This is the published version of a paper published in South African Journal of Higher Education.

Citation for the original published paper (version of record):

Comprehension of marketing research textbooks among South African students: An investigation.

Access to the published version may require subscription.

N.B. When citing this work, cite the original published paper.

Published with permission from the publisher

Permanent link to this version:
http://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-23786
Comprehension of marketing research textbooks among South African students: An investigation

A. Berndt
Jönköping International Business School
Jönköping, Sweden
e-mail: adele.berndt@jibs.hj.se

D. J. Petzer
North-West University
Potchefstroom, South Africa
e-mail: 11196092@nwu.ac.za

J. P. Wayland
University of Arkansas at Little Rock
Little Rock, United States
e-mail: jpwayland@ualr.edu

Abstract
Reading is a skill people require in order to operate successfully in all spheres of life. Mastering this skill is even more critical when pursuing academic studies. This study investigated the reading comprehension of final year undergraduate marketing students at a South African higher education institution (HEI) relating to their comprehension of marketing research textbooks. Two measurement instruments were used to test their reading comprehension. One instrument contained two passages from the respondents’ prescribed marketing research textbook and the other two passages from a comparative international textbook. Following the Cloze procedure, every 9th word was removed from the passages and respondents were subsequently required to complete the non-subject related words in one of the instruments fielded on a random basis. The results indicated that the majority of respondents exhibited a reading comprehension that is at the frustration reading level. A further evaluation that allowed for synonyms (Semantically Acceptable Scoring Method or SEMAC) to be included, did not impact meaningfully on the classification of respondents. Significant differences in reading comprehension could also not be uncovered based upon the respondents’ gender and home language. The results furthermore presented challenges for all those involved in higher education (HE), more specifically impacting on textbook choice as well as assessment and performance practices.

Keywords: comprehension, marketing research, textbooks, South Africa, readability, higher education institution (HEI)
INTRODUCTION

Reading comprehension is a skill people require in order to function effectively in their environment (Williams, Ari and Santamaria 2011), and this is certainly true in the case of higher education (HE) (Van Rooyen and Jordaan 2009). Informal discussions with academics suggest concerns regarding both the reading and writing skills of students. These skills, specifically reading, affect the tasks of instructors and their ability to communicate with students, and hence impact their success. Reading skills require the ability to understand what has been read (Bharuthram 2012) and it can be assumed that a lack of comprehension (understanding) means that effective reading has not taken place. This lack of comprehension impacts students’ ability to learn, thereby affecting their success in the course (Bharuthram 2012). The students’ success, in turn, is important in the broader HE context, affecting student dropout and throughput rates in HE, thus emphasising the importance of reading, especially in HE.

A tool that instructors use for communicating subject information that applies these skills is the textbook (Rugimbana and Patel 1996). The readability of textbooks affects student performance (Flory, Phillips and Tassin 1992; Razek and Cone 1981). Textbooks that are less readable result in lower average marks (grades) in the specific course (Spinks and Wells 1993). Further, textbooks requiring a great deal of comprehension effort have the potential of causing a high level of frustration in students (who do not comprehend the textbook) and instructors (who have to explain the content of the textbook) (Adelberg and Razek 1984; Razek and Cone 1981). The task of a course instructor implies selecting resources that communicate the concepts effectively and in a way that students are able to grasp and master. This makes selecting an appropriate textbook an important component of an instructor’s task.

The focus of previous studies into reading comprehension has been varied – some have looked at the content while others have looked as the readability of textbooks, while yet others have investigated the extent to which students comprehend the content of the textbooks. South African examples are the studies of Ngwenya (2010) (law students) and Rugimbana and Patel (1996) (marketing students). International comparisons have also been done by Williams et al. (2011). In the case of the marketing discipline, studies have investigated the readability of advertising (Zinkhan, Gelb and Martin 1983) and websites (Leong, Ewing and Pitt 2002). It is further suggested that it is important to investigate the specific discipline and its context due to differences between disciplines (Richardson 2004). Specifically, no research has been undertaken in South Africa with respect to the comprehension of marketing research textbooks. It is this research gap that the study reported on in this article sought to address.
RESEARCH OBJECTIVES

Reading is regarded as one of the most important activities of any student in HE (Bharuthram 2012). While a textbook may have a readability score at an appropriate level for tertiary students, it does not imply that the students will comprehend the content of the material that is contained in the textbook. This raises the questions: Do the students understand what they are reading? To what extent do they grasp what they are reading? The purpose of the current research was to investigate students’ comprehension and understanding of marketing research textbooks. The secondary objectives were to:

- determine students’ reading comprehension relating to passages from two marketing research textbooks;
- determine whether significant differences exist in students’ reading comprehension of the passages from the two marketing research textbooks;
- investigate whether significant differences exist in students’ reading comprehension based upon differences in demographic variables (specifically gender and home language) in the case of the two marketing research textbooks.

READING AND COMPREHENSION

The context of the study

The literacy situation in South Africa is described as being poor in primary grades, with Grade 4 South African students coming last (45th) in an assessment of reading skills that was undertaken between 2004 and 2007 (Condy 2008). This is supported by research undertaken by South Africa’s Department of Basic Education (DoBE), where the average mark for literacy for Grade 3 pupils was 35 per cent (Grobbelaar 2011). According to evaluations undertaken by the DoBE in 2012, Grade 9 pupils scored an average of 35 per cent on their additional language (Gernetzky 2012). Concern has been expressed on the literacy levels and academic achievement of students, and this is especially the case where studying takes place in a second language (Van Rooyen and Jordaan 2009). In 2005, the Department of Education reported that for those who had enrolled in tertiary education in 2000, 30 per cent had dropped out in their first year of study; while a further 20 per cent had dropped out during their second and third years (Lekseka and Maile 2008). Reasons for these figures include financial challenges. It is also reported that 22 per cent of students graduate within the specified period of three years for a bachelor’s degree and that South Africa’s graduation rate of 15 per cent is one of the lowest in the world (Lekseka and Maile 2008). This drop-out rate has consequences for many parties, including the students, HE as well as the economy.
**The role of the textbook**

Textbooks are used to structure a course (Rugimbana and Patel 2002), making them an integral part of the course and in many cases, the course is arranged around the textbook (Butaney 2007). A further reason for the importance of the textbook is that it may impact not only the students’ learning, but also their satisfaction levels with the course, and this in turn impacts on the evaluation of the instructor (Backhaus et al. 2002). This makes the issue of the textbook an important component in any course.

The purpose of a textbook is to convey knowledge (Berry 1993 in Backhaus et al. 2002) while also serving as a source of reference (McLoughlin 2007). Its purpose is also to contribute to the development of the student’s cognitive skills (Backhaus et al. 2002). When it is used as an integral part of a course, it should also provide direction and support for the course, while also providing the support materials (such as case studies and examples) to enable the attainment of the objectives of the course (Backhaus et al. 2002).

Textbooks prescribed in South Africa are mainly in English. According to Census 2011, only 9.6 per cent of South Africans have English as a home language, indicating that the majority of students will be reading textbooks written in a language other than their home language, which could be their second (or even third) language.

**Reading and comprehension: two sides of the same coin**

Language competency and language proficiency are critical for academic success, and this is evident in academic studies (Van Rooyen and Jordaan 2009). Two components of academic language have been identified, namely, oral and written modes of communication (Van Rooyen and Jordaan 2009). The process of reading comes about through the transmission of the written word to a receiver, where the receiver decodes the message using ‘rules for decoding’ (Adelberg and Razek 1984, 110) in order to make sense of the content that is presented.

The importance of reading in academic performance has long been acknowledged (Bharuthram 2012; Van Rooyen and Jordaan 2009). Specific effects of poor reading levels have been identified, including:

- an effect on the student’s self-esteem due to poor performance;
- that the student is not able to clearly follow written instructions in assignments and essays;
- an impact on the student’s ability to develop their own academic writing skills;
- an impact on the student’s future language development (Balfour 2002 in Bharuthram 2012).

The readability of a text indicates how easy it is to read and indicates that a specific document (or portion of a textbook) ‘affects its audience in the way the author intends’
(Tekfi 1987, 262). It can also be defined as ‘the degree to which a class of people find reading matter compelling and comprehensible’ (Plucinski et al. 2009, 119). When determining readability, the focus is on the word and sentence length (McLaughlin 1969; Tekfi 1987), and is thus regarded as ‘text-centered’ (Jones 1997, 105). Factors affecting readability include the: average sentence length; percentage of easy words; number of unknown words (to 6th grade students); and number of easy words (Clark and Geisler 1986; Gray and Leary 1948 in Tekfi 1987). Readability is regarded as a critical condition for the successful transfer of knowledge (Backhaus et al. 2002) and is used by instructors in the selection of textbooks as it is a significant factor.

*Comprehension* (or *understandability*), according to Leong, Ewing and Pitt (2002), focuses on the reader of the textbook and indicates the extent to which the reader makes sense of what is contained in the textbook. Comprehension can be viewed as the reader’s ability to ‘gain knowledge from a text’ (Jones 1997, 105). Comprehension is influenced by various factors, including general language ability, knowledge of the materials, as well as attention and vocabulary. Leong et al. (2002) suggest that reader competence and reader motivation are two important external variables that impact the comprehension of the contents of written material.

**Measuring reading comprehension**

The Cloze procedure is widely used as a method to measure reading comprehension, as the procedure requires the reader to complete the sentence by filling in the missing word (Chatel 2001). The procedure requires that the readers use their knowledge and the clues in the text and then infer what the correct term is, and it is based on the principles of Gestalt (Taylor 1957). The value of this procedure is that it can indicate the reading difficulty of the text, provide an indication of the students’ reading level as well as their background knowledge (Chatel 2001).

There are two types of Cloze procedures that can be used when setting up the passages, namely, the open-ended and the maze procedure. In the case of the open-ended procedure, the reader is required to provide the word that is missing from his/her word knowledge (Williams et al. 2011). In the case of the maze procedure, the reader is given three options or possible words from which he/she needs to select the correct one. This makes the maze procedure easier than the open-ended procedure (Williams et al. 2011). In the case of the open-ended Cloze procedure, every nth word is removed, and the reader is required to fill in this word. It has been suggested that every 5th word be removed, however, this can be changed to every 9th or 11th word, depending on the language proficiency of those being tested (Hadley and Naaykens 1999). Various criticisms have been levelled against the Cloze procedure, but despite these criticisms, it is regarded as ‘very helpful’ as a ‘general proficiency indicator’ (Hadley and Naaykens 1999, 64).

**Scoring and interpreting the Cloze procedure**

It has been suggested that there are two ways in which a Cloze test can be evaluated. The first is to mark correct only those words that are exactly correct (Exact Word
Comprehension of marketing research textbooks among South African students: An investigation

method), while the second approach suggests that it is also necessary to award a correct mark if a synonym or similar word is used correctly in the open space (Semantically Acceptable Scoring Method or SEMAC) (Chatel 2001; Hadley and Naaykens 1999). SEMAC is regarded as specifically acceptable in the case of second language English speakers, but there are mixed results as to whether using SEMAC provides different results from the Exact Word method (Bormuth 1967).

According to Bormuth (1967), three levels of reading skills can be identified, namely, the:

- independent reading level, where the reader is able to comprehend excellently and without instructional help or support (Chatel 2001). Many of these readers do recreational reading as they are motivated readers;
- instructional reader can improve his/her reading with the necessary support. The material is regarded as a challenge to the student, but mastering it is in within his/her ability;
- frustration reading level, where the reader is unable to make sense of the material that is presented, and may thus not be able to comprehend the majority of the text.

The percentages associated with each level of reading were proposed by Bormuth (1967). A score between 0 and 43 per cent is regarded as the frustration level; 44–57 per cent is regarded as instructional; while a score of 58–100 per cent is regarded as the independent level (Bormuth 1967). Classification using the accepted categories proposed by Bormuth (1967) cannot be used in the case of synonyms. SEMAC requires that the percentages be adapted to reflect improved comprehension, and the adjusted percentages associated with each level are suggested by Chatel (2001). It has been suggested that a SEMAC score of less than 70 per cent can be regarded as the frustration level of reading (Chatel, 2001). This classification is reflected in Table 1.
Table 1. Reading levels and associated scores

<table>
<thead>
<tr>
<th>Reading level</th>
<th>Cloze procedure (Exact word)</th>
<th>SEMAC (accepting synonyms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frustration reading level</td>
<td>0–43%</td>
<td>0–70%</td>
</tr>
<tr>
<td>Instructional reading level</td>
<td>44–57%</td>
<td>71–89%</td>
</tr>
<tr>
<td>Independent reading level</td>
<td>58% and above</td>
<td>90% and above</td>
</tr>
<tr>
<td>Sources</td>
<td>Bormuth (1968); Chatel (2001)</td>
<td>Chatel (2001)</td>
</tr>
</tbody>
</table>

Based upon the literature review above, the following hypotheses were formulated:

H1A: There is a significant difference in the reading comprehension results calculated according to the Cloze procedure for the two measurement instruments.

H2A: There are significant differences in the reading comprehension results calculated according to the Cloze procedure between the pairs of passages included in each of the two measurement instruments.

H3A: There is a significant difference in the reading comprehension results calculated according to the SEMAC procedure for the two measurement instruments.

H4A: There are significant differences in the reading comprehension results calculated according to the SEMAC procedure between the pairs of passages included in each of the two measurement instruments.

Previous studies into the reading abilities of South African students

A Stanford Diagnostic Reading Test was given to students at the University of Transkei, where it is reported that 13.8 per cent had the reading skills necessary to comprehend their textbooks. It must be borne in mind that the majority of these students were African students, who were not studying in their home language (Pretorius 2002).

The Cloze procedure was used to evaluate the reading ability of postgraduate Education students (teachers) at the University of KwaZulu-Natal (Bertram 2006). Students were given a unit (study) guide as well as an article that was regarded as ‘typical of academic writing’ (Bertram 2006, 8). As many students did not have English as a home language, every 9th word was removed, rather than every 6th word (as is suggested). In the case of the academic article, Bertram found that 37.9 per cent were reading the article at the frustration level, while 23.5 per cent were reading at the independent level. This finding is supported in a study conducted by Webb (1999, in Pretorius 2002), who reports that first-year students at the University of Pretoria had reading levels of Grade 7–8 students, while Pretorius (2000, in
Comprehension of marketing research textbooks among South African students: An investigation

Pretorius 2002) found that University of South Africa (Unisa) students were reading at the frustration level.

Following the discussion above the following hypotheses were formulated:

H5: A significant difference exists in the reading comprehension results of students based upon gender.

H6: Significant differences exist in the reading comprehension results of students based upon home language.

METHODOLOGY

Students who spoke English as a second language and who were registered for an undergraduate Marketing Research course at a South African HEI during 2012 were identified as the target population for the study. A total of 360 such students were eligible to participate in the study.

The design of the self-administered measurement instruments involved the selection of two marketing research textbooks for evaluation. The one textbook (Berndt and Petzer, hereafter BP) represented the prescribed textbook for the course, while the second text (McDaniel and Gates, hereafter MG) was comparable and prescribed at a similar level of study in the United States (US). Passages were selected from both textbooks in order to determine the extent to which students could comprehend not just their specific prescribed textbook, but also other comparable market research textbooks. Further, two passages were selected from each textbook to ensure that the results did not only rely on a single passage from a textbook.

The first measurement instrument consisted of two passages from BP (one focussing on secondary data and one on survey methodology), while Section B collected demographic data. The second measurement instrument consisted of two passages from MG (one also focussing on secondary data and one on survey methodology), while Section B collected demographic data. The two measurement instruments thus exhibited the same structure but used passages from differing textbooks.

To assess reading comprehension the researchers made use of the Cloze procedure, where every 9th word was removed from the four passages, requiring respondents to complete the missing words. Removing every 9th word is consistent with the methodology used by Bertram (2006), and is regarded as suitable for those who do not speak English as a first language, as was the case in the current study.

Fieldwork was conducted once the course was completed. The researchers followed the required procedures, as advised by the institutions involved, to contact and survey the respondents. Prior to the respondents’ completion of the measurement instruments, the proposed research was explained to the prospective respondents. Once a prospective respondent indicated his/her willingness to participate in the study, he/she was given an informed consent form to read and sign. Prospective
respondents were able to withdraw from the research at any point. Once the informed consent form was completed, signed and returned by the prospective respondent, one of the two measurement instruments was given to the respondent on a random basis to complete anonymously and submit into a dedicated container. The signed informed consent forms and anonymously completed measurement instruments have been securely stored for recordkeeping purposes.

Each response was scored by the researchers using both the Exact Word and SEMAC procedures. Responses were scored with the Exact Word procedure, with every word correctly inserted being awarded 1 mark. A percentage reflecting comprehension was determined for each passage, and this score was used to classify the student’s reading level. The passages were also scored where additional marks were awarded for the use of appropriate synonyms for the missing words (SEMAC), and these were recorded separately. The reason for this was that the respondents had English as a second language and although they did not use exactly the correct word, the synonym indicated that they grasped the meaning of the sentence. It has also been suggested that this is appropriate where respondents are second language speakers (Hadley and Naaykens 1999). For example, in one of the sentences, the word ‘a’ appeared, but the word ‘the’ could have been equally acceptable. It has been suggested that the scores including synonyms provide a clearer picture of comprehension of the passage. Each respondent was then classified, based on the scores, into the appropriate reading level. Completed questionnaires were checked for completeness and the data was entered into SPSS before it was edited and cleaned. Based upon the data, statistical calculations were done.

Based upon the reading comprehension results (mean scores) calculated for each respondent, two parametric tests, namely the independent samples $t$-test and the paired samples $t$-test, as well as one non-parametric test, namely the Kruskal-Wallis test were used to test the hypotheses formulated for the study.

**FINDINGS AND ANALYSIS**

The reading comprehension of respondents

*The readability of the selected passages*

Prior to analysing the students’ responses, the passages were tested for their readability, using the various accepted readability techniques. Use was made of an online assessment tool. For both instruments, passage 1 was evaluated as being difficult to very difficult, while the second passage was easier relative to the first passage. Table 2 indicates the readability of the selected passages.
Comprehension of marketing research textbooks among South African students: An investigation

Table 2: Readability of the passages

<table>
<thead>
<tr>
<th></th>
<th>Flesch Reading Ease</th>
<th>Gunning Fog Index</th>
<th>SMOG Index</th>
<th>Flesch-Kincaid Grade level</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP Passage 1</td>
<td>34.2</td>
<td>17.8</td>
<td>12.8</td>
<td>14.3</td>
<td>Difficult</td>
</tr>
<tr>
<td>BP Passage 2</td>
<td>50.9</td>
<td>12.2</td>
<td>8.9</td>
<td>9.5</td>
<td>Fairly difficult</td>
</tr>
<tr>
<td>MG Passage 1</td>
<td>9.0</td>
<td>20.7</td>
<td>15.8</td>
<td>18.2</td>
<td>Very difficult</td>
</tr>
<tr>
<td>MG Passage 2</td>
<td>56.2</td>
<td>11.9</td>
<td>8.7</td>
<td>8.9</td>
<td>Fairly difficult</td>
</tr>
</tbody>
</table>

The profile of the respondents

A total of 138 responses were received for analysis, of which 128 were usable (70 on instrument 1 and 58 on instrument 2). The profile of the respondents in both groups was relatively similar, making comparison between the groups possible (see Table 3).

Table 3: Profile of the respondents

<table>
<thead>
<tr>
<th>Instrument 1</th>
<th>Instrument 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>40% males; 60% females</td>
<td>29.4% males; 70.6% females</td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>92.8% were Afrikaans speakers; 7.2% indicated other home languages</td>
<td>91.4% were Afrikaans speakers; 8.6% indicated other home languages</td>
</tr>
</tbody>
</table>

Scores using the Exact Word procedure on the instruments

The mean score for instrument 1 was at the instructional level, while the mean score for instrument 2 was at the frustration level. In both instances, almost the majority of readers were classified as reading at the frustration level (47.1% and 48.3% respectively), and a small percentage of respondents were classified as reading at the independent level (8.6% and 5.2%) respectively. The details are presented in Table 4.

Table 4: Cloze scores for the instruments

<table>
<thead>
<tr>
<th></th>
<th>Mean score</th>
<th>0–43% Frustration</th>
<th>44–57% Instructional</th>
<th>58–100% Independent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument 1</td>
<td>44.36%</td>
<td>47.1% (33)</td>
<td>44.3% (31)</td>
<td>8.6% (6)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>Instrument 2</td>
<td>42.36%</td>
<td>48.3% (28)</td>
<td>46.6% (27)</td>
<td>5.2% (3)</td>
<td>100% (58)</td>
</tr>
</tbody>
</table>

Using an independent samples t-test, no significant difference was found between the reading comprehension results of the two groups ($p = 0.682$). Therefore, $H_1$ that there is a significant difference in the reading comprehension results calculated according to the Cloze procedure for the two measurement instruments, could not be accepted.
Scores using the Exact Word procedure on the passages

The mean scores for passage 1 were at the frustration level for both textbooks while they were at the instructional level for passage 2 for both textbooks. This reflects the difficulty associated with the readability of textbooks, as discussed earlier (refer Table 2). In the case of both passage 1 scores, the number of respondents whose comprehension could be classified as independent was relatively small, with the majority of respondents being classified as reading at the frustration reading level. The numbers of respondents who were classified as reading at the independent level increased in passage 2 for both textbooks, which can be linked to the fact that these passages were classified as fairly difficult (in terms of readability). The classification of reading levels on the passages is reflected in Table 5.

Table 5. Cloze scores for the passages

<table>
<thead>
<tr>
<th></th>
<th>Mean score</th>
<th>0–43% Frustration</th>
<th>44–57% Instructional</th>
<th>58–100% Independent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP Passage 1</td>
<td>39.49%</td>
<td>65.7% (46)</td>
<td>30.0% (21)</td>
<td>4.3% (3)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>BP Passage 2</td>
<td>49.22%</td>
<td>31.4% (22)</td>
<td>42.9% (30)</td>
<td>25.7% (18)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>MG Passage 1</td>
<td>38.57%</td>
<td>67.2% (39)</td>
<td>27.6% (14)</td>
<td>8.6% (5)</td>
<td>100% (58)</td>
</tr>
<tr>
<td>MG Passage 2</td>
<td>46.22%</td>
<td>43.1% (25)</td>
<td>34.5% (20)</td>
<td>22.4% (13)</td>
<td>100% (58)</td>
</tr>
</tbody>
</table>

Paired-samples t-tests were conducted to determine whether significant differences existed between the mean scores calculated according to the Exact Word procedure, for the pairs of passages measured by a particular measurement instrument. The results indicated a statistically significant difference in reading comprehension results for passage 1 ($M = 38.92$, $SD = 11.93$) to passage 2 ($M = 48.52$, $SD = 12.06$, $t(69) = -6.161$, $p = 0.000$) taken from BP. The eta statistic (0.35) indicated a large effect size. A significant difference also existed between passage 1 taken from MD ($M = 38.50$, $SD = 13.52$) to passage 2 ($M = 46.22$, $SD = 12.00$, $t(57) = -4.119$, $p = 0.000$). The eta statistic (0.23) also indicated a large effect size. Thus, H2A, that there are significant differences in the reading comprehension results calculated according to the Cloze procedure between the pairs of passages included in each of the two measurement instruments, was accepted.

Scores using the SEMAC procedure on the instruments

When marked using SEMAC, the mean scores on both instruments reflected reading at the frustration level (51.1% and 53% respectively). The majority of the respondents had scores indicating that they were reading at the frustration level and none at the independent level. The scores are reflected in Table 6.
Comprehension of marketing research textbooks among South African students: An investigation

Table 6. SEMAC scores for the instruments

<table>
<thead>
<tr>
<th></th>
<th>Mean score</th>
<th>0–70% Frustration</th>
<th>71–89% Instructional</th>
<th>90% + Independent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze score including synonyms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument 1</td>
<td>51.1%</td>
<td>95.7% (67)</td>
<td>4.3% (3)</td>
<td>0% (0)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>Instrument 2</td>
<td>53.0%</td>
<td>94.8% (55)</td>
<td>5.2% (3)</td>
<td>0% (0)</td>
<td>100% (58)</td>
</tr>
</tbody>
</table>

Using an independent samples *t*-test, no significant difference was found between the reading comprehension results of the two groups (*p* = 0.815). Therefore, H3 that there is a significant difference in the reading comprehension results calculated according to the SEMAC procedure for the two measurement instruments, could not be accepted.

Scores using the SEMAC procedure on the passages

When examining the results using SEMAC, the inclusion of synonyms on the individual passages did not increase the mean score of the passage significantly, nor did it improve the classification of the reading levels among the respondents, but in fact, worsened them. This was due to the changes in the percentages associated with the various categories when using SEMAC (refer Table 1). None of the respondents was reading at the independent level and the majority of respondents were classified as reading at the frustration level. This was the situation for all passages, though the number reading at the instructional level increased in passage 2 from both texts. The details are presented in Table 7

Table 7. SEMAC scores for the passages

<table>
<thead>
<tr>
<th></th>
<th>Mean score</th>
<th>0–70% Frustration</th>
<th>71–89% Instructional</th>
<th>90% + Independent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze score including synonyms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP Passage 1</td>
<td>45.86</td>
<td>97.1% (68)</td>
<td>2.9% (2)</td>
<td>0% (0)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>BP Passage 2</td>
<td>56.31</td>
<td>88.6% (62)</td>
<td>11.4% (8)</td>
<td>0% (0)</td>
<td>100% (70)</td>
</tr>
<tr>
<td>MG Passage 1</td>
<td>43.46</td>
<td>96.6% (56)</td>
<td>3.4% (2)</td>
<td>0% (0)</td>
<td>100% (58)</td>
</tr>
<tr>
<td>MG Passage 2</td>
<td>62.53</td>
<td>74.1% (43)</td>
<td>25.9% (15)</td>
<td>0% (0)</td>
<td>100% (58)</td>
</tr>
</tbody>
</table>

Paired-samples *t*-tests were conducted to determine whether significant differences existed between the mean scores calculated according to the SEMAC procedure for the pairs of passages measured in a particular measurement instrument. The results indicated a statistically significant difference in the reading comprehension results for passage 1 (*M* = 45.20, *SD* = 13.20) and passage 2 (*M* = 55.50, *SD* = 13.45, *t*(69) = –6.127, *p* = 0.000) taken from BP. The eta statistic (0.352) indicated a large effect size. This mirrored what was obtained when using the Exact Word procedure. A significant difference was also uncovered between passage 1 from MG (*M* = 43.46, *SD* =14.30) and passage 2 (*M* = 62.53, *SD* = 11.78, *t*(57) = -10.127, *p* =
Thus, $H_4$ that there is a significant difference in the reading comprehension results calculated according to the SEMAC procedure between the pairs of passages included in each of the two measurement instruments, was accepted.

**Demographic differences associated with comprehension**

The reading comprehension of the genders was compared using an independent samples $t$-test on each of the instruments and the various passages from the textbooks. In the case of BP, statistically significant differences were found between the genders for the instrument as a whole ($p = 0.048$), as well as on passage 2 using both the Exact Word and SEMAC systems of evaluation ($p = 0.002$ and 0.023 respectively). In the case of MG, significant differences were found on the instrument as a whole using both the Exact Word ($p = 0.038$) and SEMAC scoring systems ($p = 0.032$). Thus, the effect of gender was not seen to the same extent in both textbooks. In the case of effect sizes, the largest effect of gender was seen in passage 2 from BP (eta = 0.133).

The summary of the findings is presented in Table 8. Therefore, $H_5$ that a significant difference exists in the reading comprehension results of students based upon gender, could only be partially accepted.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>$t$</th>
<th>df</th>
<th>$p$-value</th>
<th>eta</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP Exact</td>
<td>-2.010</td>
<td>68</td>
<td>$p = 0.048$</td>
<td>0.055</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>BP SEMAC</td>
<td>-1.364</td>
<td>68</td>
<td>$p = 0.177$</td>
<td>0.026</td>
<td>Not statistically different</td>
</tr>
<tr>
<td>MG Exact</td>
<td>-2.194</td>
<td>56</td>
<td>$p = 0.032$</td>
<td>0.077</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>MG SEMAC</td>
<td>-1.919</td>
<td>56</td>
<td>$p = 0.060$</td>
<td>0.061</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Passage 1 BP Exact</td>
<td>-3.262</td>
<td>68</td>
<td>$p = 0.002$</td>
<td>0.133</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Passage 2 BP Exact</td>
<td>-1.139</td>
<td>56</td>
<td>$p = 0.259$</td>
<td>0.022</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Passage 1 MG Exact</td>
<td>-2.327</td>
<td>68</td>
<td>$p = 0.023$</td>
<td>0.073</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Passage 2 MG Exact</td>
<td>-2.327</td>
<td>68</td>
<td>$p = 0.023$</td>
<td>0.073</td>
<td>Statistically significant</td>
</tr>
</tbody>
</table>

To determine whether home language was significant, use was made of non-parametric testing since the groups were not equal in size, with only a small percentage of respondents not having Afrikaans as their home language. A Kruskas-Wallis test was used. The effect of home language is seen in the MG instrument as well as in passage 1 (the more difficult passage). Having a home language other than Afrikaans assisted in improving comprehension. The details are presented in Table 9. Therefore, $H_6$ that significant differences exist in the reading comprehension results of students based upon home language, could be partially accepted.
Table 9. Summary of findings regarding differences in home language

<table>
<thead>
<tr>
<th>Instrument</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument BP Exact</td>
<td>p = 0.066</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Instrument MG Exact</td>
<td>p = 0.034</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Instrument BP SEMAC</td>
<td>p = 0.061</td>
<td>Not statistically different</td>
</tr>
<tr>
<td>Instrument MG SEMAC</td>
<td>p = 0.026</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Passage 1 BP Exact</td>
<td>p = 0.032</td>
<td>Statistically different</td>
</tr>
<tr>
<td>Passage 2 BP Exact</td>
<td>p = 0.297</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Passage 1 MG Exact</td>
<td>p = 0.011</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Passage 2 MG Exact</td>
<td>p = 0.304</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Passage 1 BP SEMAC</td>
<td>p = 0.022</td>
<td>Statistically different</td>
</tr>
<tr>
<td>Passage 2 BP SEMAC</td>
<td>p = 0.275</td>
<td>Not statistically significant</td>
</tr>
<tr>
<td>Passage 1 MG SEMAC</td>
<td>p = 0.009</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Passage 2 MG SEMAC</td>
<td>p = 0.213</td>
<td>Not statistically significant</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The passages selected were similar in both instruments, and reflected a high number of respondents (47.7%) reading at the frustration level and a low level of respondents reading at the independent level (7%). Passages that were high in difficulty (passage 1 in both instruments) reflected high numbers of students reading at the frustration level, which is to be expected. The situation did not improve when the passages were evaluated using SEMAC, where the percentages reading at the frustration level increased. The performance on the second passage in both instances indicated significant improvement. One reason for this could be the difficulty of the passage. There were differences between the gender and home language of the respondents on selected passages.

The Cloze procedure is also useful in evaluating the suitability of textbooks, and consequently, the South African textbook in general is more suited to the reading levels of the students. There is though still a high level of readers reading at the frustration level, despite taking synonyms into account.

In the study conducted by Bertram (2006), she found that 37.9 per cent were reading the article at the frustration level, while 23.5 per cent were reading at the independent level. The study found that approximately 48 per cent of respondents were reading at the frustration level, while approximately only 8 per cent were reading at the independent level. A possible reason for the increase in the numbers reading at the frustration level can be found in the perceptions associated with reading, as well as the place of reading in the education system, which can be a focus for future research.

A number of limitations of the study can be identified. A total of 360 students were registered for the course, but approximately only 50 per cent took part in the study. This means that the respondents who did take part did not represent the course
as a whole. The students who did not attend the final contact session were unable to participate, and thus their comprehension is unknown and cannot be determined from the responses received from the respondents who did take part. Only one South African HEI was approached to participate, and thus the findings cannot be generalised outside of this specific context. The majority of respondents had one home language in common, which consequently excluded South Africans who have other languages as their home language.

The passages selected were also a potential limitation of the study. Passage 1 from PB was classified as difficult (as determined by readability measures), while passage 2 from MG, allowed for the insertion of more synonyms than in the other passages, as seen in the higher SEMAC scores.

There are numerous managerial implications as a result of the study. Awareness of students’ reading levels is important for HEIs as it impacts their performance and throughput figures, and the study has shown the importance of reading support programmes and strategies to encourage students to improve their reading skills. It means that lecturers and instructors need to be aware of the importance of comprehension skills and the fact that students are not reading the material with a great level of understanding. This needs to be incorporated into the lecture planning as well as the selection and formulation of course material.

The passages selected from the two textbooks were written by different authors at different readability levels, and consequently, publishers could investigate the composition and consistency of the readability and comprehension of their textbooks. For authors, it is the recognition that communication with the reader is not taking place as envisaged, and that changes need to be made.

Future research could be undertaken to include other South African HEIs where the demographic and racial composition is more representative of South Africa. Research into comprehension can also be undertaken into other marketing research textbooks, as well as into marketing textbooks. Research could also be conducted at an international level to determine whether this is just a South African phenomenon or whether it is a more global phenomenon. Reasons for the increase in the number of students reading at the frustration level could also be investigated.

CONCLUSION

Understanding what is read from any textbook is an important component of the learning process, especially in HE. The findings indicate that there is a small percentage of students reading at the independent level. These findings impact the grades attained by students on courses while the also affect decisions taken by instructors regarding textbooks. Failure to deal with the challenges presented by these reading levels will have consequences for all concerned in HE.
REFERENCES


