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Raising outcomes in primary education, a cluster randomised trial in rural Guinea Bissau

Submission date
14/02/2018

Recruitment status
No longer recruiting

Registration date
12/03/2018

Overall study status
Completed

Last Edited
11/12/2019

Condition category
Other

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Most children in rural Guinea Bissau leave school without basic literacy and numeracy skills. Although enrolment in rural areas has increased from 24% to 60% over the past ten years, competencies in language and maths remain very low. Primary schools in rural Guinea Bissau are characterised by poorly trained, insufficient and under motivated teachers, a lack of materials for teaching and learning, poor infrastructure and inadequate didactic teaching pedagogy. Effective Intervention has designed ROPE - Raising Outcomes in Primary Education, a programme to deliver quality basic primary education for about 700 children in south rural Guinea Bissau that focus on hiring, training and monitoring teachers to provide a better quality teaching . The aim of this study is to assess the impact of this programme by comparing the test scores of children four years after the project has been implemented.

Who can participate?
Children born between January 2007 and September 2008 who live in the participating villages

What does the study involve?
The participating villages are randomly allocated to either the intervention group or the control group.
The intervention programme comprises high quality and extensive in-service teacher training with monitoring, teaching and academic support, the development and distribution of pedagogical teaching and learning materials for teacher and children from propaedeutic to 3rd grade. Children in the intervention group are offered high quality teaching during the normal school hours. The teaching group is intensively and rigorously trained before and during the study, and these teachers are paid and supervised by Effective Intervention. Teachers and supervisors are selected based on their fluency in one of the local indigenous languages, academic level, experience in teaching, knowledge in Portuguese and mathematics, pedagogical skills and motivation. In the intervention villages, Parent Teacher Associations (PTA) are created to promote active participation and involvement of parents and communities in the process of learning. The academic support to children in the intervention group starts in February 2014 (preschool) and is given to the same group until the end of the 2017-2018 academic year. The control group children have access to the normal government and community schools. In both groups, independent research teams conduct a biennial survey to track children's residence

status, and assess their enrolment and reported school attendance. Between November and December 2017, the final tests of reading, comprehension and mathematics are conducted.

What are the possible benefits and risks of participating?
Children taking part in the study in intervention villages benefit from a high-quality schooling for 4 years. There are no risks for children participating in this study.

Where is the study run from?
Effective Intervention (Guinea-Bissau)

When is the study starting and how long is it expected to run for?
February 2012 to December 2017

Who is funding the study?
Effective Intervention (UK)

Who is the main contact?
1. Dr Ila Fazzio (scientific)
2. Dr Peter Boone (public)

Contact information

Type(s)
Scientific

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Public

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
01

Study information

Scientific Title
ROPE: Raising Outcomes in Primary Education, a cluster randomised trial to improve reading and mathematics skills of children entering primary education with hired and trained teachers in south of rural Guinea Bissau

Acronym
ROPE

Study objectives
The aim of this study is to examine the impact of providing hired, trained and monitored teachers for the first four years of primary education on child reading and mathematics performance.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. London School of Economics, self-assessment in social sciences procedures, 09/02/2018
2. Ministry of Education in Guinea-Bissau, 30/08/2012
3. NBER ethics committee, 01/07/2014, ref: IRB Ref#14_060

Study design
Unblinded stratified cluster randomized trial

Primary study design
Interventional

Secondary study design
Cluster randomised trial

Study setting(s)
Community

Study type(s)
Other

Participant information sheet
Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Primary education

Interventions
For randomisation a cluster analysis was conducted to group the villages into homogeneous strata regarding the following variables: village's distance to road, highest grade taught by the school if the village had a school (the grade was zero if the village did not have a school), number of households in the village, proportion of mothers speaking Crioulo in the village, and third quartile of mothers education in the village. These variables were selected on the assumption that they are correlated with the primary outcome, as showed by the NBER education study (Boone et al. 2013). The results of the cluster analysis suggested that two strata were sufficient, one with 17 villages, another one with 32. The cluster analysis was conducted in SAS Software version 9.3, using PROC CLUSTER.

The villages were randomised to intervention or control within each of the two strata formed, using an algorithm developed with SAS Software version 9.3. There are 49 participating villages grouped in two strata, 17 in stratum 1 and 32 in stratum 2. There was a fixed number of 26 teachers who were allocated to strata proportionally to the strata sizes: 26 x 17/49=9 to stratum 1 and 26 x 32/49=17 to stratum 2. The algorithm selects villages at random without replacement, within each stratum, until reaching the fixed number of teachers assigned to that stratum. The allocation ratio for intervention and control villages were not 1:1, but determined by randomisation, between 1:1 and 1:2.

The intervention programme comprises high quality and extensive in-service teacher training with monitoring, teaching and academic support, the development and distribution of pedagogical teaching and learning materials for teacher and children from propaedeutic to 3rd grade. Children in the intervention arm are offered high quality teaching during the normal school hours. The teaching group was intensively and rigorously trained before and during the trial. Further, these teachers were paid and supervised by Effective Intervention. Teachers and supervisors were selected based on their fluency in one of the local indigenous languages, academic level, experience in teaching, knowledge in Portuguese and mathematics, pedagogical skills and motivation. In the intervention villages, Parent Teacher Associations (PTA) were created and fomented to promote active participation and involvement of parents and communities in the process of learning. The academic support to children in the intervention arm started in February 2014 (preschool) and will be given to the same group until the end of the 2017-2018 academic year.

Control arm children had access to the normal government and community schools.

In both arms, independent research teams conducted a biennial survey to track children's residence status, assess their enrolment and reported school attendance. Between November and December 2017, the final tests of reading, comprehension and mathematics (EGRA - Early Grade Reading Assessment and EGMA - Early Grade Maths Assessment were conducted.

Intervention Type
Mixed

Primary outcome measure
Combined test scores of the mathematics (EGMA) and reading (EGRA) tests conducted in all participant villages between the 28 November and 16 December 2017 (about 44 months after the intervention had started). Child-specific composite test scores extracted from tests will be

analysed using a generalised linear model to account for clustering and stratification, comparing intervention vs. control using (adjusted) differences between mean scores. For the primary comparison an intervention-gender interaction will be tested. The primary analysis will follow the intention to treat principle (i.e. the participants will remain in the group they were randomised to and not analysed according to the interventions actually received).

Secondary outcome measures
1. Reading is measured using scores at Early Grade Reading Assessment (EGRA) in Nov/Dec 2017
2. Mathematics is measured using scores at Early Grade Mathematics Assessment (EGMA) test in Nov/Dec 2017
3. School enrolment measured biennially by visiting all enumerated households and interviewing parents using the questionnaire of Annual School Enrolment in Jan/Feb 2015 and Jan/Feb 2017
4. Reported attendance measured biennially by visiting all enumerated households and interviewing parents using the questionnaire of Annual School Enrolment in Jan/Feb 2015 and Jan/Feb 2017
5. Costs are calculated per child between Feb 2013 and Dec 2017

Overall study start date
20/02/2012

Completion date
20/12/2017

Eligibility

Key inclusion criteria
Participating clusters were selected from a list with all villages in these districts trying to maximise the number of children enrolled as far as these villages had less than 400 households and were more than 9 km apart (to avoid contamination). They are a representative sample of the villages accessible by land with total households between 44 and 256 (approximately 270 to 1500 inhabitants).

A child is considered eligible for the trial if s/he satisfies the following criteria:
1. S/he was born between January 2007 and September 2008
2. S/he is resident in eligible villages
3. S/he does not have serious conditions that may impair learning
4. Parents give the consent to participate in the study

Participant type(s)
Other

Age group
Child

Sex
Both

Target number of participants
2100

Key exclusion criteria
Children who were not resident in the trial villages or outside of the age group

Date of first enrolment
01/12/2012

Date of final enrolment
20/04/2013

Locations

Countries of recruitment
Guinea-Bissau

Study participating centre
Effective Intervention
Rua Vitorino Costa - complexo Mavegro
Guinea-Bissau
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Sponsor information

Organisation
Effective Intervention

Sponsor details
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Sponsor type
Charity

Website
effint.org

ROR
https://ror.org/00a1wp308

Funder(s)

Funder type

Charity

Funder Name
Effective Intervention

Results and Publications

Publication and dissemination plan
The trialists intend to publish the main results in the International Journal of Educational Development.
Further, they will disseminate the outcomes of our study to the communities involved and the Ministry of Education in Guinea Bissau.

Intention to publish date
30/06/2020

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Ila Fazzio. Data will be provided per child using child ID numbers.

IPD sharing plan summary
Available on request