Original Research

English Reading Proficiency and Academic Performance Among Lower Primary School Children in Ghana

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Abstract

There have been several issues about the reading skills and abilities of children in Ghana, and how reading proficiency might influence the academic performance of children. In view of the above, this study examined the influence of reading proficiency on the academic performance of lower primary school children in Accra. Using a cross-sectional survey design, 383 participants (Grades 1-3) were sampled in Accra. The children were administered questionnaires that measured their English reading proficiency, paternal involvement, maternal involvement, financial situation, and demographic characteristics as well as their academic performance. Results showed that reading proficiency was significantly and positively related with children's performance on all standard performance tests after controlling for paternal involvement, maternal involvement, financial situation, and age. Type of school significantly affected academic performance, however, no gender differences were observed in the children's academic performance. The implications for educational practice and research are espoused.

Keywords

reading proficiency, academic performance, school children, Ghana

Introduction

Over the years, concerns have been raised about the reading habits of children around the world including Ghana (Greaney, 1980; Morrow & Weinstein, 1986) and the direct consequences this attitude has on the academic performance of children. These concerns arise as a result of the relationship between reading competence and academic success (Cullinan, 2000). Reading can be explained as a cognitive activity in which the reader takes part in a conversation with the author through text. Reading is a very crucial milestone in the academic journey of an elementary school child as evidence suggests that attitudes of both boys and girls toward reading become more negative as they get older (Sainsbury & Schagen, 2004). Even though group activities tend to enhance growth and development of necessary communication, emotional, and other developmental skills, independent reading or voluntary reading is key in determining children's level of academic achievement.

Independent reading simply refers to the ability of students to read on their own without anybody necessarily instructing them to do so. This also involves selecting books of interest, time as well as place to read, which is likely to have a positive influence on their reading comprehension and adoption of strategies aimed at enhancing reading strategies (Denton et al., 2015; Scott & Shearer-Lingo, 2002). The ultimate goal of independent reading is to achieve reading proficiency, which facilitates knowledge acquisition and dissemination (McPike, 1995) and leads to holistic development of the individual. When pupils at the basic level of education are proficient in reading, it makes learning an enjoyable activity, which fosters the drive to acquire more knowledge, and leads to the production of a holistically developed human resource (Cullinan, 2000). This would effectively and eventually trigger national development, which lends support to the assumption that a reading nation is a developed nation. The third grade may be seen as a crucial milestone in a child's education because this is the period when a child transitions from learning how to read to reading to learn. Therefore, to be competent in subjects such as math,

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English, and science, an elementary school child must display proficiency in reading (Cimmiyotti, 2013).

Furthermore, due to lower standards of performance of students in Ghana as evidenced by the poor results recorded in the examination scores of our junior and senior high school graduates over the years (Cobbold, 2007; Effah & Osei-Owusu, 2014), educators and scholars, and other stakeholders in the educational sector have made several efforts to determine the sources or causes of the dwindling fortunes of our school system (Lever, Mayagoitia, Velázquez, & Estrada, 2016). In doing so, factors such as language proficiency of parents, parental involvement, and absence of learning difficulties as well as reading proficiency were identified as significant predictors of academic performance (Lever et al., 2016).

Reading Proficiency and Academic Performance

Reading is an integral part of every educational process as all the subjects taught at all levels of the educational system involve reading (Cimmiyotti, 2013). In Ghana, two main languages are used in classroom instructions at the basic education level. These are L1 and L2, the former being the child's mother tongue and the latter being English language. However, English language has a much wider use in education in Ghana compared with children's mother tongue (Yeboah, 2014), and it is the official language in Ghana. This makes the English language an integral aspect of our educational system from the basic to the tertiary levels.

The literature is replete with several evidences indicating that children who are proficient in reading outperform their counterparts on all academic performance indicators (Cullinan, 2000). It has been proven that reading proficiency has a strong positive correlation with mathematics and science abilities (Ercikan et al., 2015). Achieving reading proficiency through independent reading outside the school environment was found to positively relate to elementary school children's performance on achievement tests (Anderson, Fielding, & Wilson, 1988; Greaney & Hegarty, 1987).

To examine the consistency of findings across different educational levels, Cromley (2009) observed that the relationship between reading proficiency and achievement on science test was highly significant. This suggests that the effects of reading proficiency on academic achievement are not limited to the basic or elementary levels but rather show their influence at other levels of academic endeavor such as secondary schools. The positive spillover of reading proficiency cannot be overestimated. Students who are proficient in reading do not only get to perform very well on English tests but on general tests, which cut across all fields in academia. Vilenius-Tuohimaa, Aunola, and Nurmi (2008) and Cimmiyotti (2013) found the above evident when they examined the relationship between reading proficiency and comprehension and performance on tests of mathematical ability. Their results revealed that students who had very good reading abilities were able to comprehend the texts and were more likely to perform better on the mathematics test compared with those who could not read effectively. Similar findings were observed by Duru and Koklu (2011) among middle school children. Even though reading was not significantly related to computational skills, it was significantly related to the understanding and comprehension of mathematical tests (Grimm, 2008).

Public and Private School Differences in Performance

In Ghana, the responsibility for education at the basic level is fairly shared between government and private individuals. Public schools in Ghana are financed by the government and run by public servants whereas the private schools are owned by individuals or private organizations and are run by their own staffs (Asiedu, 2002; Nsiah-Peprah, 2004; Tooley, Dixon, & Amuah, 2007). Some evidence exists in the Ghanaian setting with regard to disparities in the performance of students in national examinations, which have been attributed to the effectiveness of the private individuals and organizations in monitoring and motivating their employees to give out their best efforts (Yeboah, 2014). Private schools in Ghana are usually operated by religious bodies and private individuals who stress the need to achieve excellence to attract more students.

Over the years, it has been asserted that private schools are superior to public schools and thus produce more excellent students (Sandy & Duncan, 2010). Private and public schools differ in terms of sources of support; public schools depend primarily on the government for support whereas private schools depend on tuition payments and funds from nongovernmental sources such as religious organizations, endowments, and grants (Asiedu, 2002; O'Riley, 1996). Differences have further been observed between students who went to public schools and those who went to private schools with the private school children recording better performance relative to their public school counterparts (Cavalcanti, Gumaraes, & Sampaio, 2010). Using different approaches, Duncan and Sandy (2007) observed a private school advantage over public schools on academic performance even after controlling for other factors such as teachers' qualities, age, and so on. Even though there are suggestions pertaining to the fact that these differences diminish at higher levels of education, performance on preceding tests serves as basis for entry into higher levels resulting in a smaller number of students entering into competitive higher institutions (Cavalcanti et al., 2010). The superior performance of private schools over public schools was also observed by Özer (2011) when the performance of students from public and private schools was examined on the Bender Gestalt performance test. The students from private schools performed significantly better than those from public schools. However, as most of these findings were from Western

countries, the extent to which they can be generalized to the Ghanaian setting is limited.

Gender Differences in Performance

In some high-performing countries, the gender gap is large (Organisation for Economic Co-operation and Development, OECD; 2011). The continuous existence of gender differences is not only a threat to our Ghana educational system but also the negative consequences it is likely to have on growth and development of human resource capacity of our country (Mechtenberg, 2009). This difference in male and female performance would mean that, in the near future, there would be smaller number of women especially in paid employments (Klasen & Lamanna, 2009). We can, however, take solace in the fact that the trend of male advantage over females is not as endemic as it used to be with some researchers even suggesting a reversal where females are outdoing males on several educational tests (Buchmann, DiPrete, & McDaniel, 2008; Legewie & DiPrete, 2012). For instance, OECD (2011) found that whereas there may be no significant difference between males and females on mathematics performance, females tend to outperform males significantly on reading tests. This suggests that females should be more proficient in reading than males (Matějů & Smith, 2015). Similar findings were obtained by Below, Skinner, Fearrington, and Sorrell (2010) who examined female superiority on oral reading fluency across Grades 1 to 5 in a sample of U.S. children and found that significant gender effect was observed for only Grade 4.

Furthermore, gender gap in reading has been found to vary across the globe. Reading comprehension, which most often is a result of continuous reading, differs across gender with males observed to be performing poorer than females on some tests (Matějů & Smith, 2015), and this could be attributed to the adoption of cognitive techniques by girls compared with boys (Denton et al., 2015). For instance, Matějů and Smith (2015) in their study examined the differences in performance between males and females in ninth grade and found that females outperformed males on reading competency whereas males performed better than females on mathematics. They suggested that the differences could be explained by reading ability. However, some researchers have argued that the reported gender differences in academic performance may simply be exaggerations, which may not necessarily depict the reality (Tiedemann, 2000), and the studies and tests showing that males outperform females may in themselves be biased toward males (Sommers, 1994). Thus, the previous studies have suggested that there are still inconsistencies in the gender differentials in academic performance and reading proficiency.

The relevance of reading proficiency in defining academic success and the insufficient studies on the topic, especially at the lower primary level of education within the Ghanaian context, are prime reasons that necessitated this present study. Even though there are some studies on reading proficiency in developed countries, there is no available published evidence of reading proficiency and its influence on children's academic performance in Ghana. This study, therefore, examined (a) the relationship between reading proficiency and academic performance among lower primary school children after controlling for effects of parental involvement, financial situation, and age of the children, (b) differences between public and private school children on reading proficiency and academic performance, and (c) differences in reading proficiency and academic performance between males and females.

Method

Research Setting

The study was conducted in selected public and private schools in Accra. Accra was chosen due to its cosmopolitan nature and convenience. In all, four schools were selected to participate in the study: two public and two private schools. The two public schools comprised one from an urban community and the other from a rural community. The private schools also consisted of two schools, one each from urban and rural areas.

Participants

The population for the study was students in Classes 1, 2, and 3 (Grades 1-3) at the lower primary level from four selected schools within public and private schools in Accra, Ghana. This category of students was chosen because they fall within the age group in which reading and comprehension become very crucial in the development of the child as far as their success in school is concerned. A total sample of 383 pupils was selected from the four schools. The above sample size was deemed adequate considering the statistical analysis to be conducted and the relevance of the study for purposes of generalization. This sample was obtained using a stratified sampling technique. This was used to ensure that a fair representation of both schools was obtained as the students in public and private schools are likely to differ significantly, which could affect the outcomes of the study.

Measures

Demographic data. Demographic data were collected from the students on the following variables: age, sex, class, maternal and paternal education as well as the type of home they lived (whether they live with a single or both parents).

Reading proficiency. The reading proficiency of the students was measured with the word reading and sentence comprehension subtests, which together form the reading composite of the WRAT 4 (Wilkinson & Robertson, 2006). The WRAT

4 is usually used in measuring basic cognitive skills, which include reading and spelling of words and basic arithmetic. The WRAT 4 has four subtests, namely, word reading, sentence comprehension, spelling, and math computation with Cronbach's alphas of .86, .78, .89, and .88, respectively. The WRAT 4 has a general internal consistency of .87 to .96 for both grade and age.

Parental involvement. This was measured with the 14-item parental involvement scale developed by Nyarko (2008) to assess children's reports of their parental involvement in their activities. The scale has two parts with each part for either parent (mother and father). Paternal involvement was measured using seven items, and it consists of the extent to which fathers get involved in the academic life of their children. The items were scored on a 5-point Likert-type scale with scores ranging from 1 = *almost never*, 2 = *rarely*, 3 = *sometimes*, 4 = *rather often*, 5 = *very often*. A total score was computed by summing all participants' responses to derive a composite score, which could range between 7 and 35. High scores on the scale reflect high paternal involvement whereas low scores reflect low paternal involvement. The instrument demonstrated good internal consistency with a Cronbach's alpha of .80 in this study. Maternal involvement was measured with seven items, which examine the extent to which mothers get involved in the academic life of their children. The items were scored on a 5-point Likert-type scale with scores ranging from 1 = *almost never*, 2 = *rarely*, 3 = *sometimes*, 4 = *rather often*, 5 = *very often*. A total score was computed by summing all participants' responses to derive a composite score, which could range between 7 and 35. High scores on the scale are indications of high maternal involvement whereas low scores show less maternal involvement. The instrument demonstrated good internal consistency with a Cronbach alpha of .82 in the present study.

Financial Pressure Scale. The financial situation of the parents was assessed using a nine-item questionnaire adapted from Conger et al. (1994). The items assessed the availability of money to provide for the educational needs of children by their parents. The questionnaire was scored on a 4-point Likert-type scale with scores ranging from 1 = *not true*, 2 = *rather not true*, 3 = *rather true*, 4 = *exactly true*. High scores reflect availability of money to provide for the children's educational needs whereas low scores indicate otherwise. Some items on the questionnaire were reverse-scored. The present study showed the instrument has a Cronbach's alpha of .77.

Academic performance. Academic performance was measured using standard tests that comprised of items taken from the Ghana Education Service (GES)-approved textbooks for primary school children in Ghana (Primary Classes 1-3). This involved the administration of three separate tests to the students to assess their performance on the three performance outcome variables, which included English, mathematics, and integrated science. The average of the three scores gives the general performance of the students in percentages. The tests administered to the students were exercises selected from the GES's-approved textbooks for each class.

Research Design and Procedure

The design employed for the study was a cross-sectional survey. For the procedure, ethical clearance was obtained from Humanities Ethical Review Board of the University of Ghana, Legon. After the clearance from the institutional review board (IRB), permission was sought from the four schools involved in the study. The authorities were provided with the details of the study as well as the essence of the study not only to the researchers but also the importance of developing and sustaining a reading culture or habit in children and the consequential effect it has on the performance of the students. Consents from teachers and parental assents were obtained before the commencement of the study. After the consents and assents from the authorities and parents, the children were administered the WRAT-4 to assess children's reading proficiency. The children were also administered the demographic questionnaires. Finally, children were administered mathematics, English, and integrated science tests to obtain scores for their academic performance. All the instruments were scored and the scores were recorded to reflect children's reading proficiency and academic performance. As a way of appreciation, the children were given pencils and pens by the research team.

Ethical Considerations

Key ethical principles guiding the use of human participants and minors were strictly adhered to in the study. These included providing the teachers, parents, and students with the necessary information to make a determination as to whether they want (the students) to be part of the study. The signing of the consent form, which is actually a process rather than an event was not used as coercive tool to compel participants to complete the study. They were assured of their right to withdraw from the study at any point when they became uncomfortable with the study. The identity of the children as well as their responses was kept confidential such that neither the responses nor their identity was revealed to any other person outside the research team.

Analysis of Data

Data were analyzed using the Statistical Package for the Social Sciences (SPSS 22). Specific statistical techniques used were partial correlation and independent *t* tests. The partial correlation was used to analyze the relationship between reading proficiency and the various performance

Table 1. Mean, Standard Deviation, Skewness, Kurtosis, and Cronbach Alphas.

Variables	Minimum	Maximum	*M*	*SD*	Skewness	Kurtosis	α
Reading proficiency	0	103	35.55	14.73	0.75	0.22	.96
Academic performance	0	100	51.12	16.14	−0.10	−0.76	—
Science test	0	100	52.88	18.54	0.03	−0.77	—
Mathematics test	0	100	44.84	17.64	0.22	−0.26	—
English test	0	100	55.65	23.78	−0.27	−0.67	—
Age of children (years)	6	14	9.05	1.78	1.10	2.95	—
Maternal involvement	7	35	22.88	7.33	−0.21	−0.82	.82
Paternal involvement	7	35	22.95	8.49	−0.02	0.89	.80
Financial situation	9	36	26.51	6.82	−0.17	−0.45	.77

tests while controlling for the effect of other variables such as age, parental involvement, and so on. This ensured that the effect of reading proficiency on academic performance was achieved devoid of the possible effects of these other potential predictors of academic performance. The independent *t* test was used to analyze the differences in the academic performance of males and females and also differences in academic performance between students from public and private schools.

Results

To check whether the data were normally distributed, normality tests were conducted. This was done using the skewness and kurtosis scores of the various study variables. Skewness and kurtosis indicate how the data are distributed and according to Garson (2012), the scores on the two tests should fall between +2 and −2, which show a fair measure of the normality of the data. The reliability of the various study instruments was also examined, and it was revealed that the various instruments used for the data collection were also reliable enough to elicit reliable responses from participants. The skewness, kurtosis, mean, standard deviation, and Cronbach alpha of the study instruments are presented in Table 1.

Table 2 presents the distribution of the respondents (both public and private schools) across the various demographic variables examined in the study. From Table 2, it can be seen that there were 87 males and 100 females from the public schools whereas there were 93 males and 103 females from the private schools. In terms of age distribution, whereas all the students (196) from the private schools fell between 6 years and 10 years, only 121 from the public schools were within the same bracket. The rest (66) were between the ages of 11 years and 14 years. This is due to the fact that, due to economic disadvantage, which is commonly found among students in public schools in Ghana. As a result of this, most of the students begin schooling at an older age in public schools compared with private schools. In terms of class distribution, there were 112 students in Class 1 (56 each from public and private schools); in Class 2, there were 62 and 60 students from public and private schools, respectively; and those in Class 3 numbered 149 with 69 of them coming from the public schools. Most of the students from the private schools have fathers who have attained at least university education (122) whereas the fathers of children in the public school have had education below high school (65) with 55 of the public school not knowing the educational qualification of their fathers. Maternal educational level also showed that while over 40% mothers of students in the private schools had education up to at least university level, none of the children from the public schools can identify their mothers as having university education. Rather, most of them had education qualification below high school level. Although 170 children from the private schools live with both of their biological parents, only 135 of those from public schools live with both biological parents. Also, the number of children who stay with only one parent (either mother or father) was higher for those coming from public schools compared with those coming from private schools. Generally, reading proficiency was low for children from both public and private schools but the children from private schools who were fluent in reading were more than those from the public schools (29 and 4, respectively). Children in private schools reported more parental involvement compared with children from public schools.

Relationship Between English Language Reading Proficiency and Academic Performance Controlling for Other Variables

The results in Table 3 showed the partial correlation between the various study variables, specifically reading proficiency scores and the various performance scores (mathematics, English language, integrated science as well as total performance). The results showed a significant positive correlation between reading proficiency and the overall performance of the students, $r(381) = .66$, $p < .01$ after controlling for other variables. Also, a significant positive correlation was found between reading proficiency and the specific performance standards after controlling for other variables. For mathematics, $r(381) = .43$, $p < .01$; integrated science, $r(381) = .60$,

Table 2. Demographic Profile of the Participants in the Study.

	Public schools	Private schools
Variables	*n* (%)	*n* (%)
Sex		
Male	87 (46.5)	93 (47.4)
Female	100 (53.5)	103 (52.6)
Age groups		
6-10 years	121 (64.7)	196 (100)
11-14 years	66 (35.3)	—
Class of the students		
Class 1	56 (29.9)	56 (28.6)
Class 2	62 (33.2)	60 (30.6)
Class 3	69 (36.9)	80 (40.8)
Father's educational level		
University	5 (2.7)	112 (57.1)
Polytechnic	—	7 (3.6)
College of education	3 (1.6)	6 (3.1)
High school	41 (21.9)	37 (18.9)
Below high school	65 (34.8)	6 (3.1)
No formal education	18 (9.6)	1 (.5)
Do not know	55 (29.4)	27 (13.8)
Mother's educational level		
University	—	79 (40.3)
Polytechnic		2 (1.0)
College of education	2 (1.1)	9 (4.6)
High school	40 (21.4)	66 (33.7)
Below high school	62 (33.2)	16 (8.2)
No formal education	28 (15.0)	3 (1.5)
Do not know	55 (29.4)	21 (10.7)
Living with both parents		
Yes	135 (72.2)	170 (86.7)
No	52 (27.8)	26 (13.3)
If no, then		
Mother	45 (88.2)	23 (92.0)
Father	6 (11.8)	2 (8.0)
Reading proficiency		
Low	183 (97.9)	169 (86.2)
High	4 (2.1)	27 (13.8)
Parental involvement (both)	38.39 (14.19)	52.48 (12.33)

$p < .01$; and English language, $r(381) = .53$, $p < .01$. This suggests that higher reading proficiency is related with increased academic performance.

Differences in Reading Proficiency and Academic Performance of Students From Public and Private Schools

The study also examined the differences in performance between students from public and private schools on reading proficiency, general academic performance, mathematics, English, and science tests as shown in Table 4. On each of the variables examined, private school children outperformed their counterparts from the public schools. On reading proficiency, the mean and standard deviation for those coming from public schools were 27.50 and 10.50, respectively, whereas those from private schools had a mean and standard deviation of 43.41 and 13.91, respectively. The mean difference was significant, $t(381) = 12.59$, $p < .001$. Furthermore, on general performance, the mean and standard deviation for those coming from public schools were 43.34 and 14.40, respectively, while those from private schools had a mean and standard deviation of 58.69 and 13.93, respectively. The mean difference was significant, $t(381) = 10.60$, $p < .001$.

In terms of their performance in mathematics, the mean and standard deviation for those coming from public schools were 40.34 and 16.03, respectively, whereas those from private schools had a mean and standard deviation of 49.26 and 19.92, respectively. The mean difference was significant, $t(381) = 5.13$, $p < .001$. On the science test, the mean and standard deviation for those coming from public schools were 44.55 and 16.03, respectively, whereas those from private schools had a mean and standard deviation of 60.94 and 17.17, respectively. The mean difference was significant, $t(381) = 9.65$, $p < .001$. Finally, on their performance in English, the mean and standard deviation for those coming from public schools were 45.14 and 22.71, respectively, while those from private schools had a mean and standard deviation of 65.87 and 19.98, respectively. The mean difference was significant, $t(381) = 9.49$, $p < .001$.

Gender Differences in Reading Proficiency and Academic Performance Among the Children

The study further examined gender differences in reading proficiency, general performance, English, mathematics, and integrated science tests. The results from Table 5 showed that there is no significant difference between males and females on all the five variables. On their reading proficiency, males had a mean and standard deviation of 35.03 and 14.87, respectively, whereas females had a mean and standard deviation of 36.18 and 14.55 respectively. However, the mean difference was not significant, $t(381) = 0.76$, $p = .45$. The mean and standard deviation for males on general performance were 50.78 and 16.16 and that of the females were 51.56 and 16.08, respectively, but the difference between their mean scores was not significant, $t(381) = 0.47$, $p = .64$. On their performance in mathematics, males had mean and standard deviation scores of 45.65 and 17.61, respectively, whereas females had mean and standard deviation scores of 44.24 and 17.56, respectively. Despite the difference in their mean scores, the statistics revealed that the difference was not significant, $t(381) = 0.79$, $p = .43$. The mean and standard deviation for males on science performance were 52.90 and 19.01 and the mean and standard deviation for the females were 52.97 and 18.12, respectively, but the mean difference was observed to be insignificant, $t(381) = 0.04$, $p = .97$. Finally, on their English performance, it was observed that males had mean

Table 3. Reading Proficiency and Academic Performance Among Lower Elementary School Pupils.

Variables	RP	TP	ST	MT	ET	Age	FI	MI	FS
RP	—								
TP	.72**	—							
ST	.67**	.79**	—						
MT	.47**	.77**	.42**	—					
ET	.61**	.86**	.51**	.49**	—				
Age	−.16**	−.26**	−.10	−.16**	−.34**	—			
FI	.48**	.34**	.34**	.22**	.36**	−.15**	—		
MI	.45**	.40**	.40**	.16**	.31**	−.25**	.77**	—	
FS	.16**	.20**	.16**	.11	.20**	−.16**	.31**	.31**	—
RP	—								
TP	.66**	—							
ST	.60**	.76**	—						
MT	.43**	.76**	.38**	—					
ET	.53**	.83**	.44**	.43**	—				

Note. Controlled variables: age, father involvement, mother involvement, and financial situation. RP = reading proficiency; TP = total performance; ST = science test; MT = mathematics test; ET = English test; FI = father involvement; MI = mother involvement; FS = financial situation.
**$p < .01$.

Table 4. Differences in Reading Proficiency and Academic Performance Among Pupils in Private and Public Schools.

	Public ($n = 187$)	Private ($n = 196$)		
Variables	*M* (*SD*)	*M* (*SD*)	*t*	*p*
Reading proficiency	27.50 (10.50)	43.41 (13.91)	12.59	<.001
Total performance	43.34 (14.40)	58.69 (13.93)	10.60	<.001
Science test	44.55 (16.03)	60.94 (17.17)	9.65	<.001
Mathematics test	40.34 (16.03)	49.26 (17.92)	5.13	<.001
English test	45.14 (22.71)	65.87 (19.98)	9.49	<.001

Table 5. Gender Differences in Reading Proficiency and Academic Performance.

	Males ($n = 180$)	Females ($n = 203$)		
Variables	*M* (*SD*)	*M* (*SD*)	*t*	*p*
Reading proficiency	35.03 (14.87)	36.18 (14.55)	0.76	.45
Total performance	50.78 (16.16)	51.56 (16.08)	0.47	.64
Science test	52.90 (19.01)	52.97 (18.12)	0.04	.97
Mathematics test	45.65 (17.61)	44.24 (17.56)	0.79	.43
English test	53.80 (23.92)	57.48 (23.47)	1.52	.13

and standard deviation scores of 53.80 and 23.92, respectively, whereas the females had mean and standard deviation scores of 57.48 and 23.47, respectively. Even though females had a higher mean than males, the difference between their means was not significant, $t(381) = 1.52$, $p = .13$.

Discussion

The objectives of the study were to investigate the relationship between reading proficiency and academic performance, examine differences in reading proficiency and academic performance between public and private schools, and find out gender differences in reading proficiency and academic performance.

Relationship Between Reading Proficiency and Academic Performance

The study showed that a positive relationship existed between reading proficiency and academic performance. This is not surprising considering the fact that reading proficiency has been mooted to influence the performance of students across

different levels of education (Cromley, 2009) and across subjects (Cimmiyotti, 2013; Vilenius-Tuohimaa et al., 2008). When students engage in continuous reading, it does not only improve their vocabulary but also their comprehension of concepts (Duru & Koklu, 2011), which are significant for understanding and performance in school.

The study also found that students in private schools were more proficient in reading than those in public schools, and this was also reflected in their academic performance (Cullinan, 2000). It was evident that even though students from both types of schools did not perform exceptionally on the reading proficiency, students from the private schools outperformed students from public schools. Reading books, not necessarily textbooks, exposed the students to wide range of vocabulary, thereby, enhancing their comprehension abilities. Children from private schools are seen to engage in more reading activities that are sometimes as a result of initiatives taken by students and at other times the result of their teachers. It was observed that children in private schools have periods that are dedicated to reading in schools. This is to ensure that children develop good vocabulary while also having a good command over the English language. This has indirectly benefited the students such that they are able to comprehend concepts and issues, not only in English exercises but also in other subjects. However, children from public schools may have little or no time to engage in reading activities.

Type of School and Academic Performance

Findings showed that students from private schools performed significantly better than those from public schools. This is consistent with the findings of previous researchers (Cavalcanti et al., 2010; Özer, 2011). The superior performance recorded by the private school children was across all tests: mathematics, science, and English. This goes to highlight the problem that children in government or public schools do not perform well on academic tests compared with those from private schools (Shah, Iqbal, & Mahmood, 2015). The difference could be attributed to the fact that even though there might be differences in the infrastructure, resources as well as management style, reading proficiency can be highlighted as one of the predictors of this finding. It is an established fact in Ghana that public schools can boast of trained teachers compared with private schools. That may no longer be the case because private schools are actually recruiting university-trained teachers as well as personnel from polytechnics and training colleges. Beside the above factors, students from private schools did a lot of private reading than those in public schools, which as identified earlier and this was responsible for their superior academic performance.

Private schools are characterized by smaller class sizes and more teachers who are now of almost the same qualification as teachers in public schools (Duncan & Sandy, 2007). The smaller class sizes make it easier for teachers to manage their classes compared with management of students in public schools where the classes are comparatively large. The large classes make it difficult for teachers in the public schools to handle, manage, and monitor their growth and development. This ultimately affects the extent to which teachers are able to manage the reading abilities of students, which affect their academic performance.

Gender Differences in Academic Performance

The study found no significant difference between males and females on all performance tests. Even though males showed slight superior performance over females on mathematics performance, females showed superior performance over males on science and English tests with the greatest difference registered for English performance. Even though females showed superior performance compared with males on reading proficiency, the difference was once again not significant. The fact that no significant difference was observed between males and females on reading proficiency and academic performance finds support in previous studies, which showed that gender differences in academic performance may be exaggerated (Tiedemann, 2000) or biased toward males (Sommers, 1994).

Change in society's orientation on the essence of education as well as differential response may be responsible for the lack of difference between the two groups of students (Below et al., 2010). Male children were hitherto seen as the heads and future of families but due to changing economic situations, female children are equally becoming a significant part of the administration and survival of families. This has reduced the emphasis being placed on male education with increasing recognition being given to females as well. Also, teachers have become more neutral in their response to children in the classroom. Teachers have been criticized as being biased toward males when it comes to paying attention to the needs of school children (Tiedemann, 2000). Teachers are increasingly becoming as responsive to female children as to male children. This may tend to motivate female students to aspire to achieve higher heights just as the male students and this might have led to the reduction in the gap between males and females in their academic performance.

Limitations of the Study

The study was conducted in the Accra metropolis, which also happens to be the capital city of the country. There could, therefore, be differences between the conditions of education and reading proficiency in other parts of the country that may not necessarily be represented in Accra. Also, cultural orientation as well as parental expectations of the children could be different from other parents from other regions of the country. These, therefore, limit the extent to which the findings of the study could be generalized to other parts of the country.

Recommendations for Educational Practice

In view of the findings of the present study, the following recommendations have been made to improve the academic performance of students. It is recommended for heads of schools to structure their schools' timetables to create room for reading periods and encouraging children to engage in independent reading. There should be time allocated on daily schedule or timetable that allows students to engage in group or private reading. The habit of independent reading should be instilled in school children because of the benefits such as improved academic performance, children are likely to obtain through independent reading as well as group reading.

A key component of reading, especially independent reading, is the presence of conducive environment that is supportive of reading. To help students engage in reading, school authorities, the GES and the Ministry of Educations (MoE) should ensure the establishment of libraries across the country. The presence of libraries would serve as an ideal environment where students can engage in voluntary reading. Beyond the establishment of libraries in the schools, there should be provision of community libraries. Another strategy that management of schools, head teachers as well as librarians could employ is to encourage book borrowing among the pupils as well as instituting reading competitions at the elementary levels. Students should be encouraged to borrow books from their school and community libraries. This would help students who cannot get the time to move to their community libraries at the weekend to have those books with them at home where they can read at their own convenience.

Recommendations for Future Researchers

Future research should include the examination of differences in academic performance among rural and urban schools. This is because the location of the schools coupled with the socioeconomic conditions of the people in these two distinct areas could play a significant role in academic performance of children. Future studies should extend their researches to cover other areas such as parental involvement, parental educational level as well as their financial status in affecting the academic performance of children. Children have reasonable amount of interaction with their parents just as they have with the school environment. It is, therefore, important to examine these factors that go beyond the school environment but may be having significant effects on the academic performance of students. The study could also be extended to other parts of the country to obtain a holistic picture on the situation of reading proficiency and how this is related to academic performance.

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References

Anderson, R. C., Fielding, L. G., & Wilson, P. T. (1988). Growth in reading and how children spend their time outside of school. *Reading Research Quarterly*, *23*, 285-304.

Asiedu, S. (2002). *A comparative study of public and private schools in the provision of quality education at the basic level in urban centres in Ghana* (Masters' thesis). Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Below, J. L., Skinner, C. H., Fearrington, J. Y., & Sorrell, C. A. (2010). Gender differences in early literacy: Analysis of kindergarten through fifth-grade dynamic indicators of basic early literacy skills probes. *School Psychology Review*, *39*, 240-257.

Buchmann, C., DiPrete, T. A., & McDaniel, A. (2008). Gender inequalities in education. *Annual Review of Sociology*, *34*, 319-337.

Cavalcanti, T., Gumaraes, J., & Sampaio, B. (2010). Barriers to skill acquisition in Brazil: Public and private school students' performance in public university entrance exam. *The Quarterly Review of Economics and Finance*, *50*, 395-407. doi:10.1016/j.qref.2010.08.001

Cimmiyotti, C. B. (2013). *Impact of reading ability on academic performance at the primary level* (Master's theses and Capstone projects. Paper 127). Dominican University, River Forest, IL.

Cobbold, C. (2007). Induction for teacher retention: A missing link in the teacher education policy in Ghana. *Postgraduate Journal of Education Research*, *8*, 7-18.

Conger, R. D., Ge, X., Elde, G. H., Jr., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development, 65*(2), 541-561.

Cromley, J. (2009). Reading achievement and science proficiency: International comparisons from the programme on international student assessment. *Reading Psychology*, *30*, 89-118.

Cullinan, B. E. (2000). Independent reading and school achievement. *Research Journal of the American Association of School Librarians*, *3*, 1-24.

Denton, C. A., Wolters, C. A., York, M. J., Swanson, E., Kulesz, P. A., & Francis, D. J. (2015). Adolescent's use of reading comprehension strategies: Differences related to reading proficiency, grade level, and gender. *Learning and Individual Differences*, *37*, 81-95. doi:10.1016/j.lindif.2014.11.016

Duncan, K. C., & Sandy, J. (2007). Explaining the performance gap between public and private school students. *Eastern Economic Journal*, *33*, 177-191.

Duru, A., & Koklu, O. (2011). Middle school students' reading comprehension of mathematical texts and algebraic equations. *International Journal of Mathematical Education in Science and Technology*, *42*, 447-468.

Effah, B., & Osei-Owusu, B. (2014). Exploring issues of teacher retention and attrition in Ghana: A case study of public senior high schools in Kwabre East district of Ashanti region-Ghana. *Journal of Education and Practice*, *5*, 83-89.

Ercikan, K., Chen, M. Y., Lyons-Thomas, J., Goodrich, S., Sandilands, D., Roth, W. M., & Simon, M. (2015). Role of reading proficiency in assessing mathematics and science learning for students from English and non-English backgrounds: An international perspective. *International Journal of Testing*, *15*, 153-175.

Garson, D. G. (2012). *Testing of assumptions: Normality*. Statnotes: Topics in Multivariate Analysis.

Greaney, V. (1980). Factors related to amount and type of leisure reading. *Reading Research Quarterly*, *15*, 337-357.

Greaney, V., & Hegarty, M. (1987). Correlates of leisure time reading. *Journal of Research in Reading*, *10*, 3-20.

Grimm, K. (2008). Longitudinal associations between reading and mathematics achievement. *Developmental Neuropsychology*, *33*, 419-420.

Klasen, S., & Lamanna, F. (2009). The impact of gender inequality in education and employment on economic growth: New evidence for a panel of countries. *Feminist Economics*, *15*, 91-132.

Legewie, J., & DiPrete, T. A. (2012). School context and the gender gap in educational achievement. *American Sociological Review*, *77*, 463-485.

Lever, J. P., de Oca Mayagoitia, S. I. M., Velázquez, A. M. P., & Estrada, A. V. (2016). Explanatory factors of academic performance in children of Mexican immigrants in New York. *Educational Psychology*, *22*, 125-133. doi:10.1016/j.pse.2016.03.001

Matějů, P., & Smith, M. L. (2015). Are boys that bad? Gender gaps in measured skills, grades and aspirations in Czech elementary schools. *British Journal of Sociology of Education*, *36*, 871-895. doi10.1080/01425692.2013.874278

McPike, E. (1995). Learning to read: Schooling's first mission. *American Educator*, *19*(2), 3-6.

Mechtenberg, L. (2009). Cheap talk in the classroom: How biased grading at school explains gender differences in achievements, career choices and wages. *Review of Economic Studies*, *76*, 1431-1459.

Morrow, L. M., & Weinstein, C. S. (1986). Encouraging voluntary reading: The impact of a literature program on children's use of library centers. *Reading Research Quarterly*, *21*, 330-346.

Nsiah-Peprah, Y. (2004). Assessment of the role of private schools in the development of education in Ghana. A study of the Kumasi Metropolis. *Journal of Science and Technology*, 24(2), 54-75.

Nyarko, K. (2008). *Parental involvement: A sine qua non in adolescents' educational achievement* (Diss. LMU München). Ludwig Maximilian University of Munich, Germany.

Organisation for Economic Co-operation and Development. (2011). *How do girls compare to boys in reading skills?* In PISA 2009 at a glance. OECD Publishing, Paris. doi:10.1787/9789264095250-5-en

O'Riley, P. (1996). A different storytelling of technology education curriculum re-visions: A storytelling of difference. *Journal of Technology Education*, *7*(2), 28-40.

Özer, S. (2011). Turkish children's Bender-Gestalt test performance: Differences in public and private school children. *Psychological Reports*, *108*, 169-181. doi:10.2466/03.11.17.24.PR0.108.1.167-181

Sainsbury, M., & Schagen, I. (2004). Attitudes to reading at ages nine and eleven. *Journal of Research in Reading*, *27*, 373-386.

Sandy, J., & Duncan, K. (2010). Examining the achievement test score gap between urban and suburban students. *Education Economics*, *18*(3), 297-315.

Scott, T. M., & Shearer-Lingo, A. (2002). The effects of reading fluency instruction on the academic and behavioral success of middle school students in a self-contained EBD classroom. *Preventing School Failure: Alternative Education for Children and Youth*, *46*, 167-173.

Shah, B. H., Iqbal, J., & Mahmood, E. (2015). Critical analysis of students' mobile phone usage: A comparison of public and private secondary schools in Pakistan. *Journal of Social Sciences and Humanities*, *23*, 129-146.

Sommers, C. H. (1994). *Who stole feminism: How women have betrayed women*. New York, NY: Simon & Schuster.

Tiedemann, J. (2000). Gender-related beliefs of teachers in elementary school mathematics. *Educational Studies in Mathematics*, *41*, 191-207.

Tooley, J., Dixon, P., & Amuah, I. (2007). Private and public schooling in Ghana: A census and comparative survey. *International Review of Education*, *53*, 389-415.

Vilenius-Tuohimaa, P., Aunola, K., & Nurmi, J. (2008). The association between mathematical word problems and reading comprehension. *Educational Psychology*, *28*, 409-426.

Wilkinson, G. S., & Robertson, G. J. (2006). *WRAT 4: Wide Range Achievement Test*. Lutz, FL: Psychological Assessment Resources.

Yeboah, Y. K. (2014). *University of Ghana, College of Humanities, School of Languages, Department of English Investigating the Low Performance of Students' English in the Basic Education Certificate Examination in the Sunyani Municipality* (Master's thesis). University of Ghana, Accra.

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