Summer reading camps in northern Ghana: Effects of camps and camp activities

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Abstract:

Middle school children in northern Ghana in 2010 exhibited a range of responses to a variety of motivations during two-week summer reading camps. Intrinsic motivation treatments, where students were encouraged to engage in a variety of authentic exercises (writing reviews for friends, or reading with parents) produced small positive effects. When students had available books by African authors and on Africa-related themes they did not read more books, contrary to a commonly-held hypothesis. A simple motivational device of a "reading tree," where students posted "leaves" with the book title and their name upon completion of a book, had no statistically discernable effect. The reading camps served approximately 200 schoolchildren for 5th form students (approximately 12 years old) in three villages. Motivational treatments varied from day to day and camp to camp. The camps appeared to be highly effective in improving reading abilities and habits. There were few large effects of motivational and contextual interventions to encourage leisure reading among schoolchildren in low-literacy environments.

1. Introduction

Many villages in rural Africa are making the transition from low levels of schooling to full enrollment in primary schooling. New schools are being constructed at a rapid pace. Some governments have made free and universal primary education a central plank of their economic development strategy. Donor agencies have supported the push to universal primary enrolment. Many countries are approaching full enrolment. In other countries, lagging enrolment rates for girls have been the main obstacle to greater overall enrolment. Donor support has increased for government programs to provide incentives for parents to

enroll girls. Research has also focused on how to improve attendance, reduce teacher absenteeism, and improve classroom learning. There have been, then, significant advances in schooling for rural Africa.

Schooling is, however, only one component in the transformation of a largely oral society to a society characterized by deep literacy. One important component is the development of a reading culture. By reading culture is meant the habits and commitments to regular reading, especially fiction, at an early age (Arua). A second important component is extra-curricular help in developing reading skills, which include phoneme awareness and deliberate comprehension strategies (predicting, reflecting, engaging). A third component, of course, is the availability of books and other reading material. There is relatively little research on how to effectively foster these three components essential to deep literacy. Griswold () explores in depth the difficulties of an emergent culture of reading in Nigeria. There are scattered accounts of programs that encourage schoolchildren to develop a love or enjoyment of reading in rural Africa. Extra-curricular reading programs are rare in rural Africa, primarily because there are very few libraries and librarians. Libraries have been neglected by most African governments, and no significant philanthropic movements have emerged to create privately funded public libraries. The private book rental marketplace remains very underdeveloped in rural Africa.

There is little shared agreement, then, on effective reading programs and activities. Indeed, there is little cataloguing of appropriate reading programs that might form the universe of possible programs to evaluate. These reading programs will have to emerge from the experience of local reading programs. It is likely that reading programs in rural Africa will differ from off-the-shelf reading programs available in developed countries. There are several reasons for this. First, many of these programs are proprietary, and African school and library systems do not have the purchasing power to acquire the rights and materials for the program. Second, these programs are tailored to their developed country markets they serve, and thus likely less effective when offered to rural African readers. The heart of any reading program is a set of books or texts to read. These are carefully selected to best serve the potential readers. The texts in most reading programs would more than likely be too difficult and unappealing to many rural African young readers. The topics and vocabulary would be far from the reality and imagination of a typical young person who has grown up in a village. Just as village life would be far from the experiences and imaginations of typical suburban children in developed countries. Third, the reading programs of developed countries presume that program implementers (librarians, resource teachers, classroom teachers) have extensive training in reading pedagogy, and are good readers themselves. In the typically rural African school and library, teachers are considerably less trained than their developed country counterparts, village librarians even less likely to be trained in reading pedagogy, and since teachers and librarians have grown up in book scarce environments, their reading capital is much lower than that of their counterparts. Developed country reading programs may not be robust, then, when implemented in the more difficult environments of rural African educational settings.

This paper reports on the short-term effects of summer reading camps that served 200 5th form students (approximately 12 years old) in three villages in northern Ghana during the period August-September 2010. The camps offered the opportunity to spend two weeks in a village library doing fun and creative activities, all the while being encouraged and helped to read simple and appropriate fiction. Much of the time in the camps was spent on reading activities. The basic idea was that by exposing schoolchildren to the village library as a fun and friendly place, and getting them exposed to the wide range of books available, they

would continue to regularly use the library for individual reading. A number of reading strategies were introduced during the camps.

The reading program of the camps was designed to have a variety of activities throughout the day, and the activities varied from camp to camp and camp session to camp session. The variation in daily programs permitted measurement of the effects of the reading programs on the number of books read during the camp, which was the major camp "output."

Teacher grades for the school year 2009-10 were collected prior to the beginning of the camps. Books read during the camps were recorded by a team of camp assistants. Students took a reading test in October, two months after the camps had ended. A short evaluative questionnaire was administered to students in October.

Analysis of this data collected before, during and after the camps reveals the following. The reading abilities of students enrolled in the camps appeared to have improved significantly, when compared with students from schools in the same villages who were not enrolled in the camps. The non-camp students appeared to have similar levels of reading and math performance at the end of the school year. But results on the October reading test were significantly higher for camp participants. During the camps, the various motivation practices had limited effects in changing the pattern of reading. Intrinsic motivation treatments, where students were encouraged to engage in a variety of authentic exercises (writing reviews for friends, or reading with parents) produced small positive effects. When students had available books by African authors and on Africa-related themes they did not read more books, contrary to a commonly-held hypothesis. A simple motivational device of a "reading tree," where students posted "leaves" with the book title and their name upon completion of a book, had no statistically discernable effect. Reading camps then seem to be very effective at improving reading capabilities and attitudes, but which specific activities in the camps have greatest effects remains difficult to discern, and should be the object of further research.

2. Reading in northern Ghana

The literacy environment of northern Ghana was quite poor in 2010. Most 5th form schoolchildren were poor readers, and many considered reading to be a difficult task that required significant effort. Students had limited English vocabulary; a variety of local languages were spoken in most homes. Schooling instruction was in crowded and under-resourced conditions. Rural schools northern Ghana typically did not teach students how to break down words and recognize phonemes. The literacy "ecosystem" of most rural villages was extremely poor, with few books, signs, posters, or packaging and little access to electronic media. Many parents were illiterate and thus offered little encouragement, assistance and supervision. Teachers hewed to the letter of the school curriculum, often simply dictating lessons for students to copy. Finally, gender inequality in childhood experiences was rampant. Girls were expected to do more household and farm chores than boys and were more discouraged from pursuing secondary school than boys.

3. Motivating reading

Motivation is a key contributing factor to the development of reading ability. Guthrie and Wigfield (2000) argue that less motivated readers spend less time reading, exercise lower cognitive effort, and are less driven to achieve full comprehension than more highly

motivated readers. Motivated readers will believe in their reading abilities to the point where they will challenge themselves with difficult reading.

Debates continue, though, over what specific types of motivation best develop reading abilities and habits. The literature has distinguished between intrinsic and extrinsic motivation. Intrinsic motivation is described as the desire to complete a task for its own sake (Oldfather and Dahl, 1994; Turner, 1995) and pursued during free time (Morrow, 1996). Readers who are highly intrinsically motivated will pursue the reading material of their choice without external direction or intervention. Deci, Koestner and Ryan (2001; p. 3) define intrinsic motivation as the innate psychological need for competence and self-determination. Intrinsic motivation may be crucial for reading development because it promotes creative task engagement, cognitive flexibility and conceptual understanding of learning activities. These mental behaviors and practices may be critical to the development of reading skills in children and young adults.

Extrinsic motivation is described as the desire to receive external recognition, rewards, or incentives for reading. Deci, Vallerand, Pelletier, and Ryan (1991; p.407) found substantial evidence to support that giving rewards and positive incentives for reading increases the time and effort in reading activities. Sansone and Harackiewicz (2000) emphasized the role of external rewards for reading achievement . They observed that incentives were helpful certain conditions, such as when children had no initial interest in the task and when reading materials was difficult and complex.

The literature on reading motivation sometimes explores the hypothesis that strategies to enhance extrinsic motivation may paradoxically undermine intrinsic motivation. Meta-analysis studies including Cameron and Pierce (1994) and Deci, Koestner, and Ryan (1999) have presented strong cases supporting different sides of this question. Other research suggests the importance of both types of motivation and their interaction as complements. Miller and Meece (1997) and Wigfield and Guthrie (1997) claim that extrinsic motivation is not the opposite of intrinsic motivation. They argue that the two are moderately and positively correlated and both play a substantial role in predicting children's reading amount and frequency (Guthrie and Wigfield, 2000; p. 407).

In the study area, schooling has increased rapidly, but library services and book access remain limited. Bolgatanga, the capital of Upper East region, hosted only one bookstore with fewer than 100 African and foreign novels in stock in 2010. There were a limited number of children's books for sale. The regional library of Bolgatanga had limited programs available for children, and little outreach to rural villages. There appeared to be no extra-curricular reading programs organized either through the school system or the National Library Board. Few villages, out of several hundred in the Bolgatanga area, had community libraries.

4. Reading camps in northern Ghana

From August to September 2010, Friends of African Village Libraries (FAVL) and the Center for Sustainable Rural Development (CESRUD) implemented two week reading camps for 5th form students (approximately 12 years old) in three villages in northern Ghana. The villages-- Sumbrungu, Sherigu and Gowrie-Kunkua-- were served by small community libraries supported by FAVL and CESRUD. FAVL is a non-profit organization that works closely with rural communities to establish and support long-term village libraries. FAVL is dedicated to increasing access to reading material and outside forms of information. CESRUD is a local Ghanaian non-governmental organization, with mission to improve well-

being of the population of villages in the Sumbrungu area. The camps were generously funded by a grant from the Chen Yet-Sen Family Foundation based in Hong Kong.

The camps were located on the library premises in the villages and were run in cooperation with local school teachers. Each village had three camps for a total of nine camps overall. Camps began at 8:00am with breakfast, and continued until 3:00 with a break for lunch. Each camp hosted between 20-27 students in the 5th form (equivalent to 5th grade). Three counselors (one teacher, the librarian, and one secondary school graduate) were present to organize camp activities, which centered on reading and reading-related activities.

All students in the 5th form in one to two of the village primary schools were invited to participate. Students were then randomly assigned into one of the three camps.

The activities for the camps centered on three reading periods per day, each lasting 45 minutes. During these reading periods, one of three following types of reading was implemented: individual, partner or group. Individual reading involved each student reading his or her own book alone and independently. During partner reading, weak readers were paired with strong readers so that the weak reader could be assisted by a more advanced peer reader. Reading techniques varied slightly but they usually involved each partner reading a paragraph or page aloud and then switching off. Depending on the levels of the readers, some pairs had just the strong reader read to the weak reader or had the weak reader read the whole book assisted by the strong readers. At the beginning of the camp, the local librarian for each village helped to pair up the students according to level. The librarians generally knew the reading abilities of the students in the community. Partners were chosen at the beginning of camp and were kept the same for the duration of the camp. This induced students to make new friends within the camp and ensured that students did not fall prey to the temptation of choosing their friends so they could talk during the period instead of reading. During group reading, students broke into small groups of 4 or 5 and read a book out loud, together. Similar to the partner reading, reading techniques varied slightly but they usually consisted of each group member reading a paragraph or page aloud and then switching off to the other group members. Students had the opportunity to read the books of their choice during each of the three designated reading periods as well as their nightly take home book.

Other reading enhancement activities consisted of workshops, phonic exercises, reading games, and non-reading related games and exercises.

A number of “treatments” were administered to the students during the camps. For most days, these were randomly selected for each day, camp order and village. The first and last days of the camps were, however, similar across the camps. The first treatment involved selection of the kinds of books that students had available to read, African or U.S.-oriented. The second treatment involved the kinds of reading activities that generated different forms of extrinsic and intrinsic motivation including public recognition, collective competition, individual material reward and personal intrinsic incentive. Overall, there were six specific treatments: Africa versus U.S. books; reading trees; inter-camp competition; “best book report” prizes; “share with family” activity; and “write a letter to a friend” activity. A sample schedule of the treatments is reproduced in Appendix Table A1.

The first treatment aimed to see what types of books motivated students to read; specifically we wanted to look at the effect Africa-oriented books had on reading output compared to U.S. or western-oriented books. Each camp had two sets of designated "reading baskets" filled with approximately 50 books ranging from simple picture books to grade-level story books (chapter books and short novels). These books were available for students to read both during the camp sessions and to take home in the evening. One set of books consisted of

Africa oriented books typically written by African authors or set in Africa. These books contained stories and illustrations that were familiar to 5th form students in rural Africa. This book set was purchased in various bookstores in Accra, Ghana and was mainly comprised of stories and settings consistent with West African or Ghanaian specific themes and subjects. The other set of books consisted of western or U.S. oriented books intended for the American children's and youth market, although heavily slanted to feature multicultural themes (African-American experience; for example the books of Harriette Robinet) and pre-industrial times ("Little House on the Prairie) that were likely to resonate with rural schoolchildren. The vocabulary of the U.S. oriented books was generally more difficult and less familiar to African readers (both young and adult). Each day during the ten days of the camp, the African or U.S. set of books was designated for the day's reading periods; the days were selected randomly and varied from camp to camp.

The second treatment implemented different motivational incentives to see what activities most effectively created an encouraging reading environment. The first type of extrinsic incentive utilized a "reading tree" to create the incentive of public recognition. At each camp location, a leafless tree was painted onto one of the walls of the library. Each tree consisted of a trunk and several bare branches that spanned the full length of the wall, in full public view. Each time a student successfully completed reading a book, the student was given a blank leaf. On the leaf, the child was instructed to write the title of the book, the author, and the student's name. At the end of the day, the students were instructed to color and decorate their leaves. They were then allowed to tape their leaves on the tree in a ceremonious fashion that acknowledged the accomplishments of each student. All the students would be gathered around the tree with their leaves. Then one-by-one, the counselor would call each student's name and the student would place their leaves on the tree while the other students clapped for the selected student.

The camp counselors thought the reading tree was very popular among the students. Their casual observation was that students in the first set of camps (the first round) who were good readers would read easy and beginner books on reading tree day so that they could maximize their "leaf-count." In the second and third round of camps, the counselors implemented different sizes of leaves according to the level of the books read. This motivated good readers to read at a level that still challenged them.

The second type of extrinsic motivation utilized an inter-camp reading competition that created the incentive for collective action. Each camp had two competitions take place over a period of two to three camp days. For those designated two or three days, the reading camps in the three different libraries competed against each other to see which camp could read the most books. The total number of books read was adjusted for both the level of the books read and the population of each camp (as camps had slightly differing amounts of students). All students were informed that each camp score would be adjusted by level, to ensure that all students read to their ability. Students were reminded during the competition period that the reading they completed for that day would be counted in the camps overall book read score for the competition. For each day of the competition, the total number of books read for that day consisted of all the books each student read during the three reading periods as well as the books they read at home. The winning camp was announced after the last day of competition and each student in the winning camp received a special treat as part of their lunch.

A third type of extrinsic motivation utilized individual material rewards in the form of assigning a "best book report of the day" award to motivate students to read. On randomly selected days, the camp counselors announced that three of the camp participants who wrote

the best short "book report" during a designated assessment period would receive small prizes such as candy and pencils. The best book reports were not necessarily the best-written, but rather the ones that best conveyed a sense of the book selected by the student. Before the day's reading period, the students would be informed that they would all be required to write a book report on the book they would complete during this period. This would motivate the students not only to read the book but also read it while analyzing what they could write in their report. After the reading period was over and the book report writing period began, the students were not allowed to use their books to aid them in writing the report. This policy was implemented because if students were allowed to use their books, they were inclined to merely copy passages directly from the book instead of from their own original ideas. As a result, not allowing them to be assisted by the books aided the authenticity of their reading comprehension. The first time this motivation was utilized in each camp, the counselors walked the students through what was expected in a book report and they were instructed to write the report in their notebook. The expectations that were set for best book report consisted of writing eighty words (a report length that they were already familiar with since the local teachers would regularly assign eighty word reports during the regular school year) and it had to include elements such as a summary of the book and what the students liked or enjoyed about the book. If the students did not finish their book during the reading period, they were instructed to write the book report on the last book they had finished from camp (normally this meant from earlier that day or the book they took home the previous night).

Two other intrinsic motivation "treatments" involved linking reading to more authentic reading assignment activities such as "share with family" and "letter to a friend." Every night, the students were allowed to take a book home to read and then return the following camp day. For the "share with family" assignment, the students were instructed to read their take home books with their family members. The students could either read it to their family members or have a family member read it to them. The written part of the assignment involved having the students write down in their notebook the name of their family member with whom they read the book, and what the family member liked about the book. At the beginning of the next camp day, the students were allowed to share their family's feedback in small groups. This was a very popular assignment with the students because they enjoyed the opportunity to read story books at home especially with younger siblings. This assignment was conducive to creating a healthy reading environment at home by getting the entire family aware and involved in the reading education and progress of their children. The students got an opportunity to show their parents the reading skills they had developed and they inspired their younger siblings to take an active role in their own reading education. Students were given no material reward for this assignment. However, a few students were chosen to read their feedback reports to the entire class at the end of the period.

For the "letter to a friend" assignment, the students were asked to write a letter to a friend describing the book they just finished in the previous reading period. Students were asked to write a minimum of eighty words describing the book, explaining what they liked about it and encouraging their friend to read it. Like the "share with family" assignment, students were given no material reward but a few students were chosen to read their letters to the entire class at the end of the period.

Each of these treatments utilized a combination of different types of motivation both intrinsic and extrinsic. Our goal was not to implement activities that just used one type of motivation or to isolate specific motivations to see which was more effective. Rather our objective was to examine what activities in general, no matter what type of motivation they employed, encouraged students to read.

5. Measurement of reading ability and reading habits

The research team used a variety of assessment and diagnostic techniques in order to form an overall impression of each child's reading motivation and accomplishments, and evaluate reading camp effectiveness and impact.

- Pre-camp collection of teacher-assigned grades in English and Math. School directors were approached and permission was obtained to record student grades for the end of the 2009-10 academic year, in order to better evaluate the effectiveness of the reading camps.
- Pre-camp test of reading ability. A short reading test was administered on the first day of camp, consisting of oral reading and multiple choice questions on reading comprehension of short passages.
- Background short survey. Each student completed a short questionnaire about their home reading habits, the education level of their siblings, and the major assets of their family.
- Participant-observation. Research team members were expected to participate actively and significantly as camp counselors, and to be observing and interacting with students during the reading camps. Observations of reading related behaviors of each child were noted throughout the day during each reading period.
- Reading log. Each child had a workbook where they entered the books read the previous day.
- Post-camp test of reading ability and questionnaire. A short reading test was administered in October, consisting of oral reading and multiple choice questions on reading comprehension of short passages. Students also completed a short questionnaire on their attitudes towards reading materials in the camp and self-evaluation of reading. Students in three other schools in the villages, that did not participate in the camps, completed the reading tests and a similar questionnaire about reading habits.

The primary measurement tool was a list of what each student read for each day of camp. We planned to keep track of the daily number of books read though a section in each student's workbook where each student wrote down the title of each book they read and the day they successfully completed reading the book. The section also included written instructions for when and how to record each book. The counselors explained these instructions on the first day of camp. The idea was for each student to keep track of his or her own book count so that the students could enjoy having a personal list of all books they had read. Then, at the end of the two weeks, the workbooks would be collected and the data would be recorded on a master sheet for each camp. However, during the first weeks of camp, it became apparent that the students were having difficulty individually recording their books. Counselors noted that books recorded in the students' workbooks did not seem to correspond with what they had observed students reading. Common problems included students forgetting to record the books, writing author's name instead of title, incorrectly writing book titles, and sometimes apparently falsely recording books that they had not read. To rectify this problem, we created a tracking sheet for every camp for every week. On each sheet, there was a row for each student in the camp and a designated space for the teacher to record what every student read

for each day of the week. One teacher per camp was given the job of managing the tracking sheet. Simplifying the process by having only one sheet managed by a teacher rather than each individual student greatly improved the accuracy of the count of books read for each day. The students were instructed to still record their books in their personal workbooks so that they had their own list to keep track of their progress but only data from the master list was used for the research. To incentivize the students to be sure to add the book to the tracking sheet if they successfully finished a book, we informed them that any book they read during the camp did not count in any competition/motivational activity unless it was written on the tracking sheet. The use of the tracking sheet was implemented at the start of the second cycle of camps. The first camp cycle thus had substantial measurement error in the recording of books read, particularly for Sherigu and Gowrie-Kunkua.

To enhance the accuracy of the list of books read, the team decided to quiz each student when they said they had finished a book. This method was employed to ensure that each student both completed the book and achieved a certain level of reading comprehension from each book. The system of quizzing before recording that each student had read his/her book was not a part of the original camp design. However, within the first few days of camp it became apparent that because the camp utilized several incentive systems to get the students to read, many students felt compelled to say they had finished a book when they had not, in order to claim the reward, whether a reading tree leaf or winning the inter-camp competition. Also, one of the reading skills emphasized during the camp was the ability to not just read the words on a page, but to reflect on what they meant and identify important elements in a story such as key characters, plot and setting. Having a short discussion with the student not only ensured that each student read each book, but this method also helped the students reading comprehension through repetition and the utilization of reading strategies.

The "verification quizzes" were implemented after the first 3 days of camp. These were carried out by the camp staff who were given specific instructions on what the quiz should consist of to keep the quizzing as uniform as possible. Each reading quiz consisted of questions that allowed the students to identify important elements of each story such as the title, main character, plot, main problem and favorite parts of the story. Students were also asked to read a paragraph selected at random from the book. Each student needed to pass the quiz before the book title could be recorded in the student's workbook and the tracking sheet.

6. Effects of the reading camp on reading capabilities

It is an open question whether a two week intensive summer reading camp will have an enduring impact on reading capabilities of 5^{th} form students. Effects may be short-lived if student return to poor reading habits prior to the camp. In this paper we report effects as measured from one to two months after the camps were finished. Students in the camps, and in three schools in the same villages that did not participate in the camps, were administered a short reading test. The test had a written component and an oral component. The written test involved responding to multiple choice questions on several short passages. The oral test involved reading aloud to an evaluator a set of increasingly difficult reading tasks: letters and numbers, words, sentences, and finally short paragraphs. The short paragraphs then had a number of multiple choice questions asked by the evaluator. The evaluator recorded all letters, numbers, and words that the student had difficulty or inability in reading. The evaluator also timed the students in their reading of the longer passages. Some students could not finish the passages, and their times were truncated.

As noted above, student grades as assigned by their 5th form teachers were recorded. It appears that the students in the three schools that participated in the camps were similar to the students in the three schools that did not participate. As seen in Table 2, the mean scores for English were 50 for the 191 students with recorded grades in the camp sample, and 52 for the 131 students with recorded grades in the non-camp schools. The mean scores for Math were 55 for the 191 students with recorded grades in the camp sample and 54 for the 131 students with recorded grades in the non-camp schools. Obviously the small differences in means were not statistically significant. Figure 1 displays kernel density estimates for the grades in both English and Math, for the camp students and the non-camp students. The distributions are very similar.

Since the two samples have reasonably similar performance in school, the results of the October test reading test suggest that the reading camps may have had very substantial effects in improving reading capabilities. Table 2 shows the mean scores for the reading test administered by the authors, where the various components are aggregated to form a weighted average with 100 as the top score. The non-camp students had average score of 50, while the camp participants had average score of 67, more than 30 % difference.

The results of the October reading test were strongly correlated with teacher grades. Table 3 reports the results of a simple regression analysis with October grades on the reading test as the dependent variable. Various explanatory variables include whether the student was in the camps ("treatment"), teacher assigned grades in English and Math, age, a dummy variable for whether the student was female, dummy variable for two of the three villages, and the camp order (1, 2 or 3) for those students in the camp. As can be seen, the students in the camps scored significantly higher than students who were not in the camps. English and Math teacher scores are also very strong predictors of the October test scores. Age and gender had no effects on the scores. (Gender interacted with participating in the camps was also not significant, suggesting there was no special gender effect of the camps.)

Several caveats are in order, since these results are so statistically significant and sizable. First, it is possible that the results are due to the camp students having previously taken one similar reading test at the beginning of the camps, and the non-camp students not having taken this test. Camp students (who did not see the results of the test) may have become more familiar with the concept of the reading test, which was in a format quite different from their usual tests in school. Camp students may also have tried harder, as a kind of "gift exchange"; knowing that they had been privileged to attend the camps, they may have taken the reading test more seriously. The camps themselves may have encouraged students to think more about tests, and so the better scores reflect better test-taking abilities, rather than better reading skills (although no deliberate effort was made in the camps to teach test-taking skills). Finally, the teacher scores, while similar, may not capture underlying differences between students in the schools. Since the camp students were not randomly selected from all schools, there could be significant teacher effects at the individual schools, not captured in the teacher scores. Teachers may aim to have similar distribution of scores regardless of student performance, in which case underlying differences in reading capabilities would not be captured by the teacher scores.

7. Effects of the reading camps on books read and reading habits.

The reading camps generated much reading. Overall, the 200 students participating in the camps were recorded as having read 4,146 books, or about 21 books each, equivalent to about 2 books per day of the ten-day camp. Although all students in the villages had access to the

community libraries (which are open to the public), there is little doubt that students participating in the camps read more in the two weeks of the camp than they had ever read before in a similar time period. Schooling in the area provided few opportunities for reading, although some school teachers occasionally brought their students to the community libraries. Students were generally expected to do chores and faming activities after school and during the summer. So the two week camps provided a very significant period of time for concentrating on reading.

The books available to students were books purchased in Ghana (for the African books) and books donated from the United States (for the U.S. books.). The books were assigned a score from 1-10 based on calculation of the Flesch index, the Flesch-Kincaid index, the AR points (from the Accelerated Reader scoring), the number of pages, and number of overall words. The majority of books for the camps were very simple children's books, AR reading level 1, of Flesch indices above 80. The well-known Ghanaian children's book, Kwajo and the Brassman's Secret, by Meshack Asare, has a Flesch score of 87. A much simpler picture book, Fati and the Old Man, has a Flesch index of 95. The P.D. Eastman book Are You My Mother has a Flesch index of 92, and one of the Junie B. Jones books available in the camps Flesch index of 86. A five-point change in the Flesh index from 90 to 85, then, corresponds, for typical U.S. reader, to a change from kindergarten level to 3rd grade level. Many of the students struggled with even these simple books, performing far below grade level standards. Table 4 reports the averages of the various metrics for each of the levels (not all books had all measures available, so sometimes judgment calls by the research team was used to assign books to particular levels).

The score is then multiplied by the number of books read by each student in each day to obtain an index of the quality-adjusted amount of reading done by each student each day. That is, if a student read 2 books, and one as level 4 and the other level 7, the student was assigned 15 quality-adjusted points. This "bookindex" is used along with the number of books read (unadjusted for quality) to explore the variation in amounts read per student in the camps. Since most students read books with score equal to one, the bookindex mean is only 32. Figures 2(a) and 2(b) show the distribution, for the 200 students in the camps, of the variables measuring the number of books read, and the bookindex, for the three village camps. Students in Sumbrungu camp read more books than in the other villages. Students in Gowrie camp read fewer books, but during one set of group reading sessions the counselors read a Junie B. Jones book, which had a high bookindex, and so the Gowrie and Sherigu distributions were closer for the quality-adjusted measure of amount of reading.

Among the African books, students especially read Mr. Pobee's Poda Poda, Louba the Little Soccer Player, Nomathemba's Fire, Just Me and My Brother, Maria's Wish, Stories From Africa, Peter's Wish, and Why Dog Is Man's Best Friend.

Regression analysis, reported in Tables 5 and 6, shows that English scores assigned by teachers significantly predicted, in some specifications, how much quality-adjusted reading students did during the two weeks of the camps. An extra point on the teacher-score generated about half an extra quality-adjusted book read. There were substantial differences between villages in the number of books read and the quality-adjusted measure of books read. Since there were only three villages, each village with three camps, there were only 9 "treatments" of camps administered (in terms of which set of reading motivation incentives were offered in a particular camp). Therefore, the villages and camp orders are very closely related to the mix of treatments. Columns (4), (5) and (6) report the overall effect on books read by each student of the combination of motivation treatments (measured in number of sessions). The village and camp order dummy variables are excluded (since they are too

closely correlated with the mix of treatments.) The various programs, randomly assigned over the camp cycle, did not seem to have large effects on the reading outcome. This is likely due to the fact that in a ten-day camp, where students had to be exposed to most treatments at least some of the time (i.e. the camp competitions all had to occur on the same days, in all of the camps), there is then not enough variation in the overall exposure to generate differences in outcomes. Nevertheless, as expected, reading sessions that involved partner and group reading generated more books read by students. Group reading, of course, generates much more reported books read.

8. Effects of the treatments using panel regression techniques

Given that the books read by each student were recorded at the end of each day (including the books read overnight), the effects of the treatments of reading motivation activities may be estimated with panel regression techniques, where each student is observed for 10 days, and the treatments vary by day. With a fixed effects specification, all of the cross-student variation is controlled for, and the panel regression estimated the effects of the treatment only on the basis of within-individual variation in reading over the camp. Several extra variables have to be included, though, because the camps had a number of days that were different from others. The first day of the camps, for example, were introductions to how the camps would work, and the camp rules, and often involved a group reading session (Mr. Podee's Poda Poda) that all the participants read together as a group. The last day of the camp, likewise, was filled with end-of-camp ceremonies, and much less reading was done. In two of the camps there were days that were clearly unusual and need to be controlled for. In one of the Sherigu camps, the counselors basically did fun activities all day, and no books were read that day. In Gowrie, as noted above, one day the counselors decided to read Junie B. Jones as a group reading activity, and so quality-adjusted reading spiked sharply for that one day. Finally, the camps showed a strong time trend, with reading per day by students rising over the ten day cycle, and falling slightly in the 8^{th} and 9^{th} day before dropping sharply on the 10^{th} day.

Results of fixed effects regression are in Table 7. As expected, the day effects are large and strongly statistically significant. The treatment effects are very mixed. The regressions present only six of the possible 1027 combinations of treatments that could be included as explanatory variables. It is clear that coefficient estimates are not robust to inclusion of different explanatory variables. The coefficient on African books, however, is consistently negative. Further research will examine the distribution of estimated coefficients and standard errors for all possible combinations of explanatory variables.

The negative coefficient on Africa-oriented books is an important finding, for it suggests that 5^{th} form readers in rural Ghana may not be as discriminating (finicky?) as many suppose. That is, promoters of reading and book distribution in rural Africa will often make the argument that collection development should focus heavily, or even exclusively, on books by African authors, or published in Africa, or featuring themes from African village life (what here is called Africa-oriented book). But perhaps 5^{th} form students are more willing to engage with the vast stock of non-Africa related children's and young adults books that are available, if they are given reasonable encouragement (such as in the context of a summer reading camp, or in the classroom).

When camp participants were interviewed in October, when they took the reading test, they were asked a number of questions intended to elicit their preferences for Africa-oriented books. They were asked for the title of their favorite book they read in the camp. They were

asked to list four other titles that they read in the camps. And they were asked explicitly about their preference for Africa-oriented books. The results are in Table 8. The majority of camp participants did not list an Africa-oriented book as their favorite book. More students listed titles of U.S. books than Africa books when they listed titles they could recall. But student did indicate a clear preference for Africa-oriented books. So the issue seems to be more complex than might have been imagined.

9. Conclusion

Summer reading camps in northern Ghana provided an opportunity to investigate, in a preliminary way, some of the movitvational features of reading programs. The results of the analysis of data collected before, during and after the camps are encouraging and discouraging. On the positive side, 5th form students read a large number of books during the camps: about 21 books each over a period of two weeks, over 4,000 books total for the 200 participants. The camps seem to have had significant effects in boosting reading capabilities over the short term (one to two months after the camps) although our control group (students in non-participating schools in the same villages) is not ideal. But there was not enough room for variation in programming treatments, and so few results are robust. That is, of the 10 treatments (ranging from whether books read were Africa-oriented or U.S. oriented, to whether there was an inter-camp competition, or whether students participated in a reading tree, or writing an authentic exercise with family and friends), few seemed to be robustly correlated with more or less reading. Africa book days may have been associated with less reading, somewhat paradoxically. Information about preferences, however, suggests that the propensity of 5th form students to greatly prefer African-oriented books may be overstated.

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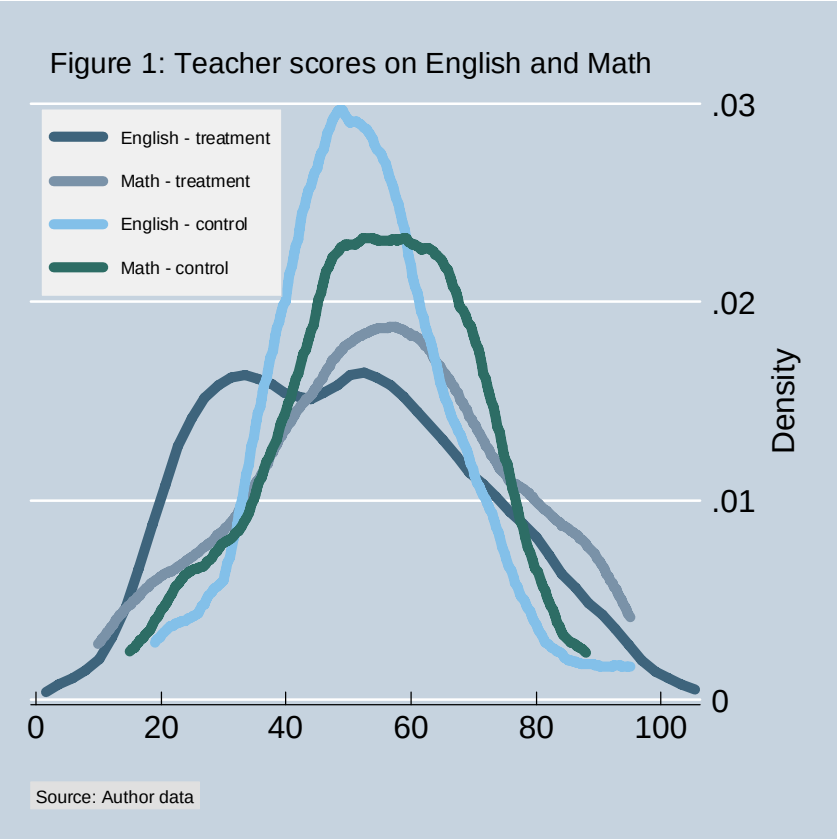
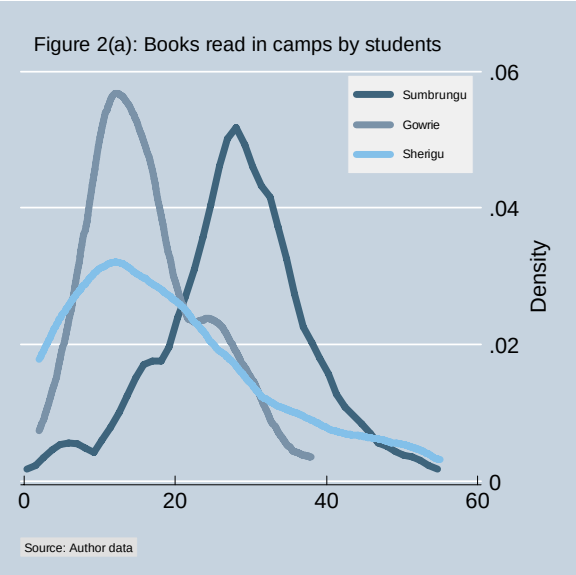


Table 2: Teacher assigned grades in English and Math, and scores on October reading test					
	Non-camp students		Camp students		
	Mean	St. dev.	Mean	St. dev.	
English score (teacher)	52.20	1.25	49.82	1.46	
Math score (teacher)	53.90	1.35	55.02	1.46	
Reading test (October)	49.90	1.24	67.10	1.33	***
***two-sided t-test of difference in means significant at 99% level.					

Table 3: Regression results explaining October reading test scores				
		(1)	(2)	(3)
	mean	b/se	b/se	b/se
In camp (treatment)	0.50	15.998***	19.646***	18.071***
		-3.73	-3.67	-3.68
Camp order	0.99	0.84	0.71	0.63
		-1.53	-1.47	-1.49
Age	13.73	-0.15	0.42	0.18
		-0.54	-0.59	-0.59
Female	0.54	1.03	0.04	1.30
		-1.84	-1.91	-1.93
Sherigu	0.35	-7.882***	-4.080*	-4.987*
		-2.05	-2.06	-2.04
Kunkua	0.18	1.44	4.72	1.99
		-2.85	-4.71	-4.67
English	50.78		0.341***	
			-0.06	
Math	54.57			0.304***
				-0.05
Constant		53.767***	25.188*	29.803**
		-8.11	-9.74	-9.70
R-sqr		0.232	0.346	0.334
dfres		379	304	306
* p<0.05, ** p<0.01, ***p<0.001				

Table 4: Characteristics of books available to read in reading camps, by summary score (1-10)						
		# of words	# of pages	Flesch index	AR points	n=
Score=1		630	32	83	0.59	107
Score>1 & <3		1751	39	83	0.63	59
Score>=3 & <6		1897	39	87	0.50	5
Score>=6		8067	83	86	1.15	21
Source: Author calculations, Accelerated Reader website; amazon.com						



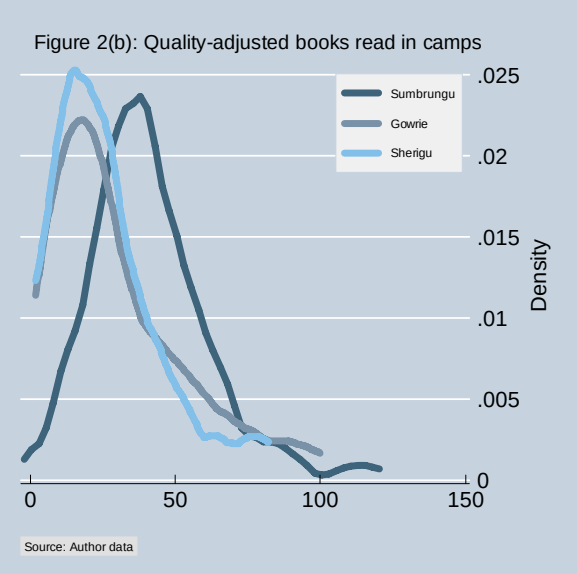


Table 5: Regression results explaining number of books read during reading camps						
	(1)	(2)	(3)	(4)	(5)	(6)
	b/se	b/se	b/se	b/se	b/se	b/se
age	-0.10	-0.04	-0.03	-0.461*	0.53	-0.27
	0.35	0.40	0.40	0.08	0.50	0.20
female	-1.07	-1.00	-0.99	-1.16	-0.23	-1.19
	1.56	1.72	1.70	1.60	1.28	1.72
Sherigu	-6.045*	-5.792*	-5.904**			
	1.00	0.76	0.50			
Kunkua	-17.526*	-17.483*	-17.568*			
	2.13	2.28	2.85			
English	0.28	0.28	0.28	0.32	0.25	0.28
	0.12	0.11	0.10	0.09	0.07	0.10
camp2		8.39	8.37			
		3.17	3.25			
camp3		7.99	7.99			
		6.81	6.60			
African book days			-0.17	0.07	2.97	0.41
			1.12	1.42	2.50	0.25
Individual reading				3.747*		3.493*
				0.61		0.48
Reading with partner				7.788*		7.242**
				1.14		0.63
Reading in group				13.369*		19.522***
				2.11		0.01
Reading tree days					-4.94	0.38
					1.26	0.51
Best book report					-2.08	-3.34
					4.52	1.45
Best workbook					-1.69	1.71
					0.79	0.70
constant	17.61	11.05	11.91	-118.674*	27.37	-123.501*
	9.90	10.19	8.76	21.39	11.63	20.29
R-sqr	0.316	0.431	0.432	0.53	0.188	0.577
n=	191	191	191	191	191	191
* p<0.05, ** p<0.01, ***p<0.001; standard errors are robust, clustered by village.						

Table 6: Regression results explaining quality-adjusted books read during reading camps						
	(1)	(2)	(3)	(4)	(5)	(6)
	b/se	b/se	b/se	b/se	b/se	b/se
age	0.09	0.42	0.35	-0.59	0.96	0.06
	0.67	0.84	0.81	0.27	0.80	0.49
female	-0.03	0.43	0.28	-0.33	1.10	-0.12
	2.69	3.46	3.27	3.00	2.35	3.32
Sherigu	-9.775*	-9.098**	-6.968*			
	1.30	0.91	1.29			
Kunkua	-21.361*	-21.182*	-19.546*			
	2.88	3.16	4.39			
English	0.53	0.54	0.56	0.617*	0.532*	0.546*
	0.16	0.15	0.14	0.12	0.10	0.13
camp2		15.33	15.82			
		11.42	7.99			
camp3		9.53	9.67			
		8.43	11.72			
African book days			3.25	3.59	7.98	6.793**
			2.43	3.79	4.08	0.54
Individual reading				4.428*		1.44
				0.91		0.78
Reading with partner				10.231*		5.594*
				1.54		1.02
Reading in group				16.92		31.021***
				4.04		0.33
Reading tree days					-6.843*	-3.00
					1.34	0.91
Best book report					-5.71	-9.667*
					6.21	2.10
Best workbook					-1.61	3.55
					2.24	1.23
constant	16.23	2.59	-13.91	-168.413*	12.05	-101.52
	15.29	17.79	19.34	35.97	25.52	26.08
R-sqr	0.214	0.299	0.328	0.377	0.215	0.461
n=	191	191	191	191	191	191
* p<0.05, ** p<0.01, ***p<0.001; Robust standard errors, clustered by village.						

Table 7: Panel (fixed effects) regression results explaining number of quality-adjusted books read per day during reading camps

	(1)	(2)	(3)	(4)	(5)	(6)
	b/se	b/se	b/se	b/se	b/se	b/se
First day	-0.494**	-0.508**	-0.20	-0.840***	-0.453*	-0.22
	0.17	0.17	0.29	0.25	0.17	0.20
Last day	-1.438***	-1.191***	-1.097***	-1.315***	-1.425***	-1.306***
	0.20	0.19	0.21	0.20	0.20	0.19
Day no books read in Sherigu	-0.834***	-0.923***	-1.166***	-0.877***	-0.746***	-0.802***
	0.19	0.19	0.17	0.22	0.20	0.20
Day Junie B read in Kunkua	7.662***	8.172***	8.464***	8.414***	7.707***	7.892***
	1.19	1.17	1.20	1.17	1.19	1.20
Day	0.139***	0.160***	0.145***	0.121***	0.148***	0.160***
	0.03	0.03	0.03	0.03	0.03	0.03
Only african books	-0.663***				-0.638***	-0.661***
	0.12				0.13	0.13
Reading tree		-0.28			-0.15	-0.18
		0.14			0.15	0.15
Individual reading			0.10			
			0.10			
Reading with partner			0.18			
			0.11			
Reading in group			-0.23			
			0.25			
Letter to a friend				0.642***		
				-0.18		
Share a book				0.10		
				0.16		
Best book report				-0.08		
				0.19		
Best workbook				0.444*		
				0.22		
Intercamp competition						0.273*
						0.14
constant	2.858***	2.600***	2.190***	2.364***	2.891***	2.685***
	0.16	0.18	0.29	0.23	0.16	0.19

* p<0.05, ** p<0.01, ***p<0.001; standard errors are robust.

Table 8: Measures of preference for Africa-oriented books					
	Favorite book read in camp was Africa-oriented	Out of 4 titles remember, how many Africa-oriented?	Out of 4 titles remember, how many U.S.-oriented?	"What types of books did you like best from camp?" Africa=1	n=
Gowrie	0.63	2.80	1.17	0.83	71
Sherigu	0.45	1.66	2.12	0.59	68
Sumbrungu	0.35	1.40	2.53	0.78	55
Source: Author calculations.					

Table A1: Example of schedule of reading camp with programs indicated

Sherigu…….Week 1: Aug 16-20

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning greetings	Introduce strategies book, and review strategies 1 and 2	Review strategies 3 and 4	Review strategies 5 and 6	Review strategies 7, 8 and 9	Announce results of intercamp competition. Review strategies
Which books available for reading?	U.S.	U.S.	Africa	U.S.	U.S.
What motivation?	Best workbook: Counsellors will evaluate workbooks next morning	Best book report: At end of day counsellors will evaluate book report	Reading tree	Reading tree	Best workbook: Counsellors will evaluate workbooks next morning
Intercamp competition?		Yes	Yes	Yes	
What "authentic reading" activity?	Report for friend			Share with family	Share with family
Reading session 1	Group reading: Select a couple of fun picture books to read together. Show how to record the books in the workbook.	Read to a partner: Use picture books and simple folktale books to read with a partner out loud. Help each other	Read to a partner: Use picture books and simple folktale books to read with a partner out loud. Help each other	Read to a partner: Use picture books and simple folktale books to read with a partner out loud. Help each other	Group and/or individual reading: free to choose - reading individual or group/partner reading- be sure to record what choose
Reading session 2	Individual reading	Individual reading	Individual reading	Individual reading	Individual reading
Reading session 3	Review strategies 1 sand 2. Show how to record books read in workbook. Do a couple pages in workbook depending on time	Individual reading	Individual reading	Individual reading	Individual reading
Assessment session	Oral reading tests throughout day of every child. Written test during assessment period.	Pages in workbook	Pages in workbook; Short questionnaire about books and reading at home	Pages in workbook	Pages in workbook

During all reading sessions and at home students are encouraged to write in their workbooks