

Child Labor, Learning Problems, and Poverty

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Abstract

In Africa, approximately 80 million children are working. Africa's 41% child labor rate is nearly twice as high as that in Asia. This study examined whether child labor is a direct result of poverty or of reading and math problems in school. The study analyzed reading and math scores of 62 child laborers and 62 non-child laborers from a farming district in the central region of Ghana. The region was chosen due to its high farming population and an equally high nonfarming population, with both groups living under the poverty limit of less than \$2.00/day. Intellectus Statistics version 1.01 was used for data analysis. Results using a paired samples *t* test showed that compared with non-child laborers, child laborers had significantly lower reading scores and math scores ($t(61) = -10.96, p < .001$, and $t(61) = -8.43, p < .001$, respectively). Thus, learning problems may be one factor associated with child labor and should be considered in programs that work to combat child labor.

Keywords: child labor, Africa, poverty, learning disabilities

Introduction

Child labor—defined as employing children in any work that deprives them of childhood and interferes with their ability to attend school (Adhvaryu & Nyshadham, 2012)—is a major concern in Africa, with more than a third of Africa’s children not attending school and engaging in work practices (Andvig, Canagarajah, & Kielland, 2001). Africa has the highest incidence of child labor. According to the International Labor Organization (2006), 41% of children under age 14, approximately 80 million, are working. This number is almost twice the Asian rate, which has the next highest incidence of child labor. This exploitative practice is considered mentally, physically, socially, and morally harmful to children and is banned by all major international organizations (Moyi, 2011).

Most child labor experts postulate poverty as the sole culprit of child labor. However, it is also possible that learning problems play a role. To address this question, this study compared reading and math scores of 62 child laborers and 62 non-child laborers from a farming district in the central region of Ghana. The study tested two hypotheses:

H10: There is no difference between the reading scores of child laborers and non-child laborers as indicated by each group’s average reading scores.

H1a: There is a difference between the reading scores of child laborers and non-child laborers as indicated by each group’s average reading scores.

H20: There is no difference between the math scores of child laborers and non-child laborers as indicated by each group’s average math scores.

H2a: There is a difference between the math scores of child laborers and non-child laborers as indicated by each group’s average math scores.

The next section provides background information on child labor, poverty, schooling, and learning problems, followed by the presentation of the study's methods, results, and conclusions.

Literature Review

The History of Child Labor

Child labor has existed to varying extents through most of history. In preindustrial societies, the concept of childhood in the modern sense was nonexistent (Lai, 2001). Children often began participating in activities such as child rearing, hunting, farming, and engaging in different types of craft. In many societies, children became adults at the age of 13 and engaged in the same activities as adults. Since the family was a unit of production, children needed to provide their labor for their survival and that of their group. Preindustrial societies were characterized by low productivity and a short life expectancy, and preventing children from participating in productive work would have been more harmful to their welfare and that of their group in the long run (Lai, 2001). Also, there was little need for children to attend school, especially in nonliterate societies, and engaging in early labor was beneficial since it equipped the child with the tools needed for survival. Most preindustrial skills and knowledge could be passed down through direct mentoring or apprenticeship by competent adults. In most societies, children existed for this purpose, and it was not unusual for a family to produce children for the sole purpose of having them work on the family farm.

The advent of industrialization did not immediately cause child labor to decline (Bernstein, 1995; Glasgow & Rice, 2007). During the 19th and early 20th centuries, many children aged 5 to 14 from poorer families still worked in Europe, the United States, and various colonies of European powers (Dumaine, 1993). These children mainly worked in agriculture,

home-based assembly operations, factories, mining, and in services such as news boys, with some working night shifts lasting 12 hours. Employers often preferred children, because they were viewed as more manageable, cheaper, and less likely to strike (UNICEF, 1995).

While the numbers of child laborers in the United States peaked in the early decades of the 20th century, child labor began to decline as the labor and reform movements grew and labor standards in general began improving, increasing the political power of working people and other social reformers to demand legislation regulating child labor (Kitchen, 2014). Union organizing and child labor reform were often intertwined, and common initiatives were conducted by organizations led by working women and middle-class consumers, such as state Consumers' Leagues and Working Women's Societies (Orr, Haskett, & Association of Junior Leagues, 1985). These organizations generated the National Consumers' League in 1899 and the National Child Labor Committee in 1904, which shared goals of challenging child labor through efforts such as anti-sweatshop campaigns and labeling programs. The National Child Labor Committee's work to end child labor was combined with efforts to provide free, compulsory education for all children and culminated in the passage of the Fair Labor Standards Act in 1938, which set federal standards for child labor.

The growth of the U.S. economy and the decline in child labor led Edmonds (2005) to postulate that child labor declines as a country's economy expands. From 1993 to 1997, gross domestic product (GDP) per capita in Vietnam grew 7% annually, and child labor declined by 28% over this same period. Edmonds (2005) concluded that improvements in per capita expenditure can explain 80% of the decline in child labor. This trend conforms with that of many developed countries in regards to child labor decline.

Globally, the incidence of child labor decreased from 25% to 10% between 1960 and 2003, according to the World Bank (Fallon & Tzannatos, 1998). Nevertheless, the total number of child laborers remains high, with UNICEF and the International Labor Organization acknowledged that in 2013 an estimated 168 million children aged 5 to 17 worldwide were involved in child labor (UNICEF, 2013).

Child Labor in Africa

In Africa, there is a dominance of the patrilineal clan system, in which family and kinsfolk provide a cultural routine that helps children learn practical skills that enable the clan to provide for itself in the next generation. Since rural areas lack formal schooling, working with elders on the family farm can provide some form of informal schooling with guaranteed future employment (Moyi, 2011). Although this indigenous system and family structure made it possible for child labor to occur, the growth of colonial rule in Africa from 1650 to 1950 by powers such as Britain, France, Belgium, Germany, and the Netherlands encouraged and continued the practice of child labor (Glasgow & Rice, 2007). Colonial administrators preferred Africa's traditional kin-ordered modes of production that hired the whole household, including the children, to work. This preferred system of hiring ensured that children learned the trade to continue serving the colonial masters when the adults were ready to pass it on (Moyi, 2011). Millions of children also worked in colonial agricultural plantations, mines, and domestic service industries. Children of 5 to 14 years in these colonies were hired as apprentices, mostly without pay, in exchange for learning a craft. Colonial British laws, for example, offered the native people ownership of some of the native land in exchange for making the labor of a man's wife and children available to the colonial government's needs, such as in farms.

Child labor is still prevalent and widely accepted in African countries and other developing countries, with their high poverty and lack of schooling opportunities (Hadley, 2010; Moyi, 2011). In 2010, Sub-Saharan Africa had the highest incidence of child labor, with several African nations recording over 50% of children below the age 16 engaging in some form of child labor. It is well documented that agriculture is the largest employer of child labor; thus, rural areas in Africa have the highest concentration of child labor (International Labor Organization, 2006). On the other hand, informal urban economies and family businesses across urban areas in Africa are also heavily dependent on child labor because it is inexpensive and labor laws are not strictly enforced (Nsamenang, 2008).

Experts in Africa are very concerned with the trend of child labor, as research has revealed that high growth in developing nations will not substantially reduce the number of children working in Africa (Blunch & Verner, 2000). Economic growth in Sub-Saharan Africa continues to rise at a significant rate. This performance is boosted by rising investment in natural resources and infrastructure and strong household income (Muller & Haller, 2012). Growth was notable in resource-rich countries such as Ghana, Sierra Leone, and Nigeria, although the drop in oil prices slowed down some of the growth (Ampofo et al., 2015). This growth of about 13% in Ghana, for example, was fueled by rising investments in natural resources and infrastructure and by strong household spending caused by globalization. Capital flows to Sub-Saharan Africa continued to rise, reaching an estimated 5.3% of regional GDP in 2013, significantly above the developing-country average of 3.9%. Net foreign direct investment inflows to the region grew 16% to a near-record \$43 billion in 2013, boosted by new oil and gas discoveries in countries such as Angola, Mozambique, Tanzania, and Ghana (Shrivastava & Shrivastava, 2014).

Yet, Africa's economic growth boosted by globalization has not resulted in the protection of children, as has been the case in the United States and most developed nations. Experts blame this break in trend on globalization. Globalization has resulted in substantial investment in education in most African countries. On the one hand, returns to investment in higher education in Africa are 21%, the highest in the world. Universities in many African countries are experiencing a surge in enrollment. Between 2000 and 2010, higher education enrollment more than doubled, increasing from 2.3 million to 5.2 million (Moloi, Gravett, & Petersen, 2009). On the other hand, the number of out-of-school children of primary school age increased in Sub-Saharan Africa to 30 million in 2011 from 29 million in 2008, with Nigeria housing a third of all these children—an estimated 10.5 million out-of-school children (Afenyadu et al., 2001). Many of these children turn to child labor. Despite a host of international treaties and domestic laws prohibiting child labor in poorer nations, authorities rarely have the will or the finances to enforce them (Moloi et al., 2009). Thus economic globalization, which was intended to end poverty through investments in education, has reproduced poverty and created greater polarization because many young children have opted to work (Afenyadu et al., 2001).

Child Labor, Poverty, and Schooling

Africa's alarming rate of child labor is differentiated within the continent itself. Countries in which a large share of children are working are, on average, poorer (Andvig et al., 2001). This premise has led experts to theorize that poverty is the sole culprit that causes children to engage in labor. As family income increases, child labor diminishes (Andvig et al., 2001).

Throughout the world, poverty is recognized as creating situations that directly relate to child abuse and neglect. Akarro and Mtwewe (2011) established this direct link between child labor and poverty in Africa. A survey of 300 households randomly selected from four accessible

villages in the Igima ward in the Njombe district in Tanzania confirmed this phenomenon. Chi-square statistical analysis on the relationship between household poverty and child labor showed that household poverty was the factor that forced children to engage in economic activities. A major finding emanating from this study is that child labor is a reflection of poverty, and therefore tackling poverty will have a positive impact on child labor. This suggests that policies such as a ban on child labor in rural areas could have an adverse effect, as child labor decisions are more likely a response to poverty and subsistence requirements. However, a closer look at this study and that of others that seek to establish a direct correlation between child labor and poverty reveals that the children engaged in child labor were in school part-time or at least had access to schooling.

The relation between child labor and schooling is not easily defined. There is evidence that shows child labor decreases school enrollment rates, negatively affects school achievement, decreases graduation rates, and increases dropout rates because household poverty forces millions of children out of school and into paying jobs (Blunch & Verner, 2000). What is not easily identifiable in the child labor and schooling relationship is whether the child labor problems resulted from poverty or learning problems in school. In either case, poverty had a causal relationship, directly or indirectly (Young & Gerber, 1998).

Education provides a compelling case for development due to the returns it yields for the country (Ampofo et al., 2015). A recently completed study from 50 countries established that every extra year of schooling provided to the whole population can increase average annual GDP growth by 0.37% (Ampofo et al., 2015). Another survey of 120 countries between 1970 and 2000 provided evidence that education consistently and significantly boosts economic development and is a necessary precondition for long-term economic growth (Bird, Amaechi,

Bey, & Taliaferro, 2016). Further, by making people more skilled and employable, education can provide an escape route from poverty. In low-income countries, an additional year of education adds about 10% to a person's income on average (Fisher, 2015). Education also plays an important role in promoting good health, as children of more educated mothers are less likely to be stunted or underweight due to malnutrition, and educated mothers are more likely to give birth in safe conditions (Bivens et al., 2016). For some children, the main obstacles to education are not school availability, cost, or quality, but rather poverty, economic insecurity, discrimination, and cultural practices that cause learning problems in school that lead to dropout. Many dropouts resort to work because child labor is perceived as the best viable option to prepare them for the future (Public Impact, 2013).

Poverty and Learning Problems

While poverty forces millions of children out of school and into paying jobs, which negatively affects school enrollment (U.S. Department of Labor, Employment, and Training Administration, 1991), many experts have also established a link between poverty and learning problems. Moreover, the National Longitudinal Study of Special Education Students showed a representative number of minority students with learning disabilities in its sample, many in families with low incomes (Wagner, 1989). Many poverty conditions cause learning disability among school children, which disrupts the normal schooling process. Sherman (1994) reported that living in poverty increases the likelihood of children having a learning disability by 30%. This conclusion was reached after analyzing data from the U.S. Department of Education and correlating data on children living in poverty and children receiving learning disabilities services. In addition, Coutinho (1995) found that 65.4% of households with a student with specific learning disabilities have an annual income of less than \$25,000, compared with 38.8% for the

general student population. In developed nations, resources are available to help such children cope in school. In many poor countries in Africa, such services do not exist and many struggling children drop out of school to engage in child labor.

The Poverty Disability Model provides an explanation of the process through which poverty increases the likelihood that a person will acquire a learning problem and may, in fact, become learning disabled (Gagnon, Mattingly, & Connelly, 2013). The relationship between poverty and any type of disability is also well documented in the United States. The 1991 Survey of Income and Program Participation found that 12% of individuals with no disability were below the poverty level, compared with 14% with nonsevere disabilities and 24% with severe disabilities (U.S. Census Bureau, 2004). A 1995 survey found that although 4% of individuals with family incomes exceeding \$50,000 reported fair or poor health, 21% of families with incomes below \$15,000 reported fair or poor health (Mullahy & Wolfe, 2001). Research provides support for the relationship between poverty and a wide range of illnesses. Children in families below the poverty level are less likely to have seen a physician in the past year, less likely to have been vaccinated, more likely to smoke, and more likely to be overweight.

Young and Gerber (1998) postulated that it is reasonable to reframe learning disabilities as a disability that also affects poor and low-income individuals. Recent national reports and the research literature have pointed out the relationship of learning disabilities and poverty in both children and adults. Families below the poverty line reported that 4.1% of their children (aged 6 to 17) have learning disabilities. For families that were not poor, that figure was 2.7%. The same is true for adults in poverty, who self-reported their learning disabilities at twice the rate of adults who didn't live in poverty (3.1% vs. 1.5% for adults aged 18 to 64 and 1.2% vs. 0.6% for those aged 65 or older). In relation to low income, Ross (2010) reported that malnutrition is a risk

factor for developing reading disabilities. In a study assessing the link between food security and reading disability, Jyoti, Frongillo, and Jones (2005) found that children from households that were food insecure experienced smaller improvements in reading score ($p < 0.005$) than students from households that were food secure. An early study by Brown and Pollitt (1996) claimed that children who suffered from poor nutrition during the brain's most formative years received significantly lower scores on tests of reading comprehension, arithmetic, and general knowledge than those who were not suffering from malnutrition (Taylor, 2014).

Methods

The central question of this study was whether child labor results from learning problems in school as determined by average scores in reading and math. The study surveyed reading and math scores of 62 child laborers and 62 non-child laborers from a farming district in the central region of Ghana. The region was chosen due to its high farming population and an equally high nonfarming population, with both groups living under the poverty limit of less than \$2.00/day. Farming communities in Ghana generally use child laborers, and most child labor experts postulate poverty as the sole culprit of child labor. Teachers randomly selected children aged 9 to 15 from a pool of children all living under the poverty line. The children from both groups have received remedial lessons in both reading and math. Average scores of children in reading and math from each group were gathered and analyzed. According to the district rubric, scores below 50 are considered failing scores.

G*Power 3.1.7 was used to determine a sample size to ensure empirical validity (Faul, Erdfelder, Buchner, & Lang, 2013). Calculations showed that for a dependent sample t test with one tail, a generally accepted power of 0.80, and an assumed medium effect size, approximately 34 participants were required to achieve empirical validity within a 95% confidence interval

(Faul et al., 2013). Thus, the researcher considered the sample size of 62 in each category of child laborer and non-child labor to be sufficient.

Intellectus Statistics version 1.01 was used for data analysis. The study presented descriptive statistics to describe the sample demographics and variables used in the analyses. Calculation of frequencies and percentages described any categorical data. A paired samples *t*-test was conducted to examine whether the difference between reading scores of the child laborers and the non-child laborers were significantly different.

Results

The groups of child laborers and non-child laborers were similar in age, with averages of 12.31 (*SD* = 1.89) and 12.11 years (*SD* = 1.88), respectively. No skewness or kurtosis was identified in the sample (Table 1). When the skewness is ≥ 2 or ≤ -2 , the variable is considered to be asymmetrical about its mean. When the kurtosis is ≥ 3 , then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013).

Prior to the analyses, the assumptions of normality and homogeneity of variance were assessed. A Shapiro-Wilk test was conducted to determine whether the difference could have been produced by a normal distribution (Razali & Wah, 2011). The results of the Shapiro-Wilk test were not significant: $W = 0.98$, $p = 0.527$ for reading and $W = 0.98$, $p = 0.545$ for math. This suggests that the deviations from normality were explainable by random chance and that normality can be assumed. Levene's test for equality of variance was used to assess whether the homogeneity of variance assumption was met (Levene, 1960). The homogeneity of variance assumption requires the variance of the dependent variable to be approximately equal in each group. The result of Levene's test was not significant— $F(1, 122) = 2.29$, $p = 0.133$ for reading

and $F(1, 122) = 2.38, p = 0.125$ for math—indicating that the assumption of homogeneity of variance was met.

As shown in Table 1 and Figure 1, children who were not working as laborers had higher reading and math scores. Paired samples t test showed significant differences ($p < .001$) between child laborers and non-child laborers for both scores (Table 2).

Insert Tables 1 and 2 and Figure 1 here

Discussion

The central question of this study was whether child labor is directly related to learning problems in school. For both reading and math, the average scores of child laborers were significantly lower than the average scores of children who did not work. Overall, the participants struggled much more with reading than math. This is not surprising, since 80% to 90% of learning problems in children are reading related (Taylor, 2014). It is also possible that children do not need to be in school to learn math; child laborers may pick up math skills on the job. Unlike reading, which needs to be taught, children have a natural propensity to acquire arithmetic skills (Gillum, 2012). Researchers have shown that the prevalence of developmental dyscalculia (math disability) is only 5% to 6% in the school-aged population and is more common in girls than boys (Gersten et al., 2008).

Many researchers have been able to link child labor to poverty, but not enough research has linked child labor to learning problems. It is well documented that poverty is the cause of child labor because research on the relationship between household poverty and child labor has shown that household poverty is the factor that forces children to engage in economic activities (Akarro & Mtwewe, 2011). On the other hand, Young and Gerber (1998) established a link

between poverty and learning problems. These findings develop a premise where one can deduce that child labor results from learning problems in school based on the hypothesis that successful children do not drop out of school.

Africa has the highest incidence of child labor. According to the International Labor Organization (2006), 41% of children under age 14 are working. Countries in which a large share of children are working are, on average, poorer (Andvig et al., 2001). It is this premise that leads experts to theorize that poverty is the sole culprit that causes children to engage in labor. As family income increases, child labor diminishes (Andvig et al., 2001). In this study, all participants were from poor households. However, this does not necessarily mean that the children engaged in child labor because of poverty. Instead, since children stand a chance of ending the cycle of poverty by staying in school, then poverty should be an incentive to stay in school and not to opt out to engage in child labor.

The link between the level of primary education attained and a family's overall level of food security is especially strong for the rural poor (Adesina & Baidu-Forson, 1995). Education allows farmers to make use of new farming techniques and technologies. A World Bank (2009) study found that farmers with a minimum of 4 years of primary education were able to increase their productivity by an average of almost 9%. It is important for experts in child labor to re-examine the role of poverty as the sole cause of children engaging in economic activities.

In conclusion, since the research literature has examined the relationship of learning disabilities and poverty in both children and adults, this study examined whether learning problems and poverty were a factor in child labor. While it is important to tackle social issues to combat child labor, it is also important to link learning problems to poverty and child labor when designing programs to combat child labor.

References

- Adesina, A. A., & Baidu-Forson, J. (1995). Farmers' perceptions and adoption of new agricultural technology: Evidence from analysis in Burkina Faso and Guinea, West Africa. *Agricultural Economics*, 13(1), 1-9.
- Adhvaryu, A. R., & Nyshadham, A. (2012). Schooling, child labor, and the returns to healthcare in Tanzania. *Journal of Human Resources*, 47(2), 364-396.
- Afenyadu, D., King, K., McGrath, S., Oketch, H., Rogerson, C., & Visser, K. (2001). *Learning to compete: Education, training & enterprise in Ghana, Kenya & South Africa* [Education Research Paper No. 42]. Edinburgh, Scotland: Centre of African Studies, University of Edinburgh.
- Akarro, R. J., & Mtwewe, N. A. (2011). *Poverty and its association with child labor in Njombe District in Tanzania: The case of Igima Ward*. Tanzania: Department of Statistics, University of Dar es Salaam.
- Ampofo, S. Y., Bizimana, B., Ndayambaje, I., Karongo, V., Lawrence, K. L., & Orodho, J. A. (2015). Social and spill-over benefits as motivating factors to investment in formal education in Africa: A reflection around Ghanaian, Kenyan and Rwandan contexts. *Journal of Education and Practice*, 6(11), 134-147.
- Andvig, J., Canagarajah, S., & Kielland, A. (2001). *Issues in child labor in Africa* [Africa Region Human Development Working Paper Series]. Oslo, Norway: Norwegian Institute of International Affairs.
- Bernstein, R. B. (1995). *From forge to fast food: A history of child labor in New York State. Volume II: Civil War to the present*. Troy, NY: Council for Citizenship Education, Russell Sage College.

- Bird, K., Amaechi, A., Bey, N. W., & Taliaferro, W. (2016). *Realizing youth justice: Advancing education and employment through public policy and investment*. Washington, DC: Center for Law and Social Policy. Retrieved from <http://www.clasp.org/resources-and-publications/publication-1/CLASP-Realizing-Youth-Justice-Final-June-20-2016.pdf>
- Bivens, J., García, E., Gould, E., Weiss, E., & Wilson, V. (2016). *It's time for an ambitious national investment in America's children: Investments in early childhood care and education would have enormous benefits for children, families, society, and the economy*. Washington, DC: Economic Policy Institute. Retrieved from <http://www.epi.org/files/uploads/EPI-Its-time-for-an-ambitious-national-investment-in-Americas-children.pdf>
- Blunch, N.-H., & Verner, D. (2000). *Revisiting the link between poverty and child labor: The Ghanaian experience* [Working Paper, The World Bank]. Retrieved from <https://siteresources.worldbank.org/INTGENDER/Resources/laborblunch.pdf>
- Brown, J. L., & Pollitt, E. (1996). Malnutrition, poverty and intellectual development. *Scientific American*, 274(2), 38-43.
- Coutinho, M. J. (1995). *The national profile and recent studies regarding the characteristics, integration, and secondary school experience and transition of youth with specific learning disabilities: Summary and implications*. Pittsburgh, PA: Learning Disabilities Association of America.
- Dumaine, D. (1993, April 5). Illegal child labor comes back. *Fortune*, p. 86.
- Edmonds, E. V. (2005). Does child labor decline with improving economic status? *Journal of human resources*, 40(1), 77-99.

- Fallon, P., & Tzannatos, Z. (1998). *Child labor: Issues and directions for the World Bank*. Washington, DC: World Bank. Retrieved from <http://documents.worldbank.org/curated/en/822881468764092813/pdf/multi-page.pdf>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2013). *G*Power Version 3.1.7* [computer software]. Universität Kiel, Germany. Retrieved from <http://www.psych.uni-duesseldorf.de/abteilungen/aap/gpower3/download-and-register>
- Fisher, T. S. (2015). *How African American, middle class parents learn and enact a racism resistant critical race achievement ideology in their adolescents in gifted and AP classes*. Unpublished doctoral dissertation, University of Georgia, Athens, GA.
- Gagnon, D. J., Mattingly, M. J., & Connelly, V. J. (2013). *Variation found in rates of restraint and seclusion among students with a disability* [National Issue Brief No. 67]. Durham, NH: Carsey Institute. Retrieved from <http://scholars.unh.edu/cgi/viewcontent.cgi?article=1205&context=carsey>
- Gersten, R., Chard, D. J., Jayanthi, M., Baker, S. K., Morphy, P., & Flojo, J. (2008). *Mathematics instruction for students with learning disabilities or difficulty learning mathematics: A synthesis of the intervention research*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Gillum, J. (2012). Dyscalculia: Issues for practice in educational psychology. *Educational Psychology in Practice*, 28(3), 287-297.
- Glasgow, J. N., & Rice, L. J. (2007). *Exploring African life and literature: Novel guides to promote socially responsive learning*. Newark, DE: International Reading Association.
- Hadley, S. (2010). *Seasonality and access to education: The case of primary education in Sub-Saharan Africa* [Research Monograph No. 31]. Sussex, UK: Consortium for Research on

- Educational Access, Transitions and Equity. Retrieved from <http://files.eric.ed.gov/fulltext/ED510901.pdf>
- International Labor Organization. (2006). *Child labour surveys. Results of methodological experiments in four countries*. London, UK: Author.
- Jyoti, D. F., Frongillo, E. A., & Jones, S. J. (2005). Food insecurity affects school children's academic performance, weight gain, and social skills. *Journal of Nutrition*, 135(12), 2831-2839.
- Kitchen, D. I. (2014, Fall). Can graduate students re-energize the labor movement? *Thought & Action*, 47-62.
- Lai, S. (2001). *A global investigation of child labor: Case studies from India, Uganda, and the United States*. Stanford, CA: Stanford Program on International and Cross-Cultural Education.
- Levene, H. (1960). Robust tests for equality of variances. *Contributions to probability and statistics, 1*, 278-292.
- Moloi, K. C., Gravett, S. J., & Petersen, N. F. (2009). Globalization and its impact on education with specific reference to education in South Africa. *Educational Management Administration & Leadership*, 37(2), 278-297.
- Moyi, P. (2011). Child labor and school attendance in Kenya. *Educational Research and Reviews*, 6(1), 26-35.
- Mullahy, J., & Wolfe, B. L. (2001). Health policies for the non-elderly poor. In S. H. Danziger & R. H. Haveman (Eds.), *Understanding poverty* (pp. 278-313). Cambridge, MA: Harvard University Press.

- Muller, B., & Haller, M. (2012). The situation of students in Sub-Saharan Africa: A case study of St. Augustine University of Tanzania. *International Studies in Sociology of Education*, 22(2), 169-189.
- Nsamenang, A. B. (2008). Agency in early childhood learning and development in Cameroon. *Contemporary Issues in Early Childhood*, 9(3), 211-223.
- Orr, S., Haskett, G., & Association of Junior Leagues. (1985). *Parental leave: Options for working parents. A report of a conference sponsored by the Association of Junior Leagues*. New York, NY: Association of Junior Leagues.
- Public Impact. (2013). *Giving every student access to excellent teachers: A vision for focusing federal investments in education*. Washington, DC: Center for American Progress.
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21-33.
- Ross, B. (2010). Disabled peers and academic achievement. *Education Finance and Policy*, 5(3), 317-348.
- Sherman, A. (1994). *Wasting America's future. The Children's Defense Fund report on the costs of child poverty*. Boston, MA: Beacon Press.
- Shrivastava, M., & Shrivastava, S. (2014). Political economy of higher education: Comparing South Africa to trends in the world. *Higher Education: The International Journal of Higher Education and Educational Planning*, 67(6), 809-822.
- Taylor, M. (2014). *Using a reading and listening comprehension discrepancy model to document teacher perceptions of reading disability in Ghana*. Unpublished doctoral dissertation, American International College, Springfield, MA.

- UNICEF. (1995). *The progress of nations, 1995*. Retrieved from <http://www.unicef.org/pon95/>
- World Health Organization, & UNICEF. (2013). *Progress on sanitation and drinking-water*.
World Health Organization.
- U.S. Bureau of the Census. (2004). *American community survey statistics with previous years and the 2010 census*. Washington, DC: Author.
- U.S. Department of Labor, Employment, and Training Administration. (1991). *The learning disabled in employment and training programs* [Research and Evaluation Report Series 91-E]. Washington, DC: Author.
- Wagner, M. (1989). *Youth with disabilities during transition: An overview of descriptive findings from the national longitudinal transition study*. Menlo Park, CA: SRI International.
- Westfall, P. H., & Henning, K. S. S. (2013). *Texts in statistical science: Understanding advanced statistical methods*. Boca Raton, FL: Taylor & Francis.
- World Bank. (2009). *Education for the knowledge economy*. Retrieved from <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:20161496~menuPK:540092~pagePK:148956~piPK:216618~theSitePK:282386,00.html>
- Young, G., & Gerber, P. J. (1998). Learning disabilities and poverty: Moving towards a new understanding of learning disabilities as a public health and economic-risk issue. *Learning Disabilities: A Multidisciplinary Journal*, 9(1), 1-6.

Table 1

Summary Statistics for Interval and Ratio Variables

Group	Variable	<i>M</i>	<i>SD</i>	Min.	Max.	Skewness	Kurtosis
Laborers	Number	31.50	18.04	1.00	62.00	0.00	-1.20
	Age	12.31	1.89	9.00	15.00	-0.17	-1.13
	Average reading score (%)	30.50	12.59	12.00	55.00	0.65	-1.07
	Average math score (%)	35.69	11.81	15.00	56.00	0.16	-1.36
Nonlaborers	Number	31.50	18.04	1.00	62.00	0.00	-1.20
	Age	12.11	1.88	9.00	15.00	-0.36	-1.04
	Average reading score (%)	59.94	16.60	22.00	91.00	-0.02	-0.40
	Average math score (%)	60.15	16.71	22.00	91.00	0.20	-0.53

Table 2

Paired Samples t-Test for Difference in Scores Between Child Laborers and Non-Child Laborers

	Child laborer		Non-child laborer		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Average reading score (%)	30.50	12.59	59.94	16.60	-10.96	<0.001	2.00
Average math score (%)	35.69	11.81	60.15	16.71	-8.43	<0.001	1.69

Note. Degrees of freedom for the *t*-statistic = 61. *d* represents Cohen's *d*.

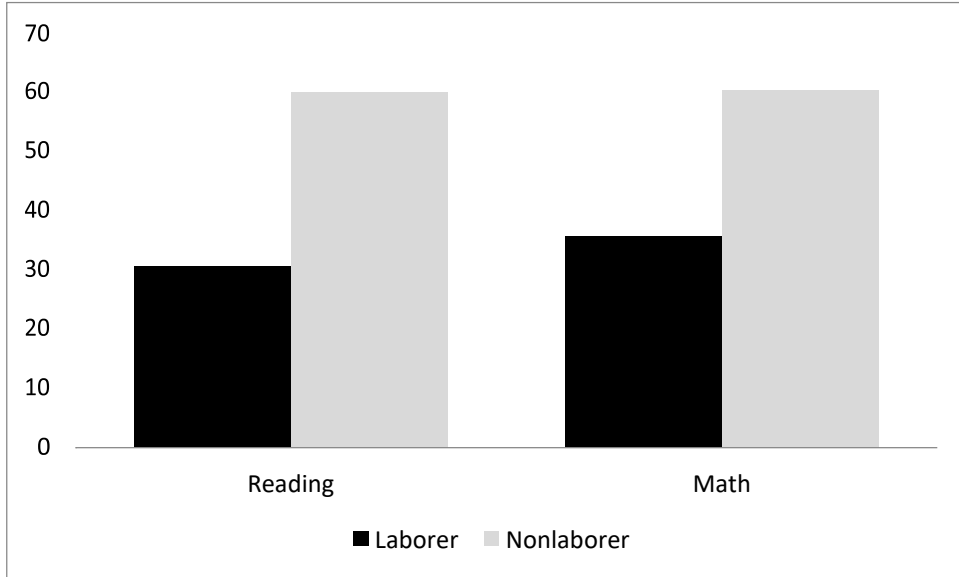


Figure 1. Mean reading and math scores for child laborers compared with children who were not laborers.