

# **Mainstreaming Early Grade Reading Instruction in Early Childhood Teacher Education**

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## **Abstract**

*This paper provides insights on how Early Grade Reading Instruction Curriculum (EGRIC) catalyzed a pedagogical shift and, consequently, began transforming early childhood teacher education in Kenya through reading instruction. EGRIC, themed: All Teachers Teaching Reading All Children Reading, was sponsored by USAID's All Children Reading: Grand Challenge for Development and implemented by the University of Nairobi from September 2012 to September 2014. EGRIC developed the capacity of 315 purposively selected UoN pre-service teachers enrolled in Bachelor of Education in Early Childhood Education and 170 in-service teachers to provide reading instruction, assessment and remediation in the early grades (K-3<sup>rd</sup> grade). The ultimate goal was to infuse EGRIC into UoN's B. Ed (ECE) program. Data were collected using mixed-method research approaches and analyzed qualitatively and quantitatively. EGRIC workshops and school follow-ups became an odyssey where teachers re-discovered the true meaning of reading instruction. Consequently, 298 teachers were certified as reading teachers at project close-out. Over 17, 800 children's reading skills were impacted; of these, 298 children at-risk of reading failure received weekly one-on-one tutoring and registered improvements in their reading skills and motivation for reading. There is need to open up and/or extend space(s) to foster technical leadership, knowledge sharing, and evidence building around issues of early grade reading instruction and assessment; improving effectiveness, sustainability, and scaling up of early grade reading interventions. The broader goal should be to build capacity of stakeholders to apply evidence-informed practices to increase impact, scale, and sustainability of reading interventions in Kenya and beyond.*

## **Introduction**

Access to education is a crucial precondition to educational impact. What happens *after* children enter schools - their learning - is the most important factor in supporting children's futures and national economic development (Nag et al., 2014). Approximately 250 million children around the world are not learning foundational skills; 130 million of whom have spent at least four years in school (UNESCO,

2014). The reading failure combined with other supply side factors exerts long-term consequences on children's learning ability and progression in schools (URC, 2014). Pinpointing the *exact* universally applicable solutions has been difficult due to global nature of the challenge of early grade reading (URC, 2014). Research in the area of early learning has resulted in suggestions for actions that can be contextualized for improvements.

Kenya has made efforts to improve quality of learning in schools through quality improvement strategic priorities in her education plans ensuring primary education is accessible to all (Ngware et al., 2013). This has led to increased children's access to schooling in Kenya. Pupils should experience quality instruction and develop sufficient skills and competencies to succeed in subsequent education levels and careers (Uwezo, 2010). Kenya has increased her national expenditure to ensure provision of learning resources in schools. Success in optimizing learning resources towards quality improvement requires a multi-sectoral approach or harnessing of public-private partnerships (Ngware et al., 2013).

Higher learning institutions, among other stakeholders, complement government efforts to mitigate challenges surrounding quality education. University of Nairobi, an exemplary leader in academic research, has trail-blazed several innovations aimed at improving the human condition. It was in this spirit that the university proposed to develop, pilot and infuse Early Grade Reading Instruction Curriculum into its early childhood teacher education programs to build the capacity of teachers for reading instruction and assessment using high quality, culturally relevant, age-appropriate instructional materials, resources and tools.

National Institute of Child Health and Human Development and Department of Education in the US were tasked, in 1997, to establish a national panel to review existing research to determine and describe effective evidence-based methods for teaching children to read, and suggest a plan for future research. Published studies in the field of early grade reading were chosen for in-depth analysis based on instructional procedures, experimental design, sample size, and linkages between practice and outcome (URC, 2014). According to URC(2014)), *fundamentals* of teaching children to read include: Phonemic Awareness (ability to break apart the spoken words into smaller sound segments); Phonics (understanding that alphabet represent sounds that can be blended together to form spoken and written words); Fluency (ability to recognize words easily, accurately, and read with greater speed); Vocabulary Enhancement (teaching more and new words); and Reading Comprehension (ability to read with full understanding and make inference from the text).

EGRIC content covered the five core components of teaching children to read and focused on reading instruction as a lever for quality. High levels of children's literacy skills will successfully prepare them for subsequent levels of education and workforce in Kenya. EGRIC aimed at informing four key sectors – early childhood teacher education, curriculum, assessment, and non-formal education—with the sorts of literacy insights needed to revise key policies and practices in Kenya. Concept of literacy is not well understood in Kenya because, too often, low level standards are applied as the “test” of literacy. Language teaching and reading are considered to be synonymous. It is often assumed that as children are taught a language their reading and comprehension skills will improve automatically (URC, 2014). Low level of literacy education in Kenya is due to contextual features such as lack of specific developmental literacy

curriculum; literacy objectives embedded within existing subject area curriculum; assessment of literacy competency; pre-service courses in literacy pedagogy; and trained literacy specialists in formal and non-formal education classes (UWEZO, 2010).

EFA Global Monitoring Report (2014) recommended, among others, development of teacher education methodology courses featuring literacy objectives; standards and benchmarks for a developmental literacy curriculum; tools and techniques for assessing literacy development nationally; and pedagogy and literacy curriculum for adult and out of school youth in non-formal education programs. In recent years, global development partners such as USAID, World Vision, Australia Aid, DFID and UNESCO have commissioned programs and literature reviews from developing contexts on critical topics including: literacy and foundation learning; mother-tongue and additive language learning; practice and pedagogy, teaching education and coaching; school readiness skills; and the political economy of education systems as it impacts quality and learning (e.g., Nag et al., 2014). These concerns about learning have stimulated additional funding for reading research and assessment studies in developing countries.

Against this background, EGRIC had to experiment with new ideas, build and/or expand evidence that shows linkages between good instructional practices and daily time for specific reading activities, and improvement in children's reading and comprehension skills. In sum, the evidence is currently being built for most contexts. Even when there is evidence to do things a certain way, donors, implementing organizations and practitioners have to respond to their individual contexts and experiences and adapt their practices accordingly. Hence, University of Nairobi's interest in and unique contribution through EGRIC to prepare teachers to make connections between reading instruction and assessment and how to adapt and apply a set of easy-to-use techniques for assessing reading instruction and monitoring pupils' reading development.

## **Methodology**

EGRIC research project answered five questions: *What was introduced in EGRIC? How was EGRIC introduced? What evidence of impact of EGRIC was seen? What lessons were learnt from EGRIC implementation? What recommendations can be made from EGRIC implementation?*

Mixed-methods design was employed in the study. In-depth qualitative data were collected through classroom observations and interviews to gather professional wisdom from experts in the field and quantitatively through statistical data analyses. Through source and method triangulation each quantitative outcome of the study was complemented by qualitative information for clarity.

The research was informed by social constructivist theoretical perspectives. It was thus an outgrowth of interchange of ideas co-constructed and shared with teachers and stakeholders between September 2012 and September 2014. Each session was treated as a researchable moment and conscious efforts made to collect data as was feasible.

Purposive and cluster sampling techniques were used to identify 315 University of Nairobi pre-service teachers enrolled in the Bachelor of Education in Early Childhood Education degree programme, 50 in-service teachers from non-formal schools in Mathare Slums and 120 teachers from Kisii County. The sample thus included rural and urban-based teachers.

Methods of data collection included:

1. Teacher observation in workshop sessions and during school follow-up visits.
2. Thematic document analyses for:
  - a. Exit Cards which provided daily feedback for workshop facilitators
  - b. Classroom observation reports by monitoring and evaluation personnel which followed a specific format requiring them to describe teachers' skills, knowledge and attitudes towards reading instruction;
  - c. Teachers' reflections;
  - d. Curricula and assessment documents developed by teachers during workshops;
  - e. Mid-term and end-line reports prepared by EGRIC Team;
  - f. Speeches made on EGRIC culminating conference and sensitization forum;
  - g. Pre- and post-literacy teacher knowledge survey;
  - h. Pupil pre-and post-tests on oral reading and reading comprehension;
  - i. Data from teachers' comments during informal meetings.

Qualitative data were analyzed using constant comparative method (Charmaz, 2002) to unearth key ideas and emerging themes; which were compared across data sources for triangulation (Denzin, 1978). Member-checks (Merriam, 1998) and peer debriefings (Seidman, 1998) were done with EGRIC team members and monitoring and evaluation consultants for trustworthiness of findings of the study. SPSS (v. 17) was used to compute percentages from quantitative data and generate graphs.

### **Ethical Considerations**

Participants willingly participated in the study. Confidentiality and privacy were respected. Rapport was created; no attrition was experienced. Pseudonyms were assigned to participants who were quoted verbatim.

### **Presentation and Interpretation of Findings**

Study findings are based on five questions: *What was introduced in EGRIC? How was EGRIC introduced? What evidence of impact of EGRIC was seen? What lessons were learnt from EGRIC implementation? What recommendations can be made from EGRIC implementation?*

### **EGRIC Content Activities**

Teachers undertook content packaged into four units:

#### **Unit 1: Foundations of Reading - Learning to Read and Reading to Learn**

This unit equipped teachers with requisite reading instruction knowledge, skills, values, and attitudes and thorough grounding in foundations of reading: how children learn to read and later read to learn from different information sources.

Teachers prepared schemes of work and planned reading lessons using *Before-During-After* conceptual framework. They provided instruction and monitored learners at three stages of each reading lesson. They explored activities for developing phonemic awareness, alphabetic principle, vocabulary, fluency and reading comprehension.

EGRIC introduced different types and levels of questions to stimulate thinking and help learners make connections between print and their experiences. The idea of helping learners formulate their own questions was new. Ultimately, teachers had an enhanced understanding of what balanced literacy instruction looks like. They were equipped also with strategies for fostering reading development in- and outside classrooms through read-alouds, shared-, guided- and independent reading and writing; discussion, journaling, creative movement, art, book clubs, LitFests, literature circles, buddy reading clubs, cross-age tutoring, Sustained Silent Reading (SSR)/Drop Everything And Read (DEAR) among other activities.

### **Unit 2: Reading Instructional Materials and Resources Development**

Teachers had thorough grounding on preparing and/or improvising materials and resources for teaching letter shapes, names and sounds; word building; reading fluency development; reading comprehension; developing, stocking and managing libraries; determining literacy abilities and book difficulty levels and matching instructional materials and resources to learners' reading levels. They explored also role of new media and new technology in literacy development and software for reading instruction; effective use of World Wide Web, social sites, e-communities, e-communication and literacy education; harnessing power of other mass media tools, pop-culture, cartoons, video-gaming, and play-station games. In addition, they explored issues surrounding typesetting and graphic design, illustrations and visual appeal, visual and performing arts; selection, use, storage and maintenance of instructional materials, resources, media and technology.

### **Unit 3: Reading Assessment**

Teachers used different types of reading assessments and how to assess five components of reading at different points and times. This concept of continuous monitoring of pupil progress *Before- During and After Teaching* was new and represented a significant shift in the teacher's role and the expectations for teachers and learners. Teachers explored formal/standardized – criterion versus norm-referenced tests and informal assessments such as running records, use of informal reading inventories, portfolio development and anecdotal records. Teachers experimented with tools for assessing each of the five components of reading: phonemic awareness skills; letter-sound correspondence; word knowledge; fluency skills and reading comprehension skills.

### **Unit 4: Interventions for Children with Reading Difficulties**

Teachers diagnosed pupil abilities, needs and objectives, prescribed requisite learning activities and provided intervention to children at-risk of reading failure. They identified struggling readers and developed Individual Reading Program for each learner. They also matched and provided intervention to children with specific reading difficulties and documented progress made, challenges encountered and

lessons learnt. They explored various ways of sharing information on struggling readers with different stakeholders - learners, parents, caregivers, colleagues, administrators, policy-makers, community. EGRIC was accessible to teachers through UoN e-learning portal and was used for on-going support during implementation period.

### **EGRIC Implementation**

EGRIC was implemented in six phases. Phase 1 (September – December 2012), involved development of EGRIC Work Plan, scope and sequence and content and uploading EGRIC onto UoN e-learning portal.

In Phase 2 (January to April, 2013), lecturers and pupils were sensitized about EGRIC initiatives. Professional development of Cohort 1 pupils was done face-to-face for three hours once a week and on-line using both synchronous and asynchronous modes of instructional support: Live chats; posts on discussion boards and emailing; Short Message Services (SMS) support; and tutorials. Links to YouTube videos were available on the e-learning portal for pre-service teachers to learn further on implementing specific strategies. Monitoring and evaluation was an integral and on-going part of the implementation progress. Each EGRIC workshop focused on expanding teachers' understanding of each of the five components of the reading process.

In Phase 3 (May to December, 2013), Cohort 1 teachers went for teaching practice in early childhood education centres across the country. School visits were made for on-going professional support, mentoring and coaching. Each teacher was seen a minimum of six times. Where face-to-face support was unavailable, weekly SMS were used, mainly for administration purposes and to encourage teachers to try out specific strategies and report back their experiences.

Cohort 1 teachers on placement monitored understanding and performance of pupils before, during, and after reading instruction. This informed teacher on effectiveness of their lessons with individuals, small groups of pupils, or whole classes, depending on instruments used. Assessment and instruction were interacting and continuous processes, with assessment providing feedback to the teacher on efficacy of prior instruction, and new instruction building on learning that pupils demonstrated. Teachers evaluated pupil learning on the spot, or collected data at different points in time and compared progress over units of instruction. They made weekly reflections on their reading instruction experiences and developed video cases. Diagnostic assessments are themselves educative for teachers. Through EGRIC, teachers recognized reading as a developmental process and targeted instruction to meet learners' unique needs.

In-service teachers (N=120) from Kisii County were incorporated as part of UoN Corporate Social Responsibility and to extend spaces for EGRIC pilot to in-service teachers. This also ensured inclusiveness of teachers in rural and urban locations. Teachers had week-long professional development workshops followed by mentoring, coaching and on-going classroom support. EGRIC mid-term project evaluation was undertaken during this phase.

In Phase 4 (January to April, 2014), professional development of Cohort 2 teachers was done. Videos developed by Cohort 1 teachers were incorporated into the training of Cohort 2 teachers. Monitoring and evaluation of Cohort 1 teachers continued. In Phase 5 (May –August 2014) Cohorts 1 and 2 pupils continued teaching in early childhood education centres across the country and were offered on-going professional development support. They continued assessing learners and planning iteratively and wrote weekly reflections.

In this phase, teachers from Mathare slums were incorporated as part of UoN Corporate Social Responsibility. Their training was week-long followed by mentoring, coaching and on-going classroom support. End-line evaluation was done during this phase followed by a one-day National Conference and Sensitization Forum attended by relevant education-sector stakeholders. In this forum, 298 teachers were certified as reading teachers and graduated accordingly on 23<sup>rd</sup> September, 2014.

In Phase 6, EGRIC was infused into early childhood teacher education programs at UoN starting September, 2014. EGRIC also established Early Grade Reading Institute for sustainability of benefits accrued. The Institute offers courses in early grade reading instruction and seeks opportunities to contribute to improvements in reading instruction outcomes in Kenya. EGRIC developed two Master of Education programs in Literacy Education and Indigenous Language(s) Pedagogies.

### **Impact of EGRIC on Teachers**

EGRIC increased teachers' understanding of reading instruction and assessment and applied appropriate reading instructional strategies and techniques in the early grades across the country. EGRIC defined teacher practices as the wherewithal required by a teacher to execute a successful reading lesson and included ability to: plan, implement and evaluate the reading lesson; employ different methods, techniques, strategies and procedures for reading instruction; manage the teaching and learning environment; interact meaningfully with learners; utilize instructional materials and resources for instruction; and determine that learning has, indeed, taken place. Teachers made most of EGRIC techniques '*visible*' in their documents and classrooms. Teachers wondered how they might accomplish such a seemingly insurmountable task. However, overtime teachers confirmed that reading tasks were doable. Let us illustrate further how this panned out.

Evidence of impact of EGRIC capacity building on teachers was available in many data sources. We provide evidence from four main sources: EGRIC workshops, pre-and post-literacy teacher knowledge surveys, classroom visits and teacher reflections and pupil learning outcomes.

### **Evidence from EGRIC Workshops**

We regularly assessed teachers' uptake of EGRIC content during workshops. For instance, we asked them to turn to someone seated next to them and summarize what they had just learned. During these turn-and-talk sessions, we noted that literacy ideas and processes were beginning to jell in teachers. Those with mixed-up views were given formative feedback.

Teachers also filled out Exit Cards at the end of each session. Teachers pointed out areas not well articulated. For instance, there was *'too much repetition [of content]*. One teacher asked about *'disadvantages'* of EGRIC. He wondered why we only focused on the *'good side'* instead of giving both the *'pros and cons.'* Another wondered why we used the term early grade reading instead of Kenyan terms such as lower primary and pre-unit, nursery, etc. and why the emphasis was only on reading when there were four language skills.

We asked teachers to rate their level of confidence in skills they were learning in the workshops. Nearly all teachers stated that they were now *"more confident"* in their work because they had acquired a variety of skills, strategies and techniques for improving their personal and professional lives. Mary (pseudonym) said:

*First and foremost, I have gained a broader understanding of the word literacy itself. I have learned how to make learning more constructivist by application of a myriad of EGRIC teaching techniques. I have acquired a number of skills which will be helpful for my professional/career development.*

Wambua(pseudonym) said:

*I am able to explain the relationship between assessment and instruction. I am able to identify and use diverse techniques for monitoring pupils' ability to use the main strategies for constructing meaning from print.*

Marube (pseudonym) said:

*I have acquired the ability to identify the major components of the literacy process and the main processes for constructing meaning from print. I have become strong in setting questions which consider different levels of the cognitive domain.*

In the end, teachers made commitments to continue reading around the issues that had been raised in workshops; to continue incorporating literacy in their programs and to construct test items that are more open-ended and/or those that require critical thinking and not *"memorization of facts"* and *"mere recall of information."* Sara (pseudonym) said:

*[I will] make a revision of all that was studied in the workshops in order to internalize it further; read more literature on the topics and techniques; and apply the techniques in setting test items.*

Some teachers said they hoped to become *"experts," "professors"* and *"consultants"* in the new field – *early grade reading instruction*. Amina (pseudonym) said she hoped to adopt EGRIC teaching *"as a habit for reflecting on [my] own understanding of literacy and my effectiveness as a literacy expert."* Many promised to assist their colleagues to improve their professional products by incorporating EGRIC teaching techniques. Caro (pseudonym) said:

*My goals will be to disseminate the knowledge I have got to educational stakeholders and [to] change the ways in which the examination questions are prepared currently to one which prepares more open-ended thinking text questions that involve critical thinking.*

Teacher Sara was inspired to pursue further studies in the area of literacy. What was evident was the desire to engage in extensive reading on the topics as well as disseminate the information learned to colleagues in the profession.



EGRIC workshops were thus perfect avenues for discussing emerging issues and concerns – sometimes reaching a consensus, sometimes agreeing to disagree. We think however that we stimulated healthy intellectual interchange among teachers that enabled them see multiple perspectives about diagnostic teaching, literacy and literacy instruction, and controversies therein.

**Evidence from Pre-and Post-Literacy Teacher Knowledge Surveys**

In pre-and post-literacy teacher knowledge survey, teachers responded to a variety of sub-topics or strands within the literacy curriculum by writing a brief definition of a given term; listing specific techniques used to teach/monitor pupil skill in each strand; and rating their self-confidence and knowledge in this strand of the literacy curriculum. Teachers worked individually during this activity. The results are shown in Figure 1.

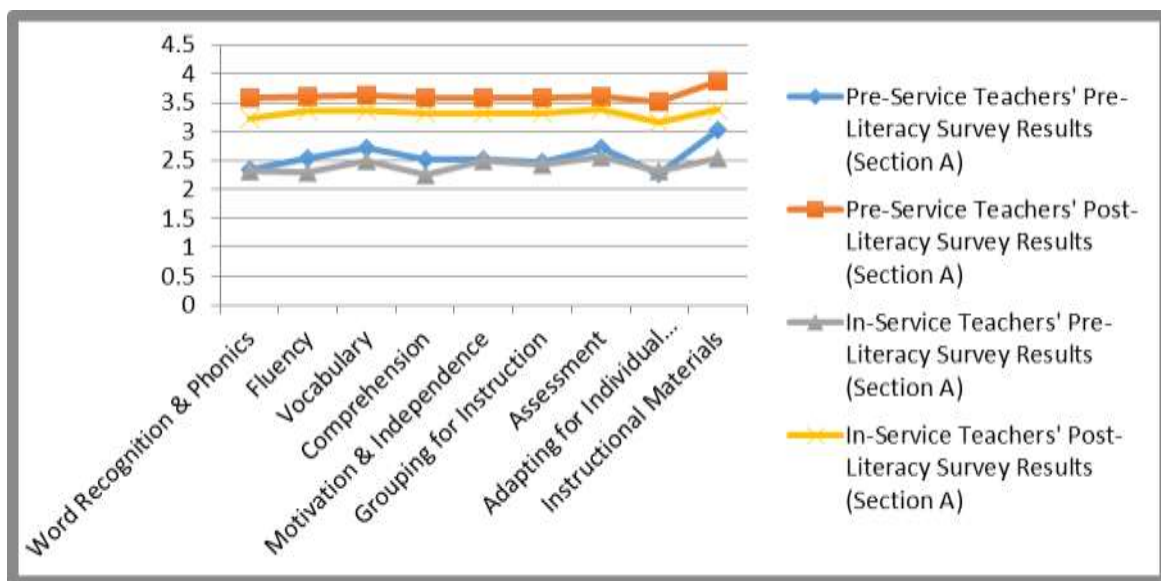


Figure 1: Level of confidence in knowledge about components of reading

Teachers’ level of confidence in knowledge about components of reading improved, on a scale of 1-5, after undergoing EGRIC trainings (Figure 1). Teachers’ frequency of incorporating reading instructional activities and approaches into lessons is shown in Figure 2.

**Rating Scale:** 1=Never 2=Rarely 3=Several Times a Month 4=Several Times a Week 5=Everyday

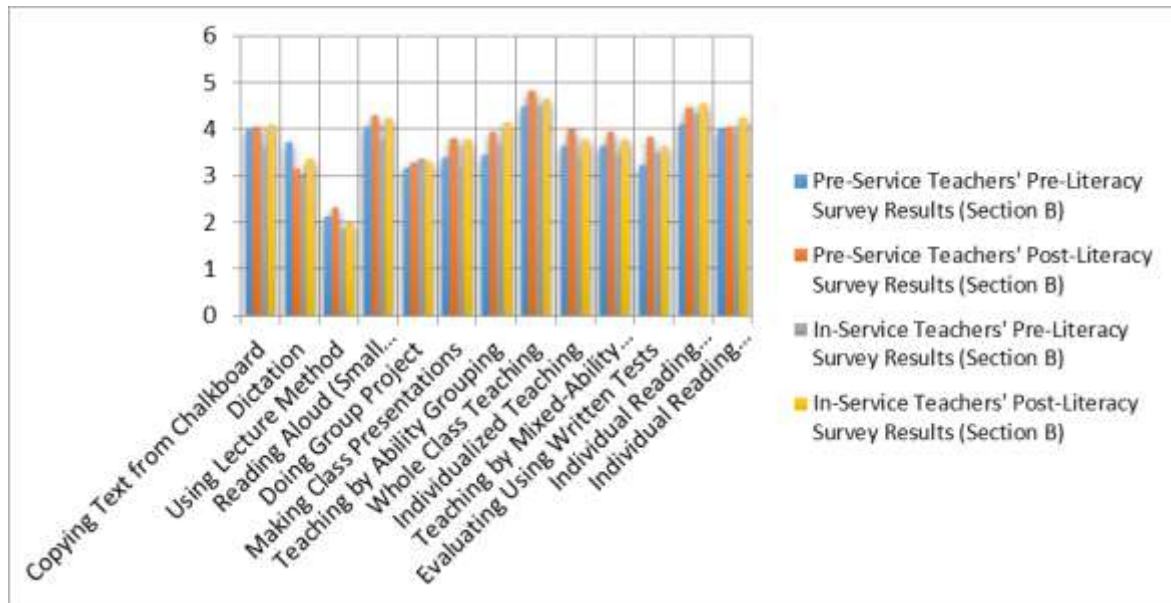


Figure 2: Frequency of incorporating reading instructional activities and approaches into lessons

Teachers appeared to be aware of the need to have a reading activity during lessons (Figure 2). Percentage of teachers who chose the correct response for the various reading instruction strategies and activities is shown in Figure 3.

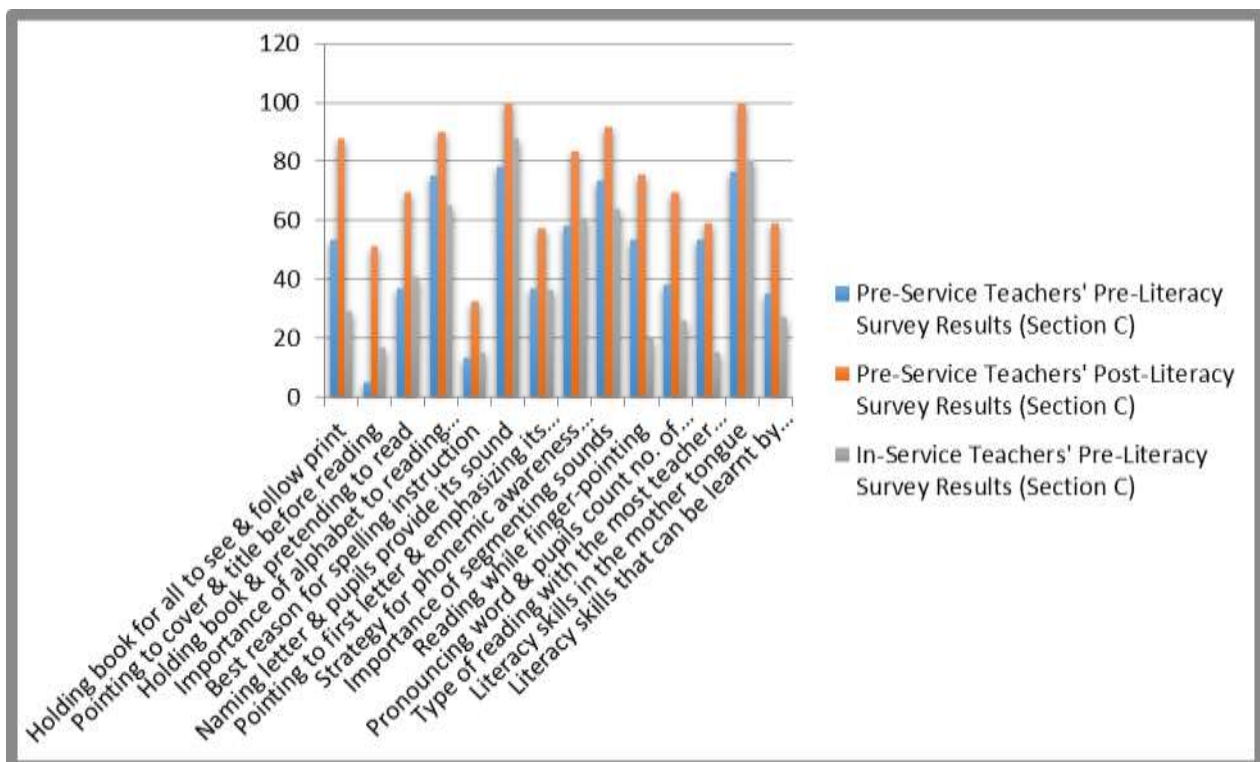


Figure 3: Percentage of teachers who chose the correct response for the various reading instruction strategies and activities

A high percentage of pre-service teachers compared to in-service teachers are able to choose the correct response for the various reading instruction strategies and activities (Figure 3).

### **Classrooms Visits and Teacher Reflections**

We followed teachers into their classrooms for on-going professional support, coaching and mentoring. Each teacher was seen a minimum of six times in the entire project life. Teachers were observed '*experimenting*' with many strategies including picture walk; pre-teaching of vocabulary; predicting and clarifying predictions; think-pair-share; pair-read-share; and bare-bones book review in a forty-minute lesson. Teachers followed the three-part conceptual framework in writing lesson plans and organizing reading instruction. In line with our operational definition of terms on teaching practices, teachers' reading instructional knowledge, skills, values, attitudes, strategies, classroom management and control skills, use of instructional materials and resources and time management changed following participation in EGRIC. Teachers' own critical thinking skills and creativity improved as well. Teachers became more adept at lesson planning, development and presentation and demonstrated that they were reading teachers. They said they had moved away from "traditional ways of teaching" and had adopted "new ways of teaching, new strategies, advanced teaching skills" which were "more participatory" meaning that both "teacher and learners interacted" unlike before. Teachers acknowledged also that they had developed "ability to control pupils" and to employ "visual aids" in the teaching and learning process. Consequently, teaching for them had become easier and more effective and that they could "see changes in their teaching and in pupils." They reported that the effect on their teaching practices was "positive." They saw this new way of teaching would help develop in them and the learners a "culture of reading and writing" which is "the basis of learning."

Classroom observations corroborated teachers' self-reports about strategy use because they did use them during instruction. Teachers demonstrated understanding of, and commitment to, EGRIC methodology. They were able to, with varying degrees of proficiency, extend their previous lesson plan models to accommodate *Before-During-After* conceptual framework.

Analysis of sample lessons revealed that many teachers were able to use techniques appropriately. They learned that assessment and instruction are continuous and interacting processes which inform each other throughout each lesson. Teachers developed an expanded understanding of literacy, the literacy process and the role of literacy in pupil learning. In essence, therefore, they were very effective in adapting literacy techniques to their local texts and contexts.

Several gaps were, however, evident in their teaching practices. The frequency of use of techniques varied considerably. Some specific techniques were used significantly more than others. For instance, conducting picture walks, making predictions based on titles and pictures and questioning was well done. This could be due to teachers' lack of confidence or mastery of other techniques. Some techniques resemble familiar practices or techniques introduced at other workshops. Some are simply easier to implement because they have fewer steps or take less time. Perhaps some of the techniques were not used because the teachers perceived an inappropriate match of the techniques introduced and the current curriculum and assessment

scheme. Or perhaps teachers found that some of the techniques are not applicable to the existing curricula, instructional materials, or assessments.

Secondly, strategies that promote phonemic awareness were glossed over, in spite of previous research which states it is the best predictor of future reading outcomes (Yopp, 1992). Some teachers did not seem to know as many “EGRIC strategies” as we would have wished them to. Where they did not know the label for a strategy, they described the process itself. Many teachers struggled with sound identification. Confronted with that reality in Kenyan schools, teachers’ capacity must be developed further through refresher workshops that EGRIC Team will continue to offer to beneficiaries.

### **Evidence from Pupil’s Learning Outcomes**

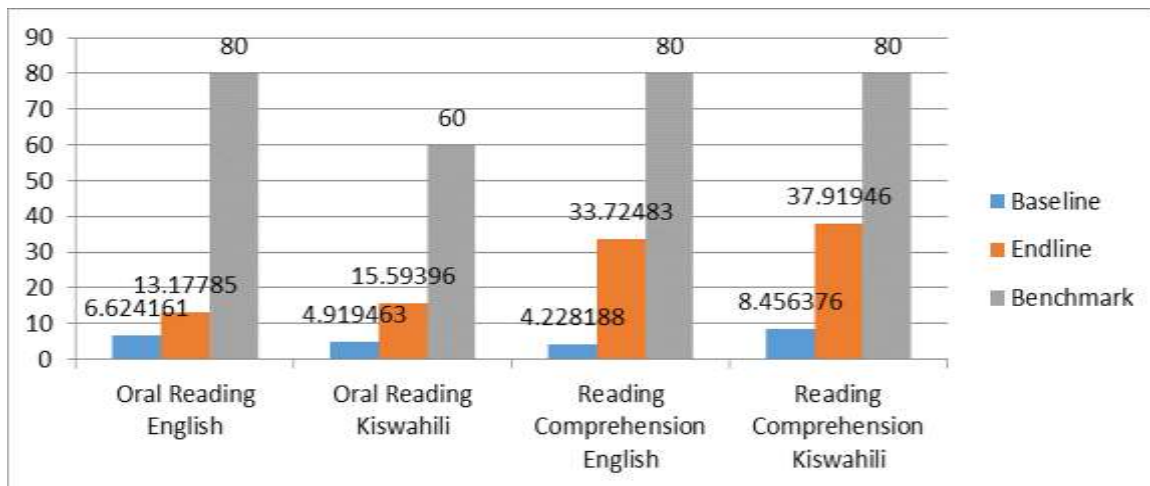
We defined learning outcomes as observable or measurable changes, results, consequences or evidence of instruction. This included but was not limited to improved learner participation in the teaching and learning process, improved ability in oral reading fluency and reading comprehension and indication of positive contribution to overall academic achievement. During school visits, we asked teachers to state whether pupils were improving in their oral reading fluency and reading comprehension. From teachers’ responses, pupils’ reading, comprehension and critical thinking skills were “gradually unfolding.” Indeed, all these skills are developmental and do not only unfold over time but it’s the reason for pupils within the same class to be at different places in their reading development. The skills can, however, be augmented through continued targeted support and scaffolding from teachers and meaningful learner-learner interactions.

We analyzed information on teacher-pupil relationships before and after EGRIC implementation. Teacher responses on learner achievement were corroborated with evidence from classroom observation. In all the classrooms the teachers looked for each and every opportunity to draw learners into the lesson and to sustain their interest. In general, therefore, teacher-pupil relationship seems to have improved tremendously. One teacher called it a “sound” relationship where pupils are no longer silent. They do more talking and participate more freely. They discuss with their teachers and ask questions. The teachers now find teaching easier and interesting.

### **Number of Pupils Reached**

We asked teachers to state the number of pupils they had in their reading classrooms during the 2012/2013 and 2013/2014 academic years. We determined that we had reached 17,880 pupils with requisite reading skills. We asked further how the teachers had worked with pupils at risk of reading failure. We got and analyzed baseline and end-line data on this unique group of pupils in to sub-skills: oral reading fluency and reading comprehension in both English and Kiswahili.

Scores for oral reading fluency were derived from words read correctly per minute from a grade level-appropriate story or list of words by each pupil assessed. The reading comprehension scores were derived as follows. After a pupil heard or read a story, the teacher asked them five comprehension questions and for each answer marked either ‘correct’ or ‘incorrect’ depending on the pupil’s answer. Upon completion of the exercise, the teacher counted the number of correct answers and converted into percentage. The results are shown in Figure 4.



**Figure 4: Pupils’ baseline and end-line oral reading and reading comprehension results by language**

The results presented in Figure 4 show growth in oral reading fluency and reading comprehension between baseline and end-line for both English and Kiswahili and as observed throughout the project period during monitoring and evaluation. This implies that EGRIC project positively impacted pupils’ reading skills and the skill level of early childhood teachers. These trends are indicative of the need for a fully-fledged Institute to continuously train and provide continuing education for early childhood educators.

Noteworthy, and consistent with previous research (e.g., Piper, 2010), pupils’ reading comprehension in Kiswahili was superior to that in English in spite of their lower oral reading fluency. The reverse was true for English. Unfortunately, the pupils remained below Ministry of Education’s set benchmarks for standard two pupils. EGRIC implementing team’s consolation lies in their ability to demonstrate that achievement gaps can be narrowed and even closed - with proper diagnostic assessment, iterative planning and reading intervention using tried and proven approaches. Harnessing the power of technology might be the magic shot in the arm to augment reading development. This is an area for further research.

We asked teachers to comment on struggling learners’ reading development. Struggling learners’ performance improved – albeit slowly but surely. Increased learner engagement, improved time on task; literate environments; increased classroom talks; promotion to next grade levels and increased enrolment were other indicators of positive change. Dismal performance in reading assessments is likely to be a thing of the past with targeted intervention such as that provided by EGRIC. Teachers must thus continue diagnosing and intervening for exceptional learners. In future dissemination forums, we will analyze these data and disaggregate them by gender and type of special need to further understand issues surrounding interventions for children with disabilities.

**Literate Environments**

We defined a literate environment as a print-rich, pupil-friendly school and/or classroom. In such environments, classroom and school walls are covered with colorful, inviting and age-appropriate pictures and other teaching aids that attract pupils’ attention and make them want to read. The displays can include also pupils’ products such as drawings, essays and graphical organizers. It can include also learner-friendly libraries and reading rooms stocked with high quality culturally relevant leveled books.

EGRIC not only prepared teachers to provide reading instruction using tried and proven strategies and internationally recognized best practices. By their very nature, these strategies require teachers to make age-appropriate instructional materials and resources. In many of the classes we visited, we saw literate environments.

### **Fringe Benefits**

We asked teachers to state their views about writing. Many of them painted writing as hard, boring and sterile; enlisting all the negative terms they could think of. We guided them to plan and write for children using the five-step writing-as-a-process approach of pre-writing, drafting, revising, editing and publishing. Teachers wove their writing around key themes outlined in the Kenyan Curriculum for the early years. They were given the choice to write in their mother tongue if they so wished for we did not want the medium of expression to be a hindrance to creativity and spontaneity. Following the writing exercise, many teachers felt they had been liberated from the fear surrounding writing for children and the writing process, illustrative of what can happen when writing instruction is structured to provide authentic opportunities for writing. EGRIC workshops birthed over 200 learner-friendly texts that, once revised and edited, will enrich supplement reading materials in Kenyan classrooms. The teachers also made videos in which they demonstrated understanding of EGRIC techniques and relevant strategies for literacy instruction and development. The videos are invaluable for future professional development workshops that EGRIC plans to run.

During EGRIC implementation, we received overwhelming support from senior management of the University of Nairobi especially in the provision of a 16-room building to house the project. This is a clear indication that they are willing to play their part in capacity building and mobilizing resources at their disposal to ensure benefits accrued thus far are sustained. Benefits can thus be measured in the capacity and vitality of the University to trail-blaze innovative service delivery teacher education programs. This will most certainly transform teacher education infrastructure in the country and, hopefully, lead the systemic reforms for quality improvement in education.

### **Lessons Learned during EGRIC Implementation**

We learned many valuable lessons along the way including the fact that:

1. EGRIC can, and is making a difference on the early childhood teacher education landscape in Kenya in a unique, unparalleled and exceptional way.
2. Literacy is more than just reading and writing. It is a human rights issue. It is about democracy, good governance, social inclusion, access to information and education, community development, language and culture, no one should be left behind. This is exemplified by EGRIC's conscious decision to provide for children with varied reading needs and inclusion of cross-cutting issues in its programming.
3. EGRIC recognizes that school-based programs must be anchored on, supported and promoted in the wider society through community engagement activities, inter-agency dialogue and in-kind support. This is demonstrated by EGRIC's zeal to reach out and network with other

like-minded organizations. It has an elaborate plan to join these organizations and The Ministry of Education in the national scale-up of reading instruction in the early grades (K-3<sup>rd</sup> grade) for the next five years.

4. Children need culturally appropriate, high quality and visually stimulating books and other resources devoid of moralistic or “preachy” and stereotypical concepts. EGRIC developed over 200 such works.
5. Children are important and do matter in education decision-making. EGRIC emphasized on instructional approaches that gave priority to pupils’ voices and opinions and encouraged their active participation in the teaching/learning process. Application of diagnostic and interactive methodologies in EGRIC pilot helped both teachers and pupils. Teachers reported their classrooms being “teacher and learner friendly” unlike in the past. Pupils were participating actively and, consequently, making the teacher’s work easier than before. They were not only answering but asking thought-provoking questions and discussing books they read in- and out-of class.
6. Children come to schools with many experiences and knowledge which need to be tapped into during the teaching/learning process. EGRIC emphasized on approaches that build and activate pupils’ prior knowledge on topics covered in the classroom as well on those that help the pupils make connections with their everyday lives and environments they live in. Teachers were guided to use the three-part conceptual framework which is helpful in activating learners’ prior knowledge, building a bridge to the new content and ensuring learner make connections with other texts read and experiences in other countries and historical epochs.
7. Teachers can create their own instructional resources to mediate shortages of the same. EGRIC recognized this potential and provided workshops on how to create instructional materials and resources. There were Big and small books and over 200 instructional materials and resources created by teachers themselves using locally available materials. This is an untapped potential waiting to be harnessed.

## **Recommendations**

EGRIC was intended to address issues of education policies and infrastructure that can be either barriers or gateways for Kenyans to achieve high literacy levels. The intervention targeted teacher education programs in the early years. It is with this in mind that we make recommendations solidify EGRIC gains:

1. *Consolidating and expanding:* A second phase of EGRIC project is highly recommended to address the one question we were frequently asked, “What next?” as well as respond to the feedback from teachers and their institutional leadership which supported the call for consolidation and expansion. This phase will enable the consolidation of capacity building activities in order to expand and disseminate the literacy program not only in Kenya but also in the region.
2. *Researching on reading instruction and assessment:* Higher institutions of learning in Kenya, in partnership with international institutions where appropriate, should organize a research agenda

to seriously investigate the quality of reading instruction, to monitor the impact of the innovative curricula and pedagogy and to serve as a reference point for MoEST.

3. Another important consideration is policy revision. It is critical now that suggestions for policy revision not only be brought back to the government from the field (informed stakeholders in education) but that a mechanism be put in place to ensure that appropriate steps are taken so that the policy revision is consistent throughout sectors.

## Conclusions

EGRIC program workshops contributed important outcomes in personnel trained. EGRIC approach was well-suited to needs and backgrounds of pre-and in-service teachers we worked with. Teachers' documents revealed interesting insights about their enthusiasm and willingness to embrace literacy education in their personal and professional lives. Where we left off, the teachers appeared a committed group of newly certified reading teachers revving to effect change in their work stations. However, there is a recognized need to create synergy between sectors so that connections can be made between aspects of programming: prevention, remediation and growth. Further research analysis and testing of aspects of this model still need to be carried out in this direction to ensure long term impact.

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