

**Can Donated English-language School Books Increase Literacy Levels in Africa?  
An Exploratory Investigation From Tanzania**

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**Abstract**

*An enormous shortage of text and library books exists throughout Africa. Accordingly, millions of donated text and library books have been shipped by a number of non-profit organizations over the past 21 years to Africa through funding provided by public, private, and government organizations. While some research shows that books increase student literacy rates, inconclusive data is available regarding the impact of donated English-language textbooks upon student achievement. Additionally, some maintain that English-language education programs are part of a colonial legacy while others maintain that such educational models are the way of the future. This study examined the influence of donated English-language text and library books from the United States upon Tanzanian tenth grade student reading comprehension scores. A mixed methods research model was used in a comparative case study in four schools in the Dodoma/Singida region of Central Tanzania, East Africa. Results showed students experienced increased English-language reading comprehension scores when provided with books. In addition, the interview data revealed that teachers and administrators believed donated English-language books did not cause cultural harm and served to improve student educational capacity. It was concluded that while this was an initial study, the findings may serve as one source of information to justify book donation programs elsewhere in Africa and that additional research in other African countries is warranted.*

**Keywords:** Africa, education, development, literacy, reading

## Introduction

So powerful is literacy, wrote one African scholar, that it may well be the most significant factor that determines successful participation in modern society (Headlam, 2005). Literacy is a critical component of the world development agenda. The Millennium Development Goals (MDG's) and Education For All goals outlining key global development strategies demonstrate that education and reading are a major component of international development strategies, especially in Africa (Sachs, 2005). Goal two of the MDG's designates universal primary education by 2015 for boys and girls as one of eight key goals. Literacy rates for 15-24 year olds as measured by the United Nations are a key indicator (UN Millennium Project, 2006). Reading achievement goals, especially the literacy indicators referenced by the MDG's, are often measured in terms of reading comprehension (Pressley, 2006; Schwartz, 1984; Farr & Carey, 1986). Strategies for increasing reading comprehension, key to the advancement of literacy, have a broad base of scholarship in the United States (where government policies have sought to increase student reading capacity), and also across the world where scholars have sought to identify techniques and best practices for advancing literacy (International Reading Association, 2009).

One challenge to achieving the Millennium Development Goals in the area of education and literacy is that textbook acquisition programs have not provided sufficient textbooks, resulting in low educational capacity (World Bank, 1987, 2002). In efforts to address issues of global education and literacy, seven major donor organizations from the West, and a host of smaller organizations, provide millions of dollars in donated English-language text and library books annually to the African continent (Sources of Donated Books, 2005). To some, this is a reflection of colonialism and a misguided belief that English-language books and instruction are synonymous with education (Prah, 2003; Brock-Utne, 2001a, 2001b). To others, English-language textbooks are a cost-effective way for the West to assist African nations in meeting their educational goals (Books For Africa, 2009; Crystal, 2004). Insufficient evidence is currently available to determine whether these book donation programs are an effective means of increasing student reading skills. Questions regarding cultural appropriateness of utilizing Western books in African schools also need to be addressed. This research study sought to address this topic and provide information regarding the extent to which donated English-language text and library book donation programs can potentially increase literacy levels in rural Africa.

### *Need for Text and Library Books in Africa*

Studies in Africa have confirmed the importance of textbooks on reading achievement. For example the World Bank undertook two large-scale studies (1987, 2002) involving over 89 education projects across Africa. The findings confirmed the cost-effectiveness and importance of localized and customized reading materials in increasing literacy skills in school settings. According to one report there is a pressing need for textbooks of all types in Africa, where, next to a good teacher, "a good textbook is the most effective medium of instruction" (World Bank, 2002, p. 5). Fehrlar,

Michaelowa, and Weber (2007) confirmed these findings in a different study of 22 Sub-Saharan African countries. This study confirmed the importance of textbooks and school libraries. Additionally, textbooks were shown to be extremely cost effective in the results of a complimentary analysis of these same 22 Sub-Saharan African countries (Michaelowa & Wechtler, 2006). The analysis concluded that textbooks, teacher guides, and wall charts were relatively low-cost inputs with relatively high returns in terms of student achievement. Michaelowa and Wechtler (2006) found that by providing one textbook to every student in a classroom, literacy scores increased by 5-20 percent. A ten percent increase in literacy scores also occurred when a school or classroom library was present.

### *English-language Book Donations in Africa*

While the importance of literacy and the importance of text and library books has been shown, the issue of English language books donated from the United States is a separate issue that merits close scrutiny.

There are a number of arguments in favor of English-language donated books. English is currently an official language in 19 African countries (World Factbook, 2009). However, European languages are spoken by a very small percentage of the African population as a mother tongue (Brock-Utne, 2001a; Gordon, 2005). To systematically use local tribal languages for school instruction in Africa would require the preparation of educational materials in some 800 languages (Gordon, 2005). Hence, the costs of producing books and other educational materials in local languages at the primary, secondary, and post-secondary levels may be cost-prohibitive, even when theoretically possible (World Bank, 2002). Additionally, strong evidence exists that the people of Africa want Western-language textbooks. Gomis and McCoy (2005), for example, found that without an official language policy in schools in Nugaal, Somalia, the language of instruction in high school defaulted to English because of a perception by the common people that this provided the best instruction for the future of the students. The World Bank (2002) also reported this same trend in favor of Western-language instruction across Africa. Local language education was viewed as second class, and a European language was perceived as necessary in most Sub-Saharan African countries for secondary education and, later, for higher education and for success in business or government. Adequate provision for transition to a second language of instruction was identified as necessary (World Bank, 2002). Statements of support come from the highest levels, such as that indicated by the South African ambassador to the United States who praised a recent book shipment from the United States with these words: “The impact cannot be articulated in words, but they will benefit the people both young and old, those who cannot read but aspire to do so and those who can read and love to do so” (Nhlapo, 2008).

Opponents of English-language textbook donation programs have concluded that such English-based educational programs do not increase educational advancement in Africa (Brock-Utne, 2001a, 2001b; Prah, 2003; Bunyi, 1999). Bunyi (1999) asserted that Western education was brought to Africa by the European colonial powers and as such

Eurocentricism was part of its baggage. Bunyi (1999) and Prah (2003) argued that in order for education to liberate itself from the Eurocentric colonial legacy, African education should be grounded in African indigenous cultures as primary vehicles for social transformation.

Despite the criticisms that English-language books provide an imperfect education, due to a lack of available books in local languages and because of a perception by many that English-language education provides more opportunity, millions of U.S. school and library books continue to be shipped to Africa annually (Books For Africa, 2009).

### **Purpose and Objectives**

The purpose of this study was to determine if usage of donated English-language text and library books had an effect upon the reading achievement scores of students in the Dodoma region of rural Tanzania. The research questions were: 1) What were the differences in the reading comprehension scores of students from institutions that provided differing levels of access to donated English language text and library books?; and 2) What were the understandings of teachers and administrators of the value of donated Western text and library books upon student achievement?

Efforts to answer these research questions combined the fields of study of international development, literacy research, and African studies with special focus on textbook donations. Student reading ability is key for student achievement in all disciplines. Further, quality text and library books have been shown to influence reading achievement throughout the world (Lance, 1994; Worthy, Moorman, & Turner, 1999; World Bank, 1989, 2002). Yet, there is currently limited empirical evidence regarding the influence of English-language books from book donation programs upon student reading comprehension scores. Questions also remain regarding the value of donated textbooks from the United States in Africa, given the cultural differences. The reason for this lack of conclusive evidence is that studies gauging the impacts on learners, teachers, and administrators in Africa are difficult to implement due to the difficulty of coordinating the delivery of books to research locations. Likewise, a lack of effective control of the research environment in African school settings is an impediment to securing quality data. Finally, organizations involved in the shipment of textbooks are often under-staffed without sufficient financial resources to undertake studies researching documenting achievements (Books For Africa, 2009; Sources of donated books, 2005).

Empirical evidence, focused on one country in Africa, helps to answer key questions and create greater understanding about the influence of donated English-language books upon reading comprehension scores. Research-based data is needed upon which further research may build. It was hoped that a case study of several public, English-speaking secondary schools in one area of Africa could lead to research in other parts of Africa, other continents, and in other types of school settings (i.e. private schools, primary schools, and universities), and in other disciplines (i.e. mathematics and social sciences).

## Methods

### *Research Design*

This study used a comparative case study that incorporated a mixed methods design. This study followed protocols established by Yin (1989) using as data collection sources interviews at all four schools with teachers and administrators, participant observation, and direct observations. A mixed methods triangulation design was implemented in order to secure maximum data for analysis purposes, including qualitative data that helped to provide better understanding of quantitative data secured. The study thus obtained different but complementary data on the topic of reading comprehension and understandings of school administrators regarding value to students of donated English-language books (Creswell & Clark, 2007). The intent of this design was to bring together differing strengths of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small sample size, details, in-depth treatment) (Creswell & Clark, 2007). The research hypothesis of this study was as follows: Providing English-language donated text and library books from the United States that are properly utilized in library settings will increase student mean scores in reading comprehension for the treatment schools in this study more than student mean scores from the control group.

### *Qualitative Features*

Qualitative features were based upon methodologies recommended by Creswell and Clark (2007), Gall, Gall, & Borg (2003), and Yin (1989). The study sought to establish understanding of the lived experience of school administrators and teachers regarding the value of donated textbooks to students. Interviews with purposefully selected individuals assisted the researcher to understand the problem and research question (Yin, 1989).

A total of 18 adult participants, 14 male and four female, were formally interviewed for this study at the four schools at which student achievement information was obtained following a pre-established case study protocol (Yin, 1989). Four participants were interviewed at a high school for boys in Singida, Tanzania; five participants were interviewed at a high achievement boarding school for girls in Dodoma, Tanzania; and nine participants were interviewed at two secondary schools for boys and girls in Dodoma. Interviews of adult participants at two schools were conducted in small groups due to time restrictions. All other interviews were conducted on a one-on-one basis. Participants included two administrative officials (one headmistress and one academic officer); six chemistry/biology teachers; three English/Swahili teachers; two history/geography teachers; one physics teacher; one mathematics teacher; one librarian; one business teacher; and one civics teacher.

### *Quantitative Features*

A pretest-posttest control group design (Gall, Gall, & Borg, 2003; Campbell & Stanley, 1963) was used to conduct the research that was designed to determine the influence of donated English-language text and library books on reading comprehension scores. Students in four schools were investigated, with one school used as a control group. The procedure for assignment of treatment and data collection was as follows: 1) assignment of treatments to treatment and control group(s) using convenience as a factor; 2) administration of pretests to students in all groups; 3) administration of the treatment (access to books) to the treatment groups but not to the control group; and 4) administration of a posttest to all groups.

### *Population and Sample*

The population of the reading comprehension portion of the mixed methods study consisted of 10<sup>th</sup> grade secondary school students in four schools (Dodoma and Singida areas). The sample consisted of students at four public (government) English-language instruction secondary schools (one of which served as a control group). Student populations per school varied based upon availability and convenience. School administration provided estimates of student populations in the four schools. Schools 1, 2, 3, and 4 had student population of 600, 400, 520, and 640 respectively. 128 students were initially tested at the pretest for all four schools. Following an attrition rate of 39 percent, 78 students were tested in the posttest assessment. Using the protocol outlined by Campbell and Stanley (1963) only data secured from the 78 students completing pretest and posttest assessments were included in this study.

### *Instrumentation*

The research instrument consisted of a standardized, field-tested, reading achievement test prepared by AIMSweb (2009) that assessed participant reading comprehension. AIMSweb reported that this instrument or similar variants have been used in over 20,000 schools in the United States. The comprehension instrument assessed the ability of the participant to interpret the meaning of words correctly in a five-minute test (the MAZE assessment) with a score of correct responses (CR's). MAZE has a validity coefficient of .76 (AIMSweb Technical Manual, 2002) and a mean alternate-form reliability coefficient of .81 (Shin, Deno, & Espin, 2000).

In addition to the AIMSweb instrument, a qualitative instrument consisting of interview questions was developed by the researcher to collect additional data regarding the breadth of impressions of teachers and administrators relating to the influence of donated books upon the students in their schools. The researcher traveled to Dodoma, Tanzania in July of 2006 to discuss opportunities for research implementation with assistance from individuals within the Dodoma-based Poverty Eradication Network (PEN Trust). An official of PEN Trust, familiar with local cultural norms and fluent in Kiswahili, was selected as a facilitator and was on location at all data collection sessions. The instrument was written and administered in English by the researcher in

January/February of 2007 and February of 2008 with assistance from officials of the PEN Trust.

### *Data Analysis Techniques*

Analysis of Variance incorporating a general linear model using repeated measures (RM-ANOVA) was used to analyze the comprehension score data. The RM-ANOVA tested the hypotheses that all group means are equal by producing an F-statistic (or F-ratio). AIMSweb and Statistical Program for the Social Sciences (SPSS) version 15.0 software were used for this study. The alpha level for all analysis was established prior to data collection at .025. This significance level, a Bonferroni post hoc correction, was selected to control for family-wise error (Field, 2003).

## **Results**

The results of the investigation indicated there were some significant differences in student reading comprehension achievement scores. The differences were influenced by different levels of student access to the donated English-language books and student gender. In addition, data from the interviews revealed that the teachers and administrators believed the donated textbooks had educational value for the students. Further, the data revealed an understanding by interview participants that donated English-language books did not cause cultural harm and did improve student achievement scores. Three themes were revealed which confirmed the value of the donated English-language books.

### *Reading Comprehension*

Repeated measures analysis of variance (RM-ANOVA) was used to test the hypothesis that donated English language books would increase reading comprehension scores. Bonferroni/LSD post hoc analyses ( $p > .025$ ) were conducted to determine significant differences among groups. Reading comprehension scores from prior to books being provided and one year later were compared.

This study found evidence that the intervention of English-language books influenced increased reading comprehension scores. Results of the MAZE test (a measure of comprehension) showed a significant comprehension by school interaction showing the influence of reading comprehension across schools. For the MAZE comprehension test, a significant main effect of comprehension was found,  $F(1,74) = 55.780$ ,  $p = .000$ . Examination of pre and posttest means indicated that student increased reading comprehension scores were significant (pretest  $M = 5.0$ ,  $SD = 4.4$ , posttest  $M = 12.1$ ,  $SD = 7.7$ ). Bonferroni post hoc analyses procedures revealed that statistical differences existed between the comprehension scores of students from the control School 1 ( $M = 3.8$ ,  $SD = 0.5$ ) and the treatment School 2 ( $M = 7.4$ ,  $SD = 2.2$ ). Differences in comprehension scores for students from School 3 increased the most ( $M = 9.6$ ,  $SD = 10.0$ ) followed by School 2 ( $M = 7.4$ ,  $SD = 2.2$ ) and School 4 ( $M = 6.8$ ,  $SD = 1.7$ ). Students from the control school (School 1) increased the least ( $M = 3.8$ ,  $SD = 0.5$ ).

The amount of time students has access to donated English-language books was a factor contributing to significant differences in student comprehension reading scores. Based on these findings, there was insufficient evidence to support the null hypothesis of no significant increases in student scores for comprehension beyond the treatment group.

### *Understandings of Value*

In order to develop an understanding of the experiences and knowledge of teachers and administrators regarding the value of books for the students, this study considered the question “what is it like for the students to have access to the English-language books donated from the United States?” Eighteen interviews, 14 male and four female, of teachers and administrators were conducted for this study. Following compilation of the responses, data was analyzed using the protocol outlined by Creswell and Clark (2007), Gall, Gall, & Borg (2003), and Yin (1989) and a number of themes were identified. Direct observations were also noted and recorded. Three key themes emerged from the analysis of the interview data. The themes identified were as follows:

*Theme I: Donated English-language text and library books designed for use in a U.S. curriculum did have perceived value in school settings in Central Tanzania.* Questions were posed to participants questioning whether English-language textbooks designed for a U.S. curriculum have value to secondary students in Kiswahili-speaking Tanzania. It was virtually unanimous among interview participants that the donated English-language books from the United States were valuable in the Tanzanian schools. Reasons provided for this value included that the text and library books provided information and a perspective lacking in resource-poor schools in Tanzania. Specifically, it was noted that if the Tanzanian government does not have enough funding to provide textbooks, textbooks from the United States are very much needed. As one participant indicated:

“Given the shortage of materials and books ... automatically they will be useful in the sense that at least students will have other materials, other books where they can develop their skills, where they can improve their language.”

*Theme II: There was a need for additional English-language donated text and library books in school settings in Central Tanzania.* Interview participants and direct observation repeatedly demonstrated a dramatic shortage of book stock. Teachers and administrators repeatedly stressed their desire for additional book donations from the United States, often citing specific areas of study in which books were lacking. As one interview participant described the need:

“For example in my department ... I have more than 200 students ... Maybe I have only 20 or even 50 textbooks. Now 50 textbooks for 200 students is a problem. So also the number of textbooks have to be added according to the number of students.”



*Theme III: Providing text and library books in the English language did not cause cultural harm.* The issue of cultural damage caused by the shipment of books from a foreign culture, and a foreign educational system, was a key area under investigation in this study. Consequentially, this was an issue probed repeatedly by the researcher with numerous, direct questions posed to interview participants as to whether the donated books were causing such damage. Almost unanimously, participants indicated that English-language textbooks donated from the United States did not undermine the local language (Kiswahili) or the local culture. As one interviewee indicated:

“I think especially in promoting Kiswahili (as) the official medium, it faces problems especially in the technical subjects where it does not have enough vocabulary to cover those specific scientific kind of names and all that. And also the people to research and re-write all of these things”

### **Conclusions and Implications**

The findings from this initial study demonstrated that donated English language text and library books had significant influence upon the comprehension scores of some Tanzanian students with differing levels of access to the books. It was also found that the Tanzanian teachers and administrators who participated in the study found the donated English-language books to be valuable and did not judge them to be harmful from a cultural standpoint. This study challenged, or at least put into perspective, findings presented by Brock-Utne (2001a, 2001b), Bunyi (1999), and Prah (2003) arguing that Western language education in Africa provided imperfect education and caused cultural harm. This study supported findings presented by Crystal (2004) demonstrating that in a global environment, international modes of communication and the need for a common language are becoming more and more important across the world for economic, cultural, and social reasons. For example, Crystal envisioned that the development of a whole “English family” of languages, each of which will be mixed with local languages, will probably be the main linguistic trend of the twenty-first century. This study found evidence that donated English-language books from the United States can increase educational capacity in Tanzania, and that students and teachers – even in a very remote region of rural Tanzania -- saw English-language reading as foundational to further academic achievement, employment, and economic vitality.

Implications of the findings in this study are that providing English-language textbooks from the United States increased levels of literacy in selected schools in Tanzania. This finding supports the development goals such as the Millennium Development Goals (UN Millennium Project, 2006) and international economic development goals such as those put forth by the World Bank (1987, 2002). If there is a link between education and economic development, and if there is a link between literacy and education (both of which premises are supported in the international development community), than the implications of this study are that book donation programs of the type used in this study do positively impact economic development in the developing world. In short, books promote literacy, which promotes education, which promotes rural and urban economic development.

Since this was one of the first studies of its type, it is recommended that additional investigations be conducted that examine the same and related questions with populations of students in Tanzania, and other developing countries in Africa and around the world. In addition, it is recommended that development professionals use the findings of this and other studies as part of the rationale for sending additional English language books to Tanzania. The potential for extremely effective and low-cost development gains through book donation programs appear substantial and merit further investigation, scrutiny, and potential investment by the development community.

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