

BORDÓN

Revista de Pedagogía



Volumen 72
Número, 4
2020

SOCIEDAD ESPAÑOLA DE PEDAGOGÍA

CAN THE QUALITY OF A SCHOOL BE GREATER THAN THE QUALITY OF ITS TEACHERS? A CASE OF EARLY GRADE READING SKILLS IN UGANDA'S REFUGEE CONTEXT

¿Puede la calidad de una escuela ser mayor que la calidad de sus profesores? Un caso de habilidades lectoras tempranas en un contexto de refugiados en Uganda

MÓNICA FONTANA^(1,2), MARTIN ARIAPA⁽²⁾ Y GILLIAN ATUHEIRE⁽²⁾

⁽¹⁾ *Universidad Complutense de Madrid (España)*

⁽²⁾ *Luigi Giussani Institute of Higher Education (Uganda)*

DOI: 10.13042/Bordon.2020.83295

Fecha de recepción: 19/09/2020 • Fecha de aceptación: 24/11/2020

Autora de contacto / Corresponding author: Mónica Fontana. E-mail: mfontana@ucm.es

INTRODUCTION. As highlighted in the 2018 Uganda Education Response Plan, reading levels in refugee host communities are way below the national average. Since the 2018 National Assessment of Progress in Education report highlighted some challenging areas to the in-service teachers, a possible explanation for the persistent poor performance of learners in reading may reside with the finding that many educators themselves lack an understanding of the linguistic construct. Therefore, an informed training for teachers in primary schools was implemented to help them foster learners' reading skills. The purpose of this paper is consequently to analyse whether learners whose teachers participated in the evidence-based intervention have better reading skills than those whose teachers did not participate in the intervention. **METHOD.** To achieve this, a quasi-experimental pre-program/post-program design, involving 2 schools, 24 teachers (12 per school), and 297 learners (157 from treatment and 140 from control) from Palabek (Uganda) refugee settlement was adopted. **RESULTS.** The findings show that the reading skills of learners whose teachers participated in the intervention significantly improved as compared to their counterparts. Particularly, learners' reading skills significantly improved in the areas of letter sound knowledge, segmenting knowledge, and nonword decoding, and slightly in oral passage reading and comprehension, and English vocabulary. **DISCUSSION.** This study therefore supported the hypothesis linked to the Peter Effect - one cannot be expected to give what they do not possess and raised a need for the Ministry of Education and Sports to mandate sufficient and informed training of teachers.

Keywords: *Reading skills, Teaching methods, Refugees, Professional development.*

Introduction

Refugee Situation in Uganda

There is a dramatic situation in refugees' children all over the world regarding reading levels. This situation is not very different from the one evidenced in Uganda. For instance, the Uwezo Annual Learning Assessment data showed that only 28% of assessed refugee pupils in Primary 3 to Primary 7 could read and comprehend a Primary 2 story and only 2 out of 10 refugee pupils (21%) had attained full competences in literacy. In addition, it was revealed that learning outcomes are equally low for refugee and host community children where more than 90% are unable to read and comprehend a story (Uwezo, 2018).

These findings imply that a substantial number of children continue to complete primary education without having ever acquired the basic reading competencies critical to their further learning, day-to-day communication and therefore more likely to struggle with life in the future. Adding to the magnitude of this tragedy is the fact that Uganda is the third largest refugee hosting country in the world, after Turkey and Pakistan, receiving refugees from South Sudan, Democratic Republic of the Congo, Burundi, Ethiopia, Eritrea, Rwanda, Somalia and Sudan, among others (UNHCR, 2019).

Furthermore, in refugee settlements there are many mother-tongue languages spoken depending on the place of origin of the refugees and it is difficult to identify a uniform 'mother-tongue' for teaching (Hicks and Maina, 2018). The complex language situation in this context has led many teachers, headteachers, schools, and partners to select English as the target language for Primary 1 to Primary 3 without a clear way to teach it.

If learners systematically struggle with reading and show very poor achievement levels, then the questions about the 'why' and detection of concrete needs of the learners become very urgent.

Sources of Learners' Difficulties in Reading and Possible Solutions

While speaking and listening have biological foundations and in general can be developed with minimal interaction, reading and writing must be learned through language activities. Several factors affect language acquisition: genetic predispositions, environmental factors and instructional issues (Medadi, Frenette and Kate, 2019; Hicks and Maina, 2018; Brady and Moats, 1997). Environmental factors such as: the school environment, learner's home environment, cultural environment, and social environment, are particularly relevant for children from disadvantaged backgrounds, refugee children, their families and preschool programs while instructional issues compromise teacher preparation to face the challenge in this context.

There is also evidence that programs in schools that incorporate evidence-based activities increase the likelihood of reading success for children from disadvantaged backgrounds who are at risk of reading failure. This is because these children tend to enter school with significant gaps in phonological awareness, knowledge of the alphabet and vocabulary (Foorman *et al.*, 1997).

However, phonemic awareness, alphabetic principle, phonics and morphology, are among the basic language constructs considered essential for reading success (Moats, 1999). Therefore, explicit teacher preparation in basic language constructs is essential in improving students' performance in reading-related skills (Binks-Cantrell *et al.*, 2012, p. 528). In addition to this knowledge teachers must also apply it in their day-to-day instruction. Most children, including those at risk for failure, can benefit from direct instruction that is developmentally appropriate and that targets specific skills directly (Blachman, 1994; Cunningham, 1990).

According to Brady and Moats (1997), the focus should shift away from a broader endorsement

of any single method, to an ability to analyse the components of reading which should be used for each category of learners as well as being able to identify techniques which would be most effective. However, if teachers lack this knowledge, they cannot be able to make appropriate instruction methods.

Teachers' Challenges and the Peter Effect

Uganda is characterised by teacher-centred pedagogy with lectures as a central feature, and heavy reliance on factual questions. This pedagogical style continues in refugee settlements as stated by Dryden-Peterson (2016), despite research evidences and policies that place a high value on child-centred, participatory teaching methods and active learning approaches. Indeed, an education system that relies heavily on traditional methods such as repetition, memorization and copying work, worsen the complex situation exposed above in refugee settlements. Moreover, there are teachers who are not fully prepared, especially in reading instruction methodology, to handle the challenges involved in the teaching of reading (Uganda National Examinations Board [UNEB], 2014, UNEB, 2018). Some teachers in Uganda also present weak performance in oral reading implying that, they themselves might not have comprehended the reading skills (Kyeyune, 2012; UNEB, 2011).

In an international level, examples of how teachers struggle with language components include: 'insufficient development concepts about language and pervasive conceptual weakness in the very skills that are needed for direct, systematic, language focused reading instructions, such as the ability to count phonemes and to identify phonic relationships' (Graham *et al.*, 2020; McMaster *et al.*, 2020; Moat and Lyon, 1996, p. 79). Other language components that are challenging to teachers include: manipulating speech sounds; knowledge of differencing letter-sound combination; conceptualization of

functional spelling; common syllable types and division patterns; recognition of children's difficulties with phonological, orthographic and syntactic learning (Moats and Foorman, 2003).

Therefore, a possible hypothesis to be verified in understanding the problem refugee children face is known as the 'Peter Effect' (Applegate and Applegate, 2004). This is because the persistent poor performance of learners in reading may reside with the finding that many teachers themselves lack an understanding of the linguistic constructs. The Peter Effect claimed that one cannot be expected to give what they do not possess. In fact, poor instruction due to poor teacher knowledge and poor teacher preparation has been suggested as one of the major causes of reading failure among learners (Brady and Moat, 1997). This hypothesis is linked with the facts that are always found in educational research, that is to say, a direct relationship between low student achievement and the skills and competence of teachers. Therefore, can the quality of a school be greater than the quality of its teachers?

Based on this review and the hypothesis of the Peter Effect, an evidence-based teachers' intervention was implemented. The intervention was made-up of the following components: 1) systemic needs assessment in order to detect gaps in reading skills of learners as well as teacher pedagogical approaches; 2) training of teachers on basic language constructs such as phonemic awareness, alphabetic principals, and phonics. This was done through Jolly Phonics and Weekly Foundation Story approaches; and 3) follow-up system for teachers through classroom observations, support supervision and guidance in order to help them create environments that enhance learners' reading skills.

Purpose and Hypotheses of the Study

The purpose of this paper is therefore to analyse whether learners whose teachers participated in

the professional development intervention have better reading skills than those whose teachers did not participate in the intervention. In other words, if the teachers participating in the professional development intervention have a better understanding of basic language constructs, do their learners also possess better reading skills (in the areas of letter sound knowledge, segmenting, nonword decoding, oral passage reading and English vocabulary) than their counterparts?

To respond to this, a set of study hypotheses were investigated:

- Ho1: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the letter sound knowledge subtask.
- Ho2: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the segmenting knowledge subtask.
- Ho3: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the nonword decoding knowledge subtask.
- Ho4: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the oral passage reading knowledge subtask.
- Ho5: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not

participate in the intervention, in terms of their performance in the English vocabulary knowledge subtask.

Method

Design

The study adopted a quasi-experimental design with a pre-program/post-program design, involving 2 schools with 24 teachers (12 teachers per school) and 297 learners (157 for treatment and 140 for control), reached during post-program assessment. In order to choose an appropriate comparison school, referred to as the 'control school', the following conditions were ensured: 1) being on the double shift system; 2) using temporary structures for classrooms; 3) enrolled learners from various tribes hence multi-lingual teaching; 4) being located in different zones to minimize issues of spill-over; 5) recruited both national and refugee teachers; and 6) enrolled both host and refugee children with the majority being refugees. These were the same conditions for the intervention school, referred to as the 'treatment school'. Notably, the 12 teachers of lower primary (Primary 1 to Primary 3) of the control school as well as their learners did not receive any reading enhancement related intervention during the study period. These teachers were expected to teach using their day-to-day pedagogical approaches.

The 12 teachers of the treatment school participated in the reading enhancement intervention that involved: a systematic needs assessment; training on basic language constructs; and a follow-up system. This intervention was conducted over a period of 4 months (July to October 2019).

Description of the Evidence-Based Teachers' Intervention

Following the steps described by Truckenmiller *et al.* (2020), professional development training

for teachers in the treatment school was based on the following components:

1. Shared understanding of what causes learners to struggle in reading and the causes that can be impacted by instruction. Many factors contribute to reading failure, including socioeconomic status, motivation, background knowledge and proficiency with components skills of reading (Francis *et al.*, 2018).

In the present study, this understanding was achieved based on the literature review, pre-intervention debriefs with teachers and classroom observations.

2. Implementation of measures that reliably diagnose the identified causes. This was achieved during the pre-intervention assessment of learners.

The measures used facilitated assessment of component skills that would provide an understanding of the learners' most affected areas.

3. Development of an informed model for reading success. The main components of this model included:

- a) An induction training of teachers to help them manage the social emotional learning needs of the learners and also prepare them to effectively teach in refugee contexts.
- b) A pedagogical approach for teaching early grade reading that included Jolly Phonics and the Weekly Foundation Story (WFS).

Jolly Phonics, a teaching program that consists of 42 English sounds categorised in sets, was developed in the United Kingdom (Lloyd, 2001). In this study, Jolly Phonics was integrated with the WFS, an approach to reading and writing that incorporates teacher-authored stories into daily lessons. Multiple components are featured in the program including phonemic awareness activities,

word decoding, dictation, and decodable text practice. Jolly Phonics method allows children to work out unknown words for themselves, rather than being asked to memorise them. This makes it a suitable methodological approach for addressing reading of the learners using phonics (Stuart, 1999; Qureshi *et al.*, 2016; Farokhbakht and Nejadansari, 2015).

The Weekly Foundation Story is a methodological approach that focuses on stories for teaching English to young learners (Kalantari and Hashemian, 2016; Lucarevski, 2016) and can include familiar stories from their countries of origin as a way to foster inclusion of children in the new context. While teaching a given sound or set of sounds, the teacher can create a story with a number of words that have the sound that s/he is targeting to teach in that lesson. The teacher first reads the story for the pupils, then lets them read it, and later draws their attention to the words with the sound that s/he wants to teach in that lesson. With the WFS, children benefit from reading stories with words selected that enable them to practice their decoding knowledge (Brady and Moat, 1997).

4. Follow-Up System for teacher practices: A supervised practice in teaching reading was conducted in order to help teachers acquire the complex skills of teaching. This entailed classroom observations and teacher support supervision, peer reviews for effective collaboration and application of the acquired pedagogical skills from the preceding phases. During this phase, teacher-facilitators' discussions ensured participatory reviews through learning cycles and community of practice where teachers usually sought clarification and correction.

Sample

Teachers' Sample

The sample involved 24 teachers (12 for treatment and 12 for control) who all taught lower primary (Primary 1 to Primary 3). In order to ensure minimal spill-over effects, none of the teachers taught in the same schools.

Learners' Sample

The number of enrolled learners in the target classes informed the desired sample sizes of learners. The smallest class had an enrolment of 105 learners while the largest class had an enrolment of 180 learners. Therefore, allowing a margin of error of 10%, at 95% level of confidence with 28% as the response distribution taken from Uwezo (2018), resulted into 55 learners sufficient for the largest class size and 45 for the smallest class. Ultimately, 339 learners (170 for the treatment school and 169 for the control school) from Primary 1 to Primary 3 were assessed at baseline.

However, due to some unavoidable circumstances such as learner transfer and absenteeism, some of them were not easily accessed during the endline data collection period. Only, 297 learners were identified and assessed. The characteristics of learners who were not found at endline and the extent of attrition showed that, missingness or attrition of the learners from the treatment and control schools would not significantly affect the estimation results. Ultimately, 297 learners were used for subsequent analyses. These were distributed as follows: 157 learners (48% females) from the treatment school (Primary 1=47, Primary 2=56, Primary 3=54); and 140 learners (52% females) from the control school (Primary 1=45, Primary 2=41, Primary 3=54). In this final sample, 50% of the learners were males (Primary 1=53%, Primary 2=41%, Primary 3=56%; Treatment=52%, Control=48%). The mean age of the learners was 10.4 years (Primary 1=9.1 years,

Primary 2=10.2 years, Primary 3=11.7 years; Treatment=10.1 years, Control=10.7 years), with a standard deviation of 1.96. Most (57%) of the learners attended nursery (Primary 1=71%, Primary 2=54%, Primary 3=47%; Treatment=59%, Control=54%); and 40% ever repeated a class (Primary 1=34%, Primary 2=42%, Primary 3=44%, Treatment=36%, Control=46%). The intervention was conducted with 12 teachers of the treatment school and their head teacher.

Instruments

In this study, reading skills were considered to cover the following areas: letter sound knowledge, segmenting, nonword decoding, oral passage reading and English vocabulary. Therefore, the early grade reading assessment tool developed and validated by Research Triangle Institute (RTI) was adapted. The validation tests conducted by RTI in the previous studies (such as RTI, 2010) revealed the Cronbach's alpha scores for each individual sub-task area as being higher than 0.73. Precisely, the alpha scores ranged from 0.73 to 0.85, with the overall score being 0.81. This tool included the following subtask areas:

1. Letter Sound Knowledge (100 items): A learner was presented with a sheet of paper with capital and lower-case letters of the English alphabet whereby he/she was asked to reproduce the sound associated with as many of the letters as they could identify within 60 seconds.
2. Segmenting (10 items): The Assessors read out aloud the words listed and the learners were asked to tell all the sounds in the word read. This was not a timed task. Each sound in a particular word was marked.
3. Nonword Decoding (10 items): A learner was presented with a sheet of made-up English words where he/she was asked to read the words aloud, quickly and carefully in 60 seconds.

4. Oral Passage Reading and Reading Comprehension (58 items): A learner was presented with a sheet of paper with a passage in English language whereby he/she was expected to read the passage aloud, quickly and carefully in 60 seconds. Those learners who managed to read any 44 (75%) words correctly were asked some oral questions about the passage.
5. English Vocabulary (14 items): Vocabulary was assessed using two tasks on knowledge of: (a) body parts and (b) words from the environment, in order to check learners' understanding of contextual terms in English. The Assessors read out the words listed, and the learners were asked to show or touch parts of his/her body and objects in the environment, that matched the word(s) the Assessors had read out. This was not a timed task.

The assessments were conducted in pairs by trained assessors. In order to suit the demands of the thematic curriculum, instructions related to the tasks in the tool were given to the learners in their local language.

In addition to this tool were:

1. A guide for debrief with teachers during the data collection days. These debriefs were done at both baseline and endline with all the teachers of Primary 1 to Primary 3. This tool was developed by the authors and included the following key questions: What is your perception about the intervention for improving early grade reading in your school? What skills and knowledge have you acquired from this intervention? What is the most significant change that you have observed in yourself or pupils or other teachers as a result of the intervention in your school?
2. A classroom observation tool which was used with teachers of Primary 1 to

Primary 3 at baseline to analyse their professional competencies and needs to be addressed during implementation. This tool included areas such as preparation for teaching, classroom management and control, subject knowledge and content, and teaching methods and delivery.

Data Analysis

The cleaning and analysis of quantitative data was done using STATA (version 13.0) statistical package. Results were analysed in terms of proportion and percentage of learners who achieved a particular benchmark mean number of items scored correctly by the learners, and difference in differences estimators for the realized proportions or percentages.

In order to verify the Peter Effect hypotheses linked to this study, difference in differences (DID) analyses were conducted. The DID estimated in this study is the difference between before-after change observed in the treatment school and before-after change observed in the control school. It was implemented as an interaction term between *time* (where 1 is assigned to the endline period and 0 is assigned to baseline period) and *treatment* (where 1 is assigned to the treatment school and 0 is assigned to control school) variables in a regression model as below:

$$Y = \beta_0 + \beta_1 * [Time] + \beta_2 * [Treatment] + \beta_3 * [Time * Treatment] + \varepsilon \quad (1)$$

Where; Y is the outcome variable; β_0 is the baseline average; β_1 is the time trend in control school; β_2 is the difference between two school (treatment vs control) at baseline and β_3 is the difference in changes over time. And with covariates (age of the learner, sex of the learner, whether learner ever attended nursery, and whether learner ever repeated any class) as in the regression model below:

$$Y = \beta_0 + \beta_1 * [Time] + \beta_2 * [Treatment] + \beta_3 * [Time * Treatment] + \beta_4 * [Covariates] + \varepsilon \quad (2)$$

Furthermore, differential impact of the intervention by sex of the learners was examined.

Generally, the DID analysis is mathematically identical to the ‘interaction term,’ from the repeated measures ANOVA. Furthermore, DID is a simpler way to get the interaction term from the repeated measures ANOVA. Therefore, we decided to use DID since it provides sufficient results.

Results

The findings of this study are presented based on the stated hypotheses which are related to the subtasks included in the assessment tool.

Hypothesis 1: *There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the letter sound knowledge subtask.*

TABLE 1. Letter Sound Knowledge Subtask: Baseline, Endline and DID Estimates on Learners Who Could Reproduce Correctly the Sound of at Least 1 Letter Per Minute

	(1) Primary 1	(2) Primary 2	(3) Primary 3	(4) All classes
Panel 1: Percentage of learners				
Baseline: Control	16%	15%	20%	17%
Baseline: Treatment	0%	14%	17%	11%
Endline: Control	16%	20%	41%	26%
Endline: Treatment	83%	86%	93%	87%
Panel 2: DID Estimates without covariates				
DID Estimates	0.83	0.67	0.56	0.67
Standard Errors	0.095	0.107	0.107	0.066
P-value	0.000***	0.000***	0.000***	0.000***
Panel 3: DID Estimates with covariates				
DID Estimates	0.84	0.66	0.56	0.67
Standard Errors	0.096	0.106	0.106	0.068
P-value	0.000***	0.000***	0.000***	0.000***
Observations	184	194	216	594
R-square ^a	0.51	0.44	0.38	0.42

Notes: **Panel 1** presents the percentage of learners, in each class and group, who performed the task correctly, at baseline (before the intervention) and endline (after the intervention). **Panel 2** presents, for each class and all classes combined, the difference in differences estimates without covariates, and the associated standard errors and p-values. **Panel 3** presents, for each class and all classes combined, the difference in differences estimates with covariates, and the associated standard errors and p-values. The covariates include: age of the learner, sex of the learner; whether learner ever attended nursery, and whether learner ever repeated any class. ^aR-squared estimates are for difference in differences estimates without covariates *** p-value less than 0.01, ** p-value less than 0.05, * p-value less than 0.1.

These notes apply to all tables.

The percentage of learners who could reproduce correctly the sound of one or more letters in 60 seconds on the letter sound knowledge subtask, in the treatment and control schools, as well as the corresponding DID estimates with and without covariates are shown in table 1.

Overall, the percentage of learners who could reproduce correctly the sound of at least 1 letter per minute in the control school increased by 9% (from 17% at baseline) whereas those in the treatment school increased by 76% (from 11% at baseline). This revealed a statistically significant (P-value=0.000) improvement of 67% in the treatment school that can be attributed to the intervention.

During the debrief with the teachers of the treatment school, it was noted that most learners in Primary 1 improved in the letter sound knowledge. For Primary 2 and Primary 3, teachers felt that little time was given to this aspect as they had a lot to cover with the learners. However, they also acknowledged the positive trend in the performance of the learners in this subtask. Teachers of the treatment school also commended the use of Weekly Foundation Stories in helping their learners to learn the various letter sounds, pronunciations and understand new words, among others.

Furthermore, the results show no differential impact of the intervention on the sex of the learners, in terms of percentage of learners who could reproduce correctly the sound of at least 1 letter per minute (P-value=0.640), at 5% level of significance.

Hypothesis 2: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the segmenting knowledge subtask.

The percentage of learners who could correctly reproduce all the sounds of one or more words

in the segmenting subtask, in the treatment and control schools, as well as the corresponding DID estimates with and without covariates are shown in table 2.

The percentage of learners who could correctly reproduce all the sounds of one or more words in the control school increased by 7% (from 6% at baseline) whereas those in the treatment school increased by 71% (from 3% at baseline). This revealed a statistically significant (P-value=0.000) improvement of 64% in the treatment school that can be attributed to the intervention.

This improvement was also noted by the teachers of the treatment schools during a debrief with them. They however added that, they still needed more time to explain the concepts of digraphs and trigraphs to the learners to help them effectively improve on their reading skills. This opinion explains why most learners in both the treatment and control schools were still unable to read the 'oral passage reading' that was presented to them.

Furthermore, the results show no differential impact of the intervention on the sex of the learners, in terms of percentage of learners who could correctly reproduce all the sounds of one or more words (P-value=0.248), at 5% level of significance.

Hypothesis 3: There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the nonword decoding knowledge subtask.

The percentage of learners who could read correctly one or more words per minute in the nonword decoding subtask, in the treatment and control schools, as well as the corresponding DID estimates with and without covariates are shown in table 3.

TABLE 2. Segmenting Subtask: Baseline, Endline and DID Estimates on Learners Who Segmented Correctly at Least 1 Word in The List

	(1)	(2)	(3)	(4)
	Primary 1	Primary 2	Primary 3	All classes
Panel 1: Percentage of learners				
Baseline: Control	0%	2%	13%	6%
Baseline: Treatment	0%	4%	6%	3%
Endline: Control	4%	10%	22%	13%
Endline: Treatment	74%	71%	76%	74%
Panel 2: DID Estimates without covariates				
DID Estimates	0.70	0.61	0.61	0.64
Standard Errors	0.071	0.084	0.099	0.021
P-value	0.000***	0.000***	0.000***	0.000***
Panel 3: DID Estimates with covariates				
DID Estimates	0.72	0.60	0.61	0.64
Standard Errors	0.068	0.085	0.098	0.026
P-value	0.000***	0.000***	0.000***	0.000***
Observations	184	194	216	594
R-square ^b	0.63	0.50	0.37	0.47

Note: see table 1.

TABLE 3. Nonword Decoding Subtask: Baseline, Endline and DID Estimates on Learners Who Read Correctly at Least 1 Word Per Minute

	(1)	(2)	(3)	(4)
	Primary 1	Primary 2	Primary 3	All classes
Panel 1: Percentage of learners				
Baseline: Control	0%	0%	9%	4%
Baseline: Treatment	0%	2%	4%	2%
Endline: Control	0%	2%	13%	6%
Endline: Treatment	21%	14%	15%	17%
Panel 2: DID Estimates without covariates				
DID Estimates	0.21	0.10	0.07	0.13
Standard Errors	0.060	0.056	0.082	0.029
P-value	0.001***	0.074*	0.369	0.007***
Panel 3: DID Estimates with covariates				
DID Estimates	0.22	0.10	0.07	0.13
Standard Errors	0.061	0.056	0.082	0.030
P-value	0.000***	0.077*	0.373	0.008***
Observations	184	194	216	594
R-square ^c	0.17	0.07	0.02	0.05

Note: see table 1.

The percentage of learners who could read correctly at least 1 word per minute in the control school increased by 2% (from 4% at baseline) whereas those in the treatment school increased by 15% (from 2% at baseline). This revealed a statistically significant (P-value=0.007) improvement of 13% in the treatment school that can be attributed to the intervention.

As of the debrief with the teachers in the treatment school, most of their learners still need support in diagraphs and trigraphs. This would facilitate learners in their blending and decoding skills.

Furthermore, the results show no differential impact of the intervention on the sex of the learners, in terms of the percentage of learners who read correctly at least 1 word per minute (P-value=0.598), at 5% level of significance.

Hypothesis 4: *There are no differences between learners whose teachers participated in the professional*

development intervention and those whose teachers did not participate in the intervention, in terms of their performance in the oral passage reading knowledge subtask.

The percentage of learners who could read correctly one or more words per minute in the oral passage reading and reading comprehension subtask, in the treatment and control schools, as well as the corresponding DID estimates with and without covariates are shown in table 4.

The percentage of learners who could read correctly at least 1 word per minute in the control school increased by 12% (from 2% at baseline) whereas those in the treatment school increased by 15% (from 0% at baseline). This revealed an improvement of 3% in the treatment school that can be attributed to the intervention (P-value=0.576). Furthermore, only 0.3% of the learners assessed managed to answer at least one out of

TABLE 4. Oral Passage Reading Subtask: Baseline, Endline and DID Estimates on Learners Who Read Correctly at Least 1 Word in the Passage Per Minute

	(1) Primary 1	(2) Primary 2	(3) Primary 3	(4) All classes
Panel 1: Percentage of learners				
Baseline: Control	0%	0%	6%	2%
Baseline: Treatment	0%	0%	0%	0%
Endline: Control	2%	15%	22%	14%
Endline: Treatment	21%	16%	7%	15%
Panel 2: DID Estimates without covariates				
DID Estimates	0.19	0.01	-0.09	0.03
Standard Errors	0.064	0.075	0.074	0.054
P-value	0.003***	0.847	0.215	0.576
Panel 3: DID Estimates with covariates				
DID Estimates	0.19	0.01	-0.10	0.03
Standard Errors	0.065	0.075	0.075	0.053
P-value	0.004***	0.903	0.207	0.582
Observations	184	194	216	594
R-square ^d	0.14	0.08	0.08	0.06

Note: see table 1.

five questions in the oral passage reading and comprehension subtask.

These findings are partly due to the limited knowledge in diagraphs and trigraphs that teachers in the treatment school felt has not yet been developed in the learners. In addition to this, cases of learner absenteeism was also cited as a major factor affecting teaching and learning in these schools.

The results also show no differential impact of the intervention by sex of the learners, in terms of the percentage of learners who read correctly at least 1 word per minute (P-value=0.086), at 5% level of significance.

Hypothesis 5: *There are no differences between learners whose teachers participated in the professional development intervention and those whose teachers did not participate in the intervention,*

in terms of their performance in the English vocabulary knowledge subtask.

The percentage of learners who could identify correctly at least 50% of the body parts and objects from the environment in the English Vocabulary subtask in the treatment and control schools, as well as the corresponding DID estimates with and without covariates are shown in table 5.

The percentage of learners who identified at least 50% of the English vocabulary words (body parts and objects from the environment) in the control school increased by 10% (from 54% at baseline) whereas those in the treatment school increased by 24% (from 63% at baseline). This revealed an improvement of 15% in the treatment school that can be attributed to the intervention (P-value=0.196).

TABLE 5. English Vocabulary Subtask: Baseline, Endline and DID Estimates on Learners Who Could Identify at Least 50% of the English Vocabulary Words

	(1) Primary 1	(2) Primary 2	(3) Primary 3	(4) All classes
Panel 1: Percentage of learners				
Baseline: Control	29%	71%	63%	54%
Baseline: Treatment	49%	64%	74%	63%
Endline: Control	44%	71%	74%	64%
Endline: Treatment	94%	88%	81%	87%
Panel 2: DID Estimates without covariates				
DID Estimates	0.29	0.23	-0.04	0.15
Standard Errors	0.130	0.128	0.120	0.100
P-value	0.027**	0.072*	0.759	0.196
Panel 3: DID Estimates with covariates				
DID Estimates	0.30	0.23	-0.04	0.15
Standard Errors	0.128	0.128	0.119	0.098
P-value	0.021**	0.073*	0.757	0.179
Observations	184	194	216	594
R-square ^c	0.24	0.04	0.02	0.07

Note: see table 1.

Furthermore, the results show no differential impact of the intervention on the sex of the learners, in terms of the percentage of learners who could identify at least 50% of the English vocabulary words (P-value=0.724), at 5% level of significance.

Discussion and Conclusions

The large number of children struggling to learn reading in Uganda is a worrying reality with a special dramatic connotation in refugee settlements. Teachers face a serious responsibility to help children become successful readers. However, they are not receiving an important body of knowledge and techniques in order to be prepared to accomplish this task. In fact, not much attention is often paid in understanding how systems that produce teachers, can be made more effective in improving learning outcomes. Our findings at the pre-intervention stage support the lack of fundamental principles of literacy and teaching methods. This, therefore, coincides with our main hypothesis, and with previous research (Binks-Cantrell *et al.*, 2012), that teachers with high/low master of basic language constructs will also have learners with high/low abilities. The learners of the teachers who participated in the professional development intervention had higher achievement scores than their counterparts in each subtask area.

The findings of this study, regarding the professional development intervention are consistent with several studies that examined the impact of Jolly Phonics in teaching reading with young learners. Dixon *et al.* (2011) obtained a positive impact of teaching Jolly Phonics in 20 schools in India compared with those who learnt in the traditional way. In Africa, a similar study came up with quite comparable findings carried out in Nigeria (Shepherd, 2013).

Bibliographic References

Applegate, A. J. and Applegate, M. D. (2004). The Peter Effect: Reading Habits and Attitudes of Teacher Candidates. *The Reading Teacher*, 57, 554-563.

The improvements in learners' reading scores associated with the impact of professional development intervention, though small in some subtask areas such as oral passage reading, still seem to have practical significance. The study therefore seems to support the Peter Effect applied to teachers-learners in primary education. This study also nullifies the misconception that minimal preparation is necessary to teach children to read.

The study addressed an area of research that could be vital for improving general levels of reading in Uganda and offers an informed and balanced approach to reading improvement that can be scaled up in similar contexts. Further research is also needed in order to explore how teachers' knowledge and abilities in basic language constructs can be improved.

In this regard, the Ministry of Education and Sports should be urged to mandate sufficient training of teachers for the necessary requirements and to demand that university training programs are regularly updated and modified to provide adequate teacher preparation to include but not limited to hands on practice instruction and materials development.

There is need to promote awareness that reading instruction is a complicated task in contrast to the erroneous belief that little preparation is necessary to be able to teach reading. Teachers require better conceptual understanding of reading (Harris, Davidson and Aprile, 2015).

Limitations of this study include a somewhat small sample size —number of schools in each group for a rigorous investigation of the impact of professional development interventions. Further studies should therefore employ experimental designs with larger sample sizes based on power calculations.

- Binks-Cantrell, E., Washburn, E. K., Joshi, R. M. and Hougen, M. (2012). Peter Effect in the Preparation of Reading Teachers. *Scientific Studies of Reading*, 16(6), 526-536.
- Blachman, B. (1994). *Early Literacy Acquisition: The Role of Phonological Awareness*. In G. P. Wallach and K. G. Butler (eds.), *Language Learning Disabilities in School-Age Children and Adolescents*. New York: Merrill.
- Brady, S. and Moat, L. C. (1997). *Informed Instruction for Reading Success-Foundations for Teacher Preparation (Position Paper)*. Baltimore, Maryland: International Dyslexia Association.
- Cunningham, A. E. (1990). Explicit versus Implicit Instruction in Phonemic Awareness. *Journal of Experimental Child Psychology*, 50, 429-444.
- Dixon, P., Schagen, I. and Seedhouse, P. (2011). The Impact of an Intervention on Children's Reading and Spelling Ability in Low-Income Schools in India. *School Effectiveness and School Improvement*, 22(4), 461-482. <https://doi.org/10.1080/09243453.2011.625125>
- Dryden-Peterson, S. (2016). Refugee Education: Breaking Open the Black Box of Pre-Resettlement Experience. *Theory and Research in Education*, 14(2), 131-148.
- Farokhbakht, L. and Nejadansari, D. (2015). The Effect of Using Synthetic Multisensory Phonics in Teaching Literacy on EFL Young Learners' Literacy Learning. *International Journal of Research Studies in Education*, 4(4), 39-52.
- Foorman, B. R., Francis, D. J., Beeler, T., Winikates, D. and Fletcher, J. M. (1997). Early Interventions for Children with Reading Problems: Study Designs and Preliminary Findings. *Learning Disabilities: A Multidisciplinary Journal*, 18, 63-71.
- Francis, D. J., Kulesz, P. A. and Benoit, J. S. (2018). Extending the Simple View of Reading to Account for Variation Within Readers and Across Texts: The Complete View of Reading (CVR i). *Remedial and Special Education*, 39(5), 274-288.
- Graham, L. J., White, S. L., Tancredi, H. A., Snow, P. C. and Cologon, K. (2020). A Longitudinal Analysis of the Alignment Between Children's Early Word-Level Reading Trajectories, Teachers' Reported Concerns and Supports Provided. *Reading and Writing*, 33(8), 1895-1923. <https://doi.org/10.1007/s11145-020-10023-7>
- Harris, L. R., Davidson, C. R. and Aprile, K. T. (2015). Understanding Teacher Aids' Definition of Reading: Implications for Classroom Practice. *The Australian Educational Researcher*, 42, 627-644.
- Hicks, R. and Maina, L. (2018). *The Impact of Refugees on Schools in Uganda*. Kampala: British Council. Retrieved from www.britishcouncil.org/language-for-resilience
- Kalantari, F. and Hashemian, M. (2016). A Story-Telling Approach to Teaching English to Young EFL Iranian Learners. *English Language Teaching*, 9(1), 221-234.
- Kyeyune, R. (2012). *Teacher Preparation and Continuous Professional Development in Africa (TPA): How Teachers are Prepared to Teach Reading and Mathematics in Lower Grades and How Their Preparation Influences Their Practice*. Paper presented at the Multilingual Education Network, Kampala, Uganda.
- Lloyd, S. M. (2001). *The Phonics Handbook: A Handbook for Teaching Reading, Writing and Spelling (Jolly Phonics)*. Chigwell: Jolly Learning, Limited.
- Lucarevski, C. R. (2016). The Role of Storytelling in Language Learning: A Literature Review. *Working Papers of the Linguistics Circle of the University of Victoria*, 26(1), 24-44.
- McMaster, K. L., Baker, K., Donegan, R., Hugh, M. and Sargent, K. (2020). Professional Development to Support Teachers' Implementation of Intensive Reading Intervention: A Systematic Review. *Remedial and Special Education*. <https://doi.org/10.1177/0741932520934099>
- Medadi, S., Frenette, S. and Kate, H. (2019). Curriculum Expectations versus Teachers' Opinions and Practices in Teaching English in Rural Primary Schools in Uganda. *Language Matters*, 50(2), 141-163. <https://doi.org/10.1080/10228195.2018.1536162>

- Ministry of Education and Sports (MoES) (2018). *Education Response Plan for Refugees and Host Communities in Uganda*. Kampala: MoES.
- Moats, L. C. (1999). *Teaching Reading is Rocked Science*. Washington, DC: American Federation of Teachers.
- Moats, L. C. and Foorman, B. R. (2003). Measuring Teachers' Content Knowledge of Language and Reading. *Annals of Dyslexia*, 53, 23-45.
- Moats, L. C. and Lyon, G. R. (1996). Wanted: Teachers with Knowledge of Language. *Topics in Language Disorders*, 73-81.
- Qureshi, A. M., Aftab, F. and Naheed, S. (2016). *Pilot Study Report for Early English Teaching Using Jolly Phonics in Schools under Punjab Education Foundation*. Punjab: University of Punjab.
- Research Triangle Institute (RTI) (2010). *Uganda Early Grade Reading Assessment Findings Report: Literacy Acquisition and Mother Tongue*.
- Shepherd, S. (2013). *Does Intensive Synthetic Phonics Instruction Improve the Literacy Skills of Primary One Children in Cross River State?* Unpublished MA thesis, Nigeria University, Nigeria.
- Stuart, M. (1999). Getting Ready for Reading: Early Phoneme Awareness and Phonics Teaching Improves Reading and Spelling in Inner-City Second Language Learners. *British Journal of Educational Psychology*, 69, 587-605.
- Truckenmiller, A. J., Yohannan, J. and Ghossein, E. (2020). Linking Reading Assessment Data to Instructional Planning: A Component Skills Approach. *Communique*, 48(7), 15-18.
- Uganda National Examinations Board (UNEB) (2011). *The Achievement of Primary School Pupils in Uganda in Numeracy, Literacy and Oral Reading: National Assessment of Progress in Education (NAPE)*. Kampala: UNEB.
- Uganda National Examinations Board (UNEB) (2014). *The Achievement of Primary School Pupils in Uganda in Numeracy and Literacy in English: National Assessment of Progress in Education (NAPE)*. Kampala: UNEB.
- Uganda National Examinations Board (UNEB) (2018). *Achievement in Numeracy and Literacy in English of Primary School Learners and Teachers in Uganda: National Assessment of Progress in Education (NAPE)*. Kampala: UNEB.
- UNHCR (2019). *Uganda Country Refugee Response Plan: The Integrated Response Plan for Refugees from South Sudan, Burundi and the Democratic Republic of the Congo*. Nairobi: UNHCR.
- Uwezo (2018). *Are Our Children Learning? Uwezo Learning Assessment in Refugee Contexts in Uganda*. Kampala: Twaweza East Africa. Retrieved from www.twaweza.org/go/refugee-uwezoassessment-Uwezo

Resumen

¿Puede la calidad de una escuela ser mayor que la calidad de sus profesores? Un caso de habilidades lectoras tempranas en un contexto de refugiados en Uganda

INTRODUCCIÓN. Como se puso de manifiesto en el Plan de Respuesta Educativa de Uganda de 2018, los niveles de lectura en las comunidades de acogida de refugiados están muy por debajo del promedio nacional. El informe de 2018 de la Evaluación Nacional para el Progreso en Educación ha destacado ciertas dificultades de los profesores en algunas áreas del lenguaje. Como consecuencia, una posible explicación del bajo rendimiento persistente de los estudiantes en la lectura puede deberse al hecho de que los propios profesores carecen de la necesaria comprensión del constructo lingüístico. Por ello, se ha desarrollado e implementado una formación basada en la evidencia para maestros de escuelas primarias con el objeto de ayudarles a fomentar las

habilidades lectoras de los alumnos. El propósito de este artículo es analizar si los alumnos cuyos maestros participaron en la intervención basada en evidencia tienen mejores habilidades lectoras que aquellos cuyos maestros no participaron. **MÉTODO.** Se adoptó un diseño cuasiexperimental de preprograma/posprograma que contó con 2 escuelas, 24 maestros (12 por escuela) y 297 estudiantes (157 de tratamiento y 140 de control) en el asentamiento de refugiados de Palabek (Uganda). **RESULTADOS.** Los resultados muestran que las habilidades de lectura de los estudiantes cuyos maestros participaron en la intervención mejoraron significativamente en comparación con los del grupo de control. En concreto, las habilidades de lectura de los estudiantes mejoraron significativamente en las áreas de conocimiento del sonido de las letras, conocimiento de segmentación y decodificación de no palabras, y ligeramente en lectura y comprensión de pasajes orales y vocabulario en inglés. **DISCUSIÓN.** Este estudio permite apoyar la hipótesis vinculada al efecto Peter (nadie puede ofrecer aquello de lo que carece) y plantea la necesidad de que el Ministerio de Educación y Deportes se replantee la formación necesaria de sus profesores.

Palabras clave: *Habilidades de lectura, Métodos de enseñanza, Refugiados, Desarrollo profesional.*

Résumé

La qualité d'une école peut-elle être supérieure à la qualité de ses enseignants? Un cas des compétences fondamentales en lecture dans le contexte des réfugiés en Ouganda

INTRODUCTION. Comme le souligne le plan d'intervention en matière d'éducation en Ouganda 2018, les niveaux de lecture dans les communautés d'accueil de réfugiés sont bien inférieurs à la moyenne nationale. Étant donné que le rapport sur l'évaluation nationale des progrès de l'éducation de 2018 a mis en évidence certains domaines difficiles pour les enseignants en service, une explication possible de la mauvaise performance persistante des apprenants en lecture peut résider dans la constatation que de nombreux enseignants eux-mêmes ne comprennent pas la construction linguistique. Par conséquent, une formation informée pour les enseignants des écoles primaires a été mise en œuvre pour les aider à développer les compétences en lecture des apprenants. Le but de cet article est par conséquent d'analyser si les apprenants dont les enseignants ont participé à l'intervention factuelle ont de meilleures compétences en lecture que ceux dont les enseignants n'ont pas participé à l'intervention. **MÉTHODE.** Pour réaliser cet objectif, une conception quasi-expérimentale pré-programme / post-programme, impliquant 2 écoles, 24 enseignants (12 par école) et 297 apprenants (157 issus du traitement et 140 du contrôle) de l'installation de réfugiés de Palabek (Ouganda) a été adoptée. **RÉSULTATS.** Les résultats montrent que les compétences en lecture des apprenants dont les enseignants ont participé à l'intervention se sont considérablement améliorées par rapport à leurs homologues. En particulier, les compétences en lecture des apprenants se sont considérablement améliorées dans les domaines de la connaissance phonologiques, de la segmentation des connaissances et du décodage non-mots, et légèrement dans la lecture et la compréhension des passages oraux et le vocabulaire anglais. **DISCUSSION.** Cette étude a donc confirmé l'hypothèse liée à l'effet Peter - on ne peut pas donner ce qu'on ne possède pas et a soulevé le besoin du Ministère d'Éducation et des Sports de reformuler la formation des enseignants.

Mots-clés: *Compétences en lecture, Méthodes d'enseignement, Réfugiés, Développement professionnel.*

Author Profiles

Mónica Fontana (corresponding author)

Associate Professor of Research Methods and Diagnosis in Education at Complutense University of Madrid. She has a background in teacher education as well as in SEL skills and family relationships. Her is now working with a sabbatical period in a Low-Income Country and her research interests are teacher education, socio-emotional skills in social complex context and research methods.

E-mail: mfontana@ucm.es

Correspondence address: calle Alba, 9. 28043 Madrid (Spain).

Martin Ariapa

Senior Monitoring and Evaluation Officer of Luigi Giussani Institute of Higher Education, and has a background in Statistics and Demography. His research interests are in psychometrics, impact evaluations, predictive analysis, population studies, youth development and educational assessment and evaluation.

E-mail: m.ariapa@lgihe.org

Gillian Atuheire

Principal Education Officer at Luigi Giussani Institute of Higher Education and has a background in secondary school teaching and teacher professional development. Her major area of specialization is Early Grade Reading and Writing with a passion of contributing to the improvement of literacy levels in Uganda.

E-mail: g.atuheire@lgihe.org