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## Improving the academic English reading proficiency of first-year students in Ghana: an educational design research approach

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## English summary

The aim of this study was twofold. First it was an attempt to investigate the academic English reading proficiency of first-year B.Ed. students at the University of Cape Coast (UCC) and the University of Education Winneba (UEW) in Ghana. Secondly, educational solutions to improve students' academic English reading proficiency were developed, implemented and evaluated. Based on these aims, the main research question was the following:

*What are the characteristics of teaching and learning activities that could lead to an improvement of the academic English reading proficiency of first-year B.Ed. students in higher education institutions in Ghana?*

An educational design research approach was selected to carry out the study and to answer the research question. Educational design research is a research approach that includes the design, development and evaluation of educational interventions as a solution to certain educational problems.

In addition to finding solutions to educational problems, educational design research yields knowledge about the processes involved in designing and developing certain interventions and their characteristics (Plomp, 2007). Following Plomp (2007), the research contained three phases. The first phase consisted of a context analysis and literature review. The second phase included the development of several prototypes based on the outcomes of the context analysis and literature review. The development of these prototypes consisted of a number of iterations. Each iterative cycle was evaluated through formative evaluation. Finally, in the third or assessment phase a summative evaluation was used to draw conclusions about the effectiveness of the intervention.

A thorough context analysis was conducted to investigate the characteristics of the academic English reading context of first-year academic B.Ed. students and to find out whether there was a need for an intervention that emphasizes improving their academic English reading proficiency. Three separate studies were conducted for the investigation with both quantitative and qualitative research methods. A fourth study was conducted that included the design, development and evaluation of a reading intervention at both universities.

### *Study I*

Study I was an attempt to fill in the blanks on the unexplored map of reading behaviour, attitudes, and self-concept of teacher education students in Ghana. The study included 316 students from the following B.Ed. programmes: Arts, Home Economics, Social Sciences, Mathematics and Science. The following socio-affective factors related to academic English reading proficiency were investigated: reading attitudes, behaviour and self-concept of reading. The outcomes showed that spending time on reading for enjoyment was not popular amongst students. However, a surprisingly positive attitude towards reading for school, for enjoyment and self-concept of reading amongst students was found. The study confirmed that earlier findings in the field of reading research are also applicable in a non-Western L2 setting of first-year university students. As in previous studies, the data showed that there is a clear relation between attitude towards reading for school and for enjoyment (Mol & Bus, 2011); reading behaviour and reading attitude (Cox & Guthrie, 2001); and self-concept of reading and attitude towards reading for enjoyment (Bandura, 1997; Schunk, 1991; Guthrie, 1997).

### *Study II*

In study II the reading attitudes and behaviour of 496 first-year B.Ed. students were investigated, as well as their academic English reading proficiency. The students who participated came from B.Ed. Mathematics and Science (UEW), B.Ed. Social Sciences (UCC), and a mixed group of BSc. and B.Ed. students from various programmes (UCC). The fact that 73.5% of the students reported reading study books in English every day or almost every day was contrary to the opinions of lecturers, who felt that students did not read sufficiently (cf. Ottevanger & Stoffelsma, 2007). As expected, the first-year UCC and UEW students had a positive attitude towards reading for school, and even reported a higher average reading attitude than the students in study I.

Regarding students' academic reading proficiency two key questions were investigated. Firstly, what is the English reading proficiency level of first-year B.Ed. students at UCC and UEW? Secondly, do the first-year B.Ed. students at UCC and UEW have a sufficient level of academic English reading proficiency to perform their academic studies without encountering reading difficulties? To answer these questions, a language test was compiled from reading items on two internationally recognised 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, which is the minimum language requirement for enrolment in European universities. If we place the results of the current study in the context of universities in which the curriculum is taught in English, it would mean that almost 52% of the sample did not attain the required level of English language proficiency and that they would need assistance in processing academic texts. Contrary to expectations, no correlations were found between students' academic reading proficiency and their reading behaviour, nor between students' academic reading proficiency and their reading attitude. This is noteworthy, since much research suggests a strong link between reading proficiency and behaviour and reading proficiency and attitude (Guthrie & Knowles, 2001; McKenna, 2001; Mol & Bus, 2011; Mullis, et al., 2007; OECD, 2009; Shaw & McMillion, 2011). These findings were further investigated in the third study, which included a qualitative approach to students' reading behaviour and attitude in relation to reading proficiency.

### *Study III*

The main objective of study III was to research the broader reading and learning context of the students by using a qualitative research approach. A total of 22 students who participated in study II were asked to keep daily activity diaries over a period of 3 weeks during semester time, after which twelve of them were interviewed. The study also included interviews with 14 academic staff members from UCC and UEW who were teaching on similar B.Ed. programmes. Results were categorised in the following themes: (I) the teaching and learning environment; (II) the role of academic English reading proficiency in the curriculum; (III) reading resources, homework, and assessment; and (IV) reading motivation.

Students reported spending as much as 48 hours and 37 minutes per week on academic work inside and outside the classroom (theme I). Compared with their peers in the United States (27 hours per week) and the Netherlands (22 hours per week) this is a lot (cf. Babcock & Marks, 2011; Torenbeek, et al., 2011). The UCC and UEW students reported spending 148.8 minutes (2 hours and 28 minutes) on average per day on leisure activities, and almost an hour and a half (88.8 minutes) on religious activities. The important role that religion plays in students' lives fits well within the highly

religious Ghanaian culture. Students also expressed that they face a variety of logistic challenges that interfere with the teaching and learning process, such as tight timetables and large class sizes.

The second theme under investigation was the role of academic English reading proficiency in the curriculum. Lecturers made strong negative statements about the reading level of first-year students. Students' lack of compliance with reading assignments seemed to bother the lecturers most. This is a universal problem in academia that fits in an international trend of a reading decline, reported in a number of studies over the past years (Lyengar, 2007; Skaliotis, 2002). The Ghanaian lecturers stated that students demonstrate a number of reading deficiencies such as poor reading skills, limited vocabulary, bad pronunciation, lack of critical reading skills, low reading speed, lack of comprehension (recall reading), and lack of perseverance when reading long texts.

Students stated that they used the internet as an additional resource to textbooks and reference books. However, in reality students only reported spending 11.9 minutes per day on average online for leisure-related activities (browsing Google, Facebook, etc.) and another 5.2 minutes per day on internet research for their studies. Only 16 out of the 22 students (73%) used the internet either for leisure or study purposes during the three weeks of the diary project. Only half of the students (11) reported reading a novel or a story book over a period of three weeks for an average time of 8.1 minutes per day.

The third theme that was addressed during the interviews concerned study resources, homework and assessment. Students depicted a much more negative picture of the library resources than their lecturers. Moreover, they reported that access to books was a severe problem that caused stress and frustration and hampered their preparation for academic assignments.

A major part of the study resources used by students are lecture notes. The use of lecture notes or hand-outs, which are prepared by the lecturer and distributed in class, is very strongly engrained in the Ghanaian educational system, also at tertiary level. As a consequence, many students who come out of secondary schools with limited reading skills are not motivated to start improving their reading skills at tertiary level. The activity diaries indicated that the average amount of time spent on reading lecture notes (41.5 minutes per day) is more than double the amount spent on reading textbooks (16.5 minutes per day). The fact that many lecturers still make it possible for students to pass their exam relying solely on lecture notes does not provide incentives for the students to read texts independently. This system is not conducive to training important reading skills such as critical reading, summarizing, and retrieving main ideas from a text. In addition, it does not provide opportunities for extensive reading.

The fourth theme that was addressed during the interviews was reading motivation. All students stated that lecturers motivated them to read by giving them reading assignments as homework. Almost half of the lecturers did not perceive it as their task to motivate students to engage in reading, but rather as the responsibility of other areas or persons in the educational system.

One of the key points that was derived from study III was that the newly collected qualitative data allowed for a new interpretation of the quantitative results from study II. A major ambiguity in study II was the absence of correlations between reading attitude and reading proficiency on the one hand and reading amount (novels, magazines and newspapers) and reading proficiency on the other. The low correlation between time spent on reading study books and academic English reading proficiency found in study II (.08) is noteworthy since reading research provides strong evidence that reading behaviour is strongly linked with reading proficiency. In other words, students who read more become better readers (Guthrie & Knowles, 2001; McKenna, 2001; Mol & Bus, 2011; Mullis, et

al., 2007; OECD, 2009; Shaw & McMillion, 2011). The outcomes of study III showed that, although many students in study II claimed to read on a daily basis (73.5%), the amount of time spent on reading textbooks was in fact 16.5 minutes per day. These findings suggest that students may be reading often but that the quantity of their reading is fairly limited. This would explain the lack of correlations between reading behaviour and reading proficiency in study II.

Also, the absence of correlations between reading attitude and reading proficiency in study II could be explained by the new data collected in study III. It is very well possible that students indeed believe that they have a positive attitude towards reading (study I and II) and a positive reading self-concept (study I and IV), but that the contextual circumstances or educational systems do not allow them to fully grasp what it means to be a proficient reader. The current study revealed that students' problems with academic reading skills have been built up in primary and secondary schools, due to a system of 'spoon-feeding' and lack of resources and books. Therefore, many students who come in at tertiary level are not used to being independent learners and their reading levels are low and in need of improvement. Once students are in the tertiary education system, problems with academic reading proficiency are partly maintained because of a number of contextual factors: lack of access to textbooks and poor quality of books, an academic culture of using lecture notes, large class sizes with few possibilities for individual attention, a high risk of cheating amongst students, no ownership of the reading problem amongst staff and few motivational practices by academic staff members. Students reported spending a lot of time on their academic work, more than their colleagues from the US or Europe. However, in terms of reading amount, the current study discovered that students do not spend many hours on reading textbooks nor do they read a lot for enjoyment. More than anything, they spend their time on attending lectures, group work or reading lecture notes and the question arises whether these activities are effective in developing their academic English reading proficiency.

#### *Study IV*

Based on the literature review (Chapter 2) and the context analysis (Chapters 3 to 5) several factors were identified that justified an intervention to enhance the academic English reading proficiency of first-year students at UCC and UEW. These factors included the importance that is attributed to academic reading proficiency by the reading research literature, the Ghanaian lecturers and the students; the low level of students' reading proficiency as perceived by the lecturers (study III); the low test scores on the language proficiency test (study II); and the positive correlations between reading behaviour, attitude and self-concept (study I), which imply that including additional reading activities in the curricula should lead to more positive reading attitudes and self-concepts.

Study IV started with the transformation of the literature review (reported in Chapter 2) and the context analysis (reported in Chapters 3 to 5) into fourteen tentative design principles. These tentative design principles were used as "how-to-do" principles for structuring and supporting the design and development activities (Plomp, 2007, p.13). A content-language integrated approach was chosen, whereby specific academic reading activities were integrated into the subject-content of three existing academic first-year courses. These included two first-semester courses at UCC: The Use of English (ENG101) and Introduction to Chemistry (CHE101), and one first-semester course at UEW: Introduction to Literature (LIT111D). The development of the prototypes was carried out by two teacher design teams, one at UCC and one at UEW. The duration of the intervention was ten weeks. An experimental set-up was used in which control and experimental groups were assessed on their

progress in reading proficiency, and their change in reading behaviour, attitudes and self-concept of reading.

The quality criteria as proposed by Nieveen (2007) guided the formative evaluation process of the prototypes. Summative assessment was used to determine the learning outcomes, i.e. the “learned curriculum” and the learning experiences, i.e. the “experiential curriculum” (Van den Akker, 2003, p.38). Data were collected through a reading proficiency test and interviews with staff and students. By the end of the intervention, the *tentative* design principles (DP’s) that were successfully applied in the final design received the status *final* design principle. These included the following: teach text structures (C1); link homework to assessment (C2); provide a sufficient number of texts (C3); emphasize vocabulary training of academic and content specific words (C4); include teachers who can motivate students to read independently (C5); and use active learning methodologies (C6). The other tentative design principles were discarded because it was either impossible to incorporate them or they were deemed unnecessary in the particular courses that were part of the investigation.

Four factors played an important role in the successful development and implementation of the prototypes: creating ownership by adhering to the communicative approach (cf. Visscher-Voerman & Gustafson, 2004); financial compensation of staff-time devoted to the project; the possibility to integrate language instruction into existing content courses (content-based language instruction); and procedural specifications in the form of teacher guides.

Due to the low expected effectiveness of the LIT111D course that was observed during the first classroom observation, the intervention was not continued. The number of CHE101 students in the control group was deemed too low to use as an independent group in the analyses. Therefore, two analyses were carried out. In the first analysis the distinction between study programmes was discarded, to the effect that a control group (n=33) was compared with an experimental group (n=51). In the second analysis the ENG101 control and experimental groups were analysed as a separate sub-set. For the ENG101 course, the results in terms of learning outcomes were hopeful because by the end of the intervention the ENG101 experimental group had improved significantly on their academic reading proficiency. They had also improved slightly more on their academic reading proficiency than their peers in the control group. Results also showed that, by the end of the intervention, the time spent on reading had increased significantly more for both experimental groups than for the control groups.

The improved academic reading proficiency did not affect the results of the final course exams. Possible explanations are the relatively short duration of the intervention (10 weeks), insufficient explicit differences between the experimental and control group design, and lack of statistical power of the sample. In addition, the lack of results for the CHE101 course could be caused by the fact that the exam questions possibly focused more on ‘formula questions’, i.e. doing calculations, than on ‘conceptual questions’. For the latter, students are required to use their academic English reading skills more than for doing calculations.

The average difference between reading behaviour as reported in the pre- and post-test was significantly higher for both experimental groups than for the control group. This increase is an indication that students from the experimental groups were indeed stimulated to read more than the students in the control group. All groups reported lower scores on the self-concept scale of the post-test than on the pre-test.

The CHE101 lecturer experienced great initial resistance from the students in the experimental group. This resistance stopped after the third week of the semester. Students then

realised that the assignments helped them to prepare for the quiz; they also learned that they now had better grades than the students from other groups who participated in the same quizzes.

In terms of learning experiences, all students in the experimental groups evaluated the vocabulary and text comprehension assignments positively. Students stated that they did not only learn new words, but the assignments enhanced their understanding of the course textbook and articles and they were stimulated to work with dictionaries if necessary. Moreover, they improved their understanding of the subject-content and the exam questions, and they improved their language-use and spelling skills.