacity building mechanism that would ensure and sustain quality delivery of lessons in CBCCs order to continue benefiting the last children. Scaling up the radio program is therefore recommended as it would ensure continuity on the service.
3. From an ethical point of view it will be rational to introduce the radio program in Kasungu which was denied access to the IRI program because the communities were chosen to be the control in the study. Kasungu district also has a community radio that can be engaged.

7.0 Proposed Scale up of Intervention

Based on the findings from the IRI Study, it is clear that the radio is an effective tool in the delivery of information to children, community members and facilitators like caregivers. This is evidenced by the finding that the caregivers only required tailor made training modules for them to follow as was demonstrated by effective delivery of particular components in ECD lessons. The radio program delivery could be reinforced by regular face-to-face sessions with experts who could offer clarifications and demonstrations of specific learned techniques, skills and strategies. At the same time the experts could observe and advise on how to use the newly acquired knowledge and skills.

The IRI approach has also proven that it is a cost-effective strategy to enhancing the implementation of quality ECD services as evidenced by the radio's ability in reaching out to and influencing behavior of both intended and unintended listeners. As was established in the study parents/guardians closely followed the radio programs resulting in improved support towards children's learning and development efforts. This finding confirms that radio programs have potential of mobilizing communities to adopt new interventions and behaviors in the provision of ECD services. Going forward, the program could therefore be expanded in its scope and information diversity. In terms of scope the program could be scaled up to five districts as follows;

1. Mchinji district targeting all the CBCCs with Mudziwathu Community Radio Station reach,
2. Kasungu North, in Sub- Traditional Authority Mnyanja, where the IRI Study control was located,
3. Lilongwe district, considering that some parts of the district are within reach by Mudziwathu Community Radio Station and that the communities already adopted the IRI programme without support from the project,
4. Mzimba district, considering that introducing IRI in the district would help to increase access to ECD services hence building on the already running IECD project and would help to advocate for inclusion of the most vulnerable and marginalized children in ECD programs in the district.
5. Nkhatakota district, considering that it borders both Mzimba and Kasungu districts giving it an advantage of easy access to community radios accessible in the two neighbouring districts.

In terms of information diversification and learning from the IRI project, it would be worthwhile to introduce a parenting education component into the radio program. In the approach, the radio program could be used to disseminate knowledge on agricultural food production, nutrition (dietary diversification, low cost nutritious diets), other child care interventions and sexual and reproductive health (SRH) issues as they all impact on child development and care. Besides disseminating knowledge, the radio could also provide a forum for dialogue on what barriers prevent communities from adopting dietary diversification, key child care practices and even sustainable SRH practices, just to cite a few. The approach could also provide a window for nutritionists and health personnel to support community members to enable them professionally deal with any barriers to the adoption of good early childhood development practices.

In summary the findings demonstrate that a radio offers a window for sensitizing and changing behavior of community members in a cost-effective manner. Although the IRI focused on ECD lesson delivery related issues, meaningful investment in early years of children would be cost effective if the radio programming can be diversified to holistically cover all child development issues hence ensuring a quality start of children.

Circulation Manager
Collins Dube
0888 898 850
cdube@mwntation.com

Marketing Manager
Albert Banda
0888 846 277
abanda@mwntation.com

Advertising Bookings

Gift Mashiri (Blantyre)
0881 762 272
gsibale@mwntation.com

Chikondi Kwanjana (Lilongwe)
0884 551 612
ckwanjana@gmail.com

Rita Banda (Zomba)
01 527 052/0888 504 916
ritabanda2@gmail.com

Jordan Nkhata (Mzuzu)
0888 743 754
jordannkhata@gmail.com

DESIGN AND PRINTING

Production and Distribution Manager
Alfred Mtaula
01 727 179/0888 827 511
amtaula@mwntation.com

FEEDBACK ON SERVICES

Subscription/Sales Agents:
Felix Bandawe
0882 860 035
fbandawe@mwntation.com

Advertising:
Nancy Kalamula
0888 843 266
nkalamula@mwntation.com

General Feedback:
Maurice Kazembe
0888 754 784
mkazembe@mwntation.com



Mchinji chiefs strengthen ECDs

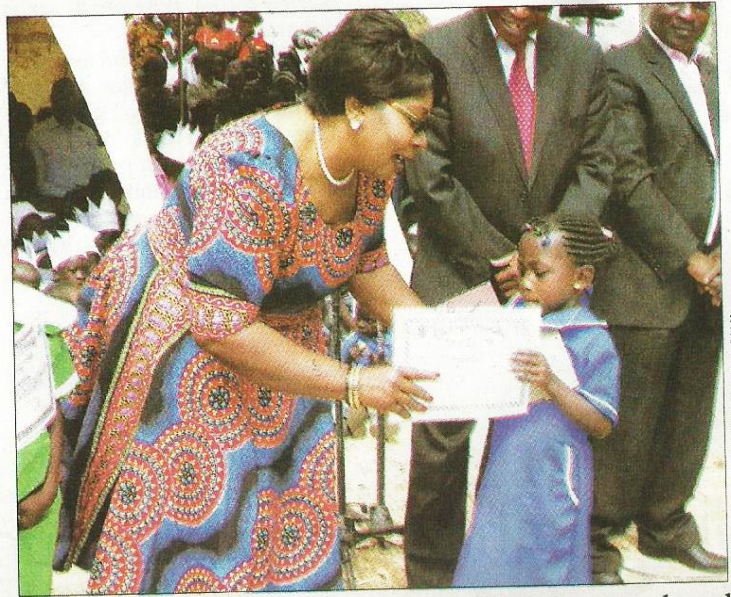
HOLYCE KHOLOWA
CORRESPONDENT

Ministry of Gender, Children and Social Welfare, in conjunction with Save the Children Fund (SCF), has commended traditional authorities (T/As) Zulu and Mulonyeni of Mchinji for boosting early child development (ECD) studies in the district.

SCF acting director of education, Lexon Ndalama, said in 2016 his organisation provided technical support to 20 community-based childcare centres (CBCCs) to teach children in preparation for primary school, which led to the graduation of 400 children.

“The number of graduands has tripled to 1 200 while the number of CBCCs has increased to 56. That gives us hope that we are creating a generation of educated people who will make informed decisions on the socio-economic development of the country,” he said.

Mulonyeni observed that education is the nucleus of a



PHOTOGRAPH: HOLYCE KHOLOWA

Banda (L) presents a certificate to a graduand

developed society, adding that he resolved, with Zulu, to inspire chiefs under them to establish CBCCs in their areas.

He added ECDs are gaining grounds with the SCF-funded *Tiyende* radio programme on the district’s Mudziwathu

Community Radio.

The ministry’s chief director Chimwemwe Banda urged chiefs to champion ECDs in the country.

“We have developed an ECD policy to address capacity and welfare of caregivers,” she said. ■

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August 27, 2017*