

World Bank - Grant Funding Request (GFR)

Ref. : 22604
Printed on : 11/22/2016

Status : Cleared

GFR 22604 - KCPIII - EMERGE Reading: School Readiness and Mechanisms of Literacy

Team Leader : 00000259971 - Mr Owen Ozier

Summary Information	
Status	Cleared
TF Number/Status	-
Estimated Grant Start Date/ Closing Date	02/01/2017 To 06/30/2019
Grant Amount	190,000.00 USD
Beneficiary Country	Kenya
Implemented by	Bank Executed
Grant linked to	P153719 - EMERGE Reading Kenya RSB Project Status : ACTV Product Line : RF
Disbursing Fund Type	Project/activity support
TF Usage	-
Managing Unit	8468 - DECHD
Responsible Cost Center	8468 - DECHD
Contributing Managing Units	
Window Manager	Ms Nancy Tee Lim
Funding Window	0000007380 - KCPIII - Service Delivery and Aid Effectiveness
Sub-Fund	TF082874 - KCPIII - Service Delivery and Aid Effectiveness
Trustee	TF072304 - Knowledge for Change Program III
Donor	TF602001 - MULTIPLE DONORS

This GFR includes the following sections: Basic Data Info, Basic Data - TTL Comment, Description, Project Information, Disbursement, Program Specific, Financing, Allowed Expenses, Sector/Theme, Attachments.

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Comments/Requests by TTL

DESCRIPTION

1. What is the Development Objective (or main objective) of this Grant?

The main problem that the EMERGE project seeks to address is low literacy rates among children in rural Kenya. Although Kenya is one of the best-educated low-income country in sub-Saharan Africa, seven out of ten students in Standard 3 cannot read at a Standard 2 level (Uwezo, 2011). The intervention this project examines is based on the idea that early childhood inputs can have substantial long-term impact, and the fact that inequality in ability begins before children reach the classroom (Gertler et al, 2014; Attanasio et al, 2014).

The central research question is whether the distribution of children's storybooks, accompanied by parent training, can improve the home learning environment in the short run, pre-literacy skills in the medium term, and both learning outcomes and service delivery measures in the long term. A variant of this question asks whether the effects depend on the language in which the storybook appears. Further details are provided in the KCPIII-specific sections below.

2. Summary description of Grant financed activities

Activities to be financed by this Grant include: (1) #census# activity at baseline to measure and ensure representativeness of sampled households; (2) development and implementation of midline process measures, including (2a) take-up of intervention evidenced by training attendance and associated knowledge retention by parents, (2b) book content knowledge by children, (2c) sustained improvement on HOME inventory measures, such as the number of books in the home and frequency of parent reading with children; and (3) measurement of long-term service-delivery outcomes, including classroom observational measures, such as teacher time-on-task and division of classroom activities, assessed using a variation of the Stallings instrument (refined by the World Bank Service Delivery Indicators work in Kenya, 2012).

3. (Optional question) What can/has been done to find an alternative source of financing, i.e. instead of a Bank administered Grant?

In addition to seeking funding from KCP and other Bank administered funding sources, we have sought funding from regional donors (Aga Khan - Strengthening Education Systems in East Africa), private foundations (Echidna Giving), government agencies (USAID Development Innovation Ventures), and others. Note that within the World Bank, SIEF funds key baseline and endline measures, but we seek KCP funding for census, midline, and service delivery measures.

4. What are the main risks related to the Grant financed activity ? Are there any potential conflicts of interest for the Bank? How will these risks/conflicts be monitored and managed?

Early childhood education is a current focal issue in Kenya; the ideas being explored in this project should contribute positively towards the current policy discussion. Preparatory work for this study has been ongoing in Kenya for more than a year, and no major risks have been borne out thus far. The salience of local language may present a small risk, in that the politics of language can be charged. However, since this is largely an empirical test of relative school-readiness (which is not local-language-specific), we believe that the risk is very low. Consultation with relevant ministry officials will take place throughout the project, however, to manage and monitor any potential risk. In-country ethical review and approval of the study provides additional assurance against major risks.

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1. How does (do) the objective(s) of this proposal align with the World Bank Group's twin goals? What are the key thematic research questions being addressed in this research?

Service delivery in education is, in many cases, predicated on a level of school-readiness that many children do not have in rural areas of developing countries. Shared prosperity, can only be attained if the playing field is level: the poor must have a chance to succeed. Yet in rural Kenya, more than 80 percent of children are disadvantaged from the start in a very measurable way: UNICEF MICS statistics show that, in the relevant region of Kenya, 84 percent of children under age five lived in homes without a single children's book, a figure corroborated by our team's 2016 pilot work.

To address this, over the past several years, we have developed, adapted, and tested an innovative scheme that provides local-language pre-school-appropriate children's books alongside a parent training in western Kenya, building on successful short-term studies in Bangladesh and South Africa (Cooper et al., 2014; Opel, et al., 2009). The project is entitled #EMERGE: Encouraging Multilingual Early Reading as the Groundwork for Education.# We are now taking the success of our pilot work to scale in a 114-community trial that will test the efficacy of the program at improving school readiness, and ultimately, service delivery in the classroom.

In summary:

The local-language dimension of the intervention being studied is specifically geared to those who are less-well-served by existing interventions. This study will test whether the intervention levels the playing field: whether it enables shared prosperity.

Better preparation for students and a more homogeneously prepared student body enables children to better take advantage of educational opportunities, and teachers to deliver a better education to more of their students. This potential improvement of human capital thereby directly aligns to the World Bank Group's other twin goal of ending extreme poverty.

The key KCPIII thematic research question being addressed in this research is how an innovative pilot scheme can improve service delivery in education.

Further details of the intervention are described in the sections below.

2. Describe analytic design & methodology. Elaborate on hypotheses, conceptual framework, data (survey design if applicable).

Summary

The central research question is whether improving access to books at home can improve human development outcomes. A leading channel is service delivery: whether teachers are better able to teach a more homogeneous and prepared student body. This builds on existing evidence that school inputs delivered late in primary school may only benefit the strongest students (Glewwe, et al., 2009), so the time to intervene is earlier. Beyond whether children's books are effective, a second question is whether the language of the books matters. Existing children's books are predominantly workbooks in a national language; few exist in the local dialects that are spoken in homes, and most are not intended to be read by an adult to a child. A three-arm randomized trial is the foundation for our analytical approach and methodology. One arm provides books in national languages; the second provides books in national languages and a regional mother tongue; the third is a comparison group. The randomized design provides unconfounded identification of causal effects.

The cluster-randomized trial includes 114 villages, with 38 villages in each study arm:

[T0] No program (comparison)

[T1] Books in Kenya's two official languages, English and Kiswahili.

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[T2] Books in Kenya's two official languages plus the local mother tongue, Luo.

Preliminary work with school GPS data and test records has provided a sample frame of locations, each centered on a primary school, no two of which in our sample are within 1.5km of one another.

Our protocol in each location begins with a local census to identify eligible participants within 800m of the school, and to establish representativeness of the sample with respect to poverty and inequality in the region. In each of the #Books# arms (T1, T2), staff from IPA Kenya will introduce the program at a community meeting to which all caregivers of children between the ages of 2 and 6 are invited. Along with the dialogic reading training, six age-appropriate books per household will be distributed at the parents' meetings. The content and quantity of the books is held fixed across the two #Books# arms, but the language of the books is varied. Outcomes will be measured at two subsequent time points, as discussed in the data section below. We randomly sample 20 households per village for measurement, with an average of 1.5 children in the eligible age range within each household (this was confirmed both in regional DHS data and in our 2016 pilot work).

Hypotheses

The main research questions are as follows:

1. Process: Does the distribution of children's storybooks, in addition to a training component for parents, improve book use and book knowledge in the short-run?
2. Parent decision-making: How often do parents read with their children as a consequence of the intervention, and what activities do they substitute away from in order to devote more time to reading activities?
3. Human development: Does the book-and-training package improve literacy and pre-literacy skills in the medium and long-term?
4. Service delivery: Does the increased and more homogeneous school-readiness of children enable teachers to teach more effectively?
5. Language: Does the take-up or impact of the intervention depend on the language in which children's books are printed # specifically, local language or national languages?
6. Heterogeneity: Is the intervention more effective for some groups than others? For example, illiterate parents cannot read with their children in the same way that literate parents could, but the storybooks' pictures can still provide a focus for stimulating play, and literate older siblings may be able to step in where parents cannot.

Conceptual framework

The main input (whose distribution is under evaluation) is a set of children's storybooks, designed to present topics that are familiar for rural Kenyan children. Book distribution takes place through meetings at which basic #dialogic reading# training is provided to parents, adapted from similar programs in South Africa and Bangladesh (Opel, Ameer, and Aboud 2009; Cooper, et al. 2014).

The immediate outputs include changes in two characteristics of parents: (1) their beliefs about their potential role in their child's early education; (2) their abilities to fulfil that role, via the new inputs that are distributed; and (3) additional books remaining in the home for the family to use.

The short-term (intermediate) outcomes we seek to change are (1) the behaviors of parents, in terms of sensitivity to child feedback during play; (2) the behaviors of parents, in terms of time use with children, and (3) the clearest short-term outcome, the familiarity that children have with the books being distributed.

The longer-term outcomes that follow from this are: (1) improvements in literacy and pre-literacy measures (familiarity with letters, for example); (2) improvements in performance in school, particularly for those with relatively disadvantaged backgrounds; and (3) improvements in the classroom environment # a better-prepared class may enable teachers to more easily teach to the common level of the students, and to deliver the service of

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education through more engaged instruction.

Project preparation

During 2016, our team conducted a small-scale within-village randomization of this intervention in eleven pilot locations. This enabled us to develop and test many of the survey instruments and protocols that we would use in the larger-scale randomized trial. We conducted follow-up visits just a month later to confirm that process measures and intermediate outputs respond as they did in analogous trials elsewhere in the world. Though data collection in the last locations remains ongoing, the preliminary findings from this pilot phase of the project are promising. A key finding is that children whose families receive the books are rapidly able to familiarize themselves with book content: one month after book distribution, #treated# children have a comprehension of the storybooks that is markedly above those in the comparison group, with a p-value well below 0.01. Longer-term human development impacts, however, can only be assessed through the upcoming trial.

Data

Baseline: During the 2016 pilot phase of this project, we have developed and piloted cognitive tests appropriate to the study population at baseline, children aged 2-6 in rural western Kenya. This includes: an adapted Malawi Developmental Assessment Tool (#MDAT,# Gladstone 2010); an adapted British Picture Vocabulary Scale (BPVS), separately measuring receptive vocabulary in three languages; a new expressive vocabulary test, which we are now validating with the pilot data; and an executive function task, remembering and identifying faces, from the Kaufman battery.

Process and output: Process measures (time use in the home, book comprehension) can show whether there is heterogeneity in intervention take-up that predicts variation in eventual impacts. Subsets of the HOME instrument (used by NLSY and by UNICEF) will also be included, such as the number of children's books and the frequency with which parents read to children. During the 2016 pilot, we developed and tested a set of thirteen comprehension questions specific to the books being studied, and we gathered time use data from parents to help refine time use coding for the full-scale randomized trial. Original data collection is anticipated for each of these measures.

Individual outcomes: Because the proposed randomized trial will start with children in the 2-6 age range, but will run for approximately two years, endline measures will overlap with baseline measures, but will go further. We anticipate including questions from the Early Grade Reading Assessment, possibly with adapted questions from the World Bank Service Delivery Indicators measures, at endline.

Service delivery outcomes: We plan to gather data including not only these tests, but also measures specific to the question of service delivery: performance records in school can tell us whether variation in service delivery (teaching) by baseline child ability is ameliorated by the intervention; classroom observation can show us whether teachers teach differently to a more homogeneous and prepared classroom. We anticipate using the Stallings instrument for this purpose, based on its existing adaptation to Kenya via the World Bank 2012 Kenya Service Delivery Indicators.

Statistical power: The pilot work in 2016 has confirmed that inclusion of baseline cognitive tests in regressions of endline measures, even when these are not the same cognitive measure, can yield R-squared values of .4 and above. Intra-cluster correlation remains low, as expected, in early childhood. Both of these findings in the pilot, bearing out our earlier assumptions, have substantial power benefits. In terms of pre-baseline standard deviations, we should have power 0.8 to detect effects of 0.2 SD or smaller, depending on the comparison being made: if the comparison is between any pair of study arms, the minimum detectable effect (MDE) is 0.17 SD; if it is between the comparison group and the pooled treatment arms (T1 and T2), the MDE is 0.148; and so on. Further details are provided in the power worksheet Annex to this proposal. On process outcomes, such as books in the home or comprehension of stories, we anticipate much larger effects than this, but on short-term human development outcomes, this should still be appropriate (based on effects found by Opel, Ameer, and Aboud, and by Cooper, et al.).

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3. Provide a literature review & explain study's intellectual merit.

Although numerous studies suggest that interventions in early childhood can have long-lasting impacts, successful programs are # to date # quite expensive (cf. Gertler, et al., 2014 in Jamaica; Attanasio, et al., in progress in Colombia). We believe our effort to distribute storybooks in mother tongue in sub-Saharan Africa while rigorously evaluating the effects on early literacy is novel; we are unaware of any directly comparable efforts. Neither are we aware of any other efforts to take dialogic reading from a high-intensity program, convert it to a low-cost training, take it to scale, and evaluate it in a rigorous way. Finally, we believe the link between more homogeneous early preparation and service delivery is a natural one, we know of no other study that examines it. This project's contributions to the literature do, of course, build upon existing (and ongoing) work quantifying the importance of a variety of early childhood literacy interventions in a range of contexts. We discuss this literature below.

Throughout sub-Saharan Africa, many primary school children read below grade level (Gove and Cvelich, 2010). In Kenya, one of the best-educated, low-income countries in sub-Saharan Africa, seven out of ten students in third grade cannot read at a second-grade level (Uwezo 2011). Even by fifth grade, many children are not reading at a second-grade level. The World Bank's Service Delivery Indicators Initiative conducted an education assessment in 2012, and found low levels of performance among students # corroborating the Uwezo report. The initiative also found low levels of teacher effort: almost half of rural public school teachers were absent from classrooms during an unannounced visit (World Bank 2013). Within Kenya, it is still the rural poor who seem disproportionately affected by weak service delivery.

There are many causes of low literacy in primary school, including overcrowded schools, lack of teacher support and teacher training, a demoralized work force and poor home-based support for learning. A key contributing factor to the widespread lack of literacy is the low level of child readiness for primary school. For example, 27 percent of students in first grade cannot read a single Kiswahili syllable (Uwezo 2011), reinforcing the notion that much of the problem originates before school age.

Looking to the home is the next logical choice. There is a strong association between home environment quality and child development, and this cross-sectional association has been replicated in many studies over the past 30 years (Bradley and Corwyn 2002, 2005). In terms of causally identified effects, previous studies have shown that providing books for young children can increase frequency of parental reading to children and possibly child language skills (Theriot, Franco et al. 2003, Weitzman, Roy et al. 2004, Maulik and Darmstadt 2009, Zuckerman 2009). In a small-scale, short-term, pilot study, Cooper, et al. (2014) showed that giving books to mothers of young children in South Africa had a significant positive effect on a range of outcomes, including two measures of the vocabulary of those children. Opel, Ameer, and Aboud (2009) showed that a similar #dialogic# reading intervention had immediate positive effects on preschoolers' vocabulary in Bangladesh. Despite the promise of these short-term findings (6 weeks and 4 weeks, respectively, from the start of the program to the measurement of outcomes), the longer-run effects of such an intervention are completely unknown. (Abeberese, et al., forthcoming, carry out longer-run follow-up of an intervention in the Philippines, but the intervention did not begin until children reached fourth grade.) Cooper, et al., concluded their paper with an exhortation for others to study this topic in a larger-scale randomized trial. That is precisely what we propose to undertake.

This project also draws on research that highlights the effectiveness of parent-child literacy activities. Greater frequency of parents engaging in storybook reading with their children is associated with positive cognitive and verbal development, particularly pertaining to the child's vocabulary and other emergent literacy skills, such as, phonological awareness, the conventions of syntax and grammar, as well as understanding story structure, and the written language register (Duursma et al, 2008; Aram et al, 2013). While reading to children who are simply quietly listening can enhance their development, interactive reading is more effective in promoting children's language development, and reading and math achievement on the longer term (Brooks-Gunn and Markham, 2005; Mol, Bus, de Jong, & Smeets, 2008). Furthermore, shared book reading at home by parents also promotes children's social emotional development, improving children's attention span and decreasing negative behaviors when they enter preschool (Baker, 2013). Language and social emotional development are linked, as children who are better able to use language to express themselves are more able to communicate with others (Baker et al, 2012; Farver et al,

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2006). The relation between the home literacy environment and child development has primarily been studied in the US, however, a recent study in rural Tanzania found that the number of books in the home, and parent's involvement in children's learning was predictive of greater reading and writing ability among grade three students (Ngorosho, 2011).

A range of ongoing NGO and government-led activities have similar goals, but different methods. Low-cost interventions, such as the community-based preschools examined by Martinez, et al (2013), may be effective at changing only certain subsets of outcomes, or at reaching only a minority of community members. Several relevant NGO programs in the region address literacy in the classroom, for example, rather than the home. Save the Children's Literacy Boost program builds primary school teachers' skills in teaching reading. Room to Read provides reading materials and teacher training, and improves the classroom environment. The Uganda Literacy Lab Project, #Mango Tree, improves curriculum delivery and encourages parents to participate in children's learning (including reading), though its intended beneficiaries are school-age. The USAID-funded #Tusome# and #PRIMR# programs in Kenya provide teacher training, books, and technology to primary schools. All of these programs are center-based, and target children after they have entered school. They may not be equitably accessed by rural families. Yet early exposure to language through reading may be crucial, as it could build pre-literacy skills before primary school. Our program targets the critical period of early childhood, focuses on providing storybooks in mother tongue, and should have a wider reach as it operates through homes. This is crucial in relation to the World Bank goal of shared prosperity.

With respect to service delivery specifically, we build on evidence that more homogeneous classrooms in Kenya permit more effective teaching (Duflo, Dupas, and Kremer 2011), and that in heterogeneous classrooms, it is only the best students who benefit from school inputs (Glewwe, et al. 2009). An intervention designed to bolster pre-reading skills among the least-prepared children prior to the start of primary school may have the potential for the greatest effects, simplifying instruction as in the former study, while broadening the beneficiaries of that instruction, in contrast to the latter study. This evaluation should not only quantify the effect of the intervention in question, but should also challenge policymakers to re-evaluate the importance of student readiness in relation to curriculum content.

4. Describe Implementation arrangements. Identify timeline, key team members and their roles. If the partnership is involved, describe the partnership arrangements, and the respective responsibility of Bank units and partners.

The approximate timeline for grant-funded activities is broken into three waves:

- (1) Census activities to strengthen the baseline data collection in mid-2017 (FY2017/FY2018)
- (2) Midline process measure data collection from mid-2017 to early 2018 (FY2018)
- (3) Long-term service-delivery data collection in the second half of 2018 to early 2019 (FY2019).

The project team is an interdisciplinary group of researchers from the World Bank, University of Maryland and University of California, Berkeley, that has worked together to develop and implement piloting work for several years.

Owen Ozier, TTL and co-PI, is an economist in the Development Research Group at the World Bank. He has been conducting research on education and early childhood interventions in Kenya for more than a decade.

Lia Fernald, co-PI, is a Professor in the School of Public Health at the University of California at Berkeley. As principal author of a landmark World Bank publication on measurement of early learning (Fernald et al. 2009), she is a recognized world expert in the measurement of early childhood cognitions, and has consulted for the World Bank and governments in Africa, Asia, and Latin America on evaluations of early childhood programs.

Pamela Jakiela, co-PI, is an Assistant Professor in the Agricultural and Resource Economics Department at the University of Maryland. She has extensive experience conducting economic research in developing countries, including both rural and urban Kenya. She is expert in adapting protocols and measurement tools in the Kenyan

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context.

Heather Knauer, co-PI, is a World Bank consultant and Ph.D. candidate from the University of California at Berkeley, School of Public Health with a specialization in parent-child relationships and early child development. Her research is on the mechanisms and pathways of interventions that alter parental behavior and benefit children.

The project team will work with an IPA research coordinator, who works under the supervision of Country director Suleiman Asman and Deputy Country director Claudia Casarotto, who have a long working relationship with the PIs, are experts in randomized trial field management, and have successfully supervised large-scale projects in Kenya for a variety of organizations in the past, including USAID and the World Bank.

Our publishing partner in Kenya is Moran Publishers EA, which kindly permitted the modification of its existing storybooks to suit the needs of this research project. Their editors worked with our content experts to finalize and print books in three languages in 2015-2016.

5. Outline the expected outputs (working paper, publication, computational/analytical tools, datasets, etc.) and specify the expected date of delivery for each output.

The main outputs of this project are a research paper suitable for publication in a peer reviewed journal as well as a policy brief suitable for more rapid communication within the World Bank, and for communication with less technical audiences outside it. The manuscript will be circulated as a working paper while awaiting publication. The research paper will discuss the efficacy of this literacy intervention on process outcomes, service delivery outcomes, and human development outcomes, and the policy brief will be entail not only towards practical implementation and scale-up. The research paper (or report leading towards that paper) will be prepared by the end of FY2019. A draft policy brief is also anticipated by the end of FY2019. We expect to engage with policymakers, Bank staff, and NGO and academic audiences around the world once our analysis is complete.

Additionally, the project will produce an interim report on process outcomes (book comprehension and use) by the end of FY2018. These process outcome measurements will aid in service delivery by explaining the mechanisms by which the intervention works, explaining some of the variation in outcomes, and offering insight into how to better deliver the intervention.

Datasets will be made publicly available after the publication of the research paper.

Finally, adaptations of baseline cognitive measures used in this work will be made publicly available (to the extent possible while complying with intellectual property laws) by the end of FY2018.

6. Describe the beneficiary of the research, the relevance for policy in developing (or transition) countries and for WBG Operations. Outline dissemination plans, including plans to reach policy makers.

The direct beneficiaries of this research are about 6,080 children aged two to six in about 4,050 households in rural communities in Nyanza Province, Kenya (cf. administrative data from Kenya's primary school leaving examination and the latest Demographic and Health Survey). However, the potential reach of the project is much greater, as, with no new book translations, the intervention is immediately scalable to the hundreds of thousands of Luo speaking children in Kenya. With new mother-tongue translations the intervention would be accessible to all 6 million children in Kenya. Furthermore, the lack of children's books is not specific to Kenya, or even sub-Saharan Africa, and could be scaled up and implemented in many different countries.

The present work has direct relevance to a number of World Bank projects outside DECRG. The team leading P152179, #Child Sensitive Social Protection,# recently contacted the EMERGE team in order to draw upon the measures that we have developed in EMERGE in order to adapt them for child cognitive measurements in Rwanda. Amanda Devercelli, TTL of P158928, #Early Learning in Africa: Opportunities for Action,# has written a letter of support for this project, describing how her work aligns with the goals and potential findings of the EMERGE project.

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The survey instruments developed in this project have also already benefitted others. We expect to continue to be in touch with both project teams as EMERGE moves forward. Please find Devercelli's letter of support as an annex to this proposal.

In Kenya, primary education policy is the work of the national government, but early childhood programs are carried out by local governments. Because our project is not center-based, it is uniquely flexible and able to reach rural communities more effectively than programs which require continued interaction between children and team members. The work of reaching policy makers and potential scale up partners has already begun. Both Jakiela and Ozier have engaged extensively with Kenyan government, including meetings with the Office of the Deputy President; presentations and meetings with Kenya's Vision 2030, the Kenya Institute of Education, and the African Economic Research Consortium. Ozier and Jakiela have met with GoK curriculum reform staff, and Ozier is in regular contact with World Bank staff who work with specific Kenyan county governments on the devolution of their ECD programs. Furthermore, they have made initial contact with Evidence Action, an NGO that specializes in partnership with government and scaling of interventions; Evidence Action has expressed interest in adopting our project into their Beta program which seeks interventions with proven impact to bring to scale.

7. Describe the capacity building components, including the collaboration with local partners, researchers from developing countries.

Capacity building in this project takes place by directly engaging with Kenyan nationals through our publishing partnership, relationship with a Kenyan university, and Kenyan staff members involved in our implementing organization, Innovations for Poverty Action. In this way we improve the ability of Kenyan nationals to conduct research by providing invaluable experience opportunities, and ensure that the project is constantly evaluated and adapted to fit the Kenyan context. With IPA training and support, aspiring Kenyan scholars have been able to enroll in courses at premier universities around the world to expand their skills beyond what fieldwork can provide. Co-PIs Jakiela and Ozier have mentored IPA scholars through this process in the past, and anticipate doing so again.

The majority of staff at IPA are Kenyan nationals, including one of our key partners, the IPA Kenya Country Director, Suleiman Asman, who holds a degree in policy analysis and is recognized as an expert in communicating research results to policy makers. Suleiman Asman participates in an ongoing dialogue with the rest of the research team: we have shared research results with him as they become available, while he has convened dissemination events, helped us refine the intervention, and collaborated on the decision of the specific geographic area best suited to this work.

Moran Publishers EA is a firm with over 40 years of experience in East Africa; it has offices in Kenya, Uganda, and Rwanda. Moran is our publishing partner in Kenya: they kindly permitted the modification of existing storybooks to suit the needs of this research project. Their editors worked with our content experts to finalize and print books in three languages in 2015-2016. They remain interested in the reception of this newly modified set of books, as the new format is designed to engage parents in reading with children.

This project is approved by Maseno University in Kenya, and we regularly communicate with faculty to identify promising scholars who have research interests relevant to the project with whom we might collaborate. TTL Ozier most recently met with faculty and presented research designs and results to promising undergraduates at Maseno University earlier this year.

8. Document evidence of the consultation process with relevant research and operations units. E.g. consultation conducted, comments received, & how comments were addressed. TTLs should also describe plans to maintain operational and research consultation.

In the course of developing this proposal the TTL (Ozier) has been in contact with GEDDR staff, economists, education specialists, and others at HQ in relation to this work specifically: for example, Sophie Naudeau, David Evans, Amanda Devercelli, Patrick Premand, John Anderson, Donald Rey Baum, Joost de Laat, and Sajitha Bashir. The proposal for this work has also been discussed with GEDDR staff members in the Kenya country office, including Nalin Jena (Senior Education Specialist in Kenya) and G N V Ramana (Program Leader, HD). In mid-2014, the work was discussed with

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topical and regional experts within the Bank (including Deon Filmer, DECHD, and Helen Craig, GEDDR), eventually leading both to a Research Preparation Grant proposal to the RSB that was approved in November, 2014, and to a concept note review in March, 2015. The concept note review included two reviewers within the World Bank who are experts on early childhood interventions in Africa: Sophie Naudeau, GEDDR, and Emanuela Galasso, DECPI. The TTL contacted and met with regional staff during planning for the CN review, and during follow up afterwards; on behalf of the Country Director, the Concept Note was approved to go forward by the Kenya Country Program Coordinator, Tom O'Brien.

In order to maintain operational and research consultation, at the end of each stage of the project (baseline, midline, and endline), the TTL will report updates to partner organizations, research and intervention donors, and other stakeholders, including regular communication with KCP as needed.

9. If this is an impact evaluation project: Why is this project a research project and not an impact evaluation project? Will this project produce new knowledge or fill the gap of current literatures? Is the project linked to the Bank lending project?

This is a Research project, as current guidelines require. Impact Evaluations have shorter timelines than are appropriate to this project, which first developed and refined an intervention before scaling it for multi-year impact evaluation.

This project both fills an important gap in early childhood development literature and offers new, policy-relevant knowledge. As mentioned in the literature review (the third KCP-specific question above), there is a lack of information on the long-term impacts of early childhood literacy interventions. While filling this gap, the project is the first of its kind to develop such a literacy intervention and make it cost effective with the intention of taking it to scale.

This project is not directly linked to the Bank lending project. However, the outcomes from this project will provide a direct benchmark to compare with the recently launched \$90m project supported by the Global Partnership for Education (GPE) to improve the first years of primary schooling (P146797). Both may have results in a similar timeframe, and the comparison may be able to productively feed into subsequent policy discussions.

FINANCING

Is retroactive financing required? No

Transfer Schedule	Amount in Grant Curr	Condition
02/01/2017	190,000.00	

Comment on Transfer Condition:

DISBURSEMENTS

Disbursement Summary in USD

Date From	Date To	Amount in USD	Amount in USD
02/01/2017	06/30/2017	100,000.00	100,000.00
07/01/2017	12/31/2017	50,000.00	50,000.00
01/01/2018	06/30/2018	40,000.00	40,000.00

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Date From	Date To	Amount in USD	Amount in USD
07/01/2018	12/31/2018	0.00	0.00
01/01/2019	06/30/2019	0.00	0.00
07/01/2019	10/31/2019	0.00	0.00

ALLOWED EXPENSES

Commitment Item Group	Indicative in USD	Indicative USD Equivalent
Associated overheads	0.00	0.00
Consultant fees	0.00	0.00
Contractual services	0.00	0.00
Equipment cost lease	0.00	0.00
Equipment cost purch	0.00	0.00
Extended term consul	0.00	0.00
Media & wrkshp costs	0.00	0.00
Staff Costs	0.00	0.00
Temporary Suppt Staf	0.00	0.00
Travel expenses	0.00	0.00

SECTORS

Description	Percentage
Early Childhood Education	50 %
Primary Education	40 %
Other Education	10 %

THEMES

Description	Percentage
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RELATED PROJECT INFORMATION

Basic Project Information

Project Definition	P153719
Project Description	EMERGE Reading Kenya RSB
Project Type	RF-Research Services
Region/Cty	KE-Kenya
Status	Active
Company code	IBRD
Team Leader	00259971 - Mr Owen Ozier

World Bank - Grant Funding Request (GFR)

Ref. : 22604
Printed on : 11/22/2016

Status : Cleared

Project Description

P153719-DESCO

Project Milestones

Usage	Description	Basic	Forecast	Actual
02310	AIS Sign-off (B)	11/17/2014		11/17/2014
02320	Activity Implementation Start (B)	11/17/2014		
02330	Draft to Director (N)	06/30/2015		
02340	Paper to Director (Y)			
02350	Paper to VP (Y)			
02360	VP Meeting (Y)			
02370	Paper to MD (Y)			
02380	Completion/Director Approval (N)	06/30/2015	06/30/2017	
02390	Board Approval (Y)			
02400	ACS (B)			
02410	Publication (N)			

Project Financing

Total Cost 0.00
Finance 0.00
Financing Gap 0.00

Source	Amount Financed
BORR	0.00

DOCUMENTS ATTACHED

Devercelli-Support-EMERGE_11022016_1513.pdf
Jakiela CV 2016-09.pdf
CN-short--Ozier_KCP_SchoolReadinessKenya.docx
ozier-EMERGE-proposal-and-annexes--1.docx
ANNEX-ozier-EMERGE-power-worksheet.xlsx
Ozier CV 2016-09.pdf
Fernald CV 2016-03.pdf
Knauer CV 2014-10.pdf
EMERGE Ozier KCP Budget Plan .xlsx
Rawlings-Letter-Support-EMERGE.pdf

Annex I: Equations and Measures

Estimation Equation

To estimate the (average) causal impacts of the early reading intervention(s), we can estimate the regression specification:

$$Y_{iv} = \alpha + \beta_B B_v + X_i \gamma + \epsilon_i$$

where Y_{iv} is an outcome of interest for individual or household i in village v ; B_v is an indicator equal to one if village v was in either of the treatment groups; X_i is a vector of individual-specific characteristics, typically including baseline values of the outcome of interest; and ϵ_i is a conditionally-mean-zero error term. β_B is a consistent estimate of the average treatment effect of the book intervention on outcome Y_{iv} . Coefficient estimates on specific treatment arms (alternatives to simply including B_v) can be compared to one another and tested for statistical significance. We anticipate clustering standard errors at the level of the village.

Child measures

- (1) Receptive vocabulary: The British Picture Vocabulary Scale (BPVS) (see World Bank publication Fernald, et al., 2009), (Cooper, et al., 2014).
- (2) Literacy: Measures of the components of early literacy skills (phonemic awareness, phonics, fluency, vocabulary, and comprehension), using variations of the Early Grade Reading Assessment (Gove 2009) and World Bank SDI Kenya instruments.
- (3) Cognition: Kaufman ABC (K-ABC), an intelligence test of problem-solving ability with three subscales: achievement, simultaneous and sequential processing. The K-ABC has been used in several different African contexts, including Benin (French), Senegal (Wolof) and Zaire (Kikongo).
- (4) Sustained Attention: The non-verbal Leiter International Performance Scales (Leiter R) (Roid & Miller, 1997) evaluates the capacity to maintain attention, a critical metric of school readiness and a test of executive function (Duncan et al., 2007).
- (5) Numeracy: Measures based on World Bank SDI (2013) and Uwezo (2011) used in Kenya.
- (6) Social/emotional development: The Strengths and Difficulties Questionnaire (SDQ) measures emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior (Goodman, 1997; Goodman & Scott, 1999), used in studies of young children Western Kenya (Oburu, 2005).
- (7) Global: The Malawi Developmental Assessment Tool (MDAT) (Gladstone et al, 2010) evaluates multiple dimensions of child development, including language and communication, fine motor skills and socio-emotional skills. The test is culturally relevant and has been adapted for use in rural African settings.

Parent and Household Measures:

- (1) Perceived Stress Index and Time use at baseline and follow up. Parents' and siblings' time use will be measured through standard survey measures, and novel methods. Including through in home and observation of parents' behaviors and strategies when asked to share a book with their child, and through the use of cameras in an area where parents tend to sit while reading to their children.

(2) Patient Health Questionnaire (PHQ) (Kroenke et al., 2001) used at baseline and follow up to evaluate depression levels among caregivers.

(3) HOME Inventory. The Home Observation for Measurement of the Environment (HOME) Inventories (Bradley and Caldwell, 1984) examines associations between home environment and child development. The HOME measures the provision of activities/materials that encourage learning, and household organization.

(4) Mother-Child Picture-Talk Task, as was used in Bangladesh (Aboud et al, 2011) will be used at baseline and endline to measure maternal-child interactions. In this task, mothers are given a page of pictures and asked to talk about them with their child. The interactions are then coded as negative, directive, or responsive.

Annex II: References

- Abeberese, A. B., Kumler, T., and L. Linden. "Improving Reading Skills by Encouraging Children to Read in School: A Randomized Evaluation of the Sa Aklat Sisikat Program in the Philippines." Journal of Human Resources, *forthcoming*.
- Aboud, F.E. and Akhter, S. (2011). "A cluster-randomized evaluation of a responsive stimulation and feeding intervention in Bangladesh." Pediatrics 127(5): e1191-7.
- Aram, D., Fine, Y., & Ziv, M. (2013). Enhancing parent-child shared book reading interactions: Promoting references to the book's plot and socio-cognitive themes. Early Childhood Research Quarterly, 28(1), 111-122. doi: 10.1016/j.ecresq.2012.03.005.
- Attanasio, O.P., Fernández, C., Fitzsimons, E.O.A., Grantham-McGregor, S.M., Meghir, C., Rubio-Codina, M et al. "Using the infrastructure of a conditional cash transfer program to deliver a scalable integrated early child development program in Colombia: cluster randomized controlled trial." BMJ 2014; 349:g5785.
- Baker, C. E. (2013). Fathers' and Mothers' Home Literacy Involvement and Children's Cognitive and Social Emotional Development: Implications for Family Literacy Programs. Applied Developmental Science, 17(4), 184-197. doi: 10.1080/10888691.2013.836034.
- Baker, C. E., Cameron, C. E., Rimm-Kaufman, S. E., & Grissmer, D. (2012). Family and sociodemographic predictors of early academic achievement among African American boys in kindergarten. Early Education and Development, 23, 883–890.
- Bradley, R.H. & Caldwell, B.M. (1984). "The relation of infants' home environments to achievement test performance in first grade: A follow-up study." Child Development, 55, 803-809.
- Bradley, R. H., & Corwyn, R. F. (2005). "Caring for children around the world: A view from HOME." International journal of behavioural development 29(6): 468-478.
- Bradley, R. H. and R. F. Corwyn (2002). "Socioeconomic status and child development." Annual Review of Psychology 53: 371-399.
- Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial gaps in early academic achievement. The Future of Children, 15(1), (Early academic achievement: Closing Racial and Ethnic Gaps), 139–168.
- Cooper, P. J., Vally, Z., Cooper, H., Radford, T., Sharples, A., Tomlinson, M., and Murray, L. (2014). "Promoting Mother–Infant Book Sharing and Infant Attention and Language Development in an Impoverished South African Population: A Pilot Study." Early Childhood Educ J. 42:143-152.
- Duflo, E., Dupas P., and M. Kremer (2011). "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya." American Economic Review 101(5):1739-1774.
- Duncan, G. J., C. J. Dowsett, A. Claessens, K. Magnuson, A. C. Huston, P. Klebanov, L. S. Pagani, L. Feinstein, M. Engel and J. Brooks-Gunn (2007). "School readiness and later achievement." Developmental Psychology 43(6): 1428-1446.

Duursma, E., Augustyn, M., & Zuckerman, B. (2008). Reading aloud to children: the evidence. Archives of Disease in Childhood, 93(7), 554-557. doi: 10.1136/adc.2006.106336.

Farver, J. M., Xu, Y., Eppe, S., & Lonigan, C. J. (2006). Home environments and young Latino children's school readiness. Early Childhood Research Quarterly, 21,196–212.

Fernald, L. C. H., Kariger, P., Engle, P., and A. Raikes (2009). Examining Early Child Development in Low-Income Countries: A Toolkit for the Assessment of Children in the First Five Years of Life. Washington: The International Bank for Reconstruction and Development.

Gertler, P., Heckman, J., Pinto, R., Zanolini, A., Vermeersch, C., Walker, S., Chang, S. M., and Grantham-McGregor, S. (2014). "Labor Market Returns to Early Childhood Stimulation: a 20-Year Follow-up to an Experimental Intervention in Jamaica." Science 344:988-1001, 20 May 2014.

Gladstone, M., Lancaster, G.A., Umar , E., Nyirenda, M., Kayira, E., et al. (2010). "The Malawi Developmental Assessment Tool (MDAT): The Creation, Validation, and Reliability of a Tool to Assess Child Development in Rural African Settings." PLoS Med 7(5): e1000273. doi: 10.1371/journal.pmed.1000273

Glewwe, P. , Kremer, M., and S. Moulin (2009). "Many Children Left Behind? Textbooks and Test Scores in Kenya." American Economic Journal: Applied Economics 2009, 1(1):112-135.

Goodman, Robert. (1997). The Strengths and Difficulties Questionnaire: a research note. Journal of child psychology and psychiatry. 38(5), 581-586.

Goodman, Robert, & Scott, Stephen. (1999). Comparing the Strengths and Difficulties Questionnaire and the Child Behavior Checklist: is small beautiful? Journal of abnormal child psychology, 27(1), 17-24.

Gove, A., and P. Cvelich (2010). Early Reading: Igniting Education for All. A report by the Early Grade Learning Community of Practice. Research Triangle Park, NC: Research Triangle Institute.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). "The PHQ-9: Validity of a Brief Depression Severity Measure. Journal of General Internal Medicine, 16(9), 606–613. doi:10.1046/j.1525-1497.2001.016009606.x

Martinez, S., Naudeau, S., and V. Pereira (2013). "The Promise of Preschool in Africa: A Randomized Impact Evaluation of Early Childhood Development in Rural Mozambique." Mimeo.

Maulik, P. K. and G. L. Darmstadt (2009). "Community-based interventions to optimize early childhood development in low resource settings." J Perinatol 29(8): 531-542.

Mol, S. E., Bus, A. G., de Jong, M. T., & Smeets, D. J. H. (2008). Added value of dialogic parent-child book readings: A meta-analysis. Early Education and Development, 19(1), 7-26. doi: 10.1080/10409280701838603.

Ngorosho, D. (2011). Reading and Writing Ability in Relation to Home Environment: A Study in Primary Education in Rural Tanzania. Child Indicators Research, 4(3), 369-388. doi: 10.1007/s12187-010-9089-8

Oburu, Paul Odhiambo. (2005). Caregiving stress and adjustment problems of Kenyan orphans raised by grandmothers. Infant and Child Development, 14(2), 199-210.

Opel A., Ameer S. S., and F. E. Aboud (2009). "The effect of preschool dialogic reading on vocabulary among rural Bangladeshi children." International Journal of Educational Research 48:12-20.

Roid, G. H. and L. J. Miller (1997). *Leiter International Performance Scale - Revised (Leiter-R)*. Wood Dale, Stoetling.

Theriot, J. A., S. M. Franco, B. A. Sisson, S. C. Metcalfe, M. A. Kennedy and H. Bada (2003). "The impact of early literacy guidance on language skills of 3 year olds." *Journal of Clinical Pediatrics* 42: 165-172.

Uwezo (2011). *Are Our Children Learning? Annual Learning Assessment Report*, Kenya 2011.

Weitzman, C. C., L. Roy, T. Walls and R. Tomlin (2004). "More evidence for Reach Out and Read: A home based study." *Pediatrics* 113: 1248-1253.

World Bank (2013). *Service Delivery Indicators: Kenya*, July 2013. Washington, World Bank.

Zuckerman, B. (2009). "Promoting Early Literacy in Pediatric Practice: Twenty Years of Reach Out and Read." *Pediatrics* 124(6): 1660-1665.

Single arms, or comparing arms

Parameters	T villages =	38
	C villages =	38
	rho =	0.07
	True n per village =	30
	Effective n per village =	20
	alpha	0.05
	power kappa	0.8
	SD scaling from baseline	0.7746
Intermediate calculations	Arm ratio	1
	Total sample sizes	1140/1140
	P =	0.5
	Normal critical value	1.959963985
	Inverse normal 0.8	0.841621234
	Critical value combined	2.801585218
	Non-baseline-adjusted MDE	0.219376448
	Baseline-adjusted MDE	0.169928996
MDE Result	Rounded-up MDE	0.17
STATA	Command part 1	sampsi 0 0.17, power(0.8) ratio(1) sd(0.7746)
	Command part 2	sampclus, obsclus(20) rho(0.07)

Pooling treatments vs C	Subgroup single	Subgroup pooled	Gender single
76	38	76	38
38	38	38	38
0.07	0.07	0.07	0.07
30	12	12	15
20	12	12	12.5
0.05	0.05	0.05	0.05
0.8	0.8	0.8	0.8
0.7746	0.7746	0.7746	0.7746
2	1	2	1
2280/1140	456/456	912/456	570/570
0.666666667	0.5	0.666666667	0.5
1.959963985	1.959963985	1.959963985	1.959963985
0.841621234	0.841621234	0.841621234	0.841621234
2.801585218	2.801585218	2.801585218	2.801585218
0.189985577	0.246844268	0.213773407	0.244236537
0.147162828	0.19120557	0.165588881	0.189185622
0.148	0.192	0.166	0.19

Gender pooled

76
38
0.07
15
12.5
0.05
0.8
0.7746
2
1140/570
0.666666667
1.959963985
0.841621234
2.801585218
0.211515046
0.163839554
0.164

KCP
Budget Plan

			FY2017			FY201	
	KCP	Unit	No. of Units	Unit Rate	Cost	No. of Units	Unit Rate
a	Staff Time (regular/term)	weeks			0		
	TTL	weeks			0	1	5000
	Others	weeks			0		
b	ETC/ETT	year			0		
c	STC/STT	days	20	250	5000		
d	Indirects	17% of staff and consultant			850		
e	Consulting Firms	as appropriate			94150		
f	Travel	trips			0		
g	Equipment (tablets, etc)	as appropriate					
h	Software, Data, Licenses	as appropriate					
i	Others	as appropriate					
	Total				100000		

8	FY2019				OTHER SOURCES OF FUNDS	
Cost	No. of Units	Unit Rate	Cost	TOTAL	BB	Others
0			0	0		
5000	1	5000	5000	10000		5000
0			0	0		
0			0	0		
0			0	5000		15000
850			850			3400
44150			34150	172450		571600
0			0	0		4000
				0		1000
				0		
50000			40000	187450	0	600000

Amanda Epstein Devercelli
Mail Stop J10-1000
The World Bank
1818 H Street NW
Washington, DC 20433

3 November 2016

To Whom It May Concern:

I am writing in support of the EMERGE project, led by Owen Ozier of the World Bank Development Research Group. I write in my capacity as the Acting Global Lead for the Early Childhood Development Global Solutions Group within the World Bank, as well as in my role as the Program Manager for the Early Learning Partnership (ELP), a \$27-million trust fund supporting early learning work in 26 countries.

Delivery of better primary and pre-primary education remains a pressing challenge around the world, and in Sub-Saharan Africa in particular. At least two key dimensions of this challenge are addressed by the EMERGE project. First, parental engagement holds promise as a potentially affordable, effective strategy to better prepare children for school, but there remains a shortage of evidence on this approach. Second, the use of local languages may be a critical channel through which to reach young children growing up in rural areas around the world; again, despite its promise, we lack evidence on the potential value of using local languages. The EMERGE project will help to fill both these important knowledge gaps, as it examines the service delivery impacts of a local-language book and parent training intervention.

I expect the results from EMERGE to inform other work in the Global Solutions Group; at the request of ELP leadership, the EMERGE team has already made one Webinar presentation of this work to the ELP audience to keep project teams aware of the study and to maximize its value to them. A project for which I am the TTL, Early Learning in Africa: Opportunities for Action (P158928), will also use the findings from the EMERGE work, as it also concerns service delivery, early stimulation, and parent involvement. Please do not hesitate to contact me in case of any questions.

Sincerely,



Amanda Epstein Devercelli
Senior Education Specialist, The World Bank

Laura Rawlings
Mail Stop J10-1000
The World Bank
1818 H Street NW
Washington, DC 20433

9 November 2016

To Whom It May Concern:

I am writing in support of the EMERGE project, led by Owen Ozier of the World Bank Development Research Group. I write in my capacity as a Lead Social Protection Specialist and Task Team Leader for the Rwanda Social Protection Systems DPO series (P158698), the Rwanda Child Sensitive Social Protection ASA (P155779), the lead on analytical work on behaviorally informed parenting interventions in the Madagascar Social Protection project (P149323) and the lead from Social Protection and Labor on the Investing in the Early Years initiative in the World Bank (P161243).

Investments in early childhood are of first-order importance around the world. The World Bank's emphasis on Investing in the Early Years at this year's Annual Meetings reinforce this point. Yet there remains a shortage of evidence on what interventions actually work in the early years. The EMERGE study will help to fill this knowledge gap, as it examines the impacts of a local-language book and parent training intervention for young children in Kenya. The EMERGE project was actually an offshoot of the World Bank's Service Delivery Indicators survey work, which showed children to be unprepared very early in schooling: EMERGE combines the World Bank's current priority in the Early Years with its interest (since at least the WDR 2004) in service delivery.

With regard to my own work in Rwanda and Madagascar, the EMERGE project has already been helpful. In our child development assessment work, our team had a need for extensions to existing cognitive measurement tools suited to young children in Sub-Saharan Africa. The work that the EMERGE team had done adapting the Malawi Developmental Assessment Tool (MDAT) to Kenya was of immediate use to our project in Rwanda: his team was able to share test items that we are now working to incorporating in our assessments. This will enable both projects to have a better understanding of the validity and generalizability of the test measures we use. We look forward to further collaboration as both the EMERGE and other early childhood projects move forward.

Please do not hesitate to contact me in case of any questions.

Sincerely,

A handwritten signature in dark ink, appearing to read 'L. Rawlings', with a stylized flourish at the end.

Laura Rawlings
Lead Social Protection Specialist, Africa Region
The World Bank

A. KCP III CONCEPT NOTE TEMPLATE BASIC INFORMATION

Proposal Title	A New Model for Primary Schooling in Developing Countries
Theme	Science of Delivery and Aid Effectiveness
Task Team Leader(s) Name	Owen Ozier
Co-Task Team Leader(s) Name	n/a
Country/Region	Kenya
Managing Unit	DECHD
Country/Sector Manager Name	Adam Wagstaff
Proposal Amount (USD)	250,000
Partners (if applicable)	n/a

B. PROPOSAL DETAILS

1. Research motivation, objectives and alignment with the World Bank Group's twin goals.

A critical question facing low-income countries today is whether there are more cost-effective models for delivering a high-quality education to students. Rapid gains in school attendance have not been accompanied by gains in quality; most third-grade students in Kenya, for example, cannot perform at a second-grade level (Uwezo 2011). Reduction of poverty—and reduction of inequalities in prosperity—may depend on the availability of opportunities to children around the world: opportunities that start with education. To begin to address this, we are conducting a study of the largest private primary school network in Sub-Saharan Africa, Bridge International Academies. Their novel, low-cost private school model involves standardized, scripted instruction to overcome teacher skill deficits, as well as close monitoring of teachers to overcome absenteeism. In Kenya, where our study is situated, Bridge operates 400 private schools across the country, but in other settings (notably, Liberia), they partner with the government to take over operation at struggling public schools. In Kenya, while we plan to measure the impacts of Bridge Academies on learning outcomes, we also believe that the relationship between teacher knowledge, classroom dynamics, and student outcomes may be very different in the scripted environment of Bridge Academies than it is in the government schools. That difference may provide new avenues for confronting the challenges that the 2004 WDR made explicit.

2. Describe research questions to be answered, the associated analytical approach and methodology, as well as the type of data expected to use.

The driving research question in this study is whether, at their relatively low cost of between \$6 and \$15 per student per month, Bridge academies deliver a high-quality education. Our study is an impact evaluation of a scholarship program based on oversubscription: of over 20,000 potential pupils who applied for scholarships to attend Bridge Academies, roughly 10,000 were awarded scholarships, randomly conditional on eligibility. (Just under half of that lottery is relevant to our main study.) The analytical approach that follows is unbiased identification of treatment effects via randomized program assignment. While randomized trials on low-cost private schools have taken place in Latin America (Angrist, et al., 2006) and South Asia (Muralidharan and Sundaramanan, 2015; Andrabi, Das, and Khwaja, 2014), no large-scale RCT on low-cost private schools has yet

been conducted in sub-Saharan Africa. The Education Global Practice has supported initial pilot work, and SIEF has provided support for an impact evaluation of a small sample of children in pre-school and lower primary school. However, the scale of the scholarship program, which we did not originally anticipate, has made a much larger study possible. We now seek funding for (1) service-delivery outcomes, including classroom observation and measurement of teacher knowledge, and (2) data collection on an increased scale for more precise measurement of learning outcomes, now that the large-scale scholarship program is in place. Funding for (1) classroom observation data and teacher knowledge assessments will permit us to test whether the Bridge Academy scripted instruction model amplifies or compensates for the variation in teacher skills that may underpin education service delivery. Funding for (2) larger-scale collection of outcome measures will leverage the large sample we have been able to construct to make precise measurements of the effect of low-cost private schools (Bridge Academies). Data collection will be undertaken specifically for this project, but the team we have assembled is well-prepared to organize this.

3. Describe how the proposal addresses the issues facing the Bank clients and operations as well as the implication of the policy relevance.

Service delivery in education involves confronting a well-known litany of challenges: teacher absenteeism, low levels of teacher skill, salary disbursement delays, and more. The World Bank Group President recently asked whether innovative low-cost private schools and public-private partnerships can help change this equation, and in particular, whether technology can be used in innovative ways to improve education, for example via the model of Bridge International Academies. This study is specifically intended to address a pressing issue for Bank clients, as highlighted in these remarks: we will find out whether Bridge Academies are actually successful at using technology to improve learning outcomes. As Service Delivery Indicators measurement work in education expands beyond Africa to countries around the world, a better understanding of the impacts of alternative delivery models for education is of first-order importance to policymakers both inside and outside the World Bank.

4. Describe the implementation plan, timeline, team members (consultants and affiliated organizations) as well as a brief description of roles and responsibilities of each key member.

We began baseline data collection in December 2015. Lottery-based (randomized) scholarship winners were announced in January of 2016. Phone-based tracking took place through September 2016. We anticipate conducting classroom observation and teacher surveys in spring 2017 (late FY2017), final phone tracking during the summer of 2017 (early FY2018), and endline assessments in late calendar year 2017 (mid-FY2018).

The team includes the TTL, Owen Ozier; Prof. Michael Kremer of Harvard University; Prof. Isaac Mbiti of the University of Virginia; and Prof. Anthony Keats of Wesleyan University.

Ozier, who has over 10 years of experience studying education interventions in Kenya, conducted the actual randomization, and brings his measurement and statistical experience working with the World Bank Service Delivery Indicators teams in countries around the world to the development of service delivery measures. Kremer, one of the world's most prominent development economists studying education and health, and who is well-known for his studies of scholarships, deworming, and educational inputs in Kenya, leads the collaboration. Mbiti (who is Kenyan) has published several journal articles on Kenyan primary and secondary schools; he also brings recent experience measuring teacher knowledge, student performance, and classroom characteristics from his ongoing research in Tanzania. Keats, whose research is also focused on Kenya, Uganda, and sub-Saharan Africa more broadly, leads supervision of field research operations.

5. Expected collaboration between DEC and operations (regions and/or global practices) as well as collaboration between Bank staff and researchers and research institutions from developing countries. Brief description of the consultation has been done, if any.

This study is positioned to be one of the flagship World Bank-IFC collaborations: as a major investor in Bridge International Academies, the IFC is very interested to know whether its investment is delivering education effectively to those living in poverty in Kenya. For the past year of project preparation and baseline launch, the DEC TTL (Ozier) has been in regular contact with counterparts and colleagues at the IFC and in the Education Global Practice on the design and progress of this landmark study. The project team has engaged education experts in Kenya who may help design curriculum-based measures of learning to be used at endline. We are also working closely with Suleiman Asman, a Kenyan national and the current Country Director of IPA Kenya; he holds a degree policy analysis, and is a regionally recognized expert in communicating research findings to policy audiences. One of our principal investigators (Mbiti) is also a researcher from a developing country.

6. Expected outputs and outcomes.

Based on preliminary phone surveys, we expect that the study scholarships induced over 3,000 additional pupils to attend Bridge International Academies in the sample most relevant to this study, from the lowest level of pre-school (ECD) through upper primary school (scholarship applicants in the lottery include those up to Kenya's Standard 7, the penultimate year of primary school). We are certain that outputs (such as choice of school) are affected by the intervention, but we will test whether longer-term outcomes (curriculum-based academic achievement, classroom service delivery) change as a consequence. The study will produce at least one standalone research paper on the learning impacts of Bridge Academies, accompanied by findings on whether the Bridge Academy scripted instruction model appears to amplify or compensate for the variation in teacher skills that may underpin education service delivery. The manuscript will be circulated as a working paper, condensed into a policy brief for a broad audience, and will be submitted to a peer-reviewed journal. We expect to engage with policymakers, Bank and IFC staff, and NGO and academic audiences around the world once our analysis is complete.

7. Proposal Budget

Activity	Expenditures under KCP			Total Expenditures over life of activity, of which		
	FY17	FY18	FY19	KCP	Bank BB	Other sources
Classroom measures	150,000			150,000		
Expanded endline		100,000		100,000		
Phone monitoring and other endline survey work						450,000
Total	150,000	100,000		250,000		450,000