

The English Reading Proficiency of Future Teachers in Ghana

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ABSTRACT

In this study we investigated the English reading proficiency, reading behaviour and reading attitude of 496 first-year B.Ed. students in Ghana. A reading test was compiled from two internationally recognized tests: the Pearson Test of English Academic (PTE-Academic) and the Programme for International Student Assessment (PISA). The results of the experiment indicated that most students in the samples drawn could adequately deal with reading texts in English which they might encounter as citizens (PISA standard). However, on the PTE academic test only about 48% of the students manifested a reading ability at CEFR B2 level or higher. Reading behaviour and attitude were measured through a questionnaire. 73.5% of the students reported reading study books in English every day or almost every day. Students demonstrated a positive attitude towards reading for school. No correlations were found between students' academic reading proficiency and their reading behaviour, or attitude. Possible explanations are discussed.

Keywords: *academic English, English as a second language (ESL), teacher training, Ghana.*

1. INTRODUCTION

Expository texts form an important part of university curricula. Reading and processing those texts is a struggle for many students (Berry, et al., 2011; Starcher & Proffitt, 2011). Students in English as Second Language (ESL) countries, where tertiary education is often not presented in their mother tongue, face the additional challenge of reading and processing academic texts in a language that is not their native tongue. Ghana is considered an ESL country (Ahulu, 1995; Kachru, 1985) and as in many such post-colonial societies, the language of colonial times still plays a major role in Ghanaian society. Although English is the official language of instruction from Grade four at primary school up to tertiary level, research shows that it is not always used in practice below tertiary education (Opoku-Amankwa, 2009).

The inability of a large number of students to read and understand written text is a major problem in Ghana at primary and secondary level (Leherr, 2009). This is particularly unfortunate since research demonstrates that reading proficiency

has a positive effect on the overall academic achievement of students in western and non-western contexts (Lyengar, 2007; Mol & Bus, 2011; Pretorius, 2000, 2002). In spite of its strong position in the academic curriculum, the English reading proficiency of primary and secondary school students in Ghana is low (Akyeampong, Pryor, & Ampiah, 1999; Ministry of Education, 2010; Ministry of Education Ghana, 2008). The 2007 National Education Assessment Report by the Ministry of Education in Ghana claims that only 26% of pupils who reached the sixth and final year of primary school in 2007 were literate in English (Ministry of Education Ghana, 2008). On the basis of these data Leherr (2009) claims that Ghana is “facing a national literacy and numeracy crisis.” (p. i). No information is available on the academic English reading proficiency of students at tertiary level. The current study is an attempt to fill this knowledge gap and identify the reading proficiency levels of first-year university students.

Underachievement in English language proficiency in Ghanaian schools can be attributed to various factors. Firstly, low performance in schools is caused by insufficient teaching resources, limited use of teaching and learning materials such as books, and low teacher salaries (Akrofi, 2003; Heyneman, 2009). The 2009 NALAP baseline evaluation indicated that “the majority of children in lower primary classrooms in Ghana are being taught by teachers who are not able to teach reading effectively, whether in public or private schools.” (Leherr, 2009, p. i). This finding does not seem surprising since the unqualified teachers in the study outnumbered the qualified teachers. This is in line with findings by UNESCO which reported that the proportion of untrained teachers in Ghana at primary and secondary level was estimated at 35.7% in the year 2007 (UNESCO, 2010).

Secondly, case study research into socio-cultural practice in Ghana has revealed that selective teacher treatment of pupils, lack of parent involvement in reading and writing activities and limitations in the home environment are restricting access to educational resources and effective classroom participation (Akrofi, 2003; Ngwarua & Opoku-Amankwa, 2010; Opoku-Amankwa, 2009).

Thirdly, very little is being done to ensure full implementation of language policies in practice. This means that teachers are not fully equipped to use English as medium of instruction and are likely to use local languages in their classrooms (Opoku-Amankwa, 2009).

These findings illustrate the necessity to improve the English language proficiency of Ghana’s future primary and secondary school teachers, in particular their reading proficiency. Identifying the reading levels of the future teachers of Ghana as proposed in the current study is a first step in this direction.

The University of Cape Coast (UCC) and the University of Education Winneba (UEW) are the only two institutions in Ghana that offer teacher training (B.Ed.) programmes at tertiary level. The teacher training programmes at both institutions play a major role as a provider of teachers to almost all levels of the Ghanaian educational system. Recent research has shown that students who start their teacher training programmes at UCC and UEW reported a positive attitude

towards reading for school and for personal enjoyment. They also reported a positive self-concept of their personal reading abilities (Stoffelsma & Spooren, 2013). However, UCC and UEW lecturers stated that their students do not sufficiently engage in reading. The lecturers also claimed that students lack reading proficiency and have many difficulties with reading texts for school. They fear that this might hamper students' academic achievement (Stoffelsma, 2013). From this clear mismatch between perceptions of lecturers and students' self-image with regard to reading behaviour and proficiency the question arises whether English reading proficiency of first-year students at UCC and UEW is indeed an obstacle for academic achievement or not. Investigating the actual English reading proficiency levels of these students can provide an answer to this question.

In spite of the numerous educational initiatives to improve the quality of education in Africa, fundamental research into reading in developing countries is scarce (Paran & Williams, 2007). Pretorius and Mampuru (2007) point out that Africa "offers an ideal setting for studying the language/reading questions that preoccupy much of L2 reading research. Yet surprisingly little research has emerged from this rich context" (p.38). The purpose of this exploratory study is to map out terra incognita, and to make several contributions to the L2 reading research field in the African context.

2. RESEARCH QUESTIONS AND HYPOTHESES

The main purpose of this study was to measure the English reading proficiency of first-year B.Ed. students at UCC and UEW and to explore whether this proficiency is sufficient for participation in study programmes at academic level without encountering reading difficulties. The following research questions correspond with this purpose:

RQ1: What is the English reading proficiency level of first-year B.Ed. students at UCC and UEW?

RQ2: Do the first-year B.Ed. students at UCC and UEW master a sufficient level of academic English reading proficiency to perform their academic studies without encountering reading difficulties?

Students must not only possess the necessary reading skills if they want to achieve academic results, they also need to be motivated to undertake reading activities. Within the area of motivational reading research a variety of concepts have been the objects of study. These include, amongst others, intrinsic motivation, self-efficacy, attitude, goal mastery and reading behaviour. In the current study, the following constructs will be further elaborated: reading behaviour and reading attitude.

Reading behaviour is related to the type of reading that people engage in (e.g. reading for school or reading for enjoyment), the type of resources they use (e.g. textbooks, novels, newspapers) and the amount of time they spend on reading activities. The latter is often referred to as ‘reading amount’ (cf. Guthrie et al., 1999) or ‘print exposure’ (cf. Mol & Bus, 2011; Stanovich, 2000). It is known that the more people read, the better they become at it (Cox & Guthrie, 2001; Guthrie & Wigfield, 1997; Guthrie, et al., 1999; Nuttall, 2005). Not surprisingly, students who read for enjoyment are more successful students (Mol & Bus, 2011; Shaw & McMillion, 2011). These findings are supported by internationally recognized reading literacy studies, such as the Programme for International Student Assessment (PISA) organized by the Organization for Economic-Cooperation and Development (OECD) and the Progress in International Reading Literacy Study (PIRLS), which is performed in a five-year cycle by the International Association for the Evaluation of Educational Achievement (IEA). Although the scope of these studies differs, the assumption that a positive reading behaviour correlates with higher reading proficiency is shared by both programmes. Following the PISA and PIRLS assumptions, it can be expected that students who demonstrate a positive reading behaviour are likely to achieve better results on the reading proficiency test. This expectation can be translated into the following hypothesis:

H1: Students’ reading behaviour and academic English reading proficiency are positively correlated.

Many definitions of reading attitude exist. The reading-specific definition by Alexander and Filler (1976) provides a clear starting point. They refer to reading attitude as “a system of feelings related to reading which causes the learner to approach or avoid a reading situation” (Alexander & Filler, 1976, as quoted in Guthrie & Knowles, 2001, p. 61 and McKenna, 2001, p. 136). In addition to reading behaviour, a positive reading attitude also influences reading proficiency in a positive way (Mullis et al., 2007; OECD, 2009). Therefore, we expected that in the present study a correlation between reading attitude and reading proficiency would be found, as formulated by the following hypothesis:

H2: Students’ reading attitude and academic English reading proficiency are positively correlated.

3. THEORETICAL FRAMEWORK

3.1 MEASURING READING PROFICIENCY

A number of standardized English as a Second Language (ESL) assessments are available for measuring the relevant component skills of non-native English

speakers. According to Grabe (2009), only recently test developers of major standardized tests such as the International English Language Testing System (IELTS) and the Test of English as a Foreign Language (TOEFL) started to use insights into the nature of L2 reading ability as a basis for development of their assessment tasks. The L2 reading constructs that are measured by these standardized tests have therefore become more evidence-based over time (Grabe, 2009).

Standardized ESL assessments have a number of characteristics in common but differ in set-up and design. Examples of major academic language tests that are especially developed for candidates who wish to gain admission to an English-speaking university or institutions of higher education are IELTS academic (IELTS, 2013), TOEFL iBT (TOEFL, 2013), and PTE Academic (Pearson, 2013). These cover reading, writing, speaking and listening tasks, and some combine two or more skills. Time allocated to reading tasks varies between 41 minutes (PTE Academic) and 60–80 minutes (TOEFL iBT). Tests can be either computer-based or paper-based, but the latter form is being used less in recent years.

African countries are represented scarcely in the top 40 countries or regions who participated most frequently in the IELTS academic test on a yearly basis (IELTS, 2013). In 2011, Egypt, Ghana, Libya, Nigeria and Sudan were amongst the 40 countries who participated most frequently. In 2012 the same African countries were on the list, except for Ghana. However, if we look at information on participants of TOEFL iBT in the year 2012, we see that 39 African countries participated in the test, including Ghana.

Out of the forty countries that have participated most often in the 2011 IELTS academic reading, Ghana came last with an average score of 4.3 on a 9-band scale on reading, below Qatar, Saudi Arabia and the United Arab Emirates. Additionally, out of the 40 most common used first languages that registered in 2011 and 2012, first language speakers of Akan (most used native language of Ghana) scored lowest in the IELTS General training. With an average reading score of 4.1 Akan speakers scored below Arabic, Thai and Korean (in 2011) and below Arabic, Punjabi and Thai (in 2012) first language speakers. A study by Pearson¹ into English language requirements for universities in English speaking countries shows that at 100 top universities in the UK, 100 top universities in the USA and 40 top universities in Australia the average minimum requirement for IELTS is 6.4. Looking at the TOEFL iBT results, participants from Ghana had an average score of 18 out of a maximum of 30 in the reading section. According to a study by ETS (Tannenbaum & Wylie, 2008), reading scores from 8 to 21 correspond to the B1 level on the CEFR scale. On the basis of data from 2009, 34% of the total population participating in TOEFL had a higher score than 18 in the reading section (Van Wyk & Greyling, 2008). Students from Ghana taking the PTE Academic from 2010 to 2012 obtained an average reading score of 46.6 out of a maximum of 90. Following a study by Pearson scores from 43 to 58

¹ Research reported at the EALTA 2009 Conference in Turku, Finland:
http://www.ealta.eu.org/conference/2009/docs/friday/John_deJong.pdf

correspond to the B1 level on the CEFR scale (Pearson, 2010a). In that same period 64% of students taking PTE Academic world-wide obtained a reading score of 46.6 or lower.

The results consistently show that, on average, nationals of Ghana who participated in standardized ESL tests did not obtain the B1 level of academic English proficiency, whereas for many universities B2 is a minimum level to be admitted. The outcomes of the current study, i.e., measured proficiency levels of students in Ghana, can add to the existing information delivered by providers of standardized tests.

A number of criteria were used for the selection of an appropriate instrument to test ESL reading proficiency of first-year students in Ghana. Firstly, the test items had to be from existing ESL assessment instruments that have proven validity and reliability. Secondly, it was preferred to use test items from two different instruments measuring clearly distinct reading levels. Since the reading level of first-year students in Ghana has not been tested before by international instruments, it is difficult to determine beforehand what proficiency level can be expected. Therefore, including items from both a tertiary and secondary school level test will provide clear information about the upper and lower threshold of the reading abilities of the student population. Thirdly, test items had to be freely available for research purposes. Finally, in order to make international comparison possible, an empirical link of some items at academic level with the Common European Framework of Languages (CEF) was preferred. This internationally recognized framework is a global benchmark for language ability and describes language proficiency levels (Council-of-Europe, 2001). The CEF has become one of the most important reference documents for language learning and language testing in Europe and beyond (Figueras et al., 2005; Fulcher, 2004). Details of the CEF levels are further described below.

In view of these conditions, the Pearson Test of English Academic (PTE Academic) and the PISA 2000 Reading test (OECD, 2006) were selected for this study. Both of these tests meet the first three criteria. Additionally, the PTE Academic meets the fourth criterion. Although PISA is not an instrument that measures L2 reading proficiency (students are assessed in their language of instruction), it is one of the major international reading tests at secondary school level with proven reliability and validity.

3.2 PTE ACADEMIC

The Pearson Test of English Academic (PTE Academic) has been developed to test academic English, i.e. to test how well a person will read, listen, speak and write in academic settings. It is used to decide whether students whose first language is not English have acquired English to a level that would allow them to follow university level courses and participate in academic life where English is the language of instruction and communication. The target population is therefore

at least 17 years old. PTE Academic items have a known empirical link to the Common European Framework (CEFR). The six CEFR levels range from A1 (low proficiency) to C2 (high proficiency). A full description of the CEFR levels is published by the Council of Europe (2001).

3.3 PISA ITEMS

The Organization for Economic Co-operation and Development (OECD) set up the Programme for International Student Assessment (PISA) to reply to the need for internationally comparable data on student performance (OECD, 2002). PISA assessments have been developed by participating economies and assess in how far 15-year-old students have acquired the knowledge and skills that are essential for full participation in society either by joining the workforce or by continuing further studies. Since the year 2000 PISA assessments have been conducted at three-year intervals with a growing number of participating countries. Except for Tunisia, no African country participated in the PISA study. Both member as well as non-member states of the OECD participated.

The selected PISA items measure the following five aspects of understanding a text: 1) Forming a broad general understanding; 2) Retrieving information; 3) Developing an interpretation; 4) Reflecting on the content of a text; and 5) Reflecting on the form of a text.

PISA results are reported on a six-level described scale: from Below Level 1 to Level 5 (since the PISA 2009 cycle this scale has been extended both upwards and downwards). The functional descriptors for these levels of reading continuous text are published by the OECD (Kirsch et al. 2002).

3.4 MEASURING BEHAVIOUR AND ATTITUDE

A number of theories have evolved in the past few years in the area of reading motivation, with overlapping concepts and constructs. Following Grabe (2009), most of the researchers agree that motivation involves a set of beliefs, values and expectations and a set of defining behaviours. Based on the PIRLS 2001 and 2006 studies, we chose to include two constructs related to reading motivation in this study: students' reading behaviour and attitudes towards reading. The details of the instrument are reported in the method section of this paper.

3.5 CULTURAL SENSITIVITY OF THE INSTRUMENTS

Both the PISA and PTE Academic items have been verified on culturally sensitivity, albeit in different ways. PISA has established a system in which

experts from participating countries cooperate in working groups that are part of a multi-year development process. In that way, the countries ensure that the PISA assessment instruments “take into account the cultural and curricular contexts of OECD Member countries” (OECD, 2002, p. 3).

With regard to the PTE Academic items, a sensitivity project was executed in which the initial item bank of the PTE Academic was reviewed to discover and remedy possible bias for or against test participants (Pearson, 2010b). For example, the project made recommendations with regard to sensitivity to different cultures, religions, ethnic and socio-economic groups, gender roles, use of positive language, and whether an item requires field-specific knowledge. Reviewers from fourteen different countries participated in this project. The outcomes of the project revealed that “a small proportion of test items were considered to be potentially biased against particular groups of test takers” (Pearson, 2010b, p. 5). These items were subjected to a statistical review process to analyse if and to what extent item sensitivity affected test takers’ performance. The few items that did not meet the criteria were dropped from the item bank (Pearson, 2010b).

4. MATERIAL AND METHODS

4.1 TARGET POPULATION

In this research, we are particularly interested in students from Ghanaian teacher training programmes, because they will be the future teachers of Ghana. After their graduation B.Ed. students from UCC and UEW will become role models in primary and secondary schools all over the country. Their English language skills, including reading proficiency, will influence the quality of learning in their classrooms and have a direct impact on the quality of education nationally. A similar target population was chosen as in the study by Stoffelsma and Spooren (2013), namely the first-year students from B.Ed. Science, Mathematics and the Humanities programmes.

4.2 SAMPLE

Convenience samples amounting to a total of 496 first-year students were taken from the University of Cape Coast (UCC) and the University of Education Winneba (UEW). During data collection the opportunity arose to include a mixed group of 49 students, representing seven B.Ed. and nine BSc. programmes. Since this was a good representation of the various study programmes at UCC, it was decided to include this group in the sample for comparison with the other

programmes. Because of this decision, the final sample included 94% B.Ed. students and 6% BSc. students.

A paper-based reading test was administered to four groups of students. Group 1 (UEW Mathematics) and group 2 (UEW Science) jointly participated in the study during an organized test session after class hours on the University campus. Students were distributed over six classrooms and a team of ten staff members and one external researcher observed the test sessions and kept time. The other two groups participated in the study during their regular first-year classes: group 3 (UCC Social sciences) during their Psychology of Learning class and group 4 (UCC mixed) during their Communicative Skills class, during which the external observer and class lecturers were present. All students responded anonymously to the questions. There was a strict time limit set of sixty minutes to complete the test.

4.3 ENGLISH READING PROFICIENCY

To measure the English reading proficiency of the students, a total of 54 reading test items were selected from two internationally recognized reading comprehension tests: 28 items from PTE Academic and 26 released items from the English language version of PISA. All 54 items have known item difficulty parameters, but these are not directly comparable as they come from separate calibrations. A linked design was used, in which the 54 test items were distributed over six different blocks of nine items. Each block contained items from both sources: three blocks with five items from PTE Academic and four items from PISA and three blocks with four items from PTE Academic and five items from PISA. Three blocks opened with PTE Academic items followed by the PISA items and the other three blocks started with PISA items followed by the PTE Academic items. Six test forms were created by combining two blocks per test form, each block appearing in two test forms in different combinations (e.g., Test form 1: Block 1 and 3, Test Form 2: Block 2 and 3, etc.). This resulted in a fully linked design of six test forms each containing 18 items. The six tests forms were distributed randomly amongst the four groups by rotation.

All 28 PTE Academic test items that were included in this study were related to continuous texts, and were multiple-choice. For this particular study a subset with an average B1 level was used: seven at A2 level; fourteen at B1 level and seven at B2 level. Out of the 26 PISA items that were selected, 16 include continuous and 10 include non-continuous texts (OECD, 2006). Nine items were open-ended questions.

4.4 DEMOGRAPHICS

The students who participated in the study were asked for their age, gender and choice of academic programme. The language characteristics of the sample were registered. Students were asked about the language use in their home environment: ‘Which language do you speak at home most of the time?’ The questionnaire items are presented in Table 1.

4.5 READING BEHAVIOUR AND ATTITUDE

Items to measure reading behaviour and attitude were based on the PIRLS (Mullis et al., 2007), which is an internationally recognized instrument that has been used to measure reading attitudes of students in over 40 countries. Although the focus of PIRLS are fourth grade students (age 10–11) in L1 settings, the PIRLS questionnaire items on reading attitudes, and behaviour are typically topics that are also relevant at higher levels of the educational system. Reading attitude was measured with six statements (see Table 1). As the first statement (‘I read only if I have to’) did not contribute to the reliability of the scale it was removed. The five remaining items had an alpha reliability coefficient of .53. Six items were used to measure students’ attitudes towards reading for school; these had an alpha reliability coefficient of .57. The other six items to measure the students’ attitude towards reading for enjoyment had an alpha reliability coefficient of .63.

Table 1. *Overview of questionnaire items in relation to research questions.*

Topic of research	Questionnaire item	Response format
Demographics	Age, gender, choice of academic programme	Open question
Linguistic background	Which language do you speak at home most of the time?	Open question
Actual time spent on reading in English (H1)	How often do you read in English? - I read stories or novels - I read magazines - I read newspapers - I read study books in English	<i>Scalar:</i> Every day or almost every day Once or twice a week Once or twice a month Never or almost never

Attitudes towards reading in English (H2)	What do you think about reading in English (textbooks, articles, etc.) for your study programme? - I read only if I have to (<i>reverse coded</i>) - I like talking about textbooks with other people - I would be happy if someone gave me a textbook as a present - I think reading is boring (<i>reverse coded</i>) - I need to read well for my future - I enjoy reading	<i>Scalar:</i> Agree a lot Agree a little Disagree a little Disagree a lot
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4.6 DATA ANALYSIS

The reading test items were analysed using the Rasch model. All item parameters were estimated in a single analysis, thereby bringing the PISA and PTE Academic items on a single underlying IRT scale. On the basis of the original PISA item difficulty estimates, a regression function was computed to project the results from the Ghana students on the PISA scale. Similarly, on the basis of the original PTE Academic item difficulty estimates, a regression function was computed to project the results of the Ghana students on the PTE Academic scale.

The questionnaire items measuring reading behaviour and attitude items were averaged per scale. The scores on the various scales were calculated for all participants. Data were screened for normality. For the normally distributed data independent t-tests (two independent samples) and one-way ANOVA (several independent samples) were used to compare subgroups, followed by planned comparisons in case of significance. For non-normally distributed data the Mann-Whitney (two independent samples) and Kruskal-Wallis (more than two independent samples) tests were used. Mann-Whitney tests were used to follow up significant findings from the Kruskal-Wallis tests. In case there were multiple comparisons involved in the follow-up tests, Bonferroni corrections were applied.

5. RESULTS

5.1 DEMOGRAPHIC AND LINGUISTIC CHARACTERISTICS OF THE SAMPLE

The total number of respondents comprised 367 male and 98 female students; 31 students did not report their gender. All student groups were dominated by male students. The average age of the students per group ranged from 19.8 (Social Sciences) to 25.1 (Science). The oldest student who participated in the study was 54 years of age and the youngest 17. The highest average age was found in the science group, with an average of 25.1 years. For further details, see Table 2.

Students were asked which language they speak at home most of the time. The outcomes show a highly multilingual student population. A total of 28 languages were reported by the students, representing eight of the ten groups into which Bodo (Bodo, 1996) classifies Ghanaian languages, and three non-indigenous language groups. The most widely spoken languages at home (60.5%) come from the Akan group: Akan, Ashante-Twi, Fante, Twi. This is no surprise because the most widely spoken indigenous languages in Ghana come from the Akan group. The second language mostly spoken at home is English (14.6%). The third language spoken at home by the student population is Ewe (12.8%). Details are presented in Table 3.

Table 2. *Composition of questionnaire groups.*

Test group	Study programme	% of sample	Nr of students	Female (%) within group ^{a)}	Male (%) within group ^{a)}	Average Age ^{b)}
Group 1	B.Ed. Mathematics UEW	34.5	171	7.6	86.5	24.1
Group 2	B.Ed. Science UEW	20.2	101	17.8	72.2	25.1
Group 3	B.Ed. Social Sciences UCC	35.3	175	30.3	64.6	19.8
Group 4	Mixed B.Ed. & B.Sc. UCC ^{c)}	9.9	49	28.6	67.3	21.1
	B.Ed.		21	28.6	66.7	21.1
	B.Sc.		28	28.6	67.9	21.1
Total			496	19.8	74.0	22.5

a) 6.3 per cent did not report their gender

b) 3 per cent did not report their age

c) This group includes the following B.Ed. programmes: Arts, Early Childhood Education, Home economics, Management, Mathematics, Physical Education, and Science. And the following BSc. programmes: Biochemistry, Biological Science, Computer Science, Industrial Chemistry, Mathematics, Medical Laboratory Technology, Physical Science, and Psychology.

Table 3. Representation of language spoken mostly at home by students, categorised by language group.

Language group (Bodomo, 1996)	Language spoken mostly at home	Percentage of students (%)
Akan Group	Akan, Ashante-Twi, Fante, Twi	60.5
Gbe Group	Ewe	12.8
Ga-Dangbe Group	Ga, Dangbe, Krobo	2.5
Mabia Group	Dagbane, Dagaare, Kusaal, Mamprulli	4.0
Other groups (Nzema, Grusi, Gurma, Guang)	Nzema, Kasem, Tampulma, Bassari, Konkomba, Moba, Effutu, Gonja, Krachi, Nchumburu	2.7
Non-indigenous regional	Gefwi, Hausa, Likpakpan, Sissala,	2.6
Non-indigenous western	English, French	14.9

5.2 ENGLISH READING PROFICIENCY TEST

The test that was used to measure reading proficiency of first-year students in Ghana existed of six different versions, each version containing two different text blocks. The tests were administered in a linked design. The difficulty of the six blocks with different items ranged from the low fifties to the upper sixties, but scores for the three groups are quite close to each other across the six blocks.

Cumulative frequency distributions of proportions correct scores on PISA and PTE Academic of all students were calculated. Results are presented in Figure 1. On the basis of these results it can be concluded that the set of PISA items included in the reading tests are easier than the set of PTE Academic items. On both tests some students reached a perfect score, indicating that the tests were not beyond their ability.

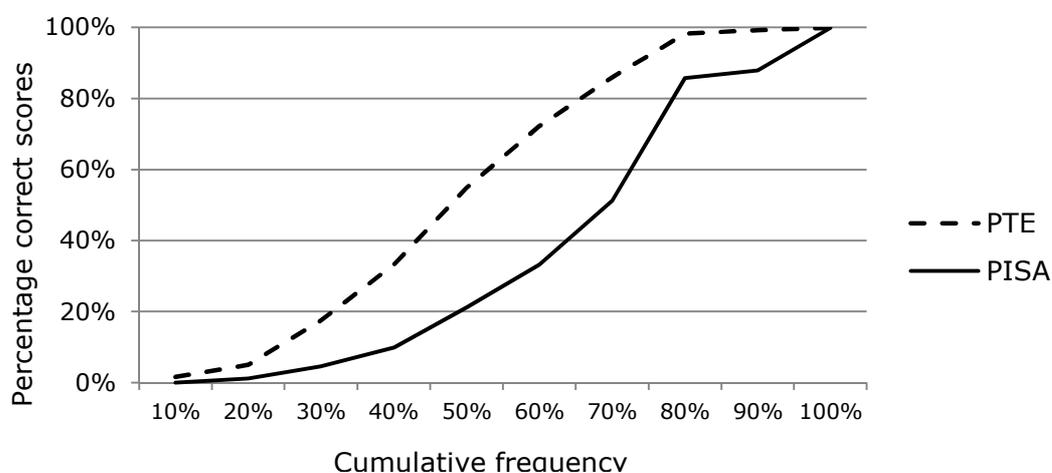


Figure 1. Cumulative frequency distributions of percentage correct scores on PISA and PTE Academic of all students (n=496).

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On the basis of a joint calibration of the items and relating the item parameters through linear regression to the scales of the PISA and PTE Academic scoring models, the estimated mean PISA score for these students is 504 with a standard deviation of 49, whereas their estimated mean PTE Academic score is 56.8 with a standard deviation of 20.03. The estimated distribution of these students on both tests is shown in Figure 2.

From Figure 2 a number of observations can be made. There are no students to be found at PISA level 1 or below and only a very small percentage at level 2. Level 2 is the minimal level in PISA not to be considered ‘at risk’. From the PISA point of view therefore none of these students would appear to be ‘at risk’ of not being capable of dealing with reading tasks required to participate as citizens in society. About 30% of this sample of Ghana students would be able to meet the definition of level 3, i.e. would be able to “use conventions of text organization, where present, and follow implicit or explicit logical links such as cause and effect relationships across sentences or paragraphs in order to locate, interpret or evaluate information.” As many as 70% of the students demonstrated a reading ability above that level.

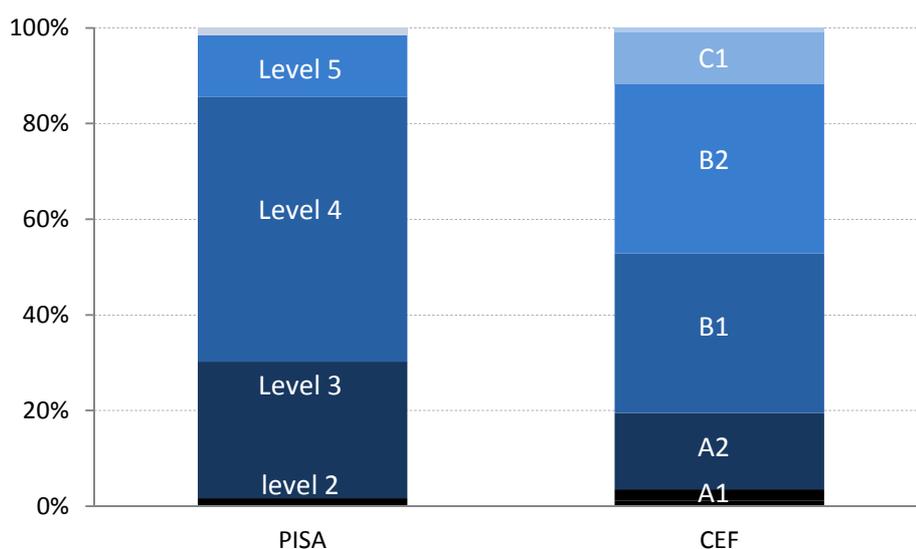


Figure 2. *Distribution of all students (n=496) over PISA and CEF levels.*

The results on the PTE academic scale can also be converted into CEF terms. About 19% of these students manifested a reading ability at A2 or below, which would suggest they need some kind of support to deal with English language texts. This may come in the form of texts that are adapted to their level, e.g., by limits on the vocabulary used or other measures to lower the difficulty. A further 33% perform at level B1, meaning they can deal independently with reading texts about familiar issues in everyday life. The remaining 48% perform at level B2 or above, suggesting they can deal independently with reading texts that they encounter in academic settings.

5.3 READING BEHAVIOUR AND ATTITUDES

In order to retrieve information on the amount of reading that students do in English, they were asked to indicate how often they read stories or novels, magazines, newspapers and study books in English. Results are presented in Figure 3. Study books in English are read most frequently by the students: 73.5% reported reading study books in English every day or almost every day. Also, newspapers in English are read frequently: 38.0% of the students reported reading those on a daily basis. 23% of the students reported reading novels every day or almost every day. Magazines in English are the least popular genre; these are mostly read on a monthly basis (43.5%).

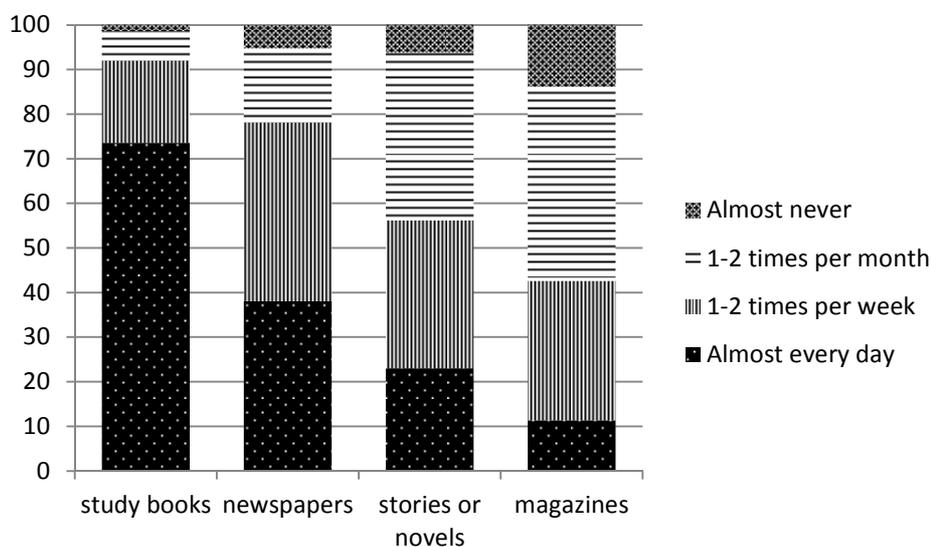


Figure 3. *Time spent on reading in English (novels, magazines, newspapers, study-books), in percentages.*

The reading attitude of first-year UCC and UEW students was remarkably positive. On a scale from 1 (negative attitude) to 4 (positive) they scored an average of 3.57 ($SE = 0.02$).

5.4 LINKING READING PROFICIENCY, READING BEHAVIOUR AND ATTITUDE [H1& H2]

In view of the assumption that reading proficiency, attitudes and behaviour are strongly linked (Mullis, et al., 2007; OECD, 2009), it was expected that students' scores on the reading proficiency test would correlate with the students' reading behaviour [H1] and attitude [H2]. Since the data were not normally distributed, Spearman's correlation coefficient was used. The data are presented in Table 4.

Table 4. *Correlations between academic reading proficiency, reading behaviour, and attitude*.*

	Academic reading proficiency	Reading behaviour ^{a)}	Reading attitude
Academic reading proficiency	x	ns	ns
Reading behaviour		x	.32*
Reading attitude			X

* Correlations significant at the 0.01 level (one-tailed).

a) This scale is the average of four items: time spent on reading novel, magazines, newspapers and study books.

Contrary to expectation, no correlation was found between students' academic reading proficiency and reading behaviour, or between the academic reading proficiency and reading attitude. A positive correlation of .32 was found between reading behaviour and reading attitude.

6. DISCUSSION AND CONCLUSION

6.1 DEMOGRAPHIC AND LINGUISTIC COMPOSITION OF THE SAMPLE

We found that the enrolment rates in terms of gender are uneven at the two institutions: students are predominantly male at both institutions, irrespective of their line of study. In addition, the data showed that the population of our study is highly heterogeneous, in terms of age (from 17 to 54 years old), and the language used in the home environment (representing 28 different languages). The average age of the participants in our study proved to be relatively high (22.5 years). The outcomes on demography and linguistic characteristics of first-year UCC and UEW students tell us that, although they are part of the same study programme, students find themselves in very different stages of life and have different linguistic backgrounds. Designing academic programmes that take into consideration these differences is, and will remain, a major challenge for the institutions.

6.2 ENGLISH READING PROFICIENCY TEST (RQ1 & RQ2)

Two key questions were posed at the beginning of this article. Firstly, what is the English reading proficiency level of first-year B.Ed. students at UCC and UEW? [RQ1]. Secondly, do the first-year B.Ed. students at UCC and UEW master a sufficient level of academic English reading proficiency to perform their academic studies without encountering reading difficulties? [RQ2]. The results of both tests that were used in this study (PISA and PTE Academic) will be discussed separately.

The PISA 2000 test, in which a total of 180.000 students from 32 countries participated, reported a global average score of 500 (SD = 100) (OECD, 2002). In the present study, the Ghana sample scored an estimated average of 504, just above the global average. This result places the Ghana sample at more or less the same level as the United States (504) and Denmark (497). Students' scores were lowest for the reading tasks that entailed reflecting on the form and content of a text.

There are three factors that need to be taken into account when interpreting this result. Firstly, the target group of the PISA test are 15-year-olds. With an average age of 22.5 years, the Ghanaian students in this study are much older than the PISA test participants. Secondly, the samples in the global PISA study represent the entire population of school going 15-year-olds in a particular nation, whereas the Ghanaian sample includes a selection of students who have already finished their secondary education and went through a selection process to be admitted to university. Thirdly, the PISA country samples are tested on proficiency in their language of instruction at school, which is usually their mother tongue. Although the test items in the current study were in English, which is not the mother tongue for many Ghanaians, the students did pass a secondary school curriculum with nominally English as language of instruction. Furthermore, they are expected to perform their university studies in the English language.

Taking all this into consideration, the results of this experiment indicate that most students in the samples drawn can adequately deal with reading texts in English as they might encounter as citizens (PISA standard). The test results do not indicate whether or not the students possess sufficient linguistic skills for an academic career.

On the PTE Academic about 19% of the students manifested a reading ability at CEF level A2 or below, 33% were at the B1 level, 36% at B2 and 12% at C1. Furthermore, the sample had an estimated average score of 56.8. The lower boundary for B2 on this scale is 59. What does this tell us about the English reading abilities of the Ghanaian sample? Since there are no research publications available on the CEF from an African perspective, the results of our study will be compared with non-African contexts.

In a study by Pearson², English language requirements were investigated for universities in English speaking countries. Data were collected from 100 universities in the United Kingdom, 100 universities in the United States, and 40 universities in Australia. The following three major disciplinary areas were included: business, engineering, and IT/Computing. The study included admission scores from three commonly used English language tests: The International English Language Testing System (IELTS), the test of English as a foreign language (TOEFL) and the Pearson Test of English (PTE). Results show that the minimum entry requirement for TOEFL is 87, for IELTS it is 6.4 and for PTE Academic it is 59.6. These requirements correspond to the lower boundary of the CEF B2 level. In other words, for admission to universities in the US, the UK and Australia, an average level of B2 is required. For undergraduate level, the requirements are a bit lower (57.41 PTE).

If we place the results of the current study in this context (English speaking universities), it would mean that almost 52% of the sample did not attain the required CEF B2 level of English language proficiency and that they would need assistance in processing academic texts. This is in line with admission requirements for European universities. L2 learners of the national languages concerned will have to perform minimally at B2 level in order to be admitted to undergraduate university programmes.

6.3 READING BEHAVIOUR AND ATTITUDE

In the current study, 23% of the students reported reading novels every day or almost every day, and 38.0% of the students reported reading newspapers on a daily basis. As much as 73.5% of the students reported reading study books in English every day or almost every day seems to contradict the opinions of the UEW and UCC lecturers, who felt that students do not engage in reading sufficiently.

The first-year students had a positive attitude towards reading for school, and even reported a higher average attitude than the students in the study by Stoffelsma and Spooren (2013).

6.4 LINKING READING PROFICIENCY, READING BEHAVIOUR AND ATTITUDE

Contrary to expectations, no positive correlations were found of students' academic reading proficiency and reading behaviour or reading attitude. This is noteworthy, since many studies suggest a strong link of reading proficiency with

² Research reported at the EALTA 2009 Conference in Turku, Finland:
http://www.ealta.eu.org/conference/2009/docs/friday/John_deJong.pdf

behaviour attitude (Guthrie & Knowles, 2001; McKenna, 2001; Mol & Bus, 2011; Mullis, et al., 2007; OECD, 2009; Shaw & McMillion, 2011). A possible explanation could be the use of self-reported instruments. Students might be inclined to give socially acceptable answers and consequently obtain high scores on reading behaviour and attitude, whereas in practice they do not read as much as they report. A qualitative follow-up study could provide additional information on how reading behaviour and attitude relate to reading proficiency.

7. LIMITATIONS OF THE STUDY

The current study is unique in its sort, in the sense that this is the first study that combines PISA and CEF items for the measurement of one student population. Furthermore, this is the first study that applies both frameworks in an African context. However, some limitations must be kept in mind when interpreting the results.

Firstly, a limitation of both instruments is the lack of participation of African countries in the development of the reading items and their verification on cultural sensitivity. Except for Tunisia, no African country has ever participated in the PISA assessments: consequently no African country participated in the PISA working groups. Furthermore, there was no African representation in the PTE Academic sensitivity project.

Secondly, the instrument used in this study consisted of only a sample of items from PISA Reading and from PTE Academic and not a complete set. Each student took a total of 18 items, which as a measure of individual reading ability would be considered too short to base high-stakes decisions on. Nevertheless, the carefully balanced and linked design combined with the sample size of close to 500 students allows interpreting the results as an indication of the reading ability of the students at the group level.

Finally, the relation of these results with the international standards of PISA and the CEF needs to be interpreted with caution because the limited sets of items included from the original instruments, although representative with respect to their difficulty level, cannot be considered to be entirely representative of the constructs underlying the original instruments.

8. RECOMMENDATION FOR FUTURE RESEARCH

Three recommendations for future research can be distilled from our study. Firstly, the lack of a positive correlation of reading behaviour and attitude with reading proficiency is remarkable. A more qualitative analysis of students' reading behaviour and attitudes will help to understand causes that underlie this lack of correlation.

Secondly, there is need for a follow-up investigation on how to improve the reading proficiency of first-year students in Ghana. From an international perspective, the reading proficiency levels of the student population in the current study have proven to be limited and many students would need assistance in processing academic texts. This is in line with the opinions of academic staff at both institutions.

Thirdly, to overcome issues of comparability, future studies should investigate possibilities to calibrate European language tests, such as PISA and PTE, with African reading tests, so that policy makers, educators and language specialists can come to an informed decision that is based on actual language proficiency levels in African countries.

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