Participatory Development Associates Ltd.
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PARTICIPATORY DEVELOPMENT ASSOCIATES

PILOTS

PHONICS-BY-PHONE

LITERACY PROGRAMME IN EDIFY SCHOOLS IN THE ASHANTI & EASTERN REGIONS

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1. Introduction

Early childhood education has rippling effects on the academic performance and self-development of children as they age, climb the academic ladder and move through various phases of life. A critical skill that needs to be acquired at this early stage is the ability to identify and read words.

Such skill is transformational for many reasons, including the building of vocabulary, improving grammar and writing skills, enhancing future academic success and helping build independence and self-confidence. However, current statistics show that reading is a major challenge in early childhood education in Ghana.

For example, the Early Grade Reading Assessment (EGRA) across the 10 regions in Ghana found that 2% or less of 7,311 (3,645 males and 3,666 females) randomly sampled primary two pupils from 738 public schools could not read with fluency and comprehension in English language and the local dialect such as Twi, Ga and Nzema (EGRA, 2015).

It is documented in literature that a number of factors have contributed to the readability problem not only in Ghana but other developing and developed countries. Figure 1 presents a snapshot of some of the key factors that influence readability.

Figure 1: Factors Contributing to Readability in Children

Therefore, dwelling on literacy, teacher training and capabilities as contributing factors to readability, the Phonics-by-Phone (PbP) programme (and now Mathematics-by-Phone (MbP) has been developed to enhance teaching approach, skills and capabilities of teachers in order to improve reading and numeracy skills of pupils.

Participatory Development Associates Limited (PDA) is the main implementer of the PbP and MbP programmes in Ghana, and in the 2018/2019 academic year, implemented the former in selected Edify schools in the Ashanti Region and Eastern Region of Ghana. The teaching phonics methodology and assessment-by-phone were introduced to teachers of Kindergarten, Primary 1 and Primary 2 in the selected schools. In addition, monitoring visits were done to all the schools to ascertain the degree and quality of implementation. The Assessment-by-phone module is aimed at enabling teachers to conduct readability assessment for each pupil in their class in the first term (baseline), second term (midline) and third term (endline). This document is a summary of the report for the academic year.

2. The Phonics-By-Phone Intervention

The PbP programme has two main objectives:

i. To improve the skills of teachers to efficiently deliver phonics classes in schools through the use of interactive computer-based modules accessible via android device or a computer.

ii. To improve readability of pupils in the early stages of their development, usually from the age of four years.

The PbP intervention has a one-on-one assessment component that enables the oral testing of pre-reading and reading using eight (8) different assessments (hereafter called tasks) that have been calibrated to the Standardized EGRA. The eight tasks are; picture, letter sound, CVC real word, CVC non words, high frequency words, complex words (*divided into 4, namely: 4 letter words + blend, 4 letter words + digraph, 5 letter words + blend, and common words + vowel digraph*), listening comprehension and reading comprehension. The sequence of flow of the assessment is depicted in the flow diagram below:

Figure 2: Progression of Tasks for the Phonics-by-Phone Assessment

Therefore, the PbP intervention helps track teacher's ability to teach phonics and the potential of each pupil at each specific task.

2.1 Scoring Assessment

Baseline data was captured immediately after training on the methodology was done for teachers but prior to the teaching of the PbP methodology in the classroom. All teachers who received the training in the first term were also given a refresher training in the second term, after which midline assessments were done. Attrition rate from baseline to midline was low, less than 5 percent. The assessment tasks are progressive; thus, it is prerequisite to pass a preceding task before moving to the next task. In furtherance, it infers that only pupils who score at least 1 out of the maximum of three scores per task qualify to proceed to the next task. A pupil who is unable to attempt any of the three tests is scored zero "0" and at that point, the test ends there for the particular pupil. The maximum score for Task 1 to Task 5 is 3 for each task. The maximum score for Task 6 is 12 as each sub task has maximum score of 3. A maximum score of 5 is allocated each to Task 7, Task 8 and Task 9. In total, pupils are assessed over 42 points.

3. Beneficiary Characteristics

Though the PbP was implemented in 210 classrooms in 23 Edify schools from 11 districts in Ashanti and Eastern region, this report covers only 165 classes in 17 schools due to teacher attrition, late submission of assessments and a host of other factors that did not lead to quality assurance for the data from six schools.

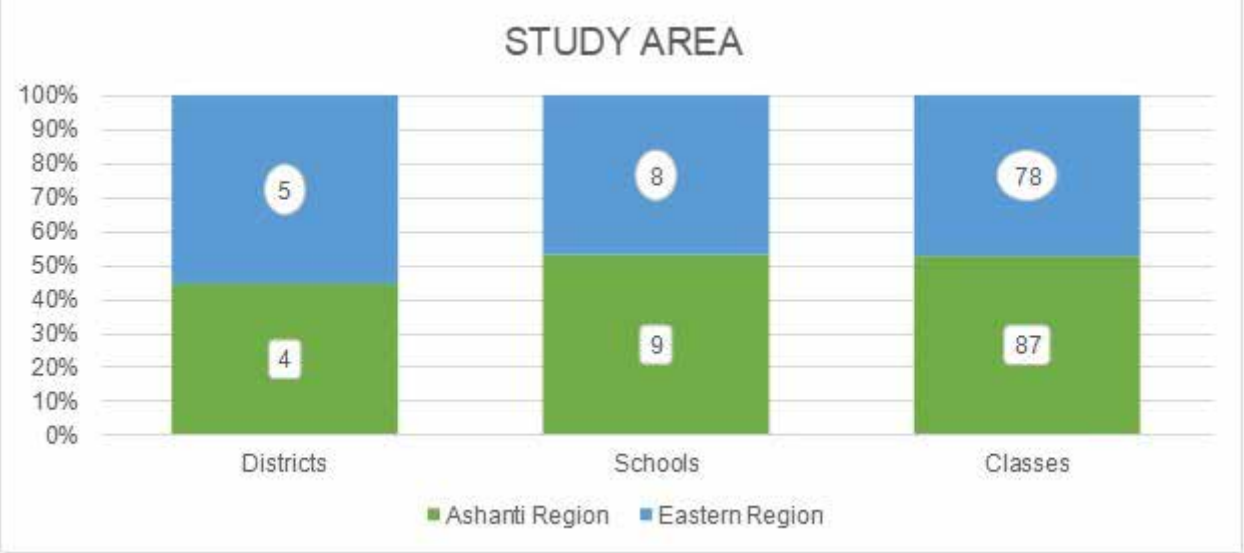

Figure 3: Statistics of the Districts, Schools and Classrooms

The 165 classes comprise of the following classes: 12 Kindergarten 1 (KG1), 48 Kindergarten 2 (KG2), 42 Primary 1 (P1), 39 Primary 2 (P2) and 24 Primary 3 (P3). In each of the 165 classes, teachers were selected, trained and enrolled on the PbP programme. As many teachers as each school could give from KG1 to Primary 3 were trained. The figures below show the class, teacher distribution and characteristics of pupils that benefited from the PbP programme.

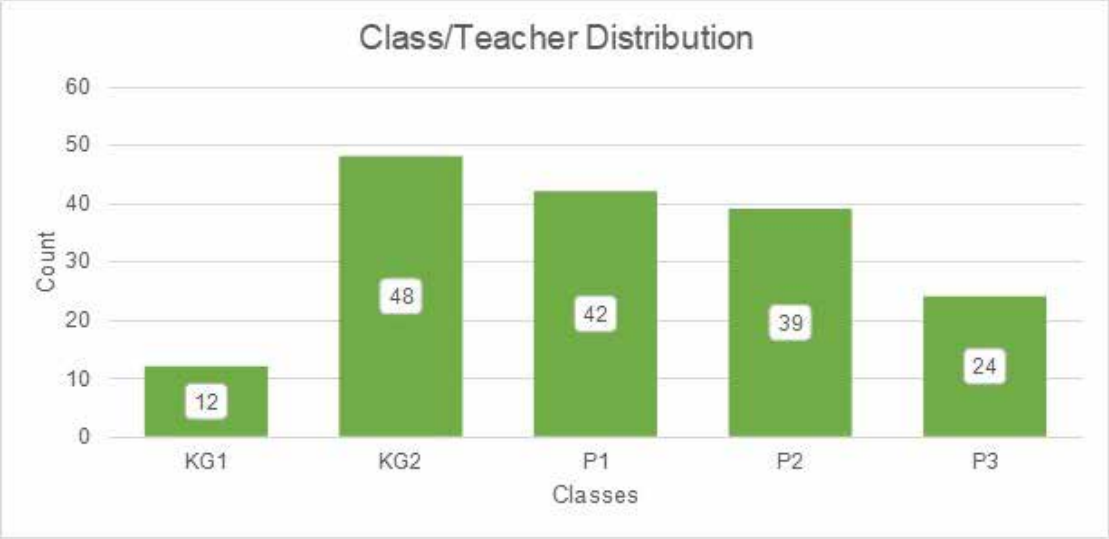

Figure 4: Classroom Characteristics

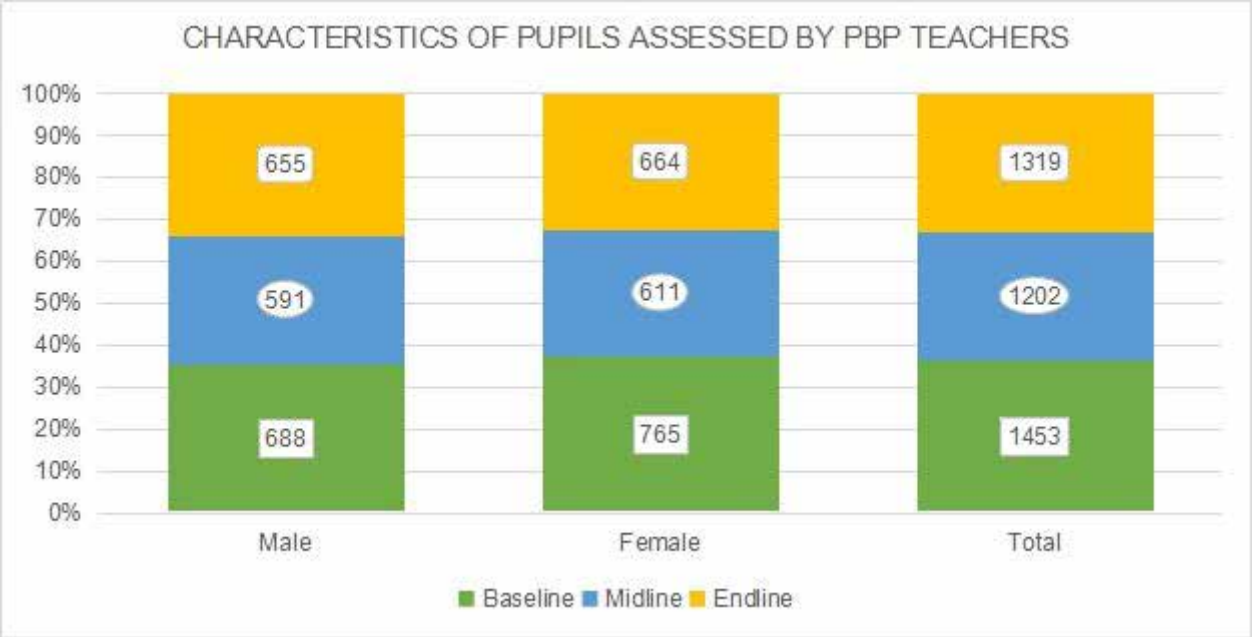

Figure 5: Characteristics of Pupils that benefited from the programme for all Three Terms

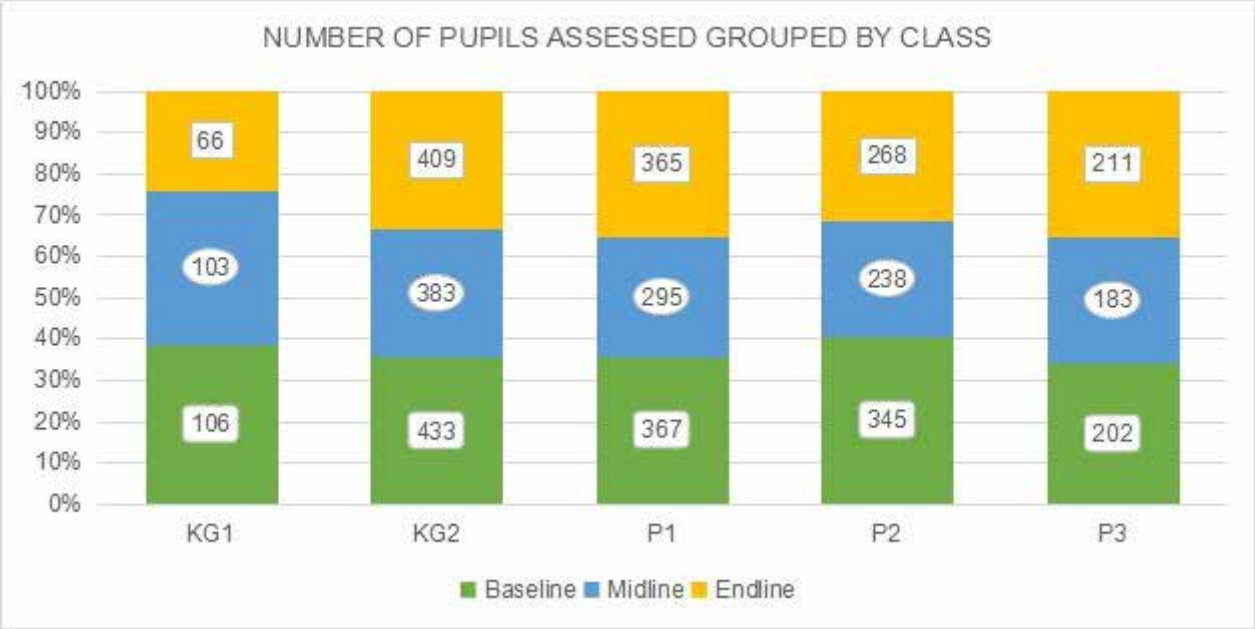

Figure 6: Class Distribution of Pupils

4. Findings

After the endline assessment, the following changes were observed in respect of readability amongst the learners. The percentage of learners who could read in KG2 moved from a paltry 3.2% to 59.4%. this represents a percentage change of 1756. For the same class level, those who could read and understand moved from 1.2% to 56% after the endline assessment. The percentage change here stands at an impressive 4567%.

Table 1: Summary of Readability Scores for KG2 Pupils in the 17 Schools

Tasks	Type of Test	% of Pupils Able to Read in KG 2			% Change in Readability-KG2 (Baseline - Endline)
		Baseline (n=433)	Midline (n=383)	Endline (n=409)	
1	Pictures	92.8	99.2	99.3	7
2	Letter Sounds	59.8	92.7	98.5	65
3	CVC Words	34.6	76.2	93.9	171
4	CVC Non-words	20.3	59.5	87.3	330
5	High Frequency Words	13.4	53.5	80.9	504
6	Complex Words	6.9	48	76.5	1009
7	Oral Comprehension	3.5	37	60.1	1617
8	Words Read	3.2	36.3	59.4	1756
9	Reading Comprehension	1.2	28.7	56	4567

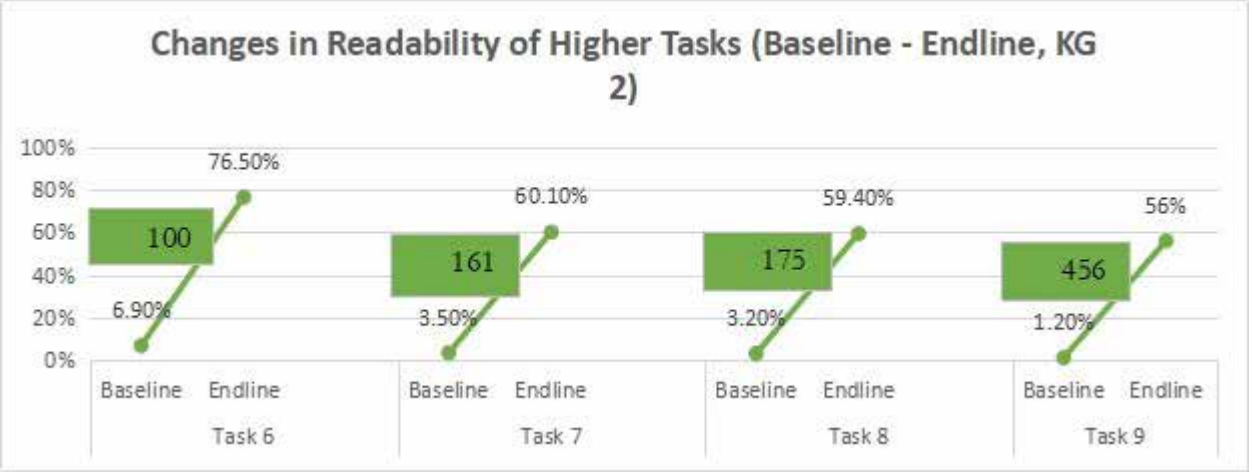

Figure 7: Changes in Readability of Higher Tasks for KG 2

For learners in Primary 1, 21.8% of the learners could read as indicated by the baseline assessment. This figure moved to 63.6% after the endline – a percentage change of 192%. This implies that almost two – thirds of the class could read after one year of rigorous implementation. The number for those who could read and understand, stood at 60.5% after the endline assessment. The baseline figure was 20.2%. Thus, there was a 200% percentage change.

Table 2: Summary of Readability Scores for Primary 1 Pupils in the 17 Schools

		% of Pupils Able to Read in P1			% Change in Readability - P1 (Baseline - Endline)
Tasks	Type of Test	Baseline (n=367)	Midline (n=295)	Endline (n=365)	
1	Pictures	95.9	99.7	100	4
2	Letter Sounds	80.4	94.9	97.3	21
3	CVC Words	55.6	75.6	88.2	59
4	CVC Non-words	40.6	67.1	81.9	102
5	High Frequency Words	35.4	62	77.5	119
6	Complex Words	29.4	55	71	141
7	Oral Comprehension	24.3	49.2	65.8	171
8	Words Read	21.8	38.3	63.6	192
9	Reading Comprehension	20.2	33.9	60.5	200

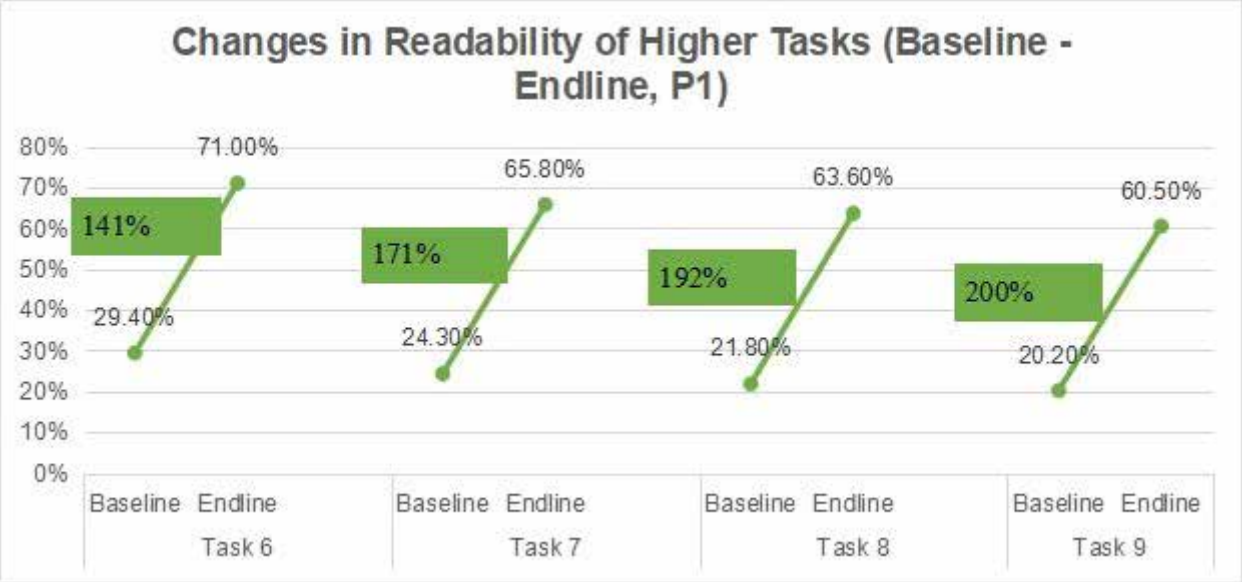

Figure 8: Changes in Readability of Higher Tasks for Primary

There were similar increases were recorded for learners in Primary 2 and 3. For the former, only 29.3% could read per the results of the baseline. This figure moved to 84.7% after the endline, indicating a 189% change. Those who could read and understand also moved from 28.4% to 82.1% - a 190% change. The number of Primary 3 learners who could read after the one – year implantation was 91.9%. The baseline figure was 50.5%. The percentage change is therefore 82%. The percentage change for those who could read and understand was 88%., with the baseline being 48.5% and the endline figure being 91%.

5. Previous Works

Prior to this partnership with Edify, the PbP was implemented in the Central and Western regions, in partnership with sabre education, for a period of one year. In all, forty schools from the two regions had the programme implemented there.

Around the same time, the programme was running in some private schools in the Northern and North East regions. The programme has also been implemented in about 30 public schools in the Northern and North Eastern regions. Similar impressive results were recorded in these schools as well.

For instance, in the Central and Western regions, out of a total of 5,057 learners assessed, those who could read in KG2 increased by 853%, whilst those who could read and understand increased by 633%.
For Primary 1, those who could read increased by 1152% whilst those who could read and understand had an increase of 1900%.

The percentage change for Primary 2 learners, in respect of those who could read was 321%, and that for those who could read to understand was 345%. The percentage change for Primary 3 learners, in respect of those who could read was 146%, and that for those who could read to understand was 136%.

6. Current Work
(2019/2020 Academic Year)

The PbP is at present being implemented in 20 schools in the Western region. These are partner schools of Edify. The programme has directly trained 62 teachers and 10 heads of schools. The number of learners benefiting from the programme is 1679. These learners are from Nursery 2 to primary 2.

7. Technology

The PbP programme has a technology component evidenced in both the tuition and assessment bits. There are audio podcasts that are accessible on its website. the audio podcasts are the lessons on the first 100 lessons or sounds. The website also has video podcasts that show the correct form of writing graphemes and vocal articulation of sounds.

Then, there is also the PbP app. This app contains all the assessments for learners from KG2 to Primary 3. There is also a portion that has the list of students in every teacher's class. The teacher records results of the assessment here. There is a feature that helps both teachers and administrators measure the performance of learners. Management of schools can also use this feature to measure the performance of different teachers.

The nature of the content of the programme lends itself to being hosted on Course Management Systems as well as Virtual Learning Environment.

8. Conclusion

The PbP programme, run for a one-year academic period, has the power to transform both teachers and pupils. Teachers are equipped to adopt varied teaching methods in delivering their lessons to aid the learning process for pupils. Also, through the PbP assessments, teachers are able adopt reflective practices based on the performance of their pupils. As a result, teachers' knowledge and teaching skills and abilities are polished. On the other hand, many pupils who have benefited from the PbP programme have demonstrated significant improvements in the readability skills. The results ascertained by these pupils sends a strong signal that with the PbP programme, the poor reading ability of pupils at the lower primary level can be address effectively.