

**SOUTH AFRICAN ACCOUNTING STUDENTS' READING COMPREHENSION OF
THE IASB'S CONCEPTUAL FRAMEWORK AND SELECTED INTERNATIONAL
FINANCIAL REPORTING STANDARDS**

by

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Ethics statement

The author, whose name appears on the title page of this dissertation, has complied with the University of Pretoria's Policy on Research Ethics and Integrity and has in general observed the principles of honesty, objectivity, the duty of care and fairness in giving credit and appropriate acknowledgement to the work of others.

The author has obtained, for the research described in this work, the applicable research ethics approval.

The author declares that she has observed the ethical standards required in terms of the University of Pretoria's *Code of ethics for researchers* and the *Policy guidelines for responsible research*.

Table of contents

	Page
Acknowledgements	i
Ethics statement	ii
List of figures	v
List of tables	vi
 SUMMARY	 vii
 CHAPTER 1 – INTRODUCTION	 1
1. INTRODUCTION	1
1.1 Reading comprehension	2
1.2 Research aim	3
1.3 Readers in a South African socio-cultural context (demographic profile)	3
1.4 International Financial Reporting Standards (text)	5
2. SPECIFIC RESEARCH OBJECTIVES	7
3. RESEARCH METHOD	7
3.1 Research instrument	7
3.2 Target population	8
4. SUMMARY	9
References	10
 CHAPTER 2 – RESEARCH PAPER 1	 14
ABSTRACT	15
1. INTRODUCTION	16
2. READING COMPREHENSION	19
3. EVALUATING READING COMPREHENSION	20
4. METHOD	21
4.1 Cloze procedure	21
4.2 Target population	22
4.3 Multivariate analysis	24
5. RESULTS AND DISCUSSION	26
5.1 Exploratory multivariate analysis	27
5.2 Cloze reading comprehension scores by demographic variable	28

6.	CONCLUSION	31
	References	33
CHAPTER 3 – RESEARCH PAPER 2		40
	ABSTRACT	41
1.	INTRODUCTION	42
2.	EVALUATING READING COMPREHENSION	46
3.	METHOD	47
3.1	Target population	50
3.2	Regression	52
4.	RESULTS AND DISCUSSION	54
5.	DEVELOPING READING COMPREHENSION	58
5.1	Language-based comprehension problems	58
5.2	Background knowledge-based comprehension problems	60
5.3	Differentiated instruction	61
6.	CONCLUSION	61
	References	63
CHAPTER 4 – CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS		69
	References	72

List of figures

	Page
 CHAPTER 1	
Figure 1: Reading comprehension	3
Figure 2: Principle-based standard	6
Figure 3: Rule-based standard	6
 CHAPTER 2	
Figure 1: The Framework-based teaching to IFRS	17
Figure 2: Demographic profile of respondent group	23
Figure 3: Mean Cloze reading comprehension scores and standard deviations	26
Figure 4: Distribution of Cloze reading comprehension scores	27
 CHAPTER 3	
Figure 1: Reading comprehension	42
Figure 2: Principle-based standard	43
Figure 3: Rule-based standard	43
Figure 4: Demographic profile of respondent group	50
Figure 5: Cloze score box plot	55
Figure 6: Interaction between instruction language and first language	57
Figure 7: Reading comprehension of IAS 16.39 and .40 (adapted and emphasis added)	59
Figure 8: Concept map of IAS 16	60

List of tables

	Page
CHAPTER 1	
Table 1: Benchmark comprehension levels for the Cloze procedure	8
CHAPTER 2	
Table 1: Benchmark comprehension levels for the Cloze procedure	21
Table 2: Regression analysis results	28
CHAPTER 3	
Table 1: Benchmark comprehension levels for the Cloze procedure	47
Table 2: Regression analysis results	56

SUMMARY

This dissertation explores South African financial reporting students' reading comprehension of the IASB's *Conceptual Framework for Financial Reporting (Framework)* and selected International Financial Reporting Standards (IFRS). In particular, this dissertation investigates differences in reading comprehension of various demographic groups, using the Cloze procedure. Analysis of differences in reading comprehension scores on the *Framework* revealed statistically significant differences between reading comprehension by language of instruction and the attendance, or not, of prior reading courses. When exploring the selected IFRS's, statistically significant differences were identified for prior academic performance, language of instruction, first language and enrolment in the *Thuthuka* programme. In a heterogeneous financial reporting class, where such differences between student groups are present, instructors may need to consider implementing differentiated instruction in developing reading comprehension. Although this dissertation considers South African students, the results may be of interest in other multicultural or multilingual environments, particularly where students also have diverse traits and backgrounds and have to comprehend learning material in a second language.

Key words: Reading comprehension, IFRS, Cloze, students

CHAPTER 1

INTRODUCTION

“In light of the importance of reading and the many differently prepared South African students who enter tertiary education, the need for reading interventions to improve the throughput rates cannot be over emphasised.”

(Bharuthram, 2012)

1. INTRODUCTION

This dissertation explores South African financial reporting students’ reading comprehension of International Financial Reporting Standards (IFRS)¹. In particular, the dissertation considers differences in reading comprehension of various demographic groups. Reading comprehension, from a teacher’s perspective, has been defined as the process through which students apply prior knowledge and experiences when interacting with written text in order to gain meaning and understanding from that text within a particular socio-cultural environment (Pardo, 2004). As reading comprehension is dependent on a reader’s individual attributes and abilities (Butcher & Kintsch, 2003; Fletcher, 1994; Narvaez, 2002; Pardo, 2004; Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001), diversity in students’ reading comprehension may be evident, particularly in a heterogeneous classroom. Globalization of higher education has contributed to diversifying the student population in university classrooms (Donald & Jackling, 2007; Sartorius & Sartorius, 2013). Consequently, researchers have questioned whether there should be different assessments of reading comprehension for different demographic groups (Broom & Jewson, 2013; Davidson, 1995; Helms, 1992).

Prior research shows a strong correlation between reading proficiency and academic success at all ages (Bharuthram, 2012; Bohlman & Pretorius, 2002; Pretorius, 2002). Poor reading skills often lead to poor academic performance, which in turn negatively affects students’ overall development (Bharuthram, 2012; Bohlman & Pretorius, 2002; Pretorius, 2002).

¹ The collective term IFRS includes, *inter alia*, the International Accounting Standards (IAS’s) which were issued by the predecessor to the International Accounting Standards Board (IASB), the Board of the International Accounting Standards Committee (IASC) (International Accounting Standards Board (IASB), 2003a).

Researchers agree that students who cannot read with the necessary comprehension will consequently encounter difficulties in learning (Bharuthram, 2012; Nel, Dreyer, & Klopper, 2004; Ngwenya 2010). Reading comprehension may, therefore, also influence students' knowledge and understanding of IFRS, while reading frustration could lead to students losing interest in the subject area and result in poor grades (Bargate, 2012; Melby-Lervåg & Lervåg, 2013; OECD, 2000). Reading frustration experienced by students may discourage instructors from prescribing IFRS as either primary or secondary teaching materials (Patel & Day, 1996; Shaffer, Stevens, & Stevens, 1993; Stevens, Stevens, & Raabe, 1983). Consequently, an assessment of the students' reading comprehension of IFRS may be necessary for effective teaching and learning of IFRS. Interventions, where necessary, can then be implemented to improve students' reading comprehension. Limited, and mostly dated, exploration of financial reporting students' reading comprehension of other primary sources considers selected statements of US GAAP (Adelberg, 1982; Stead, 1977; Stevens et al., 1983), Government Accounting Standards (GASB) (Shaffer et al., 1993) and Australian GAAP (Patel & Day, 1996).

Given the importance of reading comprehension in students' learning, education researchers have focused their research on students' reading comprehension of textbooks (Adelberg & Razek, 1984; Bargate, 2012; Cornachione, 2004; Raabe, Stevens, & Stevens, 1984). IFRS is, however, the underlying source document of many financial reporting students' study material. Financial reporting students studying solely from textbooks, which may be perceived as less frustrating to read (Bargate, 2012), risk referring only to interpretations of IFRS rather than mastering the underlying source document.

1.1 Reading comprehension

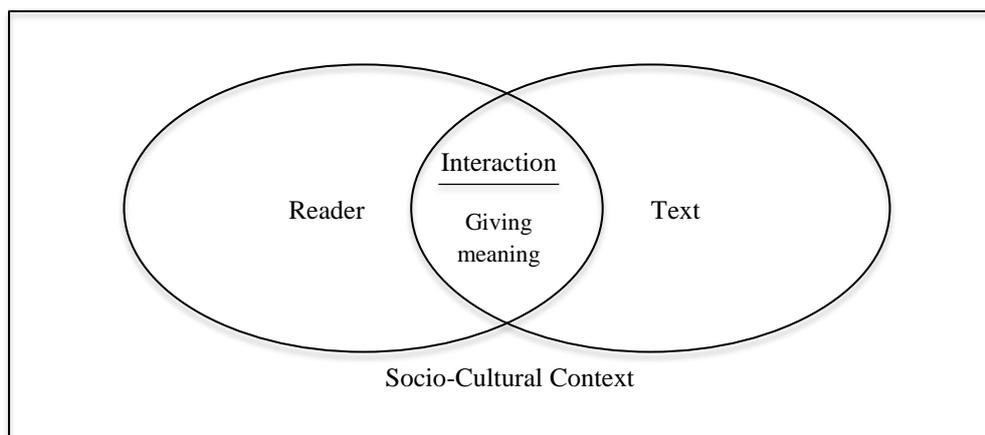
Reading comprehension is affected by the content and readability of the *text* accessed by the reader (Pardo, 2004). Readability of *text* is dependent on the word difficulty (semantic factor) and the sentence length (syntactic factor) of that text (Williamson, 2008). Readability is a passive and text-centered construct and can be determined by objective readability measures, such as the Flesch reading ease score (Jones & Smith, 2014). Reading comprehension is also affected by the *reader's* abilities, attributes and motivation (Butcher & Kintsch, 2003; Fletcher, 1994; Narvaez, 2002; Pardo, 2004; Rayner et al., 2001). A reader's motivation is a consequence of their interest, emotion and persistence in reading the text, while a reader's

abilities and attributes are influenced by the reader’s *socio-cultural* environment and understanding of the world (Pardo, 2004). Culture, broadly defined, may encompass, *inter alia*, gender, language and race (Coetzee, Schmulian, & Kotzé, 2014; Fletcher, 1994; Pardo, 2004; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982). The point at which the reader and the text *interact*, is the point at which meaning is extracted from the text and comprehension occurs (Pardo, 2004).

1.2 Research aim

Given that reading comprehension is affected by both the characteristics of the reader as well as the characteristics of the text (Figure 1), this dissertation aims to investigate differences in the reading comprehension, of selected IFRS’s as well as the IASB’s *Conceptual Framework for Financial Reporting (Framework)*, of a diverse target population.

Figure 1: Reading comprehension



1.3 Readers in a South African socio-cultural context (demographic profile)

South Africa, as a demographically diverse country, provides a suitable background for exploring demographic differences in reading comprehension. South African classrooms comprise African², Asian, Indian (descendants from India living in South Africa), Mixed-race³ and White students. Besides globalization, this diversity may result from the reintegration of the country’s once segregated society following the demise of Apartheid.

² This dissertation uses ‘African’ to refer to black indigenous or native South Africans.

³ The Mixed-race population group derives from at least five different paternal populations (Khoisan, Bantus, Europeans, Indians, and Southeast Asians) with a large (more than 60%) maternal contribution of Khoisan people (Quintana-Murci et al., 2010).

South Africa became a democracy in 1994. This resulted in the re-integration of the racially segregated education system (Bharthuram, 2012). The Bantu Education Act of 1953 and its companion, the Reservation of Separate Amenities Act, passed by the Apartheid government, resulted in racial segregation in education and public facilities (Coetzee et al., 2014; Marx, 1998). The ensuing dual education system led to substantial inequality in the standard of education (Coetzee et al., 2014; Sartorius & Sartorius, 2013). White students received a high quality education while African students received a lower standard of education (Coetzee et al., 2014; Sartorius & Sartorius, 2014).

After democratization, the expectation was that education related resources would be distributed more evenly (Bharthuram, 2012). Consequently, all students in South Africa should now have access to and receive similar learning opportunities (Bharthuram, 2012). The educational opportunities for African students, particularly those attending previously disadvantaged African schools were, however, still limited by factors such as a persistent shortage of teachers⁴, poorly trained teachers, overcrowded classrooms, a continuous shortage of funding⁵, lack of support programs, weak parent-teacher bodies and little community support (Coetzee et al., 2014; Hammond, Clayton, & Arnold, 2009; Jansen, 2011; Lam, Ardington, & Leibbrandt, 2011; Van der Berg, 2007).

Since 1994, the South African government launched various literacy and reading campaigns in an attempt to improve the literacy levels in the country. Yet, low literacy rates are still evident among students who enter higher education (Bharuthram, 2012; Department of Basic Education, 2014; Nel et al., 2004; Ngwenya, 2010). A considerable number of university students are therefore at risk of failing if no interventions with regards to their reading comprehension abilities are provided (Bharthuram, 2012). Higher education institutions have to raise students' awareness of the importance of reading and also assist them in gaining the appropriate reading practices required at university level (Bharthuram, 2012).

⁴ The pupil-teacher ratio for the historically African schools is 31:1. For historically White schools it is only 24:1 (Bhorat & Oosthuizen, 2009).

⁵ The democratically elected government adopted a funding model that allows schools to raise funds, in addition to state funding, through the collection of school fees from parents and custodians. As a result, the former White and Indian schools remain better resourced than the former African schools, which are located in less wealthy areas. The former White schools have on average 0.91 desks per learner compared to 0.54 desks per learner in the African schools (Bhorat & Oosthuizen, 2009). The former White and Indian schools have on average in excess of 4 000 library books and 35 PC's. In comparison to this, the poorest African schools have on average only 35 library books and 2 PC's (SACMEQ, 2011).

South African universities are characterized by linguistic diversity. South African students speak various first languages, as the country has eleven official languages. Higher education is, however, only available in English or Afrikaans⁶. This introduces the complexity of reading comprehension in a second language (Coetzee & Schmulian, 2013; Coetzee et al., 2014; Lonigan & Shanahan, 2009; Melby-Lervåg & Lervåg, 2013; Shuttleworth-Jordan, 1996). Given the increase of culturally and linguistically diverse accounting classrooms globally, the findings of this study may be of interest in other multicultural environments, particularly where students also have diverse traits and have to comprehend learning material in a second language.

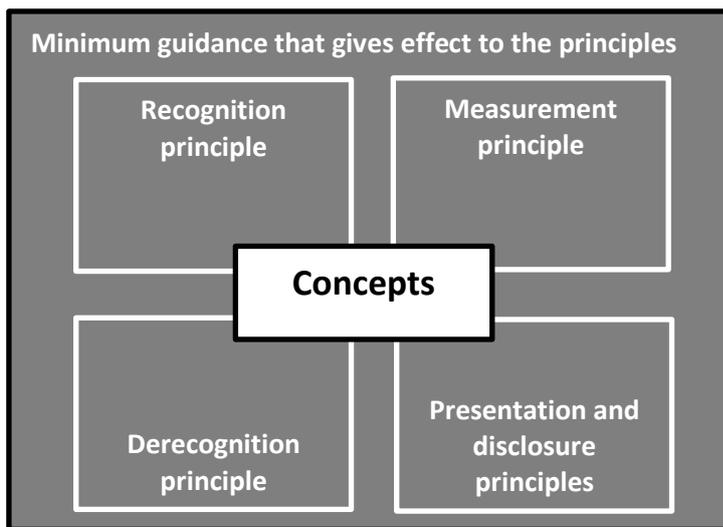
1.4 International Financial Reporting Standards (text)

More than 100 jurisdictions have adopted or endorsed IFRS (Pacter, 2014). At the core of IFRS is the *Conceptual Framework for Financial Reporting (Framework)* (International Accounting Standards Board (IASB), 2010a). The *Framework* is not an IFRS and does not define standards for any particular measurement or disclosure issue (International Accounting Standards Board (IASB), 2010a). The purpose of the *Framework* is to set out the concepts that underlie the preparation and presentation of financial statements for external users. These concepts also form the basis for the development of the detailed principles and rules contained in IFRS's, which support the accounting treatment of particular economic phenomena (Figure 2 and Figure 3). Accounting treatment comprises recognition, measurement, presentation and disclosure principles and rules. IFRS includes rule-based and principle-based standards. In a principle-based standard, the concepts contained in the *Framework* will form the foundation from where principles and rules are developed (Coetzee & Schmulian, 2012) with minimum guidance required to give effect to these principles (Figure 2). In more rule-based standards, concepts contained in the *Framework* still serve as the foundation, but for the development of more vast and detailed principles and rules and extensive application guidance (Figure 3) (International Accounting Standards Board (IASB), 2010b). In terms of content, the *Framework* is therefore not an IFRS and does not define standards for any particular measurement or disclosure issue.

⁶ Afrikaans is a West Germanic language which is spoken natively in South Africa; with approximately six million native speakers in South Africa, or 13.3 per cent of the population, it is the third most spoken mother tongue in the country (de Swaan, 2001).

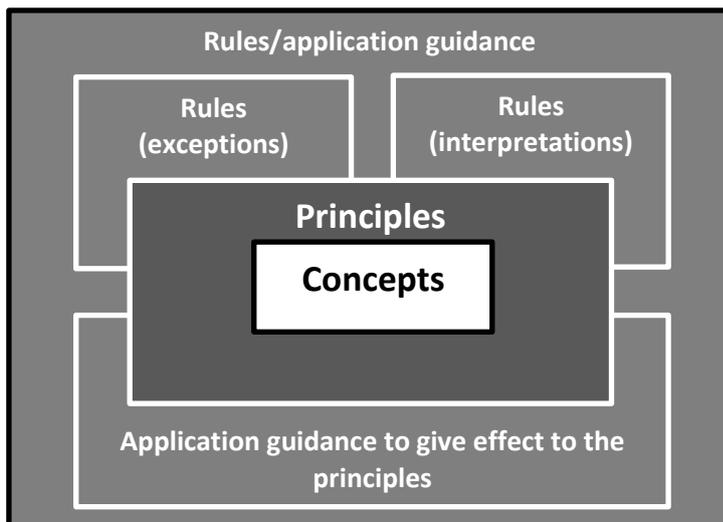
The Flesch reading ease score (FRES)⁷ of the *Framework* (FRES=23) is ‘very difficult’ to read (reading scores of less than 30) (Coetzee, Schmulian, & Cloete, 2014). The Flesch reading ease scores of IAS 2, *Inventories* (IAS 2) (International Accounting Standards Board (IASB), 2003b) (FRES=33) and IAS 16, *Property, Plant and Equipment* (IAS 16) (International Accounting Standards Board (IASB), 2003c) (FRES=31) is ‘difficult’ to read (reading scores of between 30 and 49).

Figure 2: Principle-based standard



Source: International Accounting Standards Board (IASB), 2010b

Figure 3: Rule-based standard



Source: International Accounting Standards Board (IASB), 2010b

⁷ The Flesch reading ease score has long been favored as a valid measure of readability in accounting communication literature (Stone & Parker, 2013). The score is based on the syllables per word and average words per sentence.

2. SPECIFIC RESEARCH OBJECTIVES

Given the differences in, *inter alia*, the content and readability of the text of the *Framework* and selected IFRS's, financial reporting students' reading comprehension of the *Framework* and the reading comprehension of the IFRS's might be different. Consequently, this dissertation explores differences in the reading comprehension of the *Framework* and selected IFRS's between various language and racial student groups. To explore these differences, the study is divided into two research papers.

The objective of the first research paper (Chapter 2) is to explore differences in South African financial reporting students' reading comprehension of the IASB's *Framework*.

The second research paper (Chapter 3) expands on the first paper through performing a differentiated replication⁸ thereof with additional demographic variables being explored. The objective of the second research paper is to explore differences in South African financial reporting students' reading comprehension of selected IFRS's. In research paper 2, the Cloze procedure was applied to the asset standards IAS 2 and IAS 16. These are the first IFRS's that these students are exposed to on the course.

3. RESEARCH METHOD

3.1 Research instrument

To explore demographic differences in financial reporting students' reading comprehension, both research papers apply the Cloze procedure for purposes of determining the reading comprehension score of the selected target population. The Cloze procedure tests the reading comprehension of a selected reader audience (Adelberg & Razek, 1984; Bargate, 2012; Bormuth, 1968; Cornachione, 2004; Gellert & Elbro, 2013; Raabe et al., 1984; Stevens et al., 1983; Stevens, Stevens, & Stevens, 1993; Taylor, 1953, 1956, 1957). It relies on interaction between the language competence and prior knowledge of a reader and the authors' intended communication (Bormuth, 1966). The Cloze procedure requires the random selection of passages from the chosen reading material. Every nth word from the selected passages is

⁸ A differentiated replication is deliberate or known variation on a major aspect of a study with the aim of extending the known range of conditions for which the result may hold true (Lindsay & Ehrenberg, 1993).

deleted, providing at least fifty deletions. Readers are required to insert the deleted words. The higher the accuracy of the words inserted, the higher the readers' comprehension of the material. Bormuth (1968, 1969) and Rankin and Culhane (1969) established Benchmark comprehension levels for the Cloze procedure (Table 1).

Table 1: Benchmark comprehension levels for the Cloze procedure

Cloze score	Level
0% – 43%	<i>Frustration Level</i> – language is difficult for readers to cope with
44% – 57%	<i>Instructional Level</i> – readers able to cope, but some assistance required
58% – 100%	<i>Independent Level</i> – readers able to cope with the language

Source: Bormuth (1968, 1969) and Rankin and Culhane (1969)

3.2 Target population

The passages selected were distributed in English to all the students enrolled for the first time for a financial reporting course in which they are introduced to IFRS. This course forms part of an undergraduate professional accounting education programme⁹ at a leading South African university¹⁰. The students entering this course have completed a 'bookkeeping' course during which they were exposed to generic accounting terminology. Lectures on this introductory course are presented in Afrikaans or English. Course materials and components (e.g. tutorials, textbooks, assessments) are available in both Afrikaans and English. The majority of the Afrikaans language students attend the course in Afrikaans, while all the English and African first language students attend the course in English. The Afrikaans class is therefore characterised by White students whose first language is Afrikaans. In contrast, the English classes are characterised by students from all racial groups whose first language may be one of several languages. The demographic profile within this introductory financial reporting course is therefore considered to be a suitable setting for purposes of conducting this research study.

⁹ For purposes of this paper, 'professional accounting education' is defined as accounting programmes, which have as their primary objective the graduating of students who qualify to enter the professional accountancy examinations of a professional accounting body.

¹⁰ The university is consistently rated as being in the top three performers in the professional accountancy examinations in South Africa, and is also one of only three South African universities in the Top 500 universities in the world (QS World University Rankings, 2013).

4. SUMMARY

This dissertation explores differences in the reading comprehension of the *Framework* and selected IFRS's between various language and racial student groups. Chapter 1 discussed the research objectives and motivation for the research. It formulated the purpose of the research and outlined the methodology of the research. This dissertation is further submitted in the form of two research papers (Chapter 2 and 3), each with its own reference list. Thereafter the dissertation is concluded in Chapter 4.

Research paper 1 has been published in the *Journal of Accounting Education* (Janse van Rensburg, C., Coetzee, S. A., & Schmulian, A. (2014). South African financial reporting students' reading comprehension of the IASB Conceptual Framework. *Journal of Accounting Education*, 32, 1-15.)

Research paper 2 has been submitted to *Accounting Education: An International Journal*. At submission date, this paper was still under review by this journal.

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CHAPTER 2

RESEARCH PAPER 1

South African financial reporting students' reading comprehension of the IASB Conceptual Framework

ABSTRACT

Students studying principle-based IFRS require a thorough knowledge and understanding of the IASB's *Conceptual Framework for Financial Reporting (Framework)*. Reading comprehension of the *Framework* enables students to access and decode its content. This allows the development of the ability to analyze, critique, evaluate and synthesize the content. The objective of this study was to evaluate students' reading comprehension of the *Framework* using the Cloze procedure. Researchers have questioned whether there should be different assessments of reading comprehension for different demographic groups. This paper explores differences in the reading comprehension of a diverse cohort of South African financial reporting students. Many students demonstrated reading comprehension at the *Independent* or *Instructional Level*. Further analysis revealed statistically significant differences between reading comprehension by language of instruction and the attendance, or not, of prior reading courses. While this study considers South African students, the results may be of interest to instructors in other multiracial or multilingual environments.

Key words: reading comprehension, readability, IFRS, Framework, Cloze.

1. INTRODUCTION

“The problem with comprehension is, it often comes too late.”

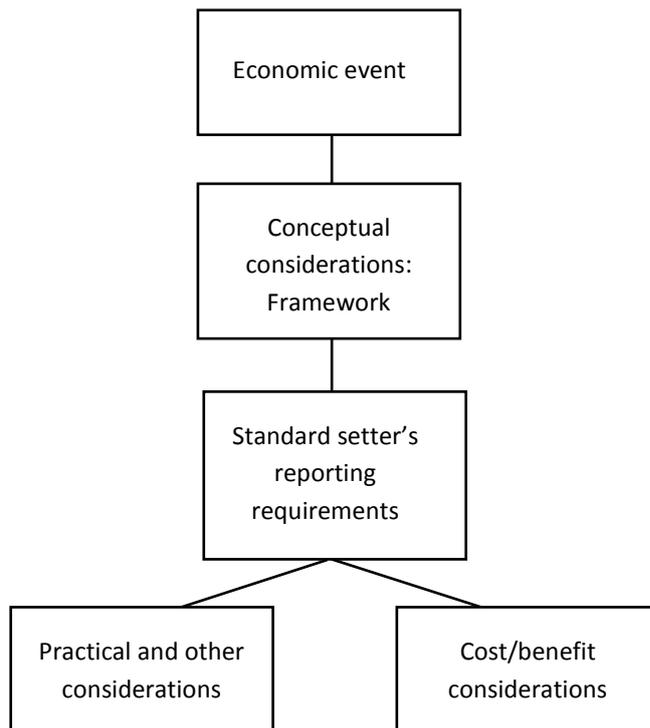
- Rasmenia Massoud, Human Detritus

The objective of this study is to evaluate South African financial reporting students’ reading comprehension of the International Accounting Standards Board’s (IASB) *Conceptual Framework for Financial Reporting (Framework)*. The goal of the IASB is ‘to develop a single set of high quality, *understandable*, enforceable and globally accepted financial reporting standards based upon clearly articulated principles’ (International Accounting Standards Board (IASB), 2013a, emphasis added). More than 100 jurisdictions have adopted or endorsed International Financial Reporting Standards (IFRS) (Pacter, 2014). Accordingly, IFRS forms the basis of many financial reporting students’ study material. At the core of IFRS is the *Framework* (International Accounting Standards Board (IASB), 2010)¹. Consequently, researchers have recommended framework-based teaching (Figure 1) of principle-based IFRS (Barth, 2008; Coetzee & Schmulian, 2011, 2012; Hodgdon, Hughes, & Street, 2011; Wells, 2011). Framework-based teaching relates the concepts in the *Framework* to a particular IFRS requirement (Wells, 2011). An understanding of these concepts enables students to apply judgment in accounting for economic events (Barth, 2008). Further, given the infrequent revision² of the *Framework*, students gain a more enduring knowledge of financial reporting (Barth, 2008). While students are not the direct target audience of the IASB, the Education Initiative of the IFRS Foundation may find information about students’ reading comprehension of the *Framework* of value when developing instructional resources. Further, financial reporting students become stakeholders of the IASB as accounting professionals (International Accounting Standards Board (IASB), 2013a).

¹ The *Framework* sets out the objective of general purpose financial reporting, as well as certain concepts that underlie IFRS. It is used by standard setters to develop new and consistent financial reporting standards and by preparers in selecting appropriate accounting policy in the absence of a specific IFRS (in terms of the hierarchy provided in IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors* (IAS 8.11(b))) (International Accounting Standards Board (IASB), 2003).

² The IASB is currently in the process of exploring possible changes to their *Framework*. They issued a discussion paper entitled “A review of the Framework for Financial Reporting” in July 2013 as the first step to issuing a revised *Framework* (International Accounting Standards Board (IASB), 2013b).

Figure 1: The Framework-based teaching approach to IFRS



Source: Coetzee and Schmulian, 2012

Reading comprehension allows students to access and use information in a given piece of text (Scottish Education, 2012). Therefore, students' knowledge and understanding of IFRS, including the *Framework*, is dependent on their ability to read the content with the necessary comprehension. Reading frustration could lead to students losing interest in the subject area and result in poor grades (Bargate, 2012; Melby-Lervåg & Lervåg, 2013; OECD, 2000). This may discourage instructors from prescribing IFRS and its *Framework* as either primary or secondary teaching materials (Patel & Day, 1996; Shaffer, Stevens, & Stevens, 1993; Stevens, Stevens, & Raabe, 1983). Students then studying solely from textbooks, which may be perceived as less frustrating to read, risk referring only to interpretations of the *Framework*, rather than mastering the underlying source document (Bargate, 2012). It is, therefore, important for instructors to determine their students' ability to read the *Framework* with the necessary comprehension. Instructors may then make interventions, where necessary, to improve students' reading comprehension. These include determining the amount of time and effort to devote to the topic (Patel & Day, 1996).

No prior research considers students' reading comprehension of IFRS. The reading comprehension of other accounting texts³ has been explored. The focus thereof is on financial reports (Adelberg, 1979; Jones & Smith, 2014; Smith & Taffler, 1992), textbooks (Adelberg & Razek, 1984; Bargate, 2012; Cornachione, 2004; Raabe, Stevens, & Stevens, 1984); US GAAP (Adelberg, 1982; Stead, 1977; Stevens et al., 1983), Government Accounting Standards (GASB) (Shaffer et al., 1993) and Australian GAAP (Patel & Day, 1996). This exploratory study introduces reading comprehension of IFRS to the literature.

Globalization of higher education has contributed to diversifying the student population in university classrooms (Donald & Jackling, 2007; Sartorius & Sartorius, 2013). Consequently, researchers have questioned whether there should be different assessments of reading comprehension for different demographic groups (Broom & Jewson, 2013; Davidson, 1995; Helms, 1992). South Africa provides perhaps the most clear-cut example of diversity (Hammond, Clayton, & Arnold, 2009). Besides globalization, this diversity may also result from reintegration of the country's once segregated society following the demise of Apartheid. South African classrooms are today a melting pot of African⁴, Asian, Indian (descendants from India living in South Africa), Mixed-race⁵ and White students. Race is, however, little more than biological fiction (Hammond et al., 2009). Focusing thereon poses the danger of perpetuating and lending legitimacy to an artificial and discriminatory construct (Annisette, 2003; Broom & Jewson, 2013). Looking beyond race, there is linguistic diversity in the classroom. South African students speak various first languages. The country has eleven official languages. Higher education is, however, only available in English or Afrikaans⁶. This introduces the complexity of reading comprehension in a second language (Coetzee & Schmulian, 2013; Coetzee, Schmulian, & Kotzé, 2014; Melby-Lervåg & Lervåg, 2013; National Institute for Literacy, 2008; Shuttleworth-Jordan, 1996). This paper explores

³ In addition to reading comprehension, the readability of these accounting texts has been considered through the application of readability formulae (Chiang, Englebrecht, Phillips, & Wang, 2008; Courtis, 1995 & 2004; Davidson, 2005; Flory, Phillips & Tassin, 1992; Leheavy, Li & Merkley, 2011; Li, 2008; Razek, Hosch & Pearl, 1982; Sullivan & Benke, 1997; Traugh, Powers & Adedokun, 1987).

⁴ This study uses 'African' to refer to black indigenous or native South Africans.

⁵ The Mixed-race population group derives from at least five different paternal populations (Khoisan, Bantus, Europeans, Indians, and Southeast Asians) with a large (more than 60%) maternal contribution of Khoisan people (Quintana-Murci et al., 2010).

⁶ Afrikaans is a West Germanic language which is spoken natively in South Africa; with approximately six million native speakers in South Africa, or 13.3 per cent of the population, it is the third most spoken mother tongue in the country (de Swaan, 2001).

differences in the reading comprehension of the *Framework* between various language and racial student groups.

The following section of the paper provides an overview of the literature pertaining to reading comprehension and the evaluation thereof. The method applied to achieve the stated research objective is then documented. Thereafter the results are reported, together with a discussion, followed by a conclusion.

2. READING COMPREHENSION

Reading is an active process through which readers use their knowledge of language and the world to construct interpretations of and generate meaning from texts in light of the particular context within which the text is read (Borasi, Siegel, Fonzi, & Smith, 1998; Brown, Pressley, Van Meter, & Schuder, 1996; Dewitz & Dewitz, 2003; Flood & Lapp, 1990; Kintsch, 1998; McNamara, 2004; Palincsar & Brown, 1984; Pressley & Afflerbach, 1995; Rosenblatt, 1994; Schuder, 1993; Siegel, Borasi, Fonzi, Sanridge, & Smith, 1996). Such comprehension of text requires more than reading by simply moving one's eyes across a page of text and verbalizing this text. Reading comprehension involves thinking and learning (Draper, 2002). A reader generates meaning from text through integrating the new information in text with pre-existing knowledge (Flood & Lapp, 1990; Pressley & Afflerbach, 1995; Rosenblatt, 1994). Reading comprehension, therefore, includes decoding of lexical information, extracting ideas and constructing new knowledge (Akyel & Ercetin, 2009; Dommès, Chevalier, & Lia, 2011; Hill, Dickinson, Arnott, Gregor, & McIver, 2011; Huang, Chern, & Lin, 2009; Maarof & Yaacob, 2011; Mayer, 1997; Park & Kim, 2011; Shepherd, Selden, & Selden, 2012; Yang, 2001).

Research considering financial reporting students' reading comprehension of their study material, including textbooks and accounting pronouncements, is limited. It has been suggested that students' reading comprehension varies between textbooks for equivalent target audiences and within textbooks, making any results difficult to generalize (Adelberg & Razek, 1984; Bargate, 2012; Cornachione, 2004; Raabe et al., 1984). Formal authoritative accounting pronouncements, including IFRS, are more generalizable as they are widely adopted. They therefore form the basis of many financial reporting courses and may be supported by a variety of textbooks written by various authors. Reading comprehension of authoritative accounting pronouncements including US GAAP (Adelberg, 1982; Stead, 1977;

Stevens et al., 1983), Government Accounting Standards (GASB) (Shaffer et al., 1993) and Australian GAAP (Patel & Day, 1996) has been explored. In particular, the reading comprehension of Financial Accounting Standards Board (FASB) Statement 33: “Financial Reporting and Changing Prices” (Stevens et al., 1983), GASB Statement 11: “Measurement Focus and Basis of Accounting-Governmental Fund Operating Statement” (Shaffer et al., 1993) and Statement of Accounting Concepts No. 4: “Definition and Recognition of the Elements of Financial Statements (SAC 4)” (Patel & Day, 1996) was investigated. In all instances the reading comprehension of the students investigated was poor.

3. EVALUATING READING COMPREHENSION

The Cloze procedure tests the reading comprehension of a selected reader audience (Adelberg & Razek, 1984; Bargate, 2012; Bormuth, 1968; Cornachione, 2004; Gellert & Elbro, 2013; Raabe et al., 1984; Stevens et al., 1983; Stevens, Stevens, & Stevens, 1993; Taylor, 1953, 1956, 1957). The Cloze procedure relies on interaction between the language competence and prior knowledge of a reader and the authors’ intended communication (Bormuth, 1966). It remains one of the more widely used measures of reading comprehension (Bargate, 2012). The Cloze procedure provides instructors with a reliable indicator of their students’ reading-related abilities (Klapwijk, 2013; Patel & Day, 1996; Williams, Ari, & Santamaria, 2011) as several researchers have identified correlations between Cloze scores and other measures of reading comprehension (Fuchs, Fuchs, & Hamlet, 1988; Greene, 2001; Jenkins & Jewell, 1993; McKenna & Layton, 1990; Williams et al., 2011).

Despite these correlations and the wide use thereof, there is debate surrounding the *validity* of the Cloze procedure as a measure of reading comprehension (Carlisle & Rice, 2004; Farr & Carey, 1986; Jones, 1997; Pearson & Hamm, 2005). The question, for example, has been raised whether the Cloze procedure tests only ‘local’ comprehension, being sensitivity to grammatical and semantic constraints on meaning (Carlisle & Rice, 2004) and not higher-order comprehension (Gellert & Elbro, 2013; Keenan, Betjemann, & Olson, 2008; Nation & Snowling, 1997). Evidence has, however, been presented to contest this (Gellert & Elbro, 2013; Tabatabaei & Mirzaei, 2014). While the Cloze procedure continues to be the subject of debate amongst scholars, instructors continue to use the instrument to provide an indication of their students’ reading comprehension (Klapwijk, 2013).

The Cloze procedure requires the random selection of passages from the chosen reading material. Every n^{th} word from the selected passages is deleted, providing at least fifty deletions. Readers are required to insert the deleted words. The higher the accuracy of the words inserted, the higher the readers' comprehension of the material. Bormuth (1968, 1969) and Rankin and Culhane (1969) established Benchmark comprehension levels for the Cloze procedure (Table 1). Readers at the *Independent Level*, scores between 58% and 100%, can access and decode the language without assistance. The *Instructional Level*, scores between 44% and 57%, applies to readers who can access and decode the content with some assistance. Scores at the *Frustration Level*, between 0% and 43%, suggests the reader has difficulty accessing and decoding the specific text.

Table 1: Benchmark comprehension levels for the Cloze procedure

Cloze score	Level
0% – 43%	<i>Frustration Level</i> – language is difficult for readers to cope with
44% – 57%	<i>Instructional Level</i> – readers able to cope, but some assistance required
58% – 100%	<i>Independent Level</i> – readers able to cope with the language

Source: Bormuth (1968, 1969) and Rankin and Culhane (1969)

4. METHOD

4.1 Cloze procedure

Two random passages of fifty deletions each (thus 100 words) were selected from the *Framework*⁷. At least 50 blanks in the reading selection increases the reliability of the test (DuBay, 2004). The *Framework* comprises of four chapters. The paragraphs across the chapters of the *Framework* were sequentially numbered for purposes of generating random numbers. Random selection assisted with analysing the document as widely as possible and helped control for experimental bias (Stevens et al., 1983). The two passages selected represented 8.8% (11 of the 125 paragraphs) of the total text of the *Framework*. A Cloze

⁷ The Basis for Conclusions (BCs) is included as an appendix to an IFRS and includes the standard setter's thought process in establishing certain concepts, principles and rules within the underlying IFRS and identifies reasons for selections between available alternatives and support for certain decisions reached in the related IFRS (Barth, 2008). The BCs would be considered to be a valuable resource available to students for purposes of comprehending the related IFRS. The BCs are, however, excluded from the respondent student group's syllabus, which is established by the professional association. The existence of the BCs and the students' possible use thereof for purposes of reading and comprehending the *Framework* can, therefore, not be considered in this study.

score is ‘unaffected by context greater than five words’ (Alderson, 1979). Accordingly, every fifth word of the selected passages was deleted and replaced by underlined blank spaces of equal length (Bargate, 2012; Hartley & Trueman, 1986). The following is an extract from the first paragraph, showing the deleted words in italic type:

The fundamental qualitative characteristics *are* relevance and faithful representation.

Relevance

Relevant financial information is capable *of* making a difference in *the* decisions made by users. *Information* may be capable of *making* a difference in a *decision* even if some users *choose* not to take advantage *of* it or are already *aware* of it from other *sources*.

The selected passages were distributed, following ethical clearance, to the students at the start of their first formal lecture on the *Framework*. Demographic data of the students was collected simultaneously. A covering letter, accompanying the selected passages and demographic data, included written instructions for the test. A visual demonstration by an author, being a lecturer on the course, supplemented the written instructions to ensure the students thoroughly understood the test (Bargate, 2012). A time limit of 15 minutes a passage was granted to complete the test. Bargate (2012) allowed 10 minutes a passage and Adelberg and Razek (1984) allowed 30 minutes a passage. Although informed by literature, the suitability of the instrument and method was determined through a pre-test⁸. Student answers were marked and compared to exact correct word replacements to avoid marker subjectivity (Adelberg & Razek, 1984; Bargate, 2012; Bormuth, 1969; Cohen, 1975; Cornachione, 2004; Litz & Smith, 2006; Taylor, 1957). Minor misspellings were allowed.

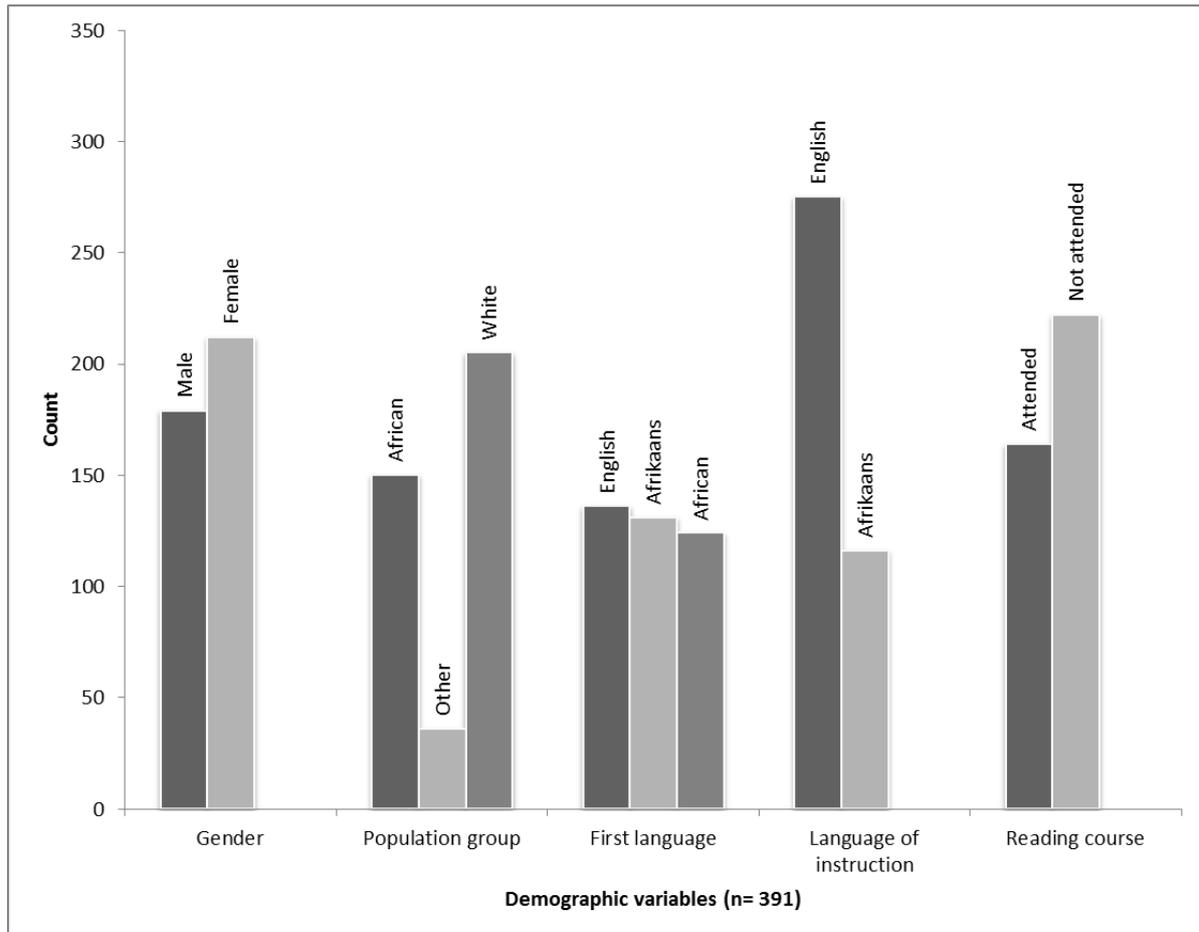
4.2 Target population

This study considered all students enrolled for the first time for an introductory course to IFRS. This introductory course to IFRS is a second-year, or intermediate, level course on an

⁸ The passages were pre-tested with a focus group of 10 students. Feedback was received orally, supported by completed passages and written comments. The final passages distributed to the target population group had been revised, where necessary, in accordance with the feedback received, yet the revision required was negligible.

undergraduate professional accounting education program⁹ at a leading South African university¹⁰. The targeted student population has not received formal teaching on the *Framework*. The study’s objective was not to test students’ memory. The students who enter this course have completed a first year ‘bookkeeping’ course exposing them to accounting terminology. The demographic profile of the respondent group is presented in Figure 2.

Figure 2: Demographic profile of respondent group



Other population groups include Asian, Chinese, Indian and Mixed Race.

The course’s language of instruction is Afrikaans (n=116) or English (n=275). All the English (n=136) and African (n=124) first language students attend the course in English, while the majority (n=116) of the Afrikaans first language (n=131) students attend the course

⁹ For purposes of this paper, ‘professional accounting education’ is defined as accounting programs which have as their primary objective the graduating of students who qualify to enter the professional accountancy examinations of a professional accounting body.

¹⁰ The university, in which the course referred to in this study is presented, is consistently rated as being in the top three performers in the professional accountancy examinations in South Africa, and is also one of only three South African universities in the Top 500 universities in the world (QS World University Rankings, 2013).

in Afrikaans and the remainder attend in English (n=15). The Afrikaans class is therefore, characterised by White students whose first language is Afrikaans. In contrast, the English classes are characterised by students from all racial groups whose first language may be one of several languages. Consequently, language of instruction is only segregated for the White students (n=205) and not the African (n=150) or other students (n=36). The other student group comprise of Asian, Chinese, Indian and Mixed-race students. Course materials and components (e.g. tutorials, textbooks, assessments) are available in both Afrikaans and English. The students' primary resource is IFRS, which is not available in Afrikaans. The *Framework* is, therefore, also not available in Afrikaans and the selected passages were provided in English. There were more female (n=212) than male (n=179) students. Finally, 164 of the students had attended reading courses while 222 had not. Students attend reading courses with the intention of, *inter alia*, increasing their reading speed, comprehension, concentration, retention and recall skills. Reading courses usually involve the assessment of current reading speed and comprehension levels together with the identification of poor reading habits. The outcome of such a course usually results in an increase in reading speed and comprehension levels as well as the introduction of improved reading habits. Students attend these courses on a voluntary basis.

The Cloze procedure was conducted in class. The response rate was 96% (n=391). Participation was voluntary, no incentives were provided and there was no impact on grades. The procedure does not consider or allow for the effort and motivation of the respondents (or lack thereof) (Bargate, 2012). All possible measures were taken to ensure that students completed the given passages with the necessary diligence. However, there cannot be absolute assurance that all respondents attempted the test with the same commitment.

4.3 Multivariate analysis

An exploratory ordinary least-squares (OLS) regression¹¹ was used to simultaneously explore the effects of several demographic variables on reading comprehension (RC). The demographic variables explored in this study are first language (*FirstLang*), language of

¹¹ This exploratory multivariate analysis will unavoidably be parsimonious and would not be adequate to predict students' reading comprehension. Inclusion of other student information which could affect reading comprehension could improve the R².

instruction (*InstructLang*), population group (*PopGroup*), gender (*Gender*) and the attendance or not of a prior reading course (*ReadCourse*).

$$RC = \alpha + \beta_1 FirstLangAfrik + \beta_2 FirstLangAfric + \beta_3 InstructLang + \beta_4 PopGroupAfric + \beta_5 PopGroupOth + \beta_6 Gender + \beta_7 ReadCourse + \epsilon$$

RC is the students' reading comprehension, as the dependent variable, and represents the students' Cloze reading comprehension scores of the *Framework*. Given the *Framework* is available in English and none of South Africa's other languages, the other language students are required to read the document in their second language. To examine the effect of first language on reading comprehension, variables were included for the different first languages, being English, Afrikaans and African. *FirstLangAfrik* equals 1 for Afrikaans first language and 0 for not Afrikaans first language. Similarly *FirstLangAfric* equals 1 for African first language and 0 for not African first language. The coefficients indicate whether the reading comprehension scores for these groups of students are different to the English first language students (*FirstLangAfrik* and *FirstLangAfric* both equal 0). A negative relationship is expected between first language (*FirstLang*) and the Cloze reading comprehension scores. *InstructLang* equals 1 if students receive instruction in English and *InstructLang* equals 0 if students receive instruction in Afrikaans. A positive relationship is expected between language of instruction (*InstructLang*) and the Cloze reading comprehension scores. There were no expectations for the signs of the coefficients for the population group (*PopGroup*) variables, being African, White and Other. *PopGroupAfric* equals 1 for African students and 0 for not African students. Similarly *PopGroupOth* equals 1 for Other population students and 0 for not Other population students. The coefficients indicate whether the reading comprehension scores for these groups of students are different when compared to the White students (*PopGroupAfric* and *PopGroupOth* both equal 0). It has been suggested that female students experience less difficulties with reading comprehension (Bray & Barron, 2003; Broom & Jewson, 2013; Chiu & McBride-Chang, 2006; Lynch, 2002; Poplin & Omar, 2001). A positive relationship was, therefore, expected between gender and the students' Cloze reading comprehension scores (*Gender* equals 1 for female and 0 for male). Further, a positive relationship was expected between the reading course attendance (*ReadCourse*) and Cloze reading comprehension scores (*ReadCourse* equals 1 if a prior reading course was attended and *ReadCourse* equals 0 if no prior reading course was attended).

5. RESULTS AND DISCUSSION

The mean Cloze score of the total respondent group was at the *Instructional Level* (M=56.1) (Figure 3). Analysis of the Cloze scores' distribution over the total respondent group (Figure 4) indicated that 43.6% of the respondents scored at the *Independent Level*, 47.8% at the *Instructional Level* and 8.6% at the *Frustration Level*. Nearly half the group displayed reading comprehension at the *Independent Level*, suggesting that many respondents could access and decode the content. These results appear more positive than previous research into students' reading comprehension of authoritative accounting pronouncements (Adelberg, 1982; Patel & Day, 1996; Shaffer et al., 1993; Stead, 1977; Stevens et al., 1983). It should, however, not be interpreted that these students have the ability to proficiently exercise appropriate judgment or apply the concepts contained in the *Framework*. A student's ability to access and decode the content of the *Framework* with the necessary comprehension is only the foundation for further development of their ability to analyze, critique, evaluate and synthesize the content (Bharuthram, 2012) and ultimately apply judgment in financial reporting.

Figure 3: Mean Cloze reading comprehension scores and standard deviations

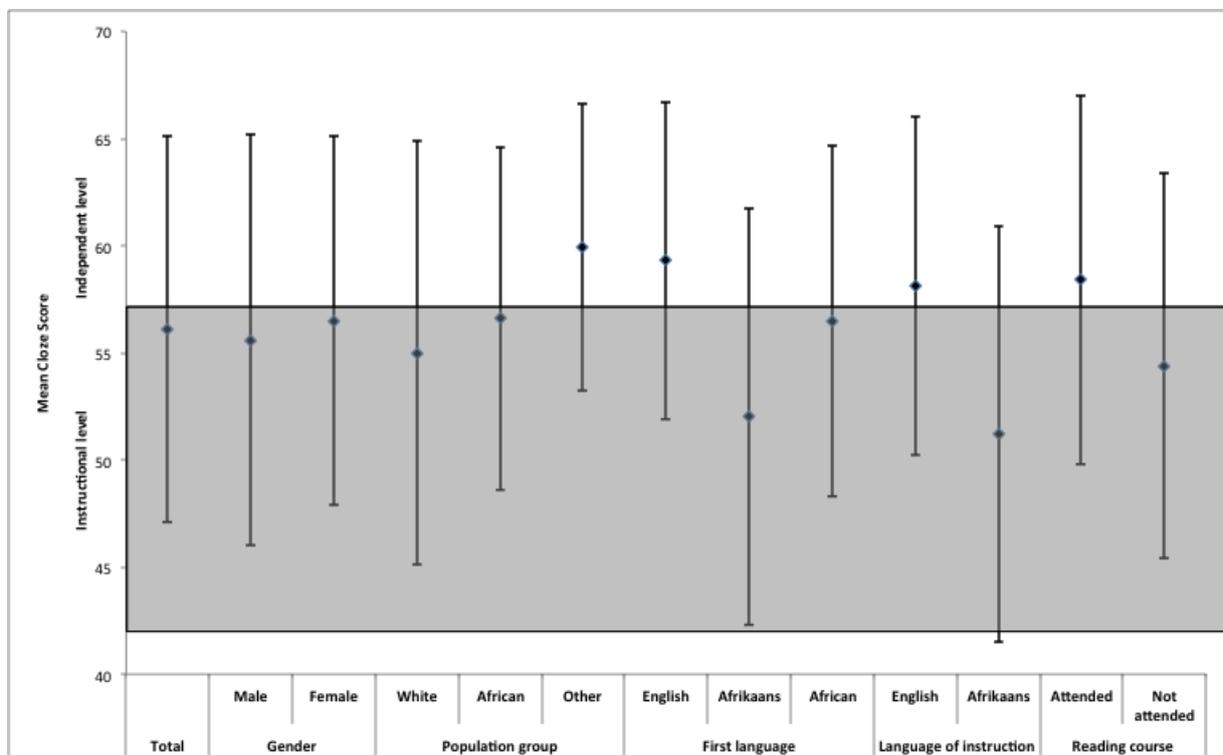
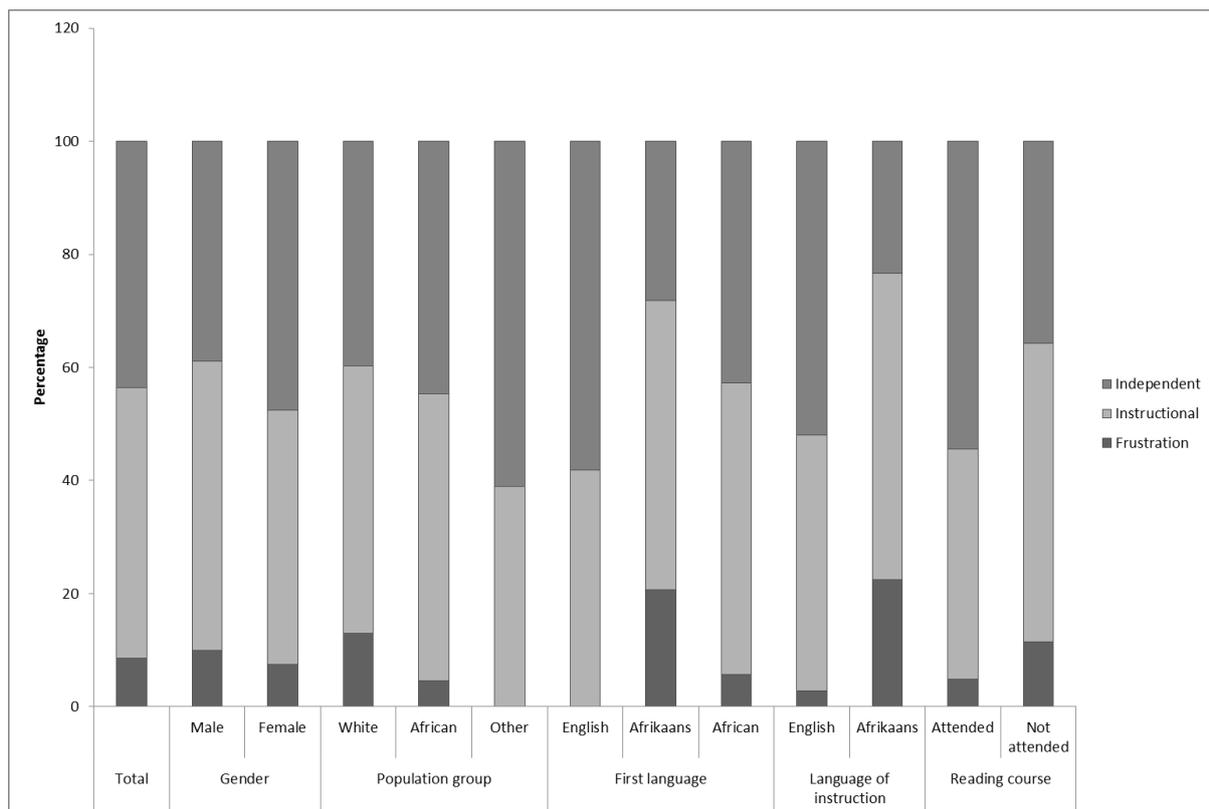


Figure 4: Distribution of Cloze reading comprehension scores



5.1 Exploratory multivariate analysis

The results of the exploratory multivariate analysis are presented in Table 2. The overall model is significant (F-statistic=11.084, $p=0.000$, $n=391$) with an adjusted R^2 of 0.168. The language of instruction (t-statistic=3.114, $p=0.002$) and the attendance or not of a reading course (t-statistic=3.169, $p=0.002$) are the two variables significantly associated with the students' Cloze reading comprehension scores. The findings supported the expectations for the direction of the association between the reading course and language of instruction variables and the students' Cloze reading comprehension scores. No multicollinearity problems existed¹².

¹² Tolerance values of less than 0.1 and VIF values greater than 10 suggest possible multicollinearity problems (Field, 2013). Although no collinearity problems were identified for the variables included in the model, some variables included were correlated (untabulated). The Population Group correlated significantly with Language of Instruction ($r=0.599$, $p<0.01$) and First Language ($r=0.516$, $p<0.01$). In addition, the Language of Instruction further correlated significantly with Reading Course ($r=0.243$, $p<0.01$). These variables were not excluded from the model on the basis that the entire set of correlated non-collinear variables is part of the underlying social dynamic whose effect is estimated. Omission of these variables from the model will result in correlated omitted variables and the loss of potentially valuable information. As a further level of analysis, additional regression models were however run by Population Group, Language of Instruction and First

Table 2: Regression analysis results

Association between demographic variables and Cloze reading comprehension scores
 Dependent variable: Cloze reading comprehension scores

Variables	Beta	t-statistic	Significance
Constant	51.237	21.711	.000*
Gender	0.831	0.977	.329
Population group			
African	-2.455	-1.336	.182
Other	0.672	0.398	.691
First language			
Afrikaans	-1.189	-0.545	.586
African	-0.990	-0.573	.567
Language of instruction	6.701	3.114	.002*
Reading course	2.800	3.169	.002*

* $p < 0.01$

Adjusted $R^2 = 0.168$

F-statistic = 11.084 ($p=0.000$)

$n = 391$

Variable definitions:

Gender = 1 for female, 0 for male;

Population group

 African = 1 for African, 0 for not African;

 Other = 1 for Other, 0 for not Other;

First language

 Afrikaans = 1 for Afrikaans, 0 for not Afrikaans;

 African = 1 for African, 0 for not African;

Language of instruction = 1 for English, 0 for Afrikaans;

Reading course = 1 for reading course attended, 0 for no reading course attended.

5.2 Cloze reading comprehension scores by demographic variable

Students attending English lectures returned a mean Cloze score at the *Independent Level* ($M=58.1$). Students attending Afrikaans lectures returned a mean Cloze score at the *Instructional Level* ($M=51.2$). Difference in mean scores by language of instruction is statistically significant ($p=0.002$) (Table 2). The Cloze scores' distribution (Figure 4.) by language of instruction showed that 52.0% of the students attending the English lectures read at the *Independent Level* compared to only 23.3% of the students attending the Afrikaans lectures. Further, only 2.8% of the students attending the English lectures read at the *Frustration Level*, compared to 22.4% of the students attending the Afrikaans lectures.

Language. The results of the regressions by these demographic groups (untabulated) support the result of the regression for the total group.

Students attending the Afrikaans lectures are Afrikaans first language speakers required to read the *Framework* in their second-language, English.

English first language students' mean Cloze score was at the *Independent Level* (M=59.3). Both the Afrikaans (M=52.0) and African (M=56.5) first language students' mean Cloze scores were at the *Instructional Level*. However, the difference in mean scores of the English first language students is not statistically different in comparison to the Afrikaans first language (p=0.586) and African first language (p=0.567) students.

The findings of this study suggest that receiving instruction in the same language as the document read, may aid the reading comprehension of second language students. Financial reporting students who learn in a second language face many challenges. These challenges include, having to learn the language, technical jargon and accounting concepts at the same time together with the translation burden (Beaven, Calderisi, & Tantral, 1999; Coetzee et al., 2014). Second language students may have particular difficulty decoding the text (Koda, 2005; Melby-Lervåg & Lervåg, 2013). These students may, due to word and sentence level difficulty, encounter problems in maintaining a sufficient reading rate, necessary to make the connections and inferences from the text needed for comprehension (Grabe, 1991). Instructors of second language learners, therefore, need to distinguish “reading-based comprehension problems” from “language-based comprehension problems” (Zoghi, Musthapa, Rizan, & Maasum, 2010). Reading skills develop automatically as a by-product of linguistic knowledge and competency (Koda, 2010). Accordingly, instructors may be able to enhance reading fluency and comprehension through explicit instruction on grammar and vocabulary (Coetzee et al., 2014; Koda 2010). Teaching accounting in English to second-language students should, therefore, be regarded as an area of specialism by accounting instructors.

Second language teaching and learning distinguishes between implicit and explicit instruction approaches (DeKeyser, 1995, 2003; Ellis, 2004; Gasparini, 2004; Hulstijn, 2005; Nunan, 1999). Implicit instruction approaches rely on the student being able to acquire the necessary language skill without deliberately drawing attention to language rules. Learning occurs without awareness thereof (DeKeyser, 2003). Explicit teaching approaches involve direct explanation and detection of language rules based on systematic language input. While explicit teaching approaches have found significant support when evaluated in a laboratory

environment, the evidence is less clear in the classroom (Stanat, Becker, Baumert, Lüdtke, & Eckhardt, 2012). The explicit approach in the classroom may be less motivating to students than implicit strategies (Stanat et al., 2012). In teaching the *Framework*, accounting instructors may consider implementing some implicit reading comprehension instruction when faced by a second-language student cohort. Further, where the students are exposed to the second language in the environment in which they function daily, some implicit learning will result (Stanat et al., 2012). Accounting instructors may find value in encouraging these students to interact with financial publications published in the popular press in the second language.

Students who previously attended a reading course could read the selected passages at the *Independent Level* (M=58.4). Those students who have not attended any reading courses scored at the *Instructional Level* (M=54.4). The difference in mean Cloze scores for this category is statistically significant ($p=0.002$). The Cloze scores' distribution, of those who have attended a reading course and those who have not, showed that 54.5% of those who attended prior reading courses scored at the *Independent Level*. Only 35.7% of the group who have not attended any prior reading courses scored at the *Independent Level*. Further, only 4.9% of students who attended prior reading courses scored at the *Frustration Level*, in contrast to 11.4% of students who have not attended any prior reading courses.

These results suggest attending a reading course may be beneficial for students reading at the *Instructional* or *Frustration Level*. Additional interventions include integrating background knowledge and other experiences in the reading process, focused classroom discussions, teaching students how to make use of concept mapping or encoding to summarize the key concepts contained in a piece of technical work, focused homework assignments and using peer teaching, whereby a small group of students take turns to being the instructor. Sources that may be informative in this respect include Duke and Pearson (2002); White (2004); Lei, Rhinehart, Howard, and Cho (2010); Duke, Pearson, Strachan, and Billman (2011) and Kim and Anderson (2011).

No statistically significant differences, between the mean Cloze scores of the remaining variables, were identified. Female (M=56.5) and male (M=55.6) students' mean Cloze scores were at the *Instructional Level* ($p=0.329$). The White (M=55.0) and African (M=56.6) students both returned mean Cloze scores at the *Instructional Level*. The difference in mean

scores of the White students is not statistically different in comparison to the African ($p=0.182$) and Other ($p=0.691$) students.

6. CONCLUSION

Framework-based teaching of principle-based IFRS necessitates that the *Framework* be at the core of teaching and learning IFRS (Barth, 2008; Coetzee & Schmulian, 2011, 2012; Hodgdon et al., 2011; Wells, 2011). Financial reporting students' reading comprehension of this *Framework* allows them to access and decode the content and in so doing provides the foundation of their understanding of the concepts contained therein. The ability to read study material with the necessary comprehension is fundamental to effective learning (Kim & Anderson, 2011; Lei et al., 2010; White, 2004). An awareness of students' ability to read IFRS with the necessary comprehension should influence the selection of teaching interventions, enhancing the effectiveness of the accounting classroom and improve the overall communication in financial reporting. Current literature is silent in respect of reading comprehension of IFRS. The objective of this study was therefore to evaluate South African financial reporting students' reading comprehension of the *Framework* using the Cloze procedure. While this study considers South African students, the results may be of interest to instructors in other multiracial or multilingual environments.

Analysis of Cloze scores for the total student population revealed that the majority of the students' reading comprehension of the *Framework* was at the *Independent* or *Instructional Level*. Few students experienced reading comprehension at the *Frustration Level*. Students attending the lectures in English, regardless of their first language, achieved significantly higher mean Cloze scores compared to the students who attend the lectures in Afrikaans. Students learning in a second language face language-based comprehension problems in addition to any reading-based comprehension problems. Accounting instructors, of second-language accounting students who do not have access to IFRS in their first language, should consider implementing implicit language and reading comprehension instruction to support their teaching of IFRS. Mean Cloze scores of those students who have attended a prior reading course were also significantly higher than those students who have not.

Future research, investigating commonalities or differences in reading comprehension of IFRS across a diversity of student populations, is encouraged. In addition, models predicting

students' reading comprehension of IFRS may be developed. Reading comprehension is a complicated construct affected by several factors (Klapwijk, 2013). Consequently, while this construct in respect of the *Framework* is measured using the Cloze procedure, this study cannot and does not claim to provide a conclusive answer to students' reading comprehension thereof. The Cloze procedure is a useful tool for instructors to employ, however, further research of supplementary measures of reading comprehension of the *Framework* is encouraged.

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CHAPTER 3

RESEARCH PAPER 2

Differences in Students' Reading Comprehension of International Financial Reporting Standards: a South African Case

ABSTRACT

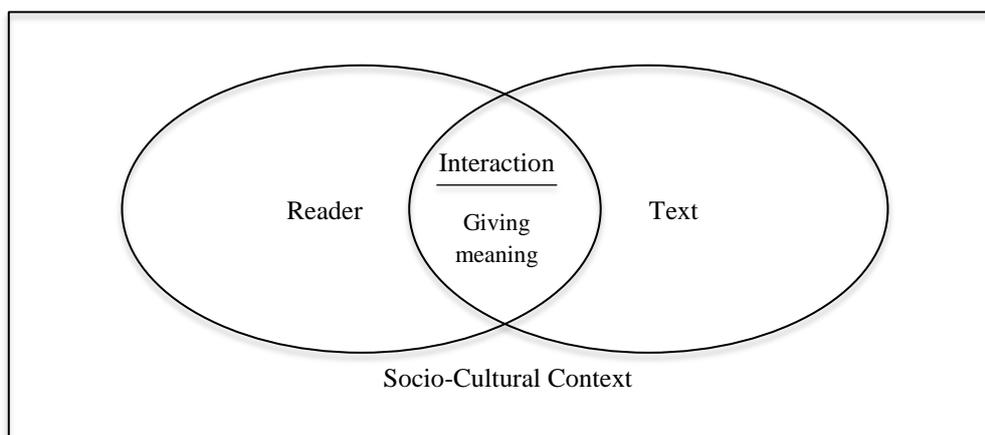
This study explores differences in students' reading comprehension of selected International Financial Reporting Standards (IFRS) in a heterogeneous South African financial reporting class. Statistically significant differences were identified for prior academic performance, language of instruction, first language and enrolment in the *Thuthuka* programme. Where students, in a heterogeneous financial reporting class, require additional interventions to develop their reading comprehension, instructors may need to consider implementing differentiated instruction. Although this study considers South African students, the results may be of interest in other multicultural or multilingual environments, particularly where students also have diverse traits and backgrounds and have to comprehend learning material in a second language.

Key words: Reading comprehension, IFRS, Cloze, students

1. INTRODUCTION

Reading comprehension, from a teacher’s perspective, has been defined as the process through which students apply prior knowledge and experiences when interacting with written text in order to gain meaning and understanding from that text within a particular socio-cultural environment (Figure 1) (Pardo, 2004). The purpose of this study is to explore differences, in the reading comprehension of formal authoritative accounting pronouncements, across a heterogeneous cohort of financial reporting students. Specifically, demographic differences in South African financial reporting students’ reading comprehension of International Financial Reporting Standards¹ (IFRS) is explored.

Figure 1: Reading comprehension



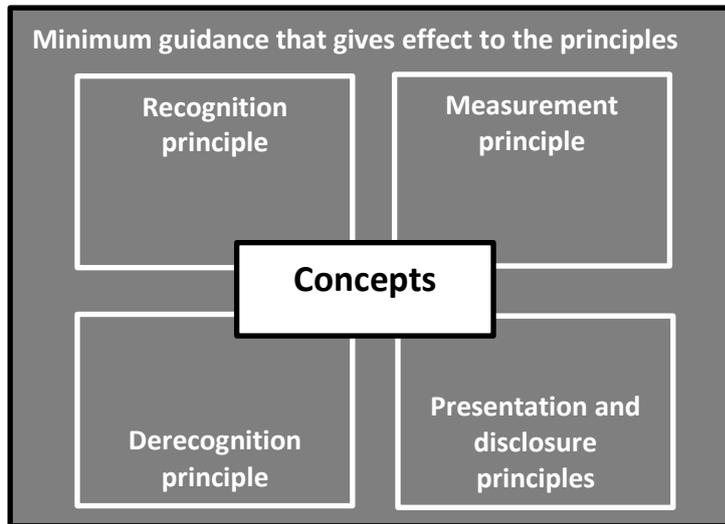
Differences in financial reporting students’ reading comprehension of the International Accounting Standards Board’s (IASB) *Conceptual Framework for Financial Reporting (Framework)* has been investigated (Janse van Rensburg, Coetzee, & Schmulian, 2014). It is however submitted that the results of that study may not be generalisable to the reading comprehension of other formal authoritative accounting pronouncements, including IFRS.

Reading comprehension is affected by the characteristics of the *text* accessed by the reader, including the content contained therein and the readability thereof (Pardo, 2004). In terms of content, the *Framework* is not an IFRS and does not define standards for any particular measurement or disclosure issue (International Accounting Standards Board (IASB), 2010a).

¹ The collective term IFRS includes, *inter alia*, the International Accounting Standards (IAS’s) which were issued by the predecessor to the International Accounting Standards Board (IASB), the Board of the International Accounting Standards Committee (IASC) (International Accounting Standards Board (IASB), 2003a).

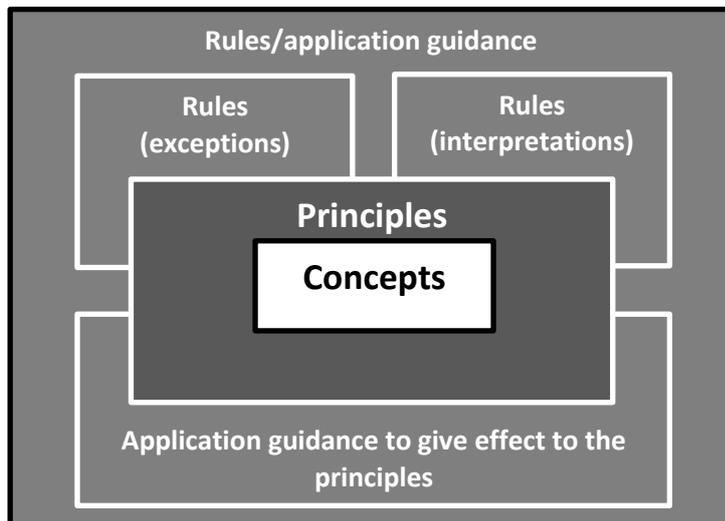
The purpose of the *Framework* is to set out the concepts that underlie the preparation and presentation of financial statements for external users. These concepts form the basis for the development of the detailed principles and rules contained in IFRS's, which support the accounting treatment of particular economic phenomena (Figure 2 and Figure 3).

Figure 2: Principle-based standard



Source: International Accounting Standards Board (IASB), 2010b

Figure 3: Rule-based standard



Source: International Accounting Standards Board (IASB), 2010b

Accounting treatment comprises recognition, measurement, presentation and disclosure principles and rules. In a principle-based standard, the concepts contained in the *Framework*

will form the foundation from where principles and rules are developed (Coetzee & Schmulian, 2012) with minimum guidance required to give effect to these principles (Figure 2). In more rule-based standards, concepts contained in the *Framework* still serve as the foundation, but for the development of more vast and detailed principles and rules and extensive application guidance (Figure 3) (International Accounting Standards Board (IASB), 2010b).

Readability of text is dependent on the word difficulty (semantic factor) and the sentence length (syntactic factor) of that text (Williamson, 2008). Readability is passive and text-centered and can be determined by objective readability measures, such as Flesch (Jones & Smith, 2014). The Flesch reading ease score (FRES)² of the *Framework* (FRES=23) is ‘very difficult’ to read (reading scores of less than 30) (Coetzee, Schmulian, & Cloete, 2014). The Flesch reading ease scores of IAS 2, *Inventories* (FRES=33) and IAS 16, *Property, Plant and Equipment* (FRES=31) is however ‘difficult’ to read (reading scores of between 30 and 49). Given the differences in, *inter alia*, the content and readability of the text of the *Framework* and IFRS, financial reporting students’ reading comprehension of the *Framework* may, therefore, not be generalised to their reading comprehension of IFRS.

Reading comprehension is also affected by the *reader’s* abilities, attributes and motivation (Butcher & Kintsch, 2003; Fletcher, 1994; Narvaez, 2002; Pardo, 2004; Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). A reader’s motivation is a consequence of their interest, emotion and persistence in reading the text, while a reader’s abilities and attributes are influenced by the reader’s *socio-cultural* environment and understanding of the world (Pardo, 2004). A reader’s environment and understanding is formed by their culture. Culture, broadly defined, may encompass, *inter alia*, gender, language and race (Coetzee, Schmulian, & Kotzé, 2014; Fletcher, 1994; Pardo, 2004; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982), although race may be little more than biological fiction (Hammond, Clayton, & Arnold, 2009). The socio-cultural context may be further represented by an individual’s schooling environment, as indication of the socio-economic level of the community in which the student is situated (Coetzee et al., 2014).

² The Flesch reading ease score has long been favored as a valid measure of readability in accounting communication literature (Stone & Parker, 2013). The score is based on the syllables per word and average words per sentence.

The point at which the reader and the text *interact*, is the point at which meaning is extracted from the text and comprehension occurs (Pardo, 2004). A student's background knowledge pertaining to the content of the text, may influence the student's ability to comprehend that text (Best, Rowe, Ozuru, & McNamara, 2005; Butcher & Kintsh, 2003; Compton, Miller, Elleman, & Steacy, 2014; Schallert & Martin, 2003). In the comprehension of new information, schema theory aids in the understanding of the role of an individual's pre-existing ideas and information (schema) developed through their own life experiences (Anderson, 2005; McVee, Dunsmore, & Gravelek, 2005; Slavin, 1988; Widmayer, 2005). Any new information is given meaning according to how this information fits into existing schema (Christensen, 2006; Widmayer, 2005). A positive correlation exists between a reader's knowledge level and reading comprehension and retention (Compton et al., 2014; Kendeou & van den Broek, 2007). Such is the strength of this correlation that it has been suggested that knowledge has a primary role in reading comprehension (Cain & Parrila, 2014). Consequently, background knowledge may assist even the poorest of readers in compensating for their poor reading ability and enhance their ability to comprehend the text (Compton et al., 2014).

Given that reading comprehension is affected by traits of the reader within a socio-cultural context, this gives rise to the Research Question:

RQ: Are there differences in students' reading comprehension of IFRS in a financial reporting class with a heterogeneous student cohort?

To explore these differences, this paper expands on that of Janse van Rensburg et al. (2014) through performing a differentiated replication³ of their study of South African financial reporting students' reading comprehension of the *Framework*. The diversity of students in South Africa provides the opportunity for such exploration. Given the increase of culturally diverse accounting classrooms globally, the findings of this study may be of interest in other multicultural environments, particularly where students also have diverse traits and have to comprehend learning material in a second language.

³ A differentiated replication is deliberate or known variation on a major aspect of a study with the aim of extending the known range of conditions for which the result may hold true (Lindsay & Ehrenberg, 1993).

2. EVALUATING READING COMPREHENSION

Accounting faculty have acknowledged the importance of reading comprehension in their students' learning, focusing their research on students' reading comprehension of textbooks (Adelberg & Razek, 1984; Bargate, 2012; Cornachione, 2004; Raabe, Stevens, & Stevens, 1984). Financial reporting students studying solely from textbooks, however, risk referring only to interpretations of IFRS, rather than mastering IFRS as the primary source (Bargate, 2012, Janse van Rensburg et al., 2014). An assessment of the students' reading comprehension of IFRS may be necessary for effective teaching and learning of IFRS (Janse van Rensburg et al., 2014). Limited, and mostly dated, exploration of financial reporting students' reading comprehension of primary sources considers selected statements of US GAAP (Adelberg, 1982; Stead, 1977; Stevens, Stevens, & Raabe, 1983), Government Accounting Standards (GASB) (Shaffer, Stevens, & Stevens, 1993), Australian GAAP (Patel & Day, 1996) and more recently the *Framework* (Janse van Rensburg et al., 2014).

Reading comprehension is often evaluated using the Cloze procedure (Adelberg & Razek, 1984; Bargate, 2012; Bormuth, 1968; Cornachione, 2004; Janse van Rensburg et al., 2014; Raabe et al., 1984; Stevens et al., 1983; Stevens, Stevens, & Stevens, 1993; Taylor, 1953, 1956, 1957; Williams, Ari, & Santamaria, 2011). The interaction between the language competence and prior knowledge of a reader and the authors' intended communication forms the foundation of the Cloze procedure (Bormuth, 1966). The overwhelming majority of academic research on reading comprehension considers the Cloze procedure to be the "criterion of choice" (Klare, 1988, p.24) for assessing adult reading comprehension (Stevens et al., 1993) and considers it to be a reliable and objective measure of reading comprehension (Haar & Kossack, 1990). Correlations between cloze scores and scores on other forms of reading comprehension assessments enhance the *reliability* of the Cloze procedure as a measure for evaluating reading comprehension (Fuchs, Fuchs, & Hamlet, 1988; Greene, 2001; Jenkins & Jewell, 1993; McKenna & Layton, 1990; Williams et al., 2011).

There is some debate surrounding the *validity* of the Cloze procedure as a measure of reading comprehension (Carlisle & Rice, 2004; Farr & Carey, 1986; Jones, 1997; Pearson & Hamm, 2005). It has been suggested that the Cloze procedure is sensitive to decoding and word level processes and not higher-order comprehension (Keenan, Betjemann, & Olson, 2008; Nation & Snowling, 1997). Evidence has, however, been given to oppose this (Gellert & Elbro,

2013; Tabatabaei & Mirzaei, 2014). Despite the continuing debate among scholars, the Cloze procedure continues to provide instructors with an indication of their students' reading comprehension (Klapwijk, 2013) and allows for the exploration of demographic differences in students' reading comprehension (Janse van Rensburg et al., 2014).

The Cloze procedure requires the reader to complete a task that involves the 'clozing' of an argument, either by selecting from three word choices in the maze format or by filling in a blank in the open-ended format. Evidence of a high co-variance between the scoring of maze and open-ended Cloze has been provided (Williams et al., 2011). In accounting literature, open-ended Cloze appears to be favoured (Bargate, 2012; Cornachione, 2004; Janse van Rensburg et al., 2014; Stevens et al., 1993). Benchmark comprehension levels for the Cloze procedure were established by Bormuth (1968, 1969) and Rankin and Culhane (1969) (Table 1). Readers at the *Independent Level* (scores between 58% and 100%) are able to cope with the text without assistance. The *Instructional Level* (scores between 44% and 57%) represents readers who are able to cope with the text with some assistance. Readers at the *Frustration Level* (scores between 0% and 43%), find it difficult to cope with and access the specific text.

Table 1: Benchmark comprehension levels for the Cloze procedure

Cloze score	Level
0% – 43%	<i>Frustration Level</i> – language is difficult for readers to cope with
44% – 57%	<i>Instructional Level</i> – readers able to cope, but some assistance required
58% – 100%	<i>Independent Level</i> – readers able to cope with the language

Source: Bormuth (1968, 1969) and Rankin and Culhane (1969)

3. METHOD

In exploring demographic differences in financial reporting students' reading comprehension, this study replicated the use of the Cloze procedure adopted by Janse van Rensburg et al. (2014). The Cloze procedure was applied to the asset standards IAS 2, *Inventories* (IAS 2) (IASB, 2003b) and IAS 16, *Property, Plant and Equipment* (IAS 16) (IASB, 2003c). Assets⁴, as an element, have conceptual primacy in financial reporting in that the definitions of all

⁴ An asset is defined as a resource controlled by the entity as a result of past events from which future economic benefits are expected to flow to the entity (International Accounting Standards Board (IASB), 2010a, paragraph 4.4a).

other elements (liabilities⁵, equity⁶, income and expenses⁷) are ‘anchored in the asset definition’ (Barth, 2008, p. 1167). Therefore, together with liabilities, assets are considered to be one of the ‘building blocks’ of IFRS financial reporting (Wells, 2011). In addition, it is submitted that the inventories and property, plant and equipment line items constitute a material part of the asset section in many entities’ statement of financial position. These asset standards are, therefore, considered to be fundamental topics in the teaching and learning of IFRS. Their significance in this respect is enhanced when it is considered that these two standards also permeate through to other topics⁸.

Two passages of IAS 2 and IAS 16 were randomly selected from each pronouncement. The selected passages were taken from paragraphs representing 12.8% of the total text of IAS 2 (5 of the 39 paragraphs) and 8.75% of the total text of IAS 16 (7 of the 80 paragraphs). The length of each of these four passages was sufficient to allow fifty deletions per passage (DuBay, 2004), where every fifth word was deleted (Alderson, 1979; Bargate, 2012; Janse van Rensburg et al., 2014; Hartley & Trueman, 1986). The deleted words were replaced by underlined blank spaces of equal length. The following extracts illustrate the passages, with the deleted words indicated in italic type:

IAS 2:

Costs of conversion

The costs of conversion of inventories include costs directly related to the units of production, such as direct labour. They also include a systematic allocation of fixed and variable production overheads that are incurred in converting materials into finished goods.

⁵ A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits (International Accounting Standards Board (IASB), 2010a, paragraph 4.4b).

⁶ Equity is the residual interest in the (carrying amount of the recognised) assets of an entity after deducting (the carrying amount) of all of its (recognised) liabilities (International Accounting Standards Board (IASB), 2010a, paragraph 4.4c).

⁷ Income and expenses are changes in assets and liabilities (other than transactions with equity holders, i.e. other than transactions with owners in their capacity as owners) (International Accounting Standards Board (IASB), 2010a, paragraph 4.25).

⁸ These topics include: IFRS 3, *Business Combinations* (International Accounting Standards Board (IASB), 2008); IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors* (International Accounting Standards Board (IASB), 2003a); IAS 36, *Impairment of Assets* (International Accounting Standards Board (IASB), 2003d) and IAS 40, *Investment Property* (International Accounting Standards Board (IASB), 2003e).

IAS 16:

Subsequent costs

Under the *recognition* principle in paragraph 7, *an* entity does not recognise *in* the carrying amount of *an* item of property, plant *and* equipment the costs of *the* day-to-day servicing *of* the item. Rather, these *costs* are recognised in profit *or* loss as incurred.

The passages were distributed to all the students enrolled for the first time for a financial reporting course in which they are introduced to IFRS. This course forms part of an undergraduate professional accounting education programme⁹ at a leading South African university¹⁰. IAS 2 and IAS 16 are the first IFRS's that these students are exposed to on the course and the passages were distributed to the students at their first contact session for these topics, which is at the beginning of the course. The students entering this course have completed a 'bookkeeping' course during which they were exposed to generic accounting terminology. They were not assigned any textbook reading on the respective topics prior to completing the passages. Written instructions on the completion of the passages were included in a covering letter. The written instructions were supplemented by a visual demonstration thereof by an author, being an instructor on the course, to ensure that the students thoroughly understood the procedure (Bargate, 2012). The students were not allowed to refer to the particular IFRS when completing the given passages. A time limit of 15 minutes per passage, thus a total of 30 minutes per selected IFRS, was allocated for the completion of the procedure (Janse van Rensburg et al., 2014). The Cloze procedure does not consider or allow for the effort and motivation (or lack thereof) demonstrated by the students (Bargate, 2012). Further, there can be no definite assurance that all the students attempted the test with the same dedication.

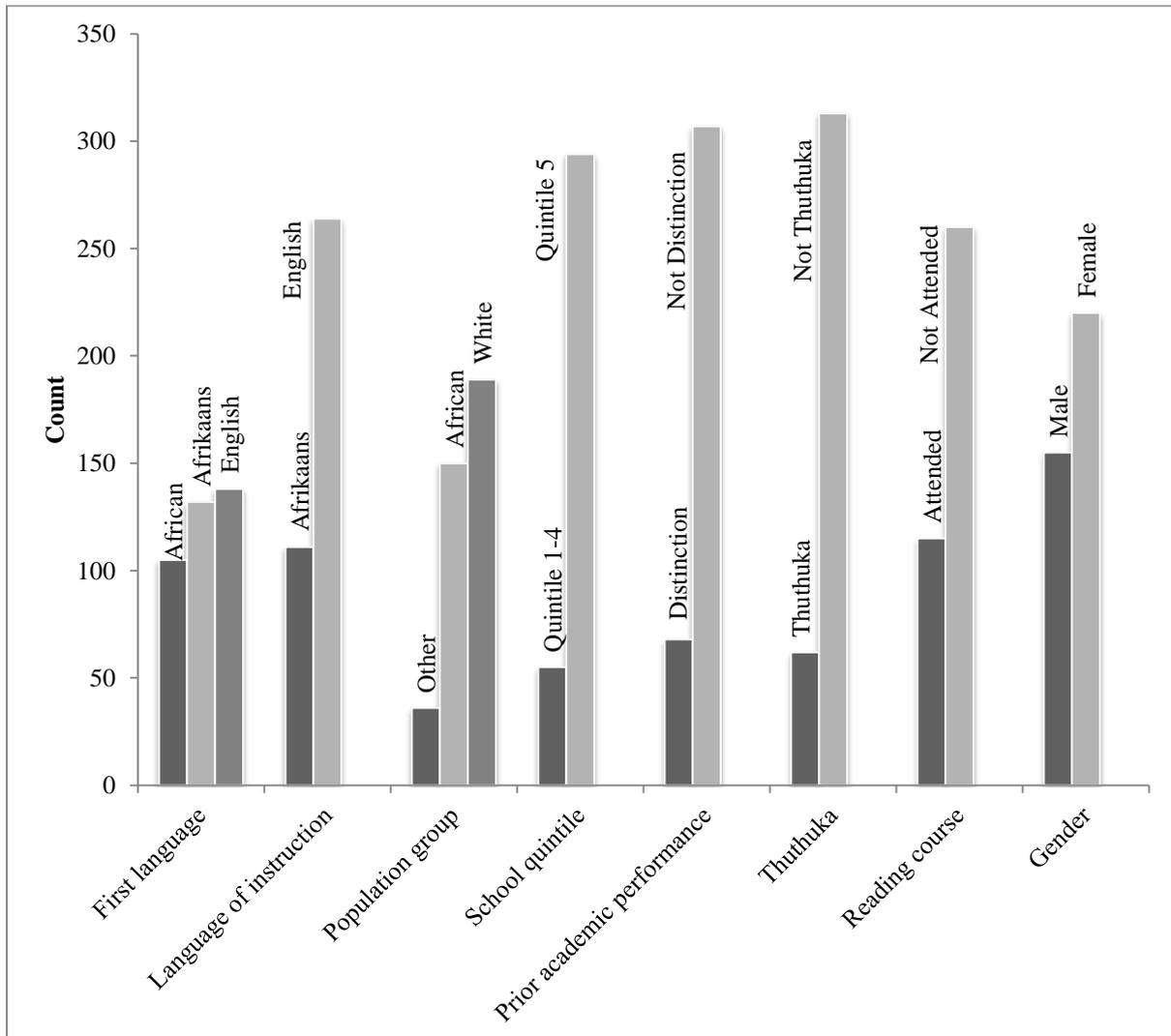
⁹ For purposes of this paper, 'professional accounting education' is defined as accounting programmes, which have as their primary objective the graduating of students who qualify to enter the professional accountancy examinations of a professional accounting body.

¹⁰ The university is consistently rated as being in the top three performers in the professional accountancy examinations in South Africa, and is also one of only three South African universities in the Top 500 universities in the world (QS World University Rankings, 2013).

3.1 Target population

Demographic data of the respondent students (n=375, 87%) were collected simultaneously with the completion of the passages. The demographic profile of these respondents is illustrated in Figure 4.

Figure 4: Demographic profile of respondent group



Despite South Africans communicating in any of 11 official languages¹¹ at home (first language), instruction at university level is only in Afrikaans¹² and/or English. The language

¹¹ The 11 official South African languages spoken at home are Afrikaans, English and 9 African languages.

¹² Afrikaans is a West Germanic language which is spoken natively in South Africa; with approximately six million native speakers in South Africa, or 13.3 per cent of the population, it is the third most spoken mother tongue in the country (De Swaan, 2001).

of instruction for this course is either Afrikaans (n=111) or English (n=264). The Afrikaans instruction group comprises exclusively of Afrikaans first language students from the White (n=110) and Other¹³ (n=1) population groups. The students receiving instruction in English consist of African (n=150), White (n=79) or Other (n=35) students, who speak either English (n=138), Afrikaans (n=21) or an African¹⁴ language (n=105) as a first language. Course materials and components (e.g. tutorials, textbooks and assessments) are generally available in both Afrikaans and English. IFRS is, however, not translated into Afrikaans or any of the African first languages. All students are expected to study from the English version of IFRS as their primary source. It is therefore particularly important to explore the English second language students' reading comprehension of their primary study source. Accordingly, the selected passages from IFRS were provided to all students in English, as is customary in their education process, regardless of the student's first or instruction language.

The respondent students have entered the university from secondary schools situated in differing socio-economic environments. The South African government assigns a poverty score¹⁵ to schools, categorising the schools into quintiles. Quintile 5 represents schools situated in higher socio-economic communities, while quintile 1-4 represents poorer communities. Although the racial divides of the country's past have been erased, the legacy of Apartheid remains evident in that the lower quintile schools generally remain poorly resourced and underfunded former African schools, while quintile 5 represents well-resourced and funded former White schools. These quintiles therefore largely continue to reflect the quality of the education provided (Coetzee et al., 2014; Sartorius & Sartorius, 2013; Spaul, 2013). The majority of students (n=294) attended quintile 5 schools¹⁶. 68 students achieved a distinction in the first year 'bookkeeping' course. Some students (n=62) have received additional academic assistance in the form of the *Thuthuka* special support programme. This programme, funded primarily by the accounting profession in South Africa, offers students from disadvantaged communities, financial support and academic

¹³ The Other population group comprises of Asian, Chinese, Indian and Mixed-race students. The Mixed-race population group originates from at least five different paternal and maternal populations (Khoisan, Bantus, Europeans, Indians, and Southeast Asians).

¹⁴ The African languages are Sesotho, isiZulu, isiXhosa, Setswana, isiNdebele, Siswati, TshiVenda, XiTsonga and Sepedi.

¹⁵ The poverty score is calculated with reference to the average household income dependency ratio and the literacy rate of the community (Human Science Research Council (HSRC), 2009). This poverty score determines the government funding received by the school in terms of the South African Schools Act (84/1996).

¹⁶ 26 students did not complete this information, therefore n=349 for this variable.

interventions, including additional exposure to financial literacy (Barac, 2015). Further, 115 students have attended a reading course while 260 have not. Finally, female students (n=220) were in the majority.

3.2 Regression

In response to the Research Question, an exploratory ordinary least-squares (OLS) regression was used to simultaneously explore the association between several demographic variables and reading comprehension (RC). The demographic variables explored in this study are first language (*FirstLang*), language of instruction (*InstructLang*), population group (*PopGroup*), school quintile (*SchoolHigh*), prior academic performance (*AcadPerf*), enrolment in the *Thuthuka* programme (*Thuthuka*), the attendance or not of a reading course¹⁷ (*ReadCourse*) and gender (*Gender*).

$$RC = \alpha + \beta_1 FirstLangAfrik + \beta_2 FirstLangAfric + \beta_3 InstructLang + \beta_4 PopGroupAfric + \beta_5 PopGroupOth + \beta_6 SchoolHigh + \beta_7 AcadPerf + \beta_8 Thuthuka + \beta_9 ReadCourse + \beta_{10} Gender + \mathcal{E}$$

RC is the students' reading comprehension, as the dependent variable, and represents the students' Cloze reading comprehension scores. *FirstLangAfrik* equals 1 for Afrikaans first language and 0 for not Afrikaans first language. Similarly, *FirstLangAfric* equals 1 for African first language and 0 for not African first language. The coefficients indicate whether the reading comprehension scores for these groups of students are different to the English first language students (*FirstLangAfrik* and *FirstLangAfric* both equal 0). Readers have demonstrated lower reading comprehension when reading in their second language as apposed to their first language (Bargate, 2012; Janse van Rensburg et al., 2014; Pasquarella, Gottardo, & Grant, 2012). A negative relationship is therefore expected between first language (*FirstLang*) and the Cloze reading comprehension scores. However, regardless of the first language of communication, receiving instruction in the language of the document to be read may enhance reading comprehension (Janse van Rensburg et al., 2014). *InstructLang* equals 1 if students receive instruction in English and *InstructLang* equals 0 if students

¹⁷ Students attend reading courses with the intention of, *inter alia*, increasing their reading speed, comprehension, concentration, retention and recall skills. The outcome of such a course usually results in an increase in reading speed and comprehension levels as well as the introduction of improved reading habits.

receive instruction in Afrikaans. A positive relationship is expected between language of instruction (*InstructLang*) and the Cloze reading comprehension scores. There were no expectations for the signs of the coefficients for the population group (*PopGroup*) variables, being African, White and Other. *PopGroupAfric* equals 1 for African students and 0 for not African students. Similarly, *PopGroupOth* equals 1 for Other population students and 0 for not Other population students. The coefficients indicate whether the reading comprehension scores for these groups of students are different when compared to the White students (*PopGroupAfric* and *PopGroupOth* both equal 0). *SchoolHigh* equals 1 for students who attended schools assigned to quintile 5. This coefficient indicates whether the Cloze reading comprehension scores for students from quintile 5 schools are different from those students who attended quintile 1-4 schools (*SchoolHigh* equals 0). Quintile 5 schools are better resourced, in terms of, for example, computers, library books and teachers, providing greater opportunity for the development of literacy skills (Bhorat & Oosthuizen, 2009). A positive relationship is therefore expected between the schooling environment (*SchoolHigh*) and the Cloze reading comprehension scores. The proxy used for prior academic performance (*AcadPerf*) is the students' percentage mark for their first year 'bookkeeping' course. As background knowledge may influence reading comprehension, the sign of the coefficient for *AcadPerf* is expected to be positive. *Thuthuka* equals 1 for students that are enrolled in the *Thuthuka* programme. A positive relationship was expected between the enrolment in the *Thuthuka* programme and the Cloze reading comprehension scores. A positive relationship is further expected between the reading course attendance (*ReadCourse*) and Cloze reading comprehension scores (Janse van Rensburg et al., 2014) (*ReadCourse* equals 1 if a reading course has been attended and *ReadCourse* equals 0 if no reading course has been attended). A positive relationship is also expected between gender and the students' Cloze reading comprehension scores (*Gender* equals 1 for female and 0 for male). Female students' reading comprehension may generally exceed that of their male counterparts (Bray & Barron, 2003; Broom & Jewson, 2013; Janse van Rensburg et al., 2014), although some association between gender and age has been suggested. Females demonstrate better reading comprehension as children or adolescents (Logan & Johnston, 2010; Lynn & Mikk, 2009), while gender differences in reading comprehension for adults appear less pronounced (Hannon, 2014; Hyde & Linn, 1988).

4. RESULTS AND DISCUSSION

The mean Cloze reading comprehension score¹⁸ for the selected IFRS's, namely IAS 2 and IAS 16, is at the *Instructional Level* (M=54.07; sd=8.024) (Figure 5). Analysis of the distribution of the score revealed that 53.6% of the students read at the *Instructional Level*, whilst 36.5% read at the *Independent Level*. Similar results were reported for the *Framework* (Janse van Rensburg et al., 2014). The majority of the respondent students may therefore require some assistance to access and decode the content of the selected IFRS's, preceding the development of their ability to evaluate, critique and apply the content thereof.

The results of the exploratory multivariate analysis (Table 2), suggest that the variables for prior academic performance (t-statistic=6.954; p=0.000), Afrikaans first language (t-statistic=-1.684; p=0.093), language of instruction (t-statistic=1.923; p=0.055), and enrolment in the *Thuthuka* programme (t-statistic=-2.511; p=0.013) are statistically significant in differentiating between the mean Cloze reading comprehension scores within each of these demographic groups. The results confirm the expectation for the direction of the association in each instance, with the exception of the *Thuthuka* programme.

The statistically significant association, between prior academic performance (as proxy for background knowledge) and the reading comprehension score, offers support for literature that suggests background knowledge is important to achieve a deeper understanding of text (Cain & Parrila, 2014; Compton et al., 2014) and extends these findings to financial reporting education. Students that achieved a distinction in the prior year 'bookkeeping' course, scored a mean of 58.14, compared to a mean of 53.17 scored by students who did not achieve a distinction. The majority of distinction students read at the *Independent Level*, while 32% of the non-distinction students scored at this level.

¹⁸ The results are reported for the total Cloze reading comprehension scores of IAS 2 and IAS 16 combined. The results between the separate passages within each of these standards and between the standards are highly correlated (untabulated) with no statistically significant difference in the mean scores of each passage (untabulated). The results for each standard are also highly correlated to the total combined Cloze reading comprehension score (untabulated).

Figure 5: Cloze score box plot

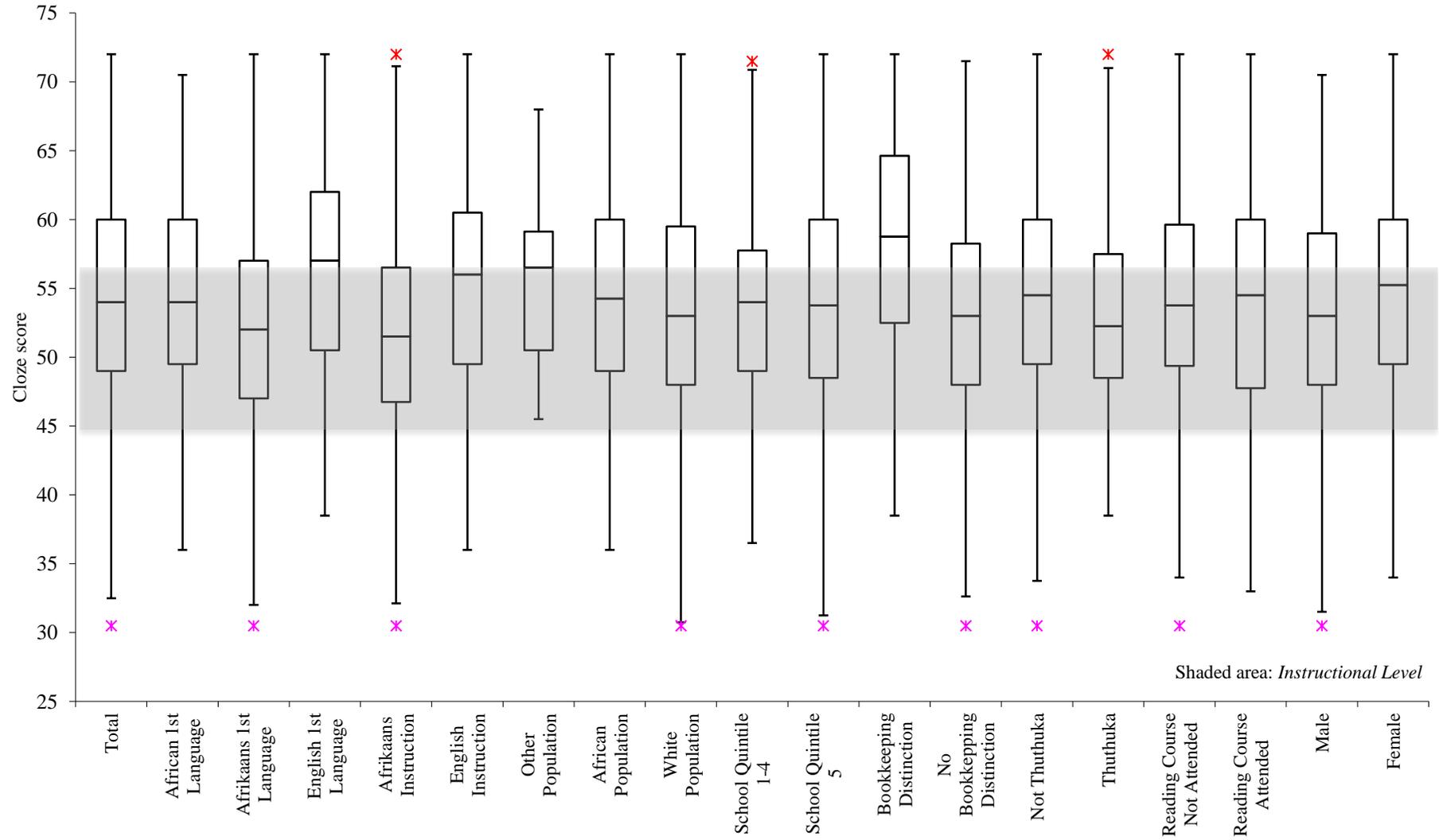


Table 2: Regression analysis results

Association between demographic variables and Cloze reading comprehension scores
 Dependent variable: Cloze reading comprehension scores

Variables	Beta	t-statistic	Significance
Constant	34.320	9.821	.000
First language			
African	-.060	-.041	.967
Afrikaans	-2.983	-1.684	.093*
Language of instruction	3.390	1.923	.055*
Population			
African	-2.406	-1.490	.137
Other	-1.436	-.951	.342
School quintile	.354	.305	.761
Prior academic performance	.301	6.954	.000***
<i>Thuthuka</i>	-3.405	-2.511	.013**
Reading course	-.304	-.347	.729
Gender	1.139	1.430	.154

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Adjusted $R^2 = 0.188$

F-statistic = 9.071 ($p=0.000$)

No multicollinearity problems existed.

Variable definitions:

First language

African = 1 for African, 0 for not African;

Afrikaans = 1 for Afrikaans, 0 for not Afrikaans;

Language of instruction = 1 for English, 0 for Afrikaans;

Population group

African = 1 for African, 0 for not African;

Other = 1 for Other, 0 for not Other;

School quintile = 1 for Quintile 5, 0 for Quintiles 1-4;

Prior academic performance = Percentage mark achieved in 'bookkeeping' course;

Thuthuka = 1 for *Thuthuka*, 0 for not *Thuthuka*;

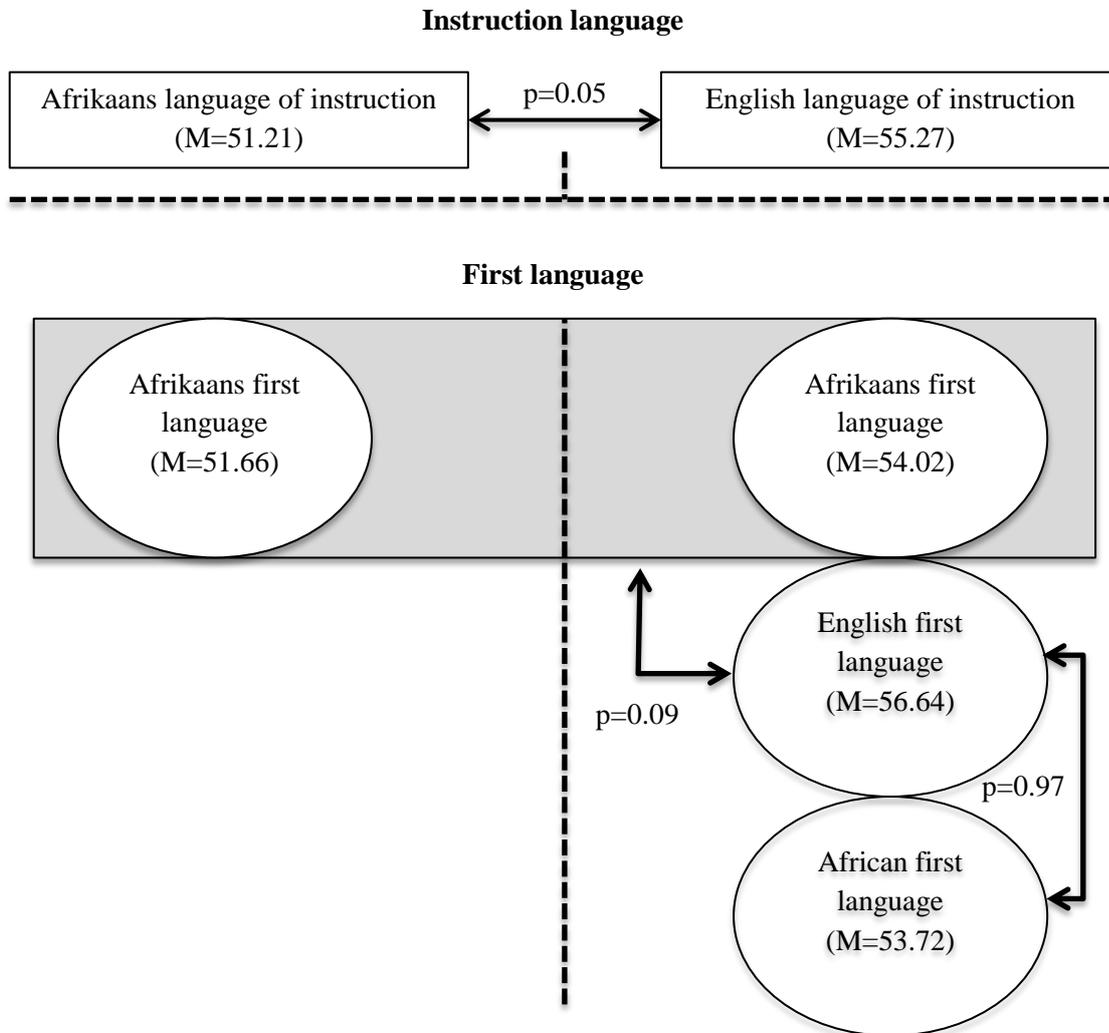
Reading course = 1 for reading course attended, 0 for no reading course attended;

Gender = 1 for female, 0 for male.

As illustrated in Figure 6, the difference between the mean score of those students receiving instruction in Afrikaans ($M=51.21$) and those receiving instruction in English ($M=55.27$) is statistically significant. Within the English instruction group, there are English, African and Afrikaans first language students. The mean score of the English first language students ($M=56.64$) does not differ statistically from the mean score of the African first language students ($M=53.72$), but does, however, differ statistically from the mean score of the total Afrikaans first language students ($M=51.66$). The majority of the Afrikaans first language

students are in the Afrikaans instruction group. Therefore, despite African and Afrikaans students reading the document not in their first language, receiving instruction in English appears to assist the African students' reading comprehension of IFRS.

Figure 6: Interaction between instruction language and first language



Students enrolled in the *Thuthuka* programme were exposed to additional interventions at first year level. However, these students' mean score (M=53.02) is still significantly lower than the mean score of students not enrolled in the *Thuthuka* programme (M=54.27). The aim of the *Thuthuka* programme is to assist students from disadvantaged backgrounds in their education towards qualifying as professional accountants. Their lower mean reading comprehension score may suggest that despite the assistance provided throughout the first year 'bookkeeping' course, continued support in the development of the students' reading comprehension of IFRS is required during the introductory course to IFRS.

The gender, population, school quintile, and reading course variables were not statistically significantly associated with the reading comprehension score. The mean score of female students (M=54.70) was, however, higher than the mean score of male students (M=53.16), as predicted. The 36 students in the Other population group had a mean score of 55.54, compared to African students (M=54.24) and White students (M=53.65). Contributing to the White students' mean score being less than the African students' mean score, is that 132 of the 189 White students were Afrikaans first language students. Students from quintile 5 schools had a mean score of 53.93, compared to a mean score of 53.32 for students from quintile 1-4 schools. Quintile 1 to 4 schools were combined, as the individual quintiles were too small to allow for meaningful statistical analysis. 10% of the students from quintile 5 schools read at the *Frustration Level*, compared to 13% of the students from quintile 1-4 schools. Also, more students from quintile 5 schools (37%) read at the *Independent Level* than students from quintile 1-4 schools (33%). In contrast with the finding by Janse van Rensburg et al. (2014), attendance of a reading course was not statistically significantly associated with an increased reading comprehension. Students who had attended a reading course and those who had not, scored a mean of 54.

5. DEVELOPING READING COMPREHENSION

Where comprehension difficulties are identified, instructors need to distinguish between 'language-based comprehension difficulties', including those experienced by students acquiring English as a second language (Janse van Rensburg et al., 2014; Zoghi, Musthapa, Rizan, & Maasum, 2010) and 'background knowledge-based comprehension difficulties', for example where students do not have the necessary knowledge to form the required inferences needed to comprehend text (Compton et al., 2014; Elbro & Buch-Iverson, 2013).

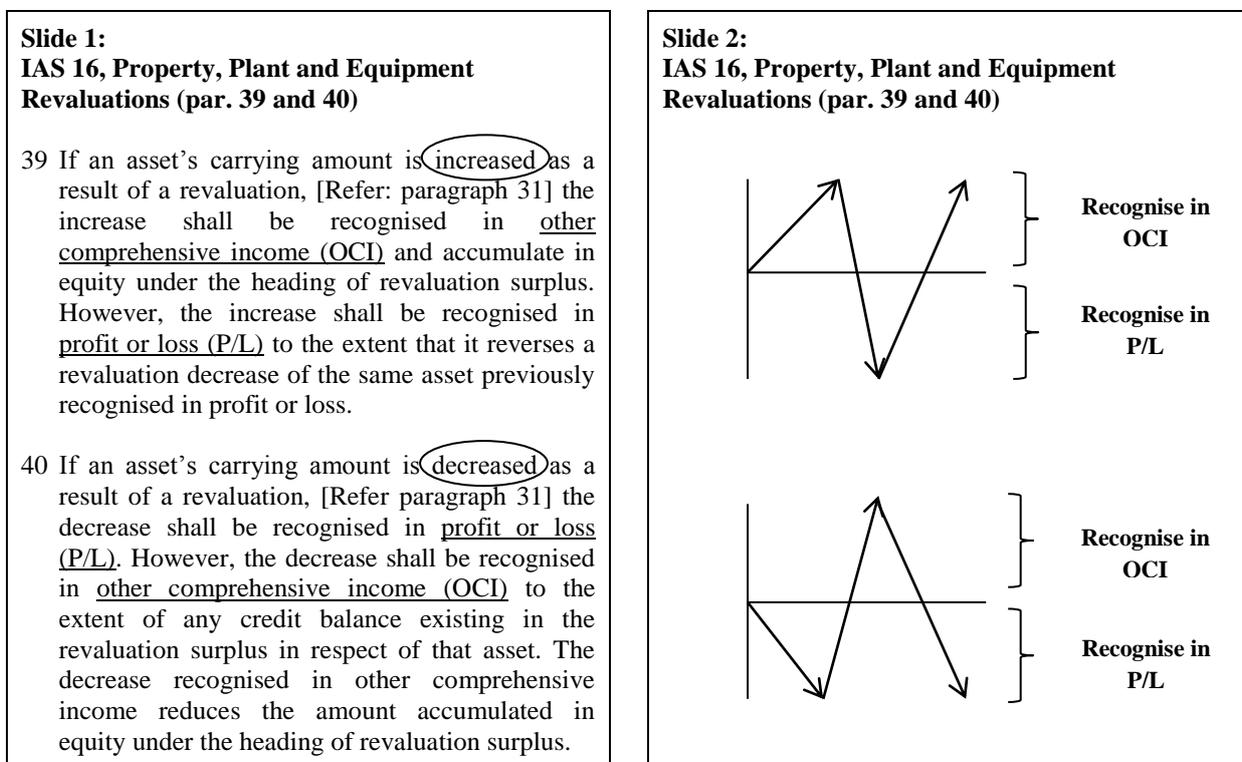
5.1 Language-based comprehension problems

In addressing language-based comprehension problems, such as those possibly faced by the Afrikaans students in this study, instructors may consider explicit instruction of, *inter alia*, grammar and language rules (Koda, 2010). It is submitted that accounting, particularly IFRS, terminology does not form part of a student's general vocabulary, especially second language vocabulary. Instructors may need to make a concerted effort to integrate the explicit teaching of words and phrases during class discussions or through writing assignments (Duke,

Pearson, Strachan, & Billman, 2011; National Academy of Sciences (NAS), 2012). Alternatively, a more subtle approach may be adopted to implicitly develop students' language skills (DeKeyser, 2003; Stanat, Becker, Baumert, Lüdtke, & Eckhardt, 2012). Implicit development may, for example, occur through encouraging students to read the financial press (Janse van Rensburg et al., 2014). It is widely believed that the more you read, the better you read (Duke et al., 2011; Guthrie, 2004). To increase the volume of reading experiences by accounting students, instructors may provide different additional accounting texts to their students.

Developing the skill of decoding could also elevate students' reading comprehension (National Academy of Sciences (NAS), 2012). Focused classroom discussions or videos (Duke et al., 2011; Lei, Rhinehart, Howard, & Cho, 2010; IFRS Rookies, 2015) on specific topics could develop this skill. For example, instructors may read complex sections from IFRS and subsequently explain its meaning and context. An example of paragraphs from IAS 16 addressed in a video, together with a visual representation thereof, is included in Figure 7.

Figure 7: Reading comprehension of IAS 16.39 and .40 (adapted and emphasis added)

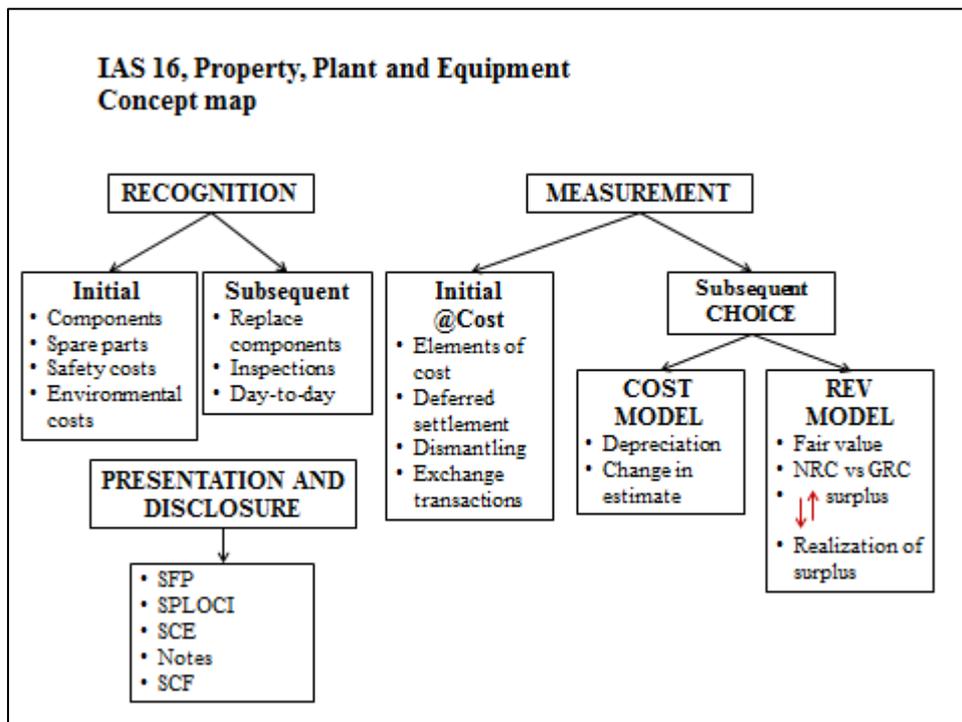


Source: IFRS Rookies, 2015

5.2 Background knowledge-based comprehension problems

In developing reading comprehension, poor language skills may be compensated for by elevating students' background knowledge (Compton et al., 2014; Kim & Anderson, 2011; Lei et al., 2010). Instructors may need to consider whether students' background knowledge is inadequate (Hirsch, 2003), is wrong - resulting in erroneous interpretation and poor memory (Kendeou & van den Broek, 2007), or if the student has the relevant background knowledge but is unable to use it (Oakhill & Cain, 2012; Elbro & Buch-Iversen, 2013). The latter presents a particular challenge to instructors to identify and, if necessary, remedy. Two interventions to consider for background knowledge-based comprehension development are content instruction and strategy instruction (McKeown, Beck & Blake, 2009). Content instruction employs open, meaning-based questions about the text, to focus students' attention on the content (McKeown et al., 2009). Strategy instruction teaches students specific procedures to employ during the reading of text to guide their access to the text (McKeown et al., 2009) and may include making use of concept mapping or encoding in the process of summarising key concepts (Kim & Anderson, 2011). An example of such a concept map of IAS 16 is included in Figure 8.

Figure 8: Concept map of IAS 16



Source: IFRS Rookies, 2015

5.3 Differentiated instruction

The generalised application of a particular intervention in a heterogeneous class may not be appropriate to develop reading comprehension. As reading comprehension is dependent on a reader's individual attributes and abilities, instructors may need to embrace differentiated instruction. Differentiated instruction is an approach that assumes there is a diversity of students in every classroom and all those students can be reached if a variety of methods and activities are used (Tomlinson, 2000). It is a changed instruction method that assists students with diverse academic needs and learning styles to master the same challenging academic content (Tomlinson, 2000). It involves varying materials, teaching processes and assessments to meet specific student groupings' needs and learning styles (Good, 2006). The purpose of differentiated instruction is to ensure that all students, regardless of the level of diversity, achieve a similar outcome (Good, 2006).

In a financial reporting class with a heterogeneous student cohort, where differences in reading comprehension abilities have been identified between demographic groupings, the adoption of differentiated instruction could be meaningful for purposes of developing each demographic grouping's particular reading comprehension. For example, interventions that could, *inter alia*, be implemented for the reported student cohort, include language-based comprehension interventions for the Afrikaans students and background knowledge-based comprehension interventions for the students with poorer prior academic performance.

6. CONCLUSION

This study explored differences in students' reading comprehension of IFRS in a South African financial reporting class with a heterogeneous student cohort. Using the Cloze procedure, the combined mean reading comprehension score for IAS 2, *Inventories* and IAS 16, *Property, Plant and Equipment* was found to be at the *Instructional Level*. Students reading at this, or the *Frustration Level*, may require assistance to access and decode the content of IFRS. Reading comprehension is influenced by several factors, including the reader's background knowledge and experience. Accordingly this study investigated, through an exploratory multivariate analysis, the association between the students' demographic profiles and their reading comprehension scores. The results thereof suggest that prior academic performance, language of instruction, first language and enrolment in the *Thuthuka*

programme are statistically significant in differentiating between the mean Cloze reading comprehension scores of the students. The gender, population, school quintile, and reading course variables were not statistically significantly associated with the mean Cloze reading comprehension scores. The result of this study suggest that where students, in a heterogeneous financial reporting class, require additional assistance to develop their reading comprehension, instructors may need to consider implementing differentiated instruction.

This study does not aim to provide a conclusive indication of financial reporting students' reading comprehension of IFRS. Further, reading comprehension is a complex construct, which may be influenced by several elements (Klapwijk, 2013). The investigation of additional variables, which may influence the financial reporting students' reading comprehension of IFRS, is encouraged. Alternative assessments of reading comprehension may also be employed. Enquiries may also further consider the application of interventions, such as content instruction or strategy instruction, in the financial reporting classroom, as a remedy for any reading comprehension difficulties that students may experience in reading IFRS.

“An author only begins the text, a reader finishes it.”

(Samual Johnson (adapted))

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CHAPTER 4

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This dissertation explored differences in South African financial reporting students' reading comprehension of the IASB's *Conceptual Framework for Financial Reporting (Framework)* and selected International Financial Reporting Standards (IFRS). The *Framework* and IFRS form the basis of many financial reporting students' study material (Pacter, 2014). The ability to read study material with the necessary comprehension is fundamental to effective learning (White, 2004; Lei, Rhinehart, Howard, & Cho, 2010; Kim & Anderson, 2011). As such, an awareness by instructors of their students' ability to read IFRS with the necessary comprehension is important in the selection of appropriate teaching interventions and may enhance the effectiveness of the financial reporting classroom.

Reading comprehension is influenced by several factors, including the content and readability of the *text* as well as the *reader's* culture, background knowledge and experience (Butcher & Kintsch, 2003; Fletcher, 1994; Narvaez, 2002; Pardo, 2004; Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). Accordingly, this study investigated, through an exploratory multivariate analysis, the association between financial reporting students' demographic profiles and their reading comprehension of the *Framework* and selected IFRS's. Prior exploration of financial reporting students' reading comprehension of financial reporting standards considers selected statements of US GAAP (Adelberg, 1982; Stead, 1977; Stevens, Stevens, & Raabe, 1983), Government Accounting Standards (GASB) (Shaffer, Stevens, & Stevens, 1993) and Australian GAAP (Patel & Day, 1996). This dissertation expands the literature by evaluating the reading comprehension of the *Framework* and selected IFRS's.

To explore demographic differences in financial reporting students' reading comprehension, this dissertation applied the Cloze procedure to determine the reading comprehension of the respondents (Adelberg & Razek, 1984; Bargate, 2012; Bormuth, 1968; Cornachione, 2004; Gellert & Elbro, 2013; Raabe, Stevens, & Stevens, 1984; Stevens et al., 1983; Stevens, Stevens, & Stevens, 1993; Taylor, 1953, 1956, 1957). The Cloze procedure relies on interaction between the language competence and prior knowledge of a reader and the authors' intended communication (Bormuth, 1966). The selected reader audience were

students enrolled for the first time for a financial reporting course in which they are introduced to IFRS. This course forms part of an undergraduate professional accounting education programme¹ at a leading South African university².

Analysis of the Cloze scores revealed that the majority of the students' reading comprehension of both the *Framework* and selected IFRS's was at the *Independent*³ or *Instructional*³ Level. Few students experienced reading comprehension at the *Frustration*³ Level. The results from research paper one, identified the attendance or not of a prior reading course as statistically significantly associated with the Cloze reading comprehension scores. Attending a reading course may, therefore, be beneficial for students reading at the *Instructional* or *Frustration Level*. The expansion of the study, in research paper two, explored additional demographic variables. Of these additional variables, prior academic performance and enrolment in the *Thuthuka*⁴ programme were statistically significant in differentiating between the mean Cloze reading comprehension scores within each of these demographic groups.

A compelling finding identified in both research papers suggests that students attending the lectures in English⁵, regardless of their first language, achieved significantly higher mean Cloze scores compared to the students who attend the lectures in Afrikaans⁶. Because IFRS is not translated into Afrikaans or any of the African languages, all students are expected to study from the English version of IFRS as their primary source. The findings of this study suggest that receiving instruction in the same language as the document read, may aid the

¹ For purposes of this paper, 'professional accounting education' is defined as accounting programmes, which have as their primary objective the graduating of students who qualify to enter the professional accountancy examinations of a professional accounting body.

² The university is consistently rated as being in the top three performers in the professional accountancy examinations in South Africa, and is also one of only three South African universities in the Top 500 universities in the world (QS World University Rankings, 2013).

³ Readers at the *Independent Level* (scores between 58% and 100%) are able to cope with the text without assistance. The *Instructional Level* (scores between 44% and 57%) represents readers who are able to cope with the text with some assistance. Readers at the *Frustration Level* (scores between 0% and 43%), find it difficult to cope with and access the specific text (Bormuth, 1968, 1969; Rankin & Culhane, 1969).

⁴ This programme, funded primarily by the accounting profession in South Africa, offers students from disadvantaged communities, financial support and academic interventions, including additional exposure to financial literacy (Barac, 2015).

⁵ Within the English instruction group, there are English, African and Afrikaans first language students. The majority of the Afrikaans first language students are, however, in the Afrikaans instruction group.

⁶ Afrikaans is a West Germanic language which is spoken natively in South Africa; with approximately six million native speakers in South Africa, or 13.3 per cent of the population, it is the third most spoken mother tongue in the country (De Swaan, 2001).

reading comprehension of second language students. Financial reporting students who learn in a second language face many challenges. These challenges include, having to learn the language, technical jargon and accounting concepts at the same time together with managing the translation burden (Beaven, Calderisi, & Tantral, 1999; Coetzee, Schmulian, & Kotzé, 2014). Second language students may have particular difficulty in decoding the text (Koda, 2005; Melby-Lervåg & Lervåg, 2013). These students may, due to word and sentence level difficulty, encounter problems in maintaining a sufficient reading rate, necessary to make the connections and inferences from the text needed for comprehension (Grabe, 1991). Accounting instructors of second-language accounting students, who do not have access to IFRS in their first language, should further consider implementing implicit language and reading comprehension instruction to support their teaching of IFRS. Implicit instruction approaches rely on the student being able to acquire the necessary language skill without deliberately drawing attention to language rules. Learning occurs without awareness thereof (DeKeyser, 2003).

Students reading at the *Instructional* or the *Frustration Level* may require assistance to access and decode the content of IFRS. The result of this study, however suggest that generalised application of a particular intervention in a heterogeneous class may not be appropriate to develop reading comprehension. As reading comprehension was found to be segregated based on a student's language of instruction, first language and prior academic performance, instructors may need to embrace differentiated instruction. Differentiated instruction is an approach that assumes there is a diversity of students in every classroom and all those students can be reached if a variety of methods and activities are used to meet specific student groupings' needs and learning styles ensuring that all students, regardless of the level of diversity, achieve a similar outcome (Good, 2006; Tomlinson, 2000).

Reading comprehension is a complicated construct affected by several factors (Klapwijk, 2013). Consequently, while this construct in respect of the *Framework* and selected IFRS's is measured using the Cloze procedure, this study cannot and does not claim to provide a conclusive answer to students' reading comprehension thereof. The Cloze procedure is a useful tool to explore for demographic differences in reading comprehension. Further research of supplementary measures that could be useful in the exploration of reading comprehension of IFRS is encouraged.

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