Validation of the performance of Tshivenda learners in PIRLS 2006

by

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ABSTRACT

The aim of this study is to validate the Tshivenda learner performance in the Progress in International Reading Literacy Study (PIRLS) 2006 in which there is an anomaly in the Tshivenda language group. By comparing the performance of the Tshivenda learners to that of learners who wrote the PIRLS 2006 test in the other official languages, the notion of performance is related to equivalence in translation in that, if the learners wrote equivalent *instruments* across all official South African languages, then it is possible that the difference in performance was related to different *translation* equivalence. Therefore, the validation of the learner performance in this study is directly linked to the validation of the translation.

The South African national results of PIRLS 2006 revealed that the Tshivenda language speakers, who had written the PIRLS tests in a secondary language, achieved higher scores than those Tshivenda speakers who had written the tests in their mother tongue (Tshivenda). This result was considered an anomaly. This research investigated the role of translation as an influencing factor in learner comprehension, which may have contributed to this anomaly.

Some of the procedures and standards set in place for PIRLS 2006 related to translation and verification were examined. Issues of language and culture, with specific reference to the availability of media in Tshivenda are discussed in the literature. Further investigation was conducted into what translation entails including translation and back-translation, equivalence and non-equivalence as well as the comprehension processes required by each of the four released PIRLS 2006 texts.

This study is a secondary analysis of data gathered for PIRLS 2006. Permission to use the data was given in 2011 by the Centre for Evaluation and Assessment at the University of Pretoria, the PIRLS National Centre. Details of the original sampling, collection and analysis methods are provided as part of the discussion on the quality assurance, validity and reliability of the original study. The secondary analysis of the data utilised a mixed methods approach which involved Classical Test Theory and Content Analysis in order to accurately explore this data. The results of this study indicated that, despite the fact that the back-translation revealed many errors, the translation did not affect the learners' level of comprehension.

Key Terms: Translation, Validation, PIRLS 2006, Secondary Analysis, Reading comprehension, International large-scale assessment

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LIST OFABBREVIATIONS

CAT	Computer Assisted Translation
CEA	Centre for Evaluation and Assessment
DAC	Department of Arts and Culture
DBE	Department of Basic Education
DIF	Differential Item Functions
EFA	Education For All
IEA	International Association for the Evaluation of Educational Achievement
LiEP	Language in Education Policy
LoLT	Language of Learning and Teaching
NRC	National Research Centre
PIRLS	Progress in International Reading Literacy Study
SL	Source Language
ST	Source Text
TL	Target Language
TR	Target Reader
TT	Target Text

1. INTRODUCTION

The aim of this study is to validate the Tshivenda learner performance in the Progress in International Reading Literacy Study (PIRLS) 2006 in which there is an anomaly in the Tshivenda language group. In this study, the validation of the learner performance is directly linked to the validation of the translation. According to Brookhart, "Without validity, there is no measurement: there are just numbers" (2009, p. 1). "But establishing validity in language assessment is by all accounts problematic, conceptually challenging, and difficult to achieve – probably more so than is recognised outside the specialised spheres of those few persons who make this endeavour their particular business" (Cumming & Berwick, 1996, p. 1). They pose the question, 'what validates a test?' and list sixteen different kinds of validity, a list which they describe as daunting. Taylor (2013) declares that validation in assessment "involves evaluating logical arguments and empirical evidence to determine whether they support proposed inferences from, as well interpretations and uses of, assessment results" (p. 2). She explains that validation is the process of this evaluation. In this study, the process of evaluation, i.e the validation, is focused on the performance of the learners specifically related to the validity of the translation of the Tshivenda instruments in PIRLS 2006. PIRLS is tremendously important in the field of literacy studies as it forms a significant part of a worldwide endeavour to investigate and raise literacy levels in even the most impoverished countries (Creemer, 2006).

The Education For All (EFA) movement is a global effort to provide basic, quality education to all children, adolescents and adults by the year 2015. At the World Education Forum in 2000, 164 governments, civil societies, development agencies and private sectors agreed to work together to make this a reality (UNESCO, 2013). Since the United Nations Educational, Scientific and Cultural Organisation's (UNESCO) mission is the promotion of education as a fundamental human right, it was decided at this forum that UNESCO would be the appropriate organisation to coordinate this project and its participants, working closely together with organisations such as the United Nations Children's Fund (UNICEF) and the World Bank. UNESCO established mechanisms to carry out its coordination function under the management of what UNESCO calls the EFA Global Partnerships team. The EFA strives to achieve six specific goals: improvement of early childhood education and care; ensuring good compulsory primary education for all, including ethnic minorities; making sure that

adolescents have access to learning and life skills programmes; achieving 50% improvement in adult literacy; eliminating gender disparities; and making sure that measurable learning outcomes are attained especially in literacy, numeracy and essential life skills (UNESCO, 2013). These six goals are pursued with the aim of improving the quality of education, and the overall goal, to alleviate poverty by means of education (UNESCO, 2006). However, a significant obstruction to reaching these goals is that many countries are experiencing or have experienced war, economic instability or natural disasters, and thus the focus is not always on education. This is why reports on the EFA are publicised so as to renew interest in the mission of the EFA movement and to encourage countries to renew their efforts in attaining the six goals before 2015. In this report it is stated that, "the right to literacy is implicit in the right to education recognised by the 1948 Universal Declaration of Human Rights" (EFA Global Monitoring Report: Literacy for Life, cited in Unesco, 2006, p. 22,), thus it could be said that literacy is one of the pillars on which education is founded. As explained in the EFA Global Monitoring Report: Literacy for life (cited in UNESCO, 2006), a World Declaration on Education for All was made in 1990 in Jomtien which placed specific emphasis on literacy. One of the main challenges faced by the EFA movement is that of greatly reducing illiteracy around the world. Not only is the progress towards these goals monitored by the EFA, it is also monitored every five years by institutions such as the International Association for the Evaluation of Educational Achievement (IEA), through international studies such as the Progress in International Reading Literacy Study (PIRLS) and the Trends in International Mathematics and Science Study (TIMSS).

The IEA was established in 1958 as an "independent, international cooperative of national research institutions and governmental research agencies" (IEA, 2011). The IEA conducts large-scale comparative studies of various aspects of education. To date, 30 international research studies have been completed under the auspices of the IEA. The 1990s brought a change to the focus on academic studies as computers and government programmes became more prominent in countries across the world. The IEA continuously develops and evolves, ever aiming to study and improve all educational aspects that influence children in today's world. Improved older studies, as well as new studies developed in and after 2008, include the TIMSS Advanced Study 2008, the International Civic and Citizenship Education Study (ICCS 2009), the International Computer and Information Literacy Study (ICILS, initiated in 2010) and the Teacher Education and Development Study in Mathematics (TEDS-M) (IEA, 2011). Current mainstream studies, in which South Africa participates, are TIMSS

and PIRLS. PIRLS is an international study which specifically monitors the reading comprehension achievement of Grade 4 learners internationally with a view to identifying countries' progress in providing basic quality education (IEA, 2011).

Language plays a vital role in teaching and learning and can help or hinder a child's learning progress. Literacy learning and teaching are integrated into any kind of language research (Bloch, 1999). The relationship between language and reading literacy is thus a fundamental one, and should be fostered so that learners have an optimal opportunity to reach their full potential at school. As Goodman (1973) explains, "the learner of reading has a highly developed language, which is his (sic) greatest resource in learning to read" (p. 64). So, good language skills are crucial to children's ability to improve their reading literacy, and will give them a better chance of succeeding at school. To facilitate the relationship between language and literacy, it may be necessary to educate learners in their mother tongue in the classroom. Currently, South African learners are expected to begin learning a second language alongside their mother tongue in Grade 3 and then continue learning in a primary and secondary language from Grade 4 onward (Department of Education, 1997).

Heugh (1999) argues that, in South Africa, the optimum number of years in mother tongue education should actually be between six and eight years during which English and Afrikaans are taught as additional language subjects. The Language of Learning and Teaching (LoLT) is the language that each school adopts as its official language. This may be different from the home language, or mother tongue spoken by the learners of the school. In the document, Department of Basic Education (2010), "'mother tongue' refers to the language that a learner has acquired in his/her early years and which has normally become his/her natural instrument of thought and communication", while 'home language' is defined as "the language that is spoken most frequently by the learner at home". The document also speaks of the learners' 'first language'. In the report of the Colloquium on Language in the Schooling System, held on 8 November 2010, neither 'home language' nor 'mother tongue' is defined and these terms are used interchangeably throughout the document. For the purpose of this study, the term 'mother tongue' is preferred because it is the learners' "natural […] instrument of thought and communication" instead of " the language […] spoken most frequently by the learner at home" (Department of Basic Education, 2010).

This chapter continues with a description of the problem being analysed in this study, the rationale behind this study and the possible causes of the problem (Section 1.1). The questions formulated for this study are then given and clarified (Section 1.2). Thereafter, the educational context of the learners who participated in PIRLS 2006 is discussed (Section 1.3). Finally, a layout of the dissertation is provided (Section 1.4).

1.1 Problem statement, rationale for the study

Every five years the International Association for the Evaluation of Educational Achievement (IEA) conducts a literacy study worldwide called the Progress in International Reading Literacy Study (PIRLS). PIRLS assesses Grade 4 learners' reading literacy, focusing on their transition *from learning to read to reading to learn* (Mullis, Kennedy, Martin, & Sainsbury, 2006). South Africa did not participate in PIRLS 2001, although it did participate in PIRLS 2006. The PIRLS 2006 results for South Africa revealed especially poor results (Mullis et al., 2006), which have led to several studies and reports (Zimmerman, 2010; Scherman, 2007; Howie et al., 2008) that investigate all the factors involved, including the school environment, home environment, the learners and the instruments. The instruments used to test the learners consisted of two types of texts: one literary text along with its items, and one informational text along with its items; the specific combination of these two types of texts per booklet was varied using a random rotated test booklet design. For the purposes of this study, the four texts and their items that were released to the public were analysed.

Each PIRLS participating country is responsible for the translation of the original English instrument into national languages, and this is undertaken using an interactive process between the International Reading group comprised of experts from across the world, the national research coordinators and the language experts employed by the National Research Centre (NRC). This development process is further detailed in Chapter 3. The participating countries are also responsible for the national verification of these translations, the quality assurance of the translations and procedural implementations, the implementation of assessment procedures as well as analysing and reporting on the data collected (Martin, Mullis, & Kennedy, 2007). According to PIRLS procedures, the translated instruments must be verified by the NRC and sent for international verification to the PIRLS International Study Centre before being sent out into the field. This allows for the inspection and verification of any adaptations made in each instrument. In the PIRLS 2006 Study, the PIRLS National Centre, which was the Centre for Evaluation and Assessment (CEA), hired several

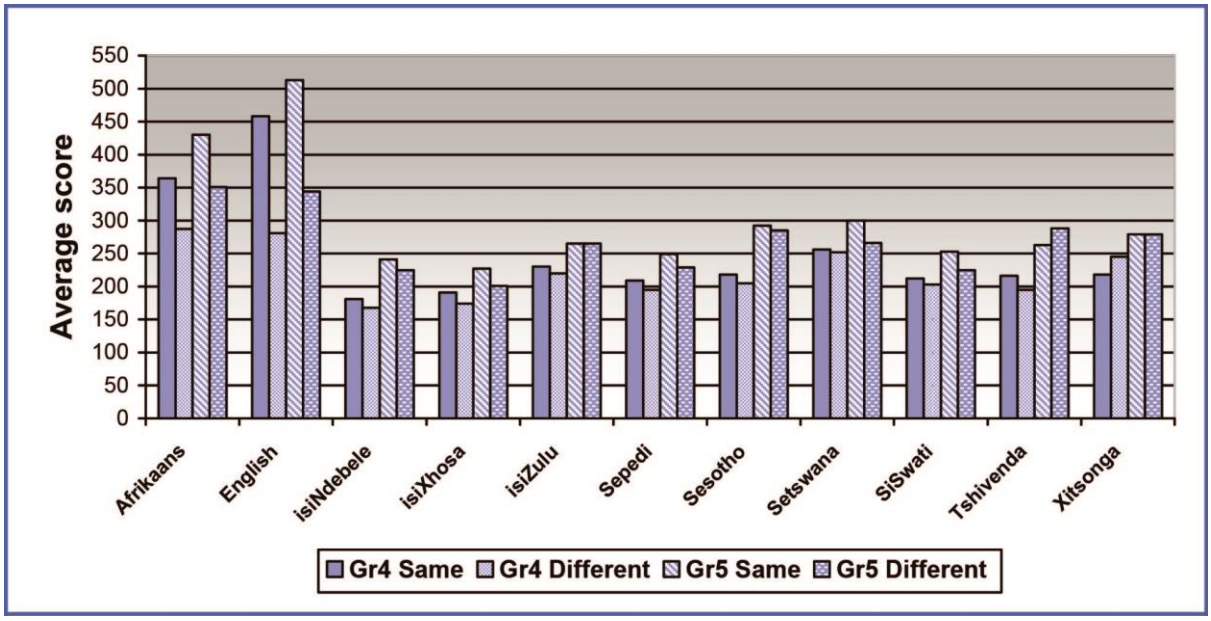
professional translators to do the translations of the English instrument into the other official South African languages. These instruments were then verified by the PIRLS National Centre, although only instruments in the larger language groups (mainly English, Afrikaans, IsiZulu and IsiXhosa) were sent for international verification. For these the IEA hired independent translator(s) to examine the translations and verify them according to IEA standards.

In the case of the Tshivenda texts, the instruments were nationally verified by the NRC, but were not sent for international verification because only languages spoken by more than 5% of the population were sent, as per IEA requirements (S van Staden, co-national research coordinator for PIRLS 2011, personal communication, 2 October 2013). This study takes a closer look at the actual translation of the Tshivenda instrument to ascertain which translation method was used and how this may have affected the quality of the instruments for reading comprehension. The adaptations reported on by the NRC are presented in the appendices and are briefly discussed in Chapter 6 (section 6.5). Malak and Trong (in Mullis et al., 2006) describe the guidelines for translation for PIRLS 2006, which are further discussed in Chapter 3.

In 2006, out of the 45 participating education systems, South Africa was ranked lowest in terms of mean learner achievement in reading literacy at both Grades 4 and 5 levels. Grade 5 learners were tested as a national option for South Africa due to the fact that learners in Grade 4 were still transitioning from their mother tongue into a second language, for example, English (Howie et al., 2008). The second reason for including Grade 5 learners in the study was "a desire to examine the progress or differences in reading knowledge and skills from Grade 4 to 5" (Howie et al., 2008, p. 14). Although it started as a national option, the Grade 5 data was selected by the International Study Centre for reporting due to measurement concerns about the Grade 4 data (see Chapter 3), and therefore the Grade 5 South African learners were compared to Grade 4 learners internationally.

South African learners were assessed in all eleven official languages according to the LoLT in the Foundation Phase at their school. This required the translation of each of the assessment instruments from English as a Source Text for the assessment, to the ten other official South African languages (Howie et al., 2008), nine of which are African languages. The learners from the sampled schools for the study wrote the PIRLS assessment in

whichever language their school utilised as its LoLT in the Foundation Phase, whether this was the learners' first language or not. South African results revealed an interesting anomaly in that Grade 5 Tshivenda learners from schools where the LoLT was not Tshivenda (and who wrote the test in the LoLT) did better than learners who attended a school where the LoLT was their mother tongue, Tshivenda (Howie et al., 2008). The other Grade 5 learners either performed at the same level, whether they wrote in their mother tongue or a second language, or did better in their first language (Howie et al., 2008). Tshivenda is not the only language group with an anomaly: the Xitsonga Grade 4 learners also performed better in the LoLT where it differed from their first language than those for whom the LoLT and and first language coincided, although that anomaly is not examined in this study.



Source: Howie et al., 2008, p. 22

Figure 1.1: Learners' performance and Test Language Correspondence to Home Language by Grade

According to the PIRLS 2006 Summary Report for South Africa (Howie et al., 2008, p. 22), "…Grade 5 Tshivenda learners obtained higher scores when they wrote in a second language and the situation is reversed in that the test language, correspondent to the home language, did not provide the learners with any advantage" as can be seen in Figure 1. In the isiZulu group, the Grade 5 learners who wrote in their home language achieved the exact same score as those in their language group who wrote in a second language. Interestingly, the Grade 4 Xitsonga learners also did better in their second language as opposed to their first language (see Figure 1 below). The Xitsonga language group is the fourth smallest language group in

South Africa at just 4% of the population. Although this study focuses on the Grade 5 Tshivenda findings specifically, the findings may provide potential reasons for the further exploration of the Grade 4 Xitsonga anomaly too. Kelley's (1927) definitive description of validity, "as the extent to which a test measures what it purports to measure" (p. 14), one which has remained one of the most commonly used definitions for validity (Schouwstra, 2000, p.5).

Although there may be many reasons for the anomaly discussed above, the current study focuses on the validation of the translation of the Tshivenda tests as a possible factor in the learners' poor performance. Tshivenda is a minority language (See Section 1.3.1). This study is concerned with the validation of the translated Tshivenda assessment instruments used in PIRLS 2006 in South Africa (see Section 2.1 for discussion on validity), and will consider both construct and content validity. In view of Kelley's (1927) description, the validity of the Tshivenda instrument is brought into question: if language was an obstruction to comprehension, then the instrument may not have been accurately measuring comprehension levels as a component of literacy. If an assessment instrument is faulty in its presentation, such as would be the case if, in the case of literary comprehension, the texts and/or their associated items are inaccurately translated, the assessment might not be measuring what it is supposed to measure. However, if errors in translation do not affect understanding per se, the assessment may still be measuring what it is supposed to measure. This study is concerned with this very issue.

The translation of the instrument and performance of the learners are analysed in order to track the quality of translation processes, to gain an understanding of issues in this language, to find a possible reason why learners performed especially poorly in certain items, and to provide recommendations for test development processes in further studies. A secondary analysis is conducted to explore the quality of the Tshivenda translation. To investigate the quality of the PIRLS 2006 Tshivenda instruments' translation, the strategies and complexities of the translation needed to be considered to understand potential language factors that may have influenced learner achievement in Tshivenda. These include equivalence at word level, equivalence above word level as well as the principles of coherence and cohesion (Baker, 1992). Nord (1992) argues that the translator must make sure that each translation conforms not only to the expectations of the author or the initiator of the translation (in other words the client) but also to the expectations of the reader of the Target Text. Nord's (1992) model of

"functionality and loyalty" can be applied very well in situations where the readership of the Target Text is different to that of the Source Text (Kruger & Wallmach, 1999, p.9). Gauton (2007) explains that, "With […] translation is meant more than the mere translation of the Source Text […] the translator has to ensure that messages that are often of a highly technical or specialised nature […] are communicated to a lay readership in a way that will be understood by a broader target readership, a readership that is not necessarily completely familiar with the concepts and ideas contained in the message" (p. 28). In order to understand whether translation could be a contributing factor to the Tshivenda anomaly, it was necessary to investigate the translation and translation methods utilised for the PIRLS 2006 Tshivenda texts (as well as each text's items).

There are several cultural issues which may also have contributed to the Tshivenda anomaly. Attitude toward language is a significant role-player in learning: "[l]anguage learning without sufficiently positive language attitudes to support it is a futile attempt" (Dörnyei & Csizér, 2002, p. 423). Tshivenda speakers may feel that their language is not acceptable in the modern world (Spencer, 1985; Vilakazi, 2000; Mda, 2010). By contrast, cultural identity, which is closely associated with language, is a concern of many parents who fear that their children are losing their cultural roots (de Klerk, 2002) and may thus always speak Tshivenda at home to counteract this loss.

However, *the language proficiency* within the Tshivenda language that is spoken at home and even at Tshivenda LoLT schools can also affect learners' literacy abilities (see the discussion in Chapter 2, Section 2.1.2). According to Fleisch (2008), home language tuition is not necessarily comprehensive: he refers to a range of learning activities that "involve a few (and limited range) of reading, writing and numeracy tasks. The tasks involve decoding letters or blends, simple vocabulary and simple sentences used in familiar narratives" (p. 105). In fact, Bloch (2006, p.15) specifies that "It is often assumed that children arrive at school at six or seven years of age, having completed learning their mother tongue", whereas, she explains, twelve years are needed to master the mother tongue, which ties in with Heugh's (2005) argument in favour of the need for six to eight years of mother tongue education. In some cases, learners are taught entirely in a second[1] language from as early as Grade 1 (Heugh, 1999; Probyn, Murray, Botha, Botya, Brooks & Westphal, 2002), however, by 2007, 80% of

[1] For the difference between mother tongue and academic language, please see discussion on BICS and CALP in Section 2.1.1

Grade 1 learners were being taught in their mother tongue (Department of Basic Education, 2010). The PIRLS 2006 results revealed that many South African learners at Grade 4 and Grade 5 level had not adequately mastered basic literacy skills (Howie, Venter, van Staden, Zimmerman, Long, du Toit, Scherman & Archer, 2008) regardless of the language in which they were taught. Many learners are either not given enough opportunity, or enough time to learn basic concepts in their mother tongue before being required to transition to learning in a second language (Heugh, 1999).

Language issues, such as equivalence, could also have a strong effect on minority language groups. Wildsmith-Cromarty (2008) found that meaning could be lost in the effort to make texts equivalent in languages with fields semantically different to that of the source text; these include fields such as the scientific, technical and academic fields. Therefore she implies that in some target languages there is the issue of a lack of vocabulary of the target audience when it comes to academic and scientific fields, and that, due to the fact that the target audience is not familiar with the vocabulary and concepts utilised, any translation used in these two fields could consequently be non-equivalent (Wildsmith-Cromarty, 2009). In reference to the PIRLS 2001 study, Grisay, Gonzalez and Monseur (2009) speak of cultural and linguistic differences as a concern for equivalence in item difficulties. They say that "the versions translated into languages that are most distant from English and other Indo-European languages [such as those spoken in Iraq and Iran] tend to have greater amounts of DIF [Differential Item Functionality]" (p. 72); they also refer to the difference in error variance of text written for linguistic minorities and poor quality translations. In the Tshivenda case of PIRLS 2006, these concerns are equally relevant because they ultimately affect the validity of conclusions regarding learner performance.

In summary, this study analysed the Tshivenda anomaly where Tshivenda learners did better in a secondary language than in their home language (Howie et al., 2008). The validity of the translation and learners' performance in terms of the Tshivenda instrument was the main focus of this study. In this research, the verification processes applied nationally to translated instruments used in South Africa was considered (see section 3.2.4). Investigation was conducted into the method of translation, possible translation errors that were not detected and whether, if at all, any or all of the above factors could have been role players in the Grade 5 Tshivenda results of PIRLS 2006.

1.2 Research questions

The following primary research question was posed for this study:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

To answer this research question, the following sub-questions were posed:

- **How valid were the assessment instruments used to test the learners writing in Tshivenda?**

Validation is the process through which validity evidence is gathered (Urbina, 2004). As stated by Scherman (2007, p. 136), "The concept of validity is multifaceted in terms of forms of evidence and the interpretation of validity differs depending on the context in which it is used" (see Section 2.1 for in-depth discussion of validity and the different types of validity). Since the purpose of PIRLS is to assess reading literacy levels of learners, especially the transition from 'learning to read to reading to learn' (Martin, Mullis, & Kennedy, 2007), the content validity of the assessment instruments, specifically for the Grade 5 Tshivenda group, was assessed to determine whether it was valid in testing literacy levels and comprehension skills of learners; in other words, whether the instrument was testing what it was meant to be testing. In the process of national and international verification of the instruments, the adaptations in the translation were analysed to ensure that the content was contextually and linguistically acceptable in terms of content and construct validity in testing Grade 4 and 5 South African learners, but there were limitations set in place for the number of adaptations allowed, such as vocabulary, names of people and places, and expressions, and PIRLS national centres were encouraged to make as few adaptations as possible (Martin et al., 2007). Since the purpose of this study was the validation of the Tshivenda learners' performance as related to the translation of the Tshivenda instrument, content analysis, through back-translation and text analysis, were conducted to answer this question.

- **How do the Tshivenda results compare to those of the other official South African languages?**

This question points to an in-depth investigation of the performance of the Tshivenda language group alongside the other language groups in the released passages and items from PIRLS 2006. This analysis was conducted using the learners' answers for each item.

1.3 Language in Education in South Africa

Prior to 1994, English and Afrikaans were the only official languages, but after the 1994 democratic elections in South Africa, the Constitution of the Republic of South Africa (1996) incorporated a founding provision that recognises eleven official languages: English, Afrikaans, isiZulu, isiXhosa, isiNdebele, Tshivenda, Xitsonga, siSwati, Sesotho, Sepedi and Setswana. isiZulu and isiXhosa are spoken by the majority[2], while Tshivenda, isiNdebele and siSwati are minority languages spoken by 2% of the population. Only10% of the population have English as their home language (Statistics South Africa, Census 2011), English is spoken across the board and is considered the most commonly spoken language in South Africa (Crystal, 2003). The multiplicity of South African languages has led to the establishment of policies such as the Language of Learning and Teaching (LoLT) and the Language in Education Policy (LiEP) (DoE, 1997). Minority languages (such as Tshivenda, Xitsonga and Siswati) are not given equal status in the South African media (Murwamphida, 2008). There is a lack of minority language items in television, radio and print, which affect the incidental exposure from which learners might otherwise benefit (ibid).

Language issues lie at the base of educational concerns in South Africa, according to the former Minister of Education, Naledi Pandor, in her address at the Foundation Phase Conference of 2008, "Clearly, language issues impact on learner performance in literacy and numeracy." The Minister was referring particularly to government concern with regard to education at Foundation Phase level, with specific reference to the significance of Grade 3 as the exit grade from Foundation Phase into the Intermediate Phase. The Minister explained the situation as follows:

> Low attainment levels in literacy and numeracy are unacceptable because they reduce chances of success in further education. The ability to calculate, the ability to write and the ability to read with comprehension enhance opportunities of success when pursuing learning beyond the foundation-phase. (Pandor, 2008)

The Department of Basic Education (DBE) (2011) emphasises the importance of LiEP in promoting successful literacy and numeracy skills in Grade 3 learners. Further to this, in its Action Plan to 2014: Towards the Realisation of Schooling 2025, the DBE identified a number of output goals of which the first is an increase in the number of Grade 3 learners

[2] See chart on page 14

with sufficient numerical and language competencies to enable them to exit the Foundation Phase successfully. However, government acknowledged that verification of the expected outcomes of LiEP had not yet been established (Department of Education, 2011). Bloch, director of the Project for the Study of Alternative Education in South Africa (PRAESA) explains that, "Children bring all they know to school in their home language, and they need to be able to use this strength to learn another language as well as other new knowledge and skills. Unless conditions are appropriate, it is very difficult to learn a foreign language well enough to learn through it," (as cited in Cook, 2013). She disagrees with the concept of LiEP as she finds that learners require at least six years of education in their mother tongue before transitioning to learning in another language.

The LiEP specifies that all learners in the Foundation Phase should be taught in one approved language, preferably their mother tongue in Grades 1 and 2, but in Grade 3, the learners must start learning one additional language to their mother tongue. From Grade 4 onwards, learners must be taught in the LoLT of their school, and one other approved language is then taught as a subject (DoE, 1997). After 1996, Outcome Based Education (OBE) or C2005 was introduced into the National Curriculum, which promoted learner-focused education over content-based education. Several other curricula have also been tried after OBE, like the 2002 Revised National Curriculum Statement (RNCS). The current curriculum, the National Curriculum Statement (NCS), uses content from OBE and the RNCS, but provides clearer instruction on what is to be taught and learnt on a term by term basis (Department of Basic Education, n.d). Change in the national curriculum affects what, and how, learners are taught and how they are perceived within the education system (Lumby, 2007). In terms of the LiEP, if parents place their children in a school in their area or closest to where they live, the LoLT may not be these children's home language. This has an effect on the development of their home language, their language of learning in the Foundation Phase and their learning of English in the Intermediate Phase. Often parents choose to place their children in a school where the LoLT differs from their home langage. For instance, this is often the case where English is not the language used in their home, but parents want their children to be educated in English (de Klerk, 2002). Mda (2010), echoing the findings of earlier studies by Spencer (1985) and Vilakazi (2000), explains that, "There seems to be a need by African language speakers generally, including government officials, to impress others that they have mastered English (the symbol of civilization and sophistication) and that they have outgrown African languages, the symbol of the 'linguistic and cultural ghetto' to which they were assigned" (p.

19). According to Mda (2010), parents want their children educated in English for the perceived prestige and success associated with the language. Alexander (2001) found that English is more respected amongst African language speakers despite the fact that native speakers of English only constitute a small portion of the population.

The learners who participated in PIRLS 2006 were being taught under the curriculum titled the Revised National Curriculum Statement (RNCS) (Department of Education, 2002), which evolved from the Curriculum 2005 curriculum. Curriculum 2005 espoused the concept of Outcomes Based Education (OBE). According to Botha (2002), OBE implies that education should be evaluated based on learner results. Van Staden (2010) explains that, "In this regard, OBE is concerned with what is actually learnt and how well it is learnt, as measured by academic results rather than simply regurgitating what was supposed to be learnt" (p. 43). Curriculum 2005 aimed to move education away from being content-based, to being learner-centred, although this curriculum was met with mixed reviews; for example, Jansen (1998) predicted the failure of this approach. In 2002, Curriculum 2005 was reviewed by the Policy Review Committee who evaluated the successes and failures of Curriculum 2005 and carried the successes forward in the RNCS, which retained its learner-centred approach while incorporating a more basic approach to curriculum organisation.

As of 2012, the DBE incorporated the RNCS for Grades R - 9 into the National Curriculum Statement (NCS) for Grades 10 – 12 as this "builds on the previous curriculum but also updates it and aims to provide clearer specification of what is to be taught and learnt on a term-by-term basis" (DBE, 2011, p.i). The NCS for grades R – 12 has replaced previous guideline documents with the Curriculum and Assessment Policy Statements (CAPS), which is currently in use in South African schools. The need to provide a new, detailed, language policy has led to the creation of the Incremental Introduction of African Languages (IIAL), which is expected to be implemented in 2015 in Grade 1 classes and thereafter incrementally implemented through Grades 2 – 12 by the year 2026 (DBE, 2014). This policy proposes that it be compulsory for all learners from Grades 1 – 12 to learn at least one indigenous language as this will not only promote marginalised languages but also social cohesion nationally. Mathanzima Mweli, the acting Deputy Director General: Curriculum at the time (2013), stated that: "Learning outcomes are poor because of poor language proficiency […] Research has confirmed this on various occasions, but very little has been done by institutions or civil society to address this problem" (as cited in Davis, 2013). Hence the urgent need for the

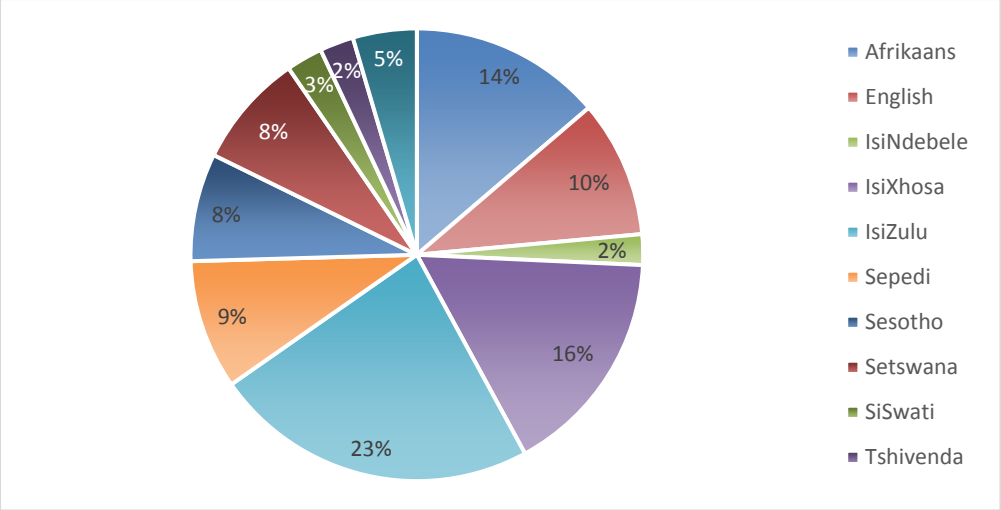
implementation of a measure that will promote indigenous and particularly marginalised languages, because, as phrased by ex-President Nelson Mandela, "If you talk to a man in a language he understands, it goes to his head. If you talk to him in his language, it goes to his heart" (as cited in Davis, 2013).

1.3.1 Context for this study

The Venda people, also known as the Vhavenda, live near the Soutpansberg Mountains in the South African province of Limpopo. The language they speak is known as Tshivenda and it is largely unrelated to any of the ten other official languages in South Africa, although Tshivenda does borrow words from SeSotho (Hanisch, 2002). It is, however, related to the Shona language which can be found in Zimbabwe, on the northern border of South Africa.

A census taken of the Venda people in 1996 (Hanisch, 2002) showed that there were 758 200 Tshivenda speakers living in South Africa amongst a population of 40.5 million at the time. A census in 2003 (Department of Arts and Culture, 2003) found that only 2% of the South African population speaks Tshivenda, as highlighted in Figure 1.2 below. The census taken in 2011 (Stats SA, 2012) reveals that there were 1 209 388 Tshivenda speakers in a population of 51.7 million, at 2.34% of the population. This makes Tshivenda the second smallest official language group in South Africa, which could also cause problems like the lack of availability of dictionaries and other aids, such as Computer Assisted Translation[3] (CAT), for a translator to use in his/her practice. There may also be a lack of availability of reading material as the demand is less.

[3] A Computer Assisted Translation is done using software, such as Google translate, which translates any sentence typed into it from one language to another (the languages being set by the user).



Source: Statistics South Africa, Census 2011

Figure 1.2: Language group distribution in South Africa according to first home language.

According to Kruger (2009, p. 45), more translation is done in the African languages than previously. Unlike some years ago when translation in the African languages was scarce, there is a normalised trend of translation in these languages today. However, a paucity of literature in Tshivenda makes it more difficult for Tshivenda translators to produce translations of the highest quality and equivalence, especially in fields that are not native to their culture. Also, Mwepu (2007) informs us that few South African universities train translators or interpreters, and of those who do study these professions, there are even fewer who graduate. Very few Tshivenda dictionaries exist today (Mafela, 2005), and those that are most popularly used date back to the 1980s and are therefore not up to date (Murwamphida, 2008). For translation into a minority language like Tshivenda, this is a relevant concern.

1.4 Layout of dissertation

The introduction in Chapter 1 is followed by the Literature review and Conceptual Framework in Chapter 2. The Literature review includes an in-depth discussion of the literature concerning validity, reading literacy – definitions and research (2.1), validity (2.2), validity of assessment instruments (2.3), translation and validity (2.4), translation and back-translation (2.5) and lastly, the Conceptual Framework (2.6). The Conceptual Framework for this study is underpinned by two theories: Skopostheorie (2.6.1), and Functionalism (2.6.2). The introduction to the research design and methodology (3.1) is followed by a comprehensive description of the design of PIRLS 2006 (3.2), a description of the design of this study (3.3), the methodological norms and procedures of this study (3.4), whereafter the

research ethics of this study (3.5) are discussed. Chapter 4 reveals the results of this study including the statistical item analysis and content analysis in terms of the literary texts *Lump of clay* (4.2) and *Unbelievable night* (4.3). Chapter 5 presents results using the same techniques as in Chapter 4 for the informational texts *Antarctica* (5.2) and *Searching for food* (5.3). Chapter 6 summarises the study including an overview of the methodology utilised in the study (6.1 and 6.2), key findings (6.3), reflections on the conceptual framework and methodology (6.4), the main conclusions of this study (6.5), and recommendations for further policy and practice (6.6) are offered.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The literature review is informed by the main question for this study, namely:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

This chapter discusses the research undertaken to date, which is related to the various components of this question: validity, translation and other research done on this topic related to PIRLS 2006. Furthermore, a critical analysis of research on the topic related to PIRLS is presented (Section 2.3), thereafter the processes involved in translation as well as the role of language and culture in translation are discussed (Section 2.4). Lastly, the conceptual framework is presented and argued in Section 2.6.

2.1 Reading Literacy – Definitions and Research

While "Literacy is considered one's overall communicative competence as it is thought to encompass not only all acts of communication - reading and writing, listening and speaking - But also the thinking processes […]" (Zimmerman, 2010, p.8), *reading literacy* is specifically:

> The ability to understand and use those written language forms required by society and/or valued by the individual. Young readers can construct meaning from a variety of texts. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment (Mullis et al., 2006, p.3).

The EFA report: Literacy for All (2006) speaks of literacy as a framework within which the mind can think analytically, in other words, it gives structure to thought. When discussing literacy, Rosenblatt (1978) describes it as the relationship between the reader and the text in a specific context.

The EFA report (2012) describes, amongst other things, the efforts made and the unfortunate lack of improvement in reducing illiteracy in adults. Reducing illiteracy could greatly affect the levels of poverty and thus positively impact the economy of each country. The advantages of promoting and improving literacy levels (in children and adults) include increased participation of a country's citizens in the running of its politics, economy and social structure (EFA report, 2012). In fact, according to Mullis et al. (2006, p.1), "It [literacy] can

be used for recreation and for personal growth and it equips young children with the ability to participate fully in their communities and the larger society". Through studies such as PIRLS 2006, statistics regarding learners' relationship with reading in the home and school environment are revealed. For example, a third of learners globally (who participated in PIRLS 2006) were found to only read outside of school twice a month. By providing these statistics and reporting on these conditions, it is hoped that countries around the world will work even harder to achieve certain goals, such as those of the EFA movement and the Millennium Development Goals, and in so doing eradicate poverty and strengthen their economies. For this reason, it is important that reading literacy evaluation be validated and anomalies investigated: learner performance speaks not only of the reading literacy level of the participants, but also of the future of the community.

2.1.1 Language of Learning and teaching in South Africa

The Language of Learning and Teaching, or LoLT, refers to the language that is the primary language through which learners are taught at school, as decided by each school (Heugh, 1999). According to Pretorius and Mampuru (2007), in South Africa,

> Literacy is usually first developed in the home language in Grades 1-3, with English introduced as an additional language in Grade 1 or 2 and becoming the LoLT in Grade 4 in most schools. African languages are not used as LoLTs after Grade 3 or 4, but African children are expected to continue studying their home language as a school subject until Grade 12 (p. 40).

This is in accordance with a bilingual educational culture which utilises mother tongue or first language as its basis as stated in the Language in Education Policy (LiEP) in terms of Section 3 (4) (m) of the National Education Policy Act, 1996 (Act 27 of 1996).

Cummins (1981) developed the theory of Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP); these two concepts address the difference between children's language proficiency in informal social contexts as opposed to their language proficiency in academic or learning contexts. Ledbetter and Seo (n.d) further explain that learners' ability to understand and even function well in informal, verbal situations in a certain language is not an indicator that they will do as well in written, academic situations. BICS involves learners' face-to-face, verbal language skills which tend to be developed long before their written, academic language skills (CALP). Ledbetter and Seo (n.d) explain that, "Reading achievement in English is more dependent on reading

achievement in their native language than it is on relative oral proficiency in English" (p.12). Thus the more developed learners' CALP is in their mother tongue, the better their CALP will be in a secondary language. It is also important to realise that learners' BICS in a secondary language, no matter how advanced, are not an indication of their CALP abilities in that language. The Tshivenda language group situation is extremely peculiar as learners did better in a second language 'CALP' situation, while their mother tongue CALP would seem to be less developed.

Internationally, Cummins (2000) finds that learners perform better when taught in their mother tongue or first language (L1) in the beginning stages of learning to read. Locally, Pretorius and Mampuru (2007) point out that poverty is a significant factor in the learning of literacy as it affects not only the learners, but also the schools. For example, many previously disadvantaged schools have resource shortages, over-crowded classrooms and inadequate facilities; many schools have also had to establish feeding programmes as poor learners were coming to school hungry, which is not conducive to learning and development (Pretorius & Mampuru, 2007). It is not only poverty that negatively affects learners' ability to read, but also the attitude adopted by parents. In some cases, parents feel that it is the responsibility of the school to teach their child to read, but as specified by Neuman (1999), it may already be too late by the time learners reach Grade 1. In such cases, there is a possibility of the Matthew[4] effect taking place as learners who have poor literacy skills only worsen, and those who have good literacy skills only get better (Stanovich, 1986). This, according to Pretorius and Currin (2009), can have a knock-on effect with learners who have poor literacy skills in one language having poor literacy skills in another language. Pretorius and Mampuru (2007) also explain that: "the large gap between performance on the language and reading tests indicates that language proficiency alone, especially in the L1 [first language], does not guarantee the ability to read in a language" (p. 53), which links to Cummin's (1981) theory of Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) as discussed in Section 2.

Heugh (2006) argues that for learners to start learning in a secondary language, thus leaving their mother tongue at such an early stage, is not a good way to promote bilingual education as learners require at least six to eight years to properly adjust to learning in a second language (English, for example). Baker (2011) supports this by explaining that learners with

[4] This is derived from the Bible, Matthew 25:29 which states that the rich get richer, and the poor get poorer

a sounder mother tongue base are more confident in their learning and reading, and do better than those who do it solely through a second language. The Minister of Basic Education stated that "The transition to English often happens before learners have fully developed the necessary cognitive skills in their home languages" (DBE, 2009). Yet, according to Marello (1998), there are some people in the field of languages who refuse to accept that English can be learned through a mother tongue presentation.

Brock-Utne and Holmarsdottir (2004) observe that teachers in Tanzanian and South African schools resort to a method known as code-switching in the classroom when they perceive that the learners are unable to understand what is being taught in the LoLT. These teachers switch from one language to another (either from one sentence to another or within the same sentence) to help their learners understand better what is being taught. Clegg and Afitska (2011) expand on this in explaining that language alternation in the classroom is mostly unplanned and usually the instinctive response of teachers to situations in their classroom environment. They also state that learners tend to discuss and work in groups using their mother tongue due to the lack of fluency in the second language or LoLT, especially in the case of learners struggling to learn and understand a secondary language, particularly English.

Some African parents prefer their children to learn in English as it is the language of government and mainstream business (de Klerk, 2002). Alexander (2000) explains the role of colonialism in minimising the usage of African languages in positions of stature or power and ascribes one of the reasons for English being a staple-added language in South African schools to colonialism: "The linguistic hierarchy built into the colonial system led to knowledge of the conquerors' language becoming a vital component of the 'cultural capital' of the neo-colonial elite" (p. 11). This attitude is still prevalent in society today as black learners and their parents view English as the language of business and success (Pretorius & Mampuru, 2007). Edwards and Ngwaru (2011b) refer to a survey taken by PanSALB (Pan South African Language Board) in 2000 where the majority (88%) of parents voted that they would prefer their children's education to be bilingual and mother tongue based, yet indicated that, failing the availability of the above, they would settle for an education in the language of the highest status (in most cases, English). Alexander, in the Report of the Colloquium on Language in the schooling system held on 8 November 2010 (2011) supports this in saying that, "If the language of teaching at school is the same as the language of the home, there is a

very natural continuity between the home and the school, and in some ways, the good teacher can genuinely take the place of the parent" (p.7).

Several factors are important in supporting the development of reading literacy and an effective language of learning and teaching, such as the availability of books to schools and learners. Hasunuma, of the South African Primary Education Support Initiative (SAPESI) explains that, "There are 14 380 South African primary schools, only 8% have functioning libraries" (Department of Basic Education, 2014, p.). Edwards and Ngwaru (2011b) add that often the only books that African learners get a chance to read are textbooks. Edwards and Ngwaru (2011b) further state that the majority of African learners do not read outside of the use of textbooks, and those that do so prefer to do so in English. This is due to the fact that in the African languages there is the historical importance of an oral culture instead of a written one. There is also a great shortage of publications for speakers of minority languages, which detracts from equal opportunities for all learners of all language groups (Edwards & Ngwaru, 2011b). Further yet, Edwards and Ngwaru (2012) state that, "It is widely believed that one of the consequences of the heavy reliance on materials that have little or no relevance for everyday life is that very few children are equipped or motivated to read either for pleasure or information by the end of formal schooling" (p. 125). According to Clegg and Afitska (2011), learners working through European languages are not fluent enough in these to use them as a medium of learning (Dutcher, 2004; Probyn, 2005; Alidou & Brock-Utne, 2006). Also, learners' classroom talk tends to be in their mother tongue as they are either not developed enough in the second language (the LoLT), or exposure to this second language is low in their community; this is also the case where learners start learning in the second language as LoLT at a very early age (Clegg & Afitska, 2011). Clegg and Afitska (2011) claim that teachers can help these learners to transition to the second language by using code switching in the classroom.

2.1.2 The relationship between language and culture

Naidoo (1994) cites Hymes (1964) in explaining that culture refers to a way of life shared by groups of people over centuries and generations, although it more broadly refers to "all socially conditioned aspects of human life" (p. 36). Saville-Troike (1986) declares that children who are learning their first language are therefore learning their culture - thus culture is carried through language. Examining the issue of culture and language, Baker, Afflerbach, and Reinking (1996) explain that children from different cultures experience literacy

differently and that the differences in experience of literacy are both qualitative and quantitative. The way that children experience literacy is also dependent on their exposure to literature from an early age as well as their exposure to their own and secondary and tertiary languages language that they may be able to speak. Ncoko, Osman and Cockroft (2000) clearly state that Xitsonga and Tshivenda are considered to be separate language groups due to the fact that they are so different to the other seven official African languages in South Africa. Unfortunately, Tshivenda speakers are not much exposed to their own language through the media, such as in magazines and on television:

> For instance, the South African Broadcasting Cooperation (SABC) and eTV stations do not broadcast as many programmes in Tshivenda on occasions as compared to other official languages such as English, isiZulu, Sesotho, and Afrikaans. Furthermore, while there are hundreds of magazines in English and to a lesser extent in Afrikaans, there are hardly any magazines and newspapers published in Tshivenda. (Murwamphida, 2008, p. 1)

Murwamphida (2008) also discusses the lack of newspapers in Tshivenda. She found that eleven South African Newspapers are written solely in English, three newspapers in Afrikaans and two newspapers cater for a mixed Afrikaans and English audience. There are only two newspapers that are written with Tshivenda readers in mind, namely the *Tshivhoni* and *Mirror* newspapers. Edwards and Ngwaru (2011b) found that most children's books are translated for majority languages such as isiZulu; whereas minority languages such as Tshivenda are oftentimes overlooked (Kruger, 2009). This could possibly be the case due to the Tshivenda language group only forming 2% of the overall South African population. There would be less demand and therefore less incentive for publishers to remedy the situation.

Of concern is the availability and quality of multilingual dictionaries for Tshivenda learners. Malange (2010), when discussing the development and quality of Tshivenda dictionaries, explained that target language speakers may have difficulty understanding culture-bound words in bilingual or multilingual dictionaries as they are obviously not familiar with the culture-bound concept.

Brock-Utne and Holmarsdottir (2004) find that, "[w]hen students are taught in their mother tongue and are allowed to write their answers in their mother tongue they perform far better than if they are taught through a foreign medium of instruction that they do not understand

and a language they are not proficient in" (p. 79) yet Tshivenda learners who attend schools where the LoLT is Tshivenda were unable to achieve better results in this language in the PIRLS 2006 test. Desai (2001) also writes of the isiXhosa learners in his case study: "The examples show the rich vocabulary children have when they express themselves in Xhosa and the poor vocabulary they have when they express themselves in English" (p. 323); yet the Tshivenda anomaly is in direct contrast to the natural pattern discussed by Brock-Utne and Holmarsdottir, and Desai.

Investigating the issue of language and culture, Ulrych (1992) found the following:

> Members of a culture place a high value on certain behaviour, ideas or material possessions which is reflected in their language … the translatability of a text depends on the degree to which it is embedded in its own culture. The more culture-bound a text is, the more difficult it is to translate or rather, the more scope there is for *modification* [emphasis added] (pp. 72-73) .

Stubbe (2011) explicates that in order for a text to be correctly translated into the target language, the translator must take into consideration adapting the text to make the translation appropriate for the cultural context of the target reader. This is why Rodrigues (2001) finds that in the South African translation situation, in many cases the translator has to rewrite or edit the original text first before translating to the target language, implying that the translator has to closely collaborate with the author of the text to ensure that the text stays true to the author's original intent. This may not have occurred in PIRLS due to the high quality of the original instrument.

Inggs and Meintjies (1998) argue that the translation profession requires more attention as in many situations the police, courts and hospitals make use of someone who is simply able to speak two or more languages. Ceramella (2008) speaks of the role of translation in cultural societies in saying, "We should not be surprised then if translation is now central to debates about language and cultural identity, stressing the role of translation and translators as necessary to safeguard and promote linguistic and cultural diversity in the changing geography of globalised societies" (p.5). Beukes (2006) agrees with this notion as she emphasises the important role of translation in society as a tool that helps build tolerance, understanding and unification in South Africa. Trivedi (2007) observes the true nature of the relationship between language and culture in his finding that "the translation of a literary text [is a] transaction not between two languages, or a somewhat mechanical sounding act of

linguistic "substitution" as Catford had put it, but rather a more complex negotiation between two cultures" (p. 3).

Gauton (2007) further examines the issue of culture and language by elucidating on the cultural knowledge required by a translator. A translator must be completely familiar with the cultures of both languages concerned; she advises exposure to culture through the media but, seeing that this has been shown to be inadequate in the case of the Tshivenda language, the translator of this language should preferably have lived for a sufficient amount of time in both cultural situations.

2.2 Validity

There are many types of validity, namely: content validity; criterion-related validity; construct validity; internal validity; external validity; concurrent validity; ecological validity; face validity; predictive validity; jury validity; consequential validity; cultural validity; systemic validity; descriptive validity; interpretive validity; evaluative validity, and theoretical validity (Cohen, Manion & Morrison, 2008). However, "In educational research, there are four types of validity that are of much importance. They are: face, content, construct and criterion-related validity" (Oluwatayo, 2012, p. 392).

In this study, content and construct validity are particularly relevant. Cohen, Manion and Morrison (2005) explain that *content validity means that the instrument actually deals with the content that it says it does*. For example, in the PIRLS test, the instruments set out to cover content that would test learners' literacy levels. This was done by using literary and informational texts, as well as using questions with different comprehension difficulties. Thus, the content in the instrument covers what it purports to cover: content that tests literacy levels. Construct validity focuses on the meaning of a certain construct. This can be achieved by comparing the construct in question with other measures of the same construct, which could be done, for example, through a review of literature (Cohen et al., 2005). Trochim (2006) speaks of construct validity as the veracity of the reflection that the operationalisation produces of the original construct. Operationalisation, in terms of his use of the word, can refer to a specific test or in fact the translation of text. He also refers to translation validity, which does not refer to the act of moving text out of one language into another, but is rather a term combining face and content validity, i.e the validator investigates whether the operationalisation thoroughly reflects the construct. In the case of this study, the construct is

seen as the original texts and items (in English), while the operationalisation can be seen as their translation into Tshivenda.

In discussing validity, Messick (1995) specifically looks at the interpretation of test scores, and the generalizability and replicability of each test as significant factors of validity. In terms of Messick's criteria, the PIRLS 2006 tests would be described as valid because the results were generalizable to a diversity of learners of a certain age and level of schooling. Scherman (2007) states that validity is the "extent to which the interpretations of results are appropriate as well as meaningful" (p. 135), which is consistent with Messick (1995). In this regard, Messick (1989) declares that "what is to be validated is not the test or observation device as such but the inferences derived from test scores or other indicators – inferences about score meaning or interpretation and about the implications for action that the interpretation entails" (p. 5). In fact, Messick (1989) emphasises that validation needs to look at the link between content (in this case text and accompanying items), and interpretations of results. He suggests that there is one significant question that research in this regard needs to address: to what degree should test scores be interpreted in the way proposed by the test itself? Messick (1989) speaks of validation approaches, such as relevance and representativeness of test content, which is particularly important for this study with regard to the construction of a conceptual framework (see Section 2.4).

In this case, the representativeness of test content relates to the adequate representation of the different comprehension processes used to analyse proficiency in literacy and reading; for example, if an item is testing literal translation, then the content of this item should allow a question that requires the learner to retrieve explicitly stated information (Mullis et al., 2006). Cumming and Berwick (1996) speak specifically of test validity in terms of "relevance and utility to the content domain specifications of these tests" (p. 11). In the context of this study, where learner performance is validated in terms of the translation of the text, relevance and utility may be taken to refer to the purpose of the text (to assess the literacy levels of Grade 4 and 5 learners) and functionality, which relates to the operationalisation of the translation of the text in terms of the relationship between the initiator, the translator and the target reader.

In this study, validity is the degree to which the instrument measures what it is supposed to measure (Cronbach & Meehl, 1955; Brown, 1996), which for PIRLS 2006 in South Africa

was literacy levels in Grade 5 for learners across all eleven official languages. Maneesriwongul and Dixon (2004) posit that:

> Thus, quality of translation and validation of the translated instrument plays a significant role in ensuring that the results obtained in cross-cultural research are not due to errors in translation, but rather are due to real differences or similarities between cultures in the phenomena being measured (p. 175).

This reflects the reasoning that underpins this study, as this research pays particular attention to the translation of the instruments with a view to validation. Content validity is often established using expert judgement (Dellinger & Leech, 2007; Scherman, 2007). For instance, Scherman (2007) utilised a content specialist to evaluate the content validity having drawn up specification tables containing specific criteria.

2.3 Validity of assessment instruments

Establishing the validity of an assessment instrument is a continuous process and not something about which it is possible to be absolutely certain (Raykov & Marcoulides, 2011). Higgins and Straub (2006) say much the same thing, describing validity as an ideal state to be continuously striven for but never achieved. Miles and Huberman (1994) state that there are no definite rules set in place for establishing validity. Kvale (1995) declares that validation is the process of continuous checking, not just the final product. However, in the pursuit of validity, the purpose of the assessment has to be borne in mind, i.e. that the items not only access understanding of the content of the text, but also achieve the purpose for which the assessment is designed in the first place. Sireci (2007) explains as follows: "Any conceptualization of validity theory must acknowledge that what is to be validated is not a test itself but the use of the test for a particular purpose" (p. 477). Therefore, in the case of PIRLS 2006, the purpose was to assess the literacy levels of Grade 4 (and Grade 5 in South Africa) learners in terms of set international benchmarks. Cook and Beckman (2006), however, relate validity specifically to the interpretation of scores. They indicate that in order for this to be achieved, the test items must completely represent the content. DeVon, Block, Moyle-Wright, Ernst, Hayden, Lazzara, Savoy and Kostas-Polston (2007) bring together the ideas of purpose and operationalization with the concepts that constitute the content: "It [validity] is supported if the instrument's items are related to its operationally defined theory and concepts" (156). So, while there are no set rules for establishing validity, in pursuing the validity of assessment instruments, the purpose of that assessment must be constantly kept in mind. Also, in the case of PIRLS 2006, the validity of the test instrument could possibly be

derived from the interpretation of the scores. In this study, the scores are interpreted through the use of Classical Test Theory, and content analysis.

2.3.1 Validity of PIRLS 2006

Since validation of translation implies both verification and quality assurance, or as Venuti (2012) puts it, consideration of purpose and process, any critique of assessment instruments must look at both these aspects. Since it is the aim of PIRLS to assess literacy levels internationally (Mullis et al., 2006), the text should access the comprehension processes of the reader by allowing the reader to construct meaning from the text (Gómez Vera, 2011). According to Gómez Vera (2011) of the Center for Advanced Research in Education, University of Chile, the reader is the main constructor of meaning. She also states that:

> As a result, to successfully construct meaning, the reader must count on the help of his/her reading skills, in other words, this theory encompasses the impact of factors that influence reading, including previous experience with similar texts, cognitive and metacognitive processes, and the effects of context (social, cultural, educational) (p. 18).

Therefore, it is not only learners' prior experience with texts of a certain nature that is important when testing reading comprehension, but learners must also be able to associate with the context (social, cultural, economic) of the passages and test items. Anderson and Morgan (2008) expand on the cultural aspect of developing a national assessment test in saying that learners have a diversity of cultural knowledge that they bring to a test and therefore this knowledge should not lead to these learners being "penalized or advantaged by life experiences that are not relevant to the knowledge, skills, and understandings that the test is intended to assess" (p. 30). Naidoo (1994) supports this in stating that learners are entitled to a culturally fair and appropriate assessment of their language abilities. Stubbe (2011) further agrees with Naidoo (1994) and Anderson and Morgan (2008) in that he explains that people with the same abilities should have an equal opportunity to answer a question correctly, no matter the language of testing or the cultural backgrounds of those who are tested. For this reason, an analysis of the passages used in PIRLS was done to determine whether it was appropriate for Tshivenda learners and a Tshivenda specific context. Mullis et al. (2006) state that passage selections should take into consideration the type of literature children would read at home every day that would elicit the most natural responses. It is also

imperative that no culture is over-represented, so for PIRLS 2006 a wide range of texts from various countries were gathered and the texts selected were as culturally unbiased as possible.

Along with consideration of translation and the appropriateness of passages and items, there is also the ideology behind international comparative studies such as PIRLS: "The criticism related to culture can involve a wide range of issues, from translations, languages, populations, to the ideology behind international comparisons" (Gómez Vera, 2011, p. 90). She goes on to explain how the very nature of an international study is complicated as cultures vary so vastly from one country to another and this creates difficulty with setting a standard that can apply fairly to all countries and cultures. Mkoka, Vaughan, Wylie, Yelland and Jelsma (2003, p.265) warn about the usage of texts in languages and cultures different from the original text and even go as far as to say that the validity of cross-cultural research projects may be open to question.

Stubbe (2011) provides an excellent example of why cross-cultural research, especially international studies, should be subjected to a validation process. He does this by showing a sample of translated text from the PIRLS 2006 released passage *Antarctica* that shows how the instructions may not have been explicit enough for learners and thus the text did not work in the same way from one country to another: "These translations simply state that people do not go to Antarctica between April and September, while in Luxembourg the wording ''nicht zwischen April und September in die Antarktis fahren wollen'' (''do not want to go to Antarctica between April and September'') stresses the voluntary nature of this decision." (p.474). Stubbe (2011) also found significant differential item functions (DIF) between three different German translations (Germany, Belgium and Luxembourg) of the same released texts and items.

Hilton (2006) argues that with so many differences in wealth and population distribution (as well as other differences), and taking into consideration the one-dimensionality of the PIRLS test, there is a a tendency towards cultural bias, yet, explains Hilton, on the opposite end of the spectrum, when a text is culturally neutral, it loses its intrinsic interest. Hilton refers to "one-dimensionality" in the light of the vast variety of cultures of the learners being tested with an instrument that cannot possibly, despite intense efforts, be entirely appropriate for all cultures involved. She describes her study as a wide-ranging critique of the measuring paradigm involved in PIRLS where the target populations are not comparable, and not an

analysis of statistical results. She also highlights the issue that countries of different economies and cultures cannot truly be compared by a test as one-dimensional as PIRLS. She then declares that, "[t]here remain important methodological problems inherent in the use of this kind of standardised testing of reading comprehension across nations, cultures and languages" (p. 822).

In rebuttal to Hilton (2006), Whetton et al. (2007) state that, "[i]n comparative surveys, which inevitably include countries of diverse size, wealth and cultures, simple comparisons can be of considerable interest. We therefore see this as a strength of PIRLS rather than a criticism" (p. 980). They acknowledge that, "…it is true that different languages do not reflect 'the world' in exactly the same ways, so there cannot be an exact match between the mental experiences of children using different languages to access the assessment" (p. 981), although they also assert that "This [PIRLS test] is based on a view that children's school experiences provide them with some common ground, in the form of familiarity with stories and information texts that are broadly accessible and interesting to the age group" (p. 981). All four authors make a strong case for their views on PIRLS and its validity and viability, although in responding to Hilton's criticism, Whetton et al. provide empirical evidence to support their counter argument, suggesting a possibly sounder basis for their perspective than the one espoused by Hilton.

2.4 Translation and validity

Edwards and Ngwaru (2011a), the director of the National Centre for Language and literacy in the United Kingdom and a member of the Routledge Editorial Board respectively, discuss another factor that could affect the PIRLS 2006 texts in particular: the pool of people who have the correct translation training and experience in translating children's literature is extremely small, so complaints about the quality of translations are common. This may indicate, if not a problem, at least a difficulty for the PIRLS National Centre in terms of the translation of the PIRLS 2006 texts.

When an assessment is translated, there is a risk that the translation has affected the assessment intrinsically in some way. Peña (2007) explains that particular care and effort need to be taken with the translation of instruments to ensure their validity. Ercikan (1998) specifies that,

> "When items are poorly translated, their properties may change for the groups taking the test in different languages. These changes in properties of items can affect what is being assessed by the test as well as altering the difficulty of the item for different groups" (pp. 444-445).

Ercikan goes on to explain that, not only may the difficulty of the item be altered, but the validity of the instrument may be changed as well because "what the item measures may be altered" (p. 544). He posits that by eliminating translation error, the comparison between source text and back-translation will be more valid. Translation is more than just the rewriting of words in a language different to the original text. Sperber (2004) explains as follows: "It is not enough to translate a questionnaire literally. The additional challenge is to adapt it in a culturally relevant and comprehensible form while maintaining the meaning and intent of the original items" (p.2). Therefore, before any translation is commenced, the translator should be sure of the requirements of the translation, vis-à-vis the needs of both the initiator and the target reader.

Venuti (2012) speaks of three components of translation: the specification of the goal; the analysis of operations or process; and a reflection on the relationship between the goal and the process. He emphasises the connection between the target language and its culture with the function or purpose of the translation: "Function is a variable notion of how the translated text is connected to the receiving language and culture" (p. 5). This means that the translator, while striving for equivalence between the translated text and the Source Text, must bear in mind the culture of the "receiving language". Sperber and Wilson (1986) refer to this as relevance theory. In the context of this study, for any translation that has as an African language as its target text, the translator has to balance the brief of converting a Source Text to another language with cultural issues which require adaptation to make it appropriate for the target reader. Pym (personal communication, 2013) enters a caveat regarding ensuring validity of the translation: "It doesn't much matter what strategy you use, but it does matter if you don't know how to use the target language".

The following sections focus on the theory and processes of translation (see 2.4.1), adaptations in translation (2.4.2), translation and back-translation (2.5), and issues of equivalence and non-equivalence in translation (2.5.1).

2.4.1 Theory and Processes of translation

Pym (2010) prefers the use of the term 'paradigms' when speaking about translation theories, since, he explains, translators are continuously theorising and it is therefore more appropriate to refer to such theorizing as occurring within a particular paradigm, such as the equivalence paradigm. Within this particular paradigm, arguably the largest and most commonly used in translation, Source Text and Target Text are examined through the lens of equivalence, i.e. whether the Target Text is a good reflection of the function and meaning of the Source Text. House (1997) explains that the equivalence model is characterised by a "double-binding relationship" (p. 28) between the Source Text and the Target Text. This means that for a translation to be equivalent to the Source Text there must be as much consideration given to the Target Text as was given to the conceptionalisation of the Source Text. Where Pym (2010) speaks of the translator continuously theorizing, Larson (1998) explains it as "The interpreter […] who conceptualizes the meaning and, using vocabulary and grammatical structure appropriate for the Target Language, reconstructs the meaning of the statement in a new cultural context".

Chesterman (2004) explains that the theory of translation encompasses two views on assessing equivalence or the quality of the product: a comparison between the Source Text and the Target Text; and a comparison between the Source Text and the purpose (*skopos)* /need of the translation. He also refers to the prerequisites required for translation, this being specified by the client – the client is the receiver of the end product or Target Text, and is also a judge of its equivalence based on the meaning and purpose of the Source Text.

In the field of translation, theory often relates to process. Esposito (2001) illustrates the basic translation processes as shown in Figure 2.1 below, adapted from Larson (1998).

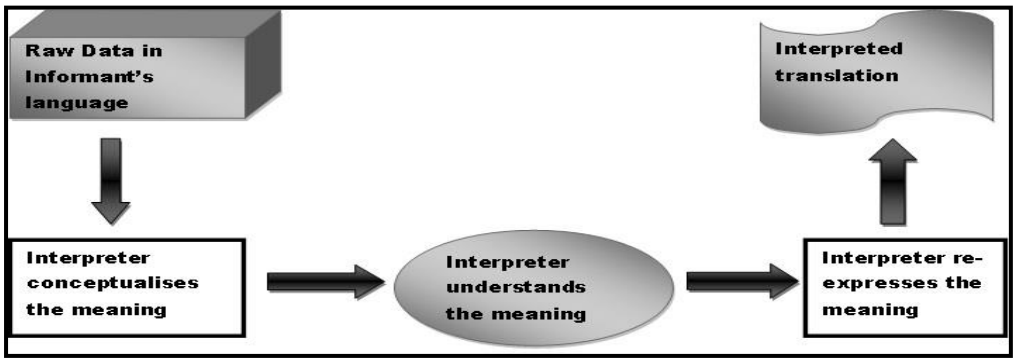
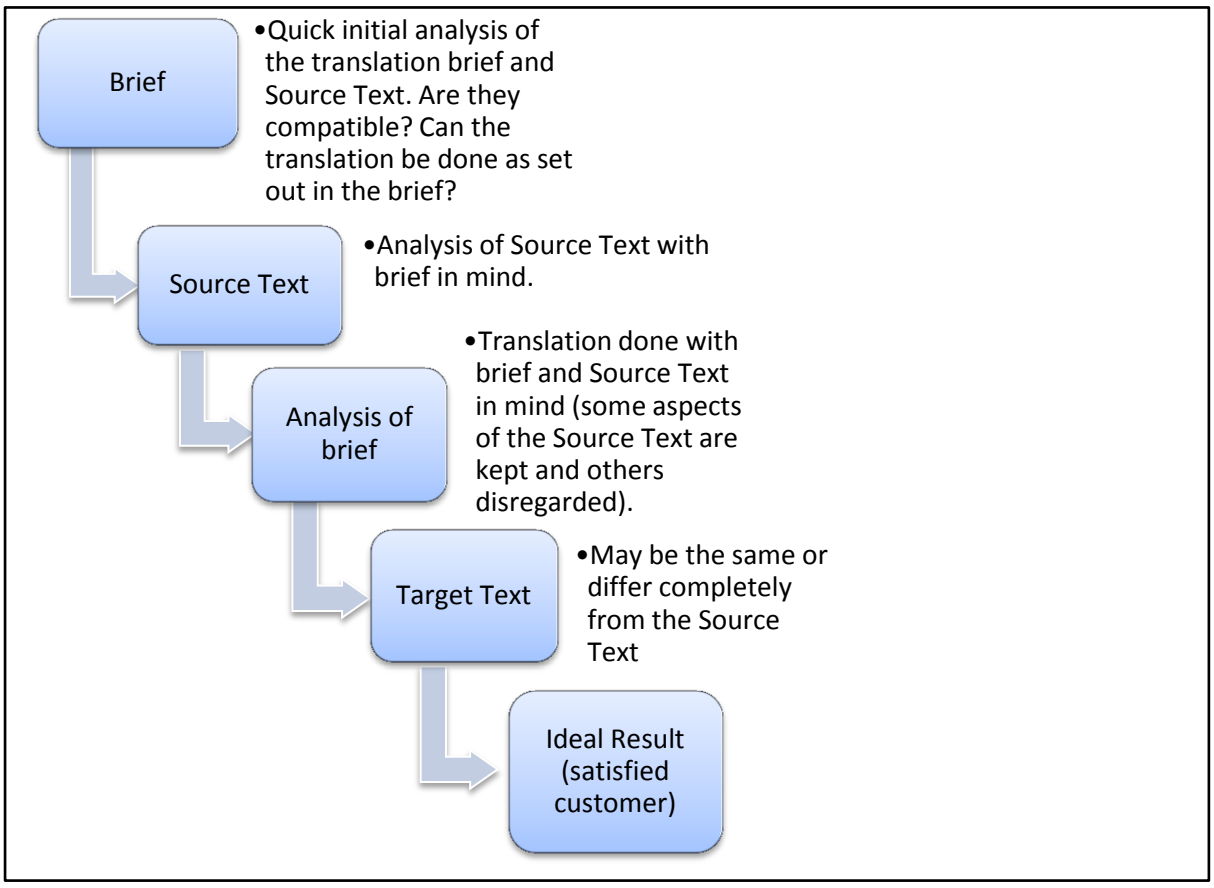


Figure 2.1: Process of Cross-Language Interpretation (Esposito, 2001, p. 571)

These processes, examined in more detail relate to Chesterman's (2004) PQR theory, i.e. Product, Quality and Reception. This means that the quality of the product, the translation, is closely associated with its reception: the clients' judgement of its equivalence to the original text. Larkin, de Casterlé and Schotsmans (2007) describe the importance of certain translation procedures by stating that "[a]rguably, current translation procedures, applied to ensure word equivalence (such as forward-backward translation), have become the gold standard by which language-based academic research is judged" (p. 469). Gauton (2007) created the following schematic representation of specific translation procedures starting with the initiation of the translation process up to submission of the end product.



Source: Gauton, 2000, p. 26

Figure 2.2: Schematic illustration of the translation process

When the initiator or client presents a translation project to a translator, the translator must make an initial judgment as to whether the client's brief is feasible with regard to the Source Text itself. Once the translator has accepted the project, he/she then analyses the brief in depth, and keeps it in mind while translating the Source Text. Some features and formats

from the Source Text may be retained in the Target Text, although the translator may choose not to retain any of the Source Text features for the sake of comprehension over form. This Target Text is then presented to the client, who will then judge the end product against the purpose and meaning of the Source Text and the brief given to the translator. Within the processes of translation, attention should be given to the particular translation method used as it should be in response to the brief and the purpose of the Source Text.

Table 2.1: Methods of translation

Method of Translation	Description
Word-for-word translation	The words are translated individually instead of per phrase and are translated by their most common meaning, usually out of context.
Literal translation	The Source Text is translated to its nearest equivalent in the Target Text but as with word-for-word translation, it is translated out of context.
Faithful translation	This attempts to reproduce the same contextual meaning as the Source Text. It is as faithful as possible to the intentions and concepts in the Source Text.
Semantic translation	This differs only slightly from faithful translation in that the aesthetic value is valued more. Meaning is compromised on if necessary to ensure the natural sound of the Source Language is preserved. Semantic translation is more flexible in that it allows the translator to use his/her own intuition to recreate the best version of the original text in the Target Language.
Adaptation	This is mainly used for plays and poetry and is the freest form of translation.
Free translation	Recreates the original content without the form of the original, this also involves paraphrasing that sometimes is longer than the original text.
Idiomatic translation	This method of translation reproduces the meaning of the original yet colloquialisms and idioms are used where these do not exist in the original. This can lead to a lively and natural translation.
Communicative translation	This method attempts to convey the exact contextual meaning of the original text whilst adapting it so that both content and language are easily understandable to the readership (whatever the social context).

Source: Newmark, 1995, pp. 45-47

According to Newmark (1995), the most commonly used methods for translation are Faithful translation, Semantic translation and Literal translation (see table above). However, the best methods for translation, depending on the purpose of the text and the brief given to the translator, are Faithful translation, Semantic translation and Communicative translation because these methods are each meant to convey the meaning of the Source Text and the intent of the author of the Source Text. Word-for-word translation and Literal translation

should only ever be used as a pre-translation process to indicate problems that require solving as these methods do not make any adaptations for situational or cultural context and the words are translated individually, out of context, instead of as a whole.

2.4.2 Adaptations

Bastin (in Baker & Saldanha, 2011) provides a definition of adaptations as used in the field of translation: "Adaptation may be understood as a set of translative interventions which result in a text that is not generally accepted as a translation but is nevertheless recognised as representing a Source Text" (p. 3). An adaptation is therefore used at the discretion of the translator to ensure that the best possible equivalence is achieved in the final product. In this regard, the purpose of the Source Text has to be borne in mind as well as the "receivability" of the translation to the target reader or client. Dollerup (2005) speaks of *Skopostheorie* ('purpose theory') (see Section 2.6.1), a theory developed by the Germans "to explain how translations must be adapted to other cultures" and that "a translation has to function in cultures other than the one in which it originated" (pp. 274, 283) meaning that it must be clearly comprehensible and applicable in both the Source and Target culture(s). Although the PIRLS instruments were translated with the *skopos* (or 'purpose') of making the instruments comprehensible both contextually (culturally) and linguistically, the brief given was only to make adaptations where absolutely necessary. Martin et al. (2007, p. 54) explain that the NRCs were encouraged to make as few adaptations as possible, only making changes (such as vocabulary, names of people and places, and expressions) where absolutely necessary. If the translation of a text is contextually (culturally) insufficient or even incorrect, a learner cannot associate with the text and may miss out on meaningful information that is implied in the text.

Naidoo (1994) describes certain factors that should be included in the development and adaptation of a test. She draws on Adler (1971) to explain that extrinsic factors of a test include the environment, child rearing, socio-cultural position and role of the test population; whilst intrinsic factors include the language of the test as well as bias against certain groups in the use of culture-bound general knowledge (including toys and pictures used in the test) (p.23). Understanding of these factors forms part of knowledge of the language system. Baker (1992) notes that "Knowledge of the language system may not be sufficient, but it is essential if one is to understand what is going on in any kind of verbal communication. This means that any mistranslation of words and structures in the Source Text may well affect the

calculability of implicatures [implied meaning] in the Target Text" (p. 229). In her study of South African language systems, Kruger (2009) indicates that there are serious concerns regarding both reading literacy and publishing in African languages, although the efforts from the Publishers' Association of South Africa (PASA) with catalogues such as the *Writings in nine languages* has helped to make literature and learning materials available to the African community (p. 39).

In reference to PIRLS 2006 as carried out in Germany, Austria and Belgium, Stubbe (2011), drawing from Bos, Freiberg, Kühn and Reding (2007), states that the NRC for these three countries made the decision to adapt certain wordings to suit the situation in their countries (p. 467). In addition to this, according to Van Diepen, Verhoeven, Aarnoutse, and Bosman (2007), the Dutch translation of the PIRLS 2001 test, when compared with the English version, was found to have differences in quantity and length of words which meant that the Dutch learners had more to read than learners reading the English version of the test. Despite the fact that the Dutch version took learners longer to read, this did not influence the results in the sense of making the text any more or less accessible to Dutch learners than it was to English speaking learners, who completed the test using un-translated and un-adapted passages. In some of the African languages in South Africa, equivalent concepts to those used in English tend to involve long words and often several words to describe a single concept as these concepts may be new or unfamiliar ones without a linguistic equivalent in an African language, thus requiring explanation.

2.5 Translation and back-translation

The second of Venuti's (2012) components of translation, analysis of operations or process, requires an investigation into how the translation is actually conducted. Edwards and Ngwaru (2011a) find that, "Translation can also be justified as a form of cultural sharing which has shaped all societies across the centuries. Viewed as an act of recreational art rather than science, it allows for sharing and reciprocal development between readers and writers of different languages" (p. 592). When looking at translation, it is of the utmost importance to consider the methods utilised to render an equivalent of the original Source Text. Johnson (2011), in discussing the creation of a Xhosa-English translation system, states that for such translation to be of good quality, translators should have considerable knowledge of South Africa as well as its languages. According to Newmark (1995), the most commonly used methods for translation are Faithful translation, Semantic translation and Literal translation

(see Table 2.1 above). The best methods for translation, depending on the purpose of the text and the brief given to the translator, are Faithful translation, Semantic translation and Communicative translation because these methods are each meant to convey the meaning of the Source Text and the intent of the author of the Source Text. However, two of the most commonly used methods for translation are Word-for-word translation and Literal translation, both of which should only ever be used in a pre-translation process to indicate problems that require solving because these methods do not make any adaptations for situational or cultural context and the words are translated individually, out of context, instead of as a whole. In many cases, especially public and community orientated translations, these translations are done by amateurs who may speak both the Source Language and the Target Language, but do not know the nuances of professional translation (Leech, 2005). Since culture is an important factor in translation, "The extent to which a task is translatable depends on the degree to which the text is embedded in the specific culture associated with the language, and the physical and chronological distance between the cultural background of the source language and the target language." (Naidoo, 1994, p.63).

Stubbe (2011) confirms that back-translation is an effective and simple way to ensure equivalence of different languages. Temple and Young (2004) explain that it is invaluable to have two independent translations for comparison purposes, as translation is a creative process which should still be logical and make sense. Miyabe, Yoshino and Shigenobu (2009, p.1) even refer to back-translation as "translation repair". Van Dyk, van Rensburg and Marais (2011) state that:

> Back-translation is considered to be a means of validating the accuracy of a translation. This validation process hinges on a process of double translation, thus, after a test is translated from the source language into the target language, the translated version is translated back into the original language by a different translator. The original version of the test is then compared with the back-translated version, which will also be in the source language. (p. 157)

Shigenobu (2007, p. 260) validates this explanation of back-translation, but adds that back-translation draws attention to problem areas and provides confirmation of the accuracy of the translation. Back-translation, nevertheless, is not without its own problems. As Shigenobu (2007) states, "Another of the weaknesses of back-translation is that it usually leads to literal translation at the cost of vernacular language used in the translated version. A literal or word-

for-word translation does not guarantee that the correct meaning is transferred from the Source Text to the translated version" (p. 158). Therefore it is important to ensure that the translator who will be doing the back-translation does not use literal translation at any stage.

One significant advantage of back-translation, according to Naidoo (1994), is that people who are not familiar or fluent in the Target Language can compare the two texts (original and back-translated) in the Source Language in order to assess the quality of the translation. However, Beaton, Bombardier, Guillemin and Ferraz (2000) warn that a back-translation does not necessarily guarantee optimal forward translation accuracy; it can only guarantee a consistent translation. Sperber (2004) goes on to list several back-translation disadvantages, including the fact that it can be time consuming, expensive and that translators may intuitively make sense of badly written texts and therefore correct the Source Text, which is a methodological disservice (p. 4).

The utilisation of back-translation as a means of validation is supported by Maneesriwongul and Dixon (2004), who state that back-translation is a "substantial effort to assure validity of the translation" (p. 181). Sperber (2004) adds that back-translation may not use the same vocabulary or convey the same meaning as the Source Text. She also postulates that back-translations may read similarly to the original Source Text *despite* the fact that the original translation is not of good quality; if this is a possibility, then it is reasonable to suppose that the opposite may also be true – the back-translation may be of poor quality and thus incongruent with the original Source Text, despite the fact that the original translation may be more congruent with the original Source Text.

2.5.1 Equivalence and non-equivalence in translation

According to Koch (2009), "[e]quivalence is a measurement term dealing with the measurement level at which scores of tests that are available in more than one language … can be regarded as comparable." (p. 302). Newmark (1988) simplifies this by indicating that equivalence involves the effort to produce the same effect on the Target Reader as was attained with the reader of the Source Text. Mkoka, Vaughan, Wylie, Yelland and Jelsma (2003) indicate that it is not only the equivalence in meaning that is important to maintain equivalence, but also that the text should invoke the same reaction from the reader as the original would. To achieve the same reaction from the Target Reader, the translator has to carefully and skilfully deal with the cultural aspect of the text. James (2002) discusses the

non-equivalence dilemma that translators face when they have to deal with the cultural aspects embedded in the Source Text while still managing to successfully convey these in the Target Text. It is entirely possible that there could have been a problem of non-equivalence in the Tshivenda translation of the PIRLS 2006 test due to the cultural complications embedded in the passages.

When discussing non-equivalence, Baker (1992) mentions several problems that translators come across, as well as some strategies for overcoming such problems. Amongst these problems she lists culture-specific concepts, when the source-language concept is not lexicalized in the target language, when the source and target languages make different distinctions in meaning, and when the target language lacks a superordinate (general word) or a hyponym (specific word).

In the process of translation, one of the important aspects is the culture of the Source Text, i.e. of the Source Text reader; as well as that of the Target Text reader. Culture specific concepts are concepts which have meaning in one culture, but not necessarily to the same extent or at all in other cultures. Culture-specific concepts, whether an exact word or an idea, are extremely difficult to find equivalents for when translating a text. When the source-language concept is not lexicalized in the target language, it means that the concept exists only in one language and there are no equivalents 'allocated' in the target language to express it. When the source and target languages make different distinctions in meaning, this means that a word or concept is given more significance in one language than in others (Baker, 1992). For example, some languages make distinctions in different actions that can be associated with the same concept: "Indonesian makes a distinction between going out in the rain without the knowledge that it is raining and going out in the rain with the knowledge that it is raining. English does not make this distinction" (Baker, 1992, p.22). When the target language lacks a hyponym, the target language may have specific words but no general terminology to describe a certain situation or topic and vice versa.

Some of the solution strategies mentioned by Baker (1992) are: translation by using a more general word (in the case of no hyponym existing); translation by using a more neutral/less expressive word; translation using a loan word (a word borrowed from the source language) or a loan word plus an explanation in the target language, and cultural substitution. However, Ceramella (2008, p. 15) warns that loan words can cause trouble because of "false friends":

words that are spelled the same or sound the same in two languages but mean totally different things. According to Baker (1992), the best strategy is to use a Target Language item that, although it does not have the same meaning, it will have a similar impact on the Target Reader. Thus the Target Reader can identify with "something familiar and appealing" (p. 31).

When looking at the method of a translation, Ceramella (2008) advises that the register of the Target Text should be adapted to that expected within the Target Language, although this also depends on the preferences of the initiator of the translation. This refers not only to the type of language that is acceptable in a translation, but also highlights the importance of communicating with the initiator of the translation to determine whether any elements of the source culture can and should be introduced into the Target Text to increase comprehensibility and learner association with the text. At the same time, the translator should also consider for whom the text is being translated. James (2002) elaborates on the topic by explaining that the translator must consider for whom the original text was written and whether that readership is similar to the potential Target Reader. She also distinguishes between the ideal Source Text reader and the ideal Target Reader.

The translator therefore has a multiplicity of factors to take into consideration when translating a text: what the initiator wants and expects; the responsibility to make the text relevant to the Target Teader; and the reader community for whom the text was written. This places considerable pressure on the translator to produce the perfect translation. It is unlikely that the translator will be able to meet the expectations of everybody involved. This study will strive to find out if the translator was able to meet the expectations of the initiator of the PIRLS 2006 passage and item translations for the Tshivenda learners, while still taking the target language community, as well as the learners themselves, into consideration.

In light of the above information it can be said that if the learners are not exposed to their own language through the media, this could negatively impact their reading abilities in that language. If, for example, Tshivenda learners were more exposed to English, SeSotho, IsiZulu and IsiXhosa than Tshivenda, the chance of learners performing better in those languages than in Tshivenda is greatly increased. It is therefore important that the quality of translation be investigated with a view to determining whether translation was a factor in the performance of the Tshivenda learners in PIRLS 2006.

2.6 Conceptual framework

This conceptual framework is informed by the main question:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

This question addresses two validity concerns, the performance of the Tshivenda learners and the translation of the test instruments that they wrote. By comparing the performance of the Tshivenda learners to that of learners who wrote the PIRLS 2006 test in the other official languages, the notion of performance is related to equivalence in translation. In other words, if learners wrote equivalent *instruments* across the board, it is possible that the difference in performance was affected by *translation* equivalence. Therefore, it was essential to use a conceptual framework which allowed the performance of the learners to be examined alongside of the quality of the translation of the test instrument, both with a view to establishing validity. In the conceptual framework underpinning the study (see Figure 2.3), the key concept is validation in terms of translation equivalence and learner performance. In this conceptual framework, validation is guided by Skopostheorie, which is the lens used to look at the translation of the PIRLS 2006 Tshivenda instrument, and Functionalism is the lens used to look at learner performance. The three core aspects of this conceptual framework are discussed below.

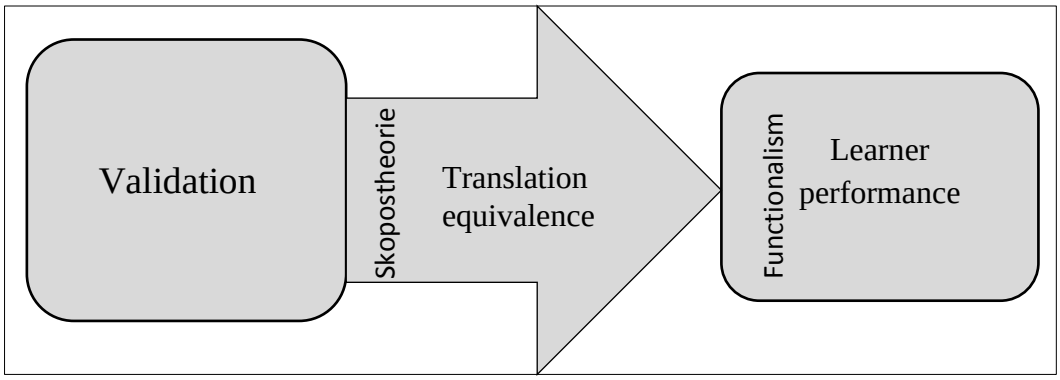


Figure 2.3: Conceptual Framework (informed by Reiss & Vermeer, 1984; Nord, 1992)

Validity is a multifaceted concept (Messick, 1995) as noted earlier, and for the purposes of this study, content and construct validity in addition to reliability are important (Raykov & Marcoulides, 2011). Johansson (2013) writes about validity being specifically related to the measuring instrument itself, and not so much to its results, the interpretation of which can vary depending on the circumstances. Lissitz and Samuelson (2007) indicate that content

validity should be the label used for validation of a test instrument. Content validity is defined by Johansson (2013) as how well "performances in a particular area of activity can be an estimate of overall ability in that activity" (p. 25), i.e. the conclusions to which the scores point are correct. Raykov and Marcoulides (2011) add that content validity also points to the degree to which the components of an assessment instrument closely reflect the construct on which the instrument is based. However, Sparfeldt, Kimmel, Löwenkamp, Steingräber and Rost (2012) indicate that content and construct validity have come under criticism when it comes to reading comprehension assessments (p. 216), particularly when it comes to multiple-choice items. They define reading comprehension as the "ability to construct meaning from a written text" (p. 215). Construct validity is comprehensive and is the degree to which an assessment measures what it claims to measure, so that the inferences based on the scores can be considered appropriate.

As early as 1951, Cureton identified validity as comprising two aspects: relevance and reliability; relevance implying that the elements of an assessment are appropriate for the function of the assessment, and reliability as as the evidence of validity (Lissitz, 2009). Jonsson and Svingby (2007) provide the following assurance: it is a "self-evident fact that when all students do the same task or test, and the scoring procedures are well-defined; the reliability will most likely be high" (p. 135); this is because there would be consistency in the evaluation of the test results. However, this does not *guarantee* a high validity. Messick (1989) states that reliability is a necessary part of validity, but is not necessarily sufficient to *prove* validity. In fact, according to Raykov and Marcoulides (2011), there is seldom enough evidence to prove without a doubt that an instrument is absolutely valid. At best, a *degree* of validity can be established by using conclusions drawn from the scores obtained.

Given the centrality of the translation in partly establishing the content validity, this study paid particular attention to the quality of the translation. Venuti (2012) describes three components of translation, namely, purpose, process and a reflection on the relationship between the two. In order to look at the above components, the translation was analysed through the lens of Skopostheorie (Reiss & Vermeer, 1984) (see Section 2.6.1). Just as translation is central to partial establishment of content validity, the learners' performance is central to partially establishing construct validity; this was analysed through the lens of Functionalism (Nord, 1992) (see Section 2..2).

2.6.1 Skopostheorie

Skopostheorie or Scopos Theory was developed by Reiss and Vermeer (1984). *Skopos* is the Greek word meaning "intent, goal or function" (Gentzler, 1993, p. 71). The development of Skopostheorie is recognised as the major school of thought in modern translation studies (Kerr, 2011). As Gauton (2007, p. 17) specifies, the translation of a Source Text should be determined by the intended function the initiator or client (or sponsor) wants the translation to fulfil.

There is the argument of function versus form as discussed by Pym (2010). Should a translator decide to use the direct, corresponding words (words with the same meanings) to translate a text, this does not automatically render the text understandable to the Target Reader. On the other hand, should the translator decide to use function over form, this would mean that the translator uses descriptions and images that do not directly correlate to the Source Text but the meaning is better conveyed. When using *Skopostheorie*, Dollerup (2005) says that function is preferred over form and this approach is supported by Viaggio (p. 2), who states that a translator does not simply write a certain phrase because it is the equivalent of the original, but because he wants the interlocutor or reader to understand. This implies that the translator's judgment and preference, as based on the context of the text, is utilised in conveying the meaning of the original text as effectively as possible. Throughout this process, the translator must keep to the brief from the client or sponsor. This is why an open communication line between the translator and client/sponsor is imperative.

One of Pym's (1996) concerns is that translators may become "mercenary experts, able to fight under the flag of any purpose able to pay them" (p. 338), i.e. using purpose as a licence to ignore the ideal of loyalty in translation. Nord (2006) argues that this is not the case as translators are rather "responsible agents" (p. 40) in meaningfully mediating between two cultures. In his doctoral thesis, Costales (2009) uses Skopostheorie as a theoretical base in analysing web localisation[5] in translation. While he finds that Skopostheorie gives great import to the Target Text and places the translator in the significant role of transferring the message between languages and cultures, he later theorises that Nida's (1964) concept of dynamic equivalence, also known as functional equivalence, could just as easily be used to analyse cultural adaptation. In this study, it could be said that in utilising both Reiss and

[5] Localisation is when a text is adapted to fit within the Target Text Reader's local context. i.e. expressions may be altered to what is used locally in order for them to make sense to the Target Reader.

Vermeer's (1984) Skopostheorie, along with Nord's more recent contributions, which fall under Functionalism, Nida's (1964) term is summed up concisely: Functionalism looks at the functionality of the texts based on learner performance, while Skopostheorie is used to determine translation equivalence.

2.6.2 Functionalism

Skopostheorie follows a Functionalist approach to translation. Nord (1992) explains this idea by stating that a translator should be aware of the *skopos* fixed by the initiator and should make an effort to keep to this *skopos* while still ensuring that the translated text is receivable in terms of meaning and naturally expressed linguistically to the Target Reader (p. 40). Functionalism, in other words, places the process of translation firmly in the hands of the translator; in fact, the end justifies the means (Nord, 1997).

In cases of academic comparative tests, the translation should be loyal (Nord, 1997), or rather it should consider both the needs of the reader, as well as the requirements given by the test developer. Van Dyk et al. (2011) explain that:

> The key concept of this theory [Functionalist translation approach], which originated from Vermeer's Skopos Theory (cf. Vermeer, 1989; 1998), *is that the purpose (skopos) of the translation plays a bigger role in determining the translation method than the nature of the Source Text*. This means that where a literal translation would not lead to a successful transfer of meaning from Source Text to Target Text, the translator can apply a translation strategy, such as adaptation, in order to fulfil the purpose of the target text. (p. 158) (Emphasis added)

Van Dyk et al. (2011) elucidate the relationship between translator and test developer:

> The translator shows his/her loyalty to the test developer as well as the students by applying appropriate translation strategies, for example, adapting parts where a literal translation would result in an inaccurate translation. The translator and the test developer are partners in the sense that they work together to create a successful translation (p. 159).

The translator is responsible for using the processes at his/her disposal to produce a translation that most effectively meets the needs of the initiator as well as the Target Reader. Yue (2013) speaks of maintaining "the flavour of Source Texts", while not "violating the

Target Language system" (p. 61). In the case of her study, the translator had to consider "how to bridge the western culture and Chinese culture conveyed in the text" (p.61). In the PIRLS context, this implies that the translator, rather than striving for traditional equivalence, should consider adapting the process of translation to the context of the target language culture.

Thus looking at the PIRLS 2006 Tshivenda instrument through the lens of Skopostheorie means that the purpose of the translation of this text (which was to assess learners reading comprehension) is brought to the fore and the quality of the translation is measured using purpose or *skopos* as the primary criterion. Applying the tenets of Functionalism in this context means that the relationships and loyalties between the translator and the initiator, and between the translator and the reader, in terms of the processes utilised, are examined. This examination is conducted by studying learner performance; the scores per item reveal not only what the general reading comprehension capabilities of the learners are, but also how the translated text and items conveyed the *skopos* determined by the initiator in tandem with how the translated text and items were understood by the readers (learners).

The main question which guided this study was: How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments? In terms of the conceptual framework, two specific sub-questions arise, the answers to which help to answer the main question. The first sub-question is:

How valid were the assessment instruments used to test the learners writing in Tshivenda?
Kelley's (1927) defines validity "as the extent to which a test measures what it purports to measure" (p. 14). Therefore, if the PIRLS 2006 Tshivenda instrument measures the comprehension skills of Grade 4 learners, which was the skopos for this assessment, it may be deemed valid. This theory therefore constitutes the lens through which translation equivalence is examined, since this speaks directly to the validity of the instrument.
The second sub-question which deals with learner performance is: How do the Tshivenda results compare to those of the other official South African languages? Functionalism was originally derived from Skopostheorie, as this specifically placed the emphasis of translation on the functionality of the translation, i.e. did it function as effectively as the original Source Text? Analysing and comparing the learners' results across all official South African languages allows us to establish the functionality of the PIRLS 2006 Tshivenda instrument.

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This study involves a secondary analysis of some of the PIRLS 2006 Tshivenda assessment data as well as the original instruments used to measure the assessment. The primary question is:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

Answering this question requires a secondary analysis of the original 2006 data and instruments. Secondary analysis can prove to be a rich and unique source of research in that it offers information through looking at the original study a second time from a different perspective using different analysis, and can also be compared with more recent data (Corti & Bishop, 2005).

In this chapter, the research design and methods used in the original PIRLS 2006 study are described (Section 3.2), followed by the design and methods used in this study (Section 3.3). The methodological norms for this study are provided in section 3.4 and lastly, the research ethics issues related to this study (3.5) are presented.

3.2 Design of PIRLS 2006

As an international large-scale assessment that measures trends, PIRLS 2006 involved 45 countries participating in measuring Grade 4 learners' reading literacy. In South Africa, the PIRLS study was carried out by the Centre for Evaluation and Assessment (CEA), University of Pretoria with permission from the Minister of Education and with funding from the National Research Fund, and the Royal Netherlands Embassy (Howie et al., 2008).

The reasons why learners read was investigated. Mullis et al (2006) explain that, "Broadly, these reasons [for reading] include reading for personal interest and pleasure, reading to participate in society, and reading to learn. For young readers, emphasis is placed on reading for interest or pleasure and reading to learn" (p. 17). The PIRLS tests Grade 4 learners as they are at a level where they are "reading to learn instead of learning to read" (Joncas, 2007, p.36).

3.2.1 PIRLS 2006 target population

The IEA uses the term "international desired target population" in defining the target population that should be sampled for PIRLS. Grade 4 learners were the international target group that PIRLS 2006 tested. The international target population was learners who were in their fourth year of schooling, transitioning from learning to read to reading to learn (Joncas, 2007). In order to guarantee that all participating learners were of an appropriate age for the level of testing to be conducted, the average age of the learners had to be 9.5 years or more. Only three exclusions were acceptable: learners with cognitive disabilities; those with functional disabilities, and, non-native language speakers (Joncas, 2007). A Probability Proportional to Size (PPS) sample was drawn for each country in the study's target population which was proportional to the size of the population and a random representative sample of the entire population. This means that schools (or learners) from smaller language groups or in rural areas had just as much opportunity to be included in this study as schools from majority languages, in urban areas (McGinn, 2004).

Each country had to use a uniform sampling method as specified by the PIRLS 2006 sample design to rule out different sampling designs as a reason for possible differences in mean achievement. The national defined population had to include 95% of the national defined population of learners while keeping exclusions to a minimum (Joncas, 2007) (see Section 3.2.4). To ensure adequate sampling sizes, since a population sample can be divided into many different subgroups, the learner sample had to be a minimum of 4000 learners in each country.

In South Africa, nearly 30 000 learners were assessed, with a sample of 16 073 Grade 4 learners in 429 schools and 14 657 Grade 5 learners in 397 schools (Joncas, 2007). Grade 5 was added as a national option with permission from the PIRLS International Study Centre (ISC) (Martin et al., 2007, pp.1-8). Of particular significance to this study is the fact that there were 20 Tshivenda schools at Grade 5 level, yielding a total of 784 Grade 5 Tshivenda learners who participated in PIRLS 2006 (Howie et al., 2008). For the four released passages, there were 382 Tshivenda learners who wrote in their mother tongue, and 263 Tshivenda learners who wrote in a secondary language. According to Howie, Venter and van Staden (2008), the allocated schools that participated in PIRLS 2006 were stratified by province and language, representing all nine provinces and eleven languages at Grade 4 and Grade 5 levels. As per the international requirements, all countries were required to administer the tests to

learners in each school in the language that they had been exposed to for at least four years. In the case of South Africa, this was the LoLT for the Foundation Phase. This allowed valid and reliable assessment of the test languages in the PIRLS 2006 testing internationally.

3.2.2 Assessment Instruments administered in PIRLS 2006

PIRLS requires a rotated design, what Joncas (2007) calls a "matrix sampling technique" (p.39): this is an effective method to assess the abilities of a large group of people as it distributes the texts (and their questions) equally. In total, ten passages with 126 items were selected from more than 100 passages that were submitted. Five literary and five information passages were rotated across thirteen booklets, which were then distributed to learners in a classroom (this was done using a computer randomised order). In this way all the texts could be used for testing while still obtaining a relevant distribution of learners' responses for each booklet (Mullis et al., 2006), since "each achievement block within the booklets was given to an equal number of students in each country" (Mullis et al., 2007, p. 65). Each learner received an instrument/test booklet containing one information and one literary passage. These had to be completed in two blocks of 40 minutes during the testing.

Underpinning the development of the assessment was the PIRLS 2006 framework which focused on the assessment of reading for literary experience and reading to acquire and use information. Learners were to "focus on and retrieve specific ideas, make inferences, interpret and integrate information and ideas; and examine and evaluate text features" (Mullis, Kennedy, Martin, & Sainsbury, 2006, p.12). Strong guidelines are also given for the basic assessment design, specifications for instrument development as well as describing contexts within the micro and macro environment (Mullis et al., 2006). The development of PIRLS was collaborative involving several groups, such as the PIRLS Reading Coordinator and the National Research Coordinators (NRCs), the PIRLS Item Development Task Force, and TIMSS and PIRLS International Study Centre (ISC) staff (Kennedy & Sainsbury, 2007, p. 9). Through an extensive process of review ultimately six new passages were identified, of which three literary and three informational texts were selected and combined with 4 trend passages, two informational and two literary. Texts were examined for relevance, appropriateness (of knowledge and culture) and themes explored. The passages were 800 words or more, with approximately twelve items per passage. In the four passages analysed in this study, the established pattern was to begin the test with questions that tested simpler comprehension processes, working up to questions dealing with the more complex

comprehension processes towards the end of the test. Table 3.1 gives the statistical information for the Reading Purpose and Reading Process of each text; the Reading Purpose refers to learning to acquire and use information versus literary experience for each item (this is deconstructed into Multiple-choice and Constructed-response items). The Reading Process refers to the comprehension skills analysed per item; this is also deconstructed into Multiple-choice items and Constructed-response items.

Table 3.1: Distribution of Items by Reading Purpose and Process Category

Items in the PIRLS 2006 Assessment

READING PURPOSE	Total Number of Items	Number of Multiple-choice Items	Number of Constructed-response Items	Total number score points
Literary experience	64	34	30	85
Acquire and use information	62	30	32	82
Total	126	64	62	167
READING PROCESS				
Focus on and Retrieve Explicitly Stated Information and Ideas	31	19	12	36
Make Straightforward Inferences	43	29	14	47
Interpret and Integrate Ideas and Information	34	6	28	61
Examine and Evaluate Content, Language and Textual Elements	18	10	8	23
Total	126	64	62	167

Source: Mullis et al., p.285

Martin, Mullis and Kennedy (2007) note that several countries chose to use the staff members of their PIRLS national centre to translate the instruments and questionnaires, some used external translators while others used a combination of the two. While most countries carried out the test in one language only, nine countries, including Canada, administered the test in two languages. Spain administered the PIRLS test in five languages and South Africa administered the test in eleven languages (Martin et al., 2007). It can thus be argued that the translation and verification process would be somewhat easier for countries with fewer languages, and this implies that internal staff could possibly more easily translate it and

verify it themselves. Malak and Trong (2007) explain that the experienced translator must have an outstanding knowledge of the Source Language and the Target Language; they must also have extensive experience in translating literary texts according to the cultural context and history of the country they live in. This implies that it would be helpful if the translators had experience with learners of the target population and if they had experience with test development and translation.

After translation, each participating country also had to hire a reviewer to ensure the quality of the translations as well as the readability for the target population. Only adaptations that were essential to learners' comprehension of texts were allowed, which are documented in the National Adaptation Forms (NAFs) as, for example, vocabulary, names of people and places, and expressions. The materials (Student, Teacher and Parent questionnaires, tracking forms, and the instruments) were then sent for international verification before the field test and main data collection (the verifier having the target language as their first language) so that the translations could be verified as accurate and the adaptations relevant (Malak & Trong, 2007). According to Howie et al. (2008), this procedure was followed for all South African instruments, including the Tshivenda instrument. In light of the above procedures utilised, it would seem that the development and quality assurance of the instruments attempted to mitigate as many risks as possible in PIRLS 2006.

3.2.3 Quality Assurance, Validity and Reliability issues related to PIRLS 2006

A field trial was carried out in 2005 across 38 schools, whereafter the main study was carried out for Grade 4 and 5 learners across all eleven official languages in 441 schools nationally. Howie et al. (2008) go on to explain that "The data were captured, cleaned and submitted to the International Data Processing Centre in Hamburg, Germany in 2006. The final international data were received by the South African researchers in mid-September 2007" (p. 2). Every country had to follow standardised procedures for PIRLS 2006. These standardised procedures were given in the survey operations manual and training manuals (Martin & Mullis, 2008). Additionally, an independent quality control programme was carried out by the TIMSS and PIRLS International Study Centre, and the IEA secretariat. Furthermore, the IEA appointed an International Quality Control Monitor for each country to evaluate the quality of the study and data in each country. As part of this, each PIRLS National Centre had to complete a survey activities questionnaire, to be sent to the TIMSS

and PIRLS International Study Centre, in which each country's experience and quality of the assessment instruments was explained in detail.

Despite each participating country having different curricula, the framework was developed around this problem by refining the processes and purposes of PIRLS, using surveys and literature reviews, as well as iterative reviews by experts, and by each country's PIRLS National Centre (Mullis & Martin, 2008). In addition, the framework is reviewed and revised with each five year PIRLS cycle. The IEA guaranteed content validity through ensuring that the data was internationally comparable, that inferences made about achievement between the different countries could be validated; through test and framework development; translation verification; in the sampling and data collection phases; through the creation of a database; by ensuring that the target populations were comparable; and by reporting on the achievement data (Mullis & Martin, 2008). Mullis and Martin (2008) explain that in order to compare the results of different countries, the guidelines were created that the learners who participated in PIRLS 2006 should be in their fourth year of primary schooling, as education is organised according to grade, not to age of the learners, and learning is also dependent on the amount (period) of instruction. The amount of exclusions was also kept to a minimum. The sampling was conducted through random sampling, with the guidelines that the school and classroom sampling should be accurate, that the participation rates should be 100%, and that all sampling procedures should be documented and in accordance with PIRLS standards (Mullis & Martin, 2008).

The test development was carried out through the assessment of content in the test; this meant that the content was assessed to ensure that all domains were accurately represented.As with the framework, the test content and structure is reviewed and revised with each five year cycle (Mullis & Martin, 2008). The PIRLS National Centre of each country was responsible for reviewing the content, as well as the field test that was conducted in March and April 2005 that provided necessary information about measurement properties of selected passages and items for PIRLS 2006 (Martin et al., 2007). Howie et al. (2008) state that "All the PIRLS 2006 instruments were developed and prepared in English by two international committees working with the International Study Center (ISC) at Boston College, USA and with contributions by National Research Coordinators (NRCs) of participating countries" (p. 13).

The translation verification entailed that each country had to send their translated tests to the IEA for verification, whereafter they would be sent back to the PIRLS National Centre of each country for correction and resolution of problems (see Section 3.2.2). Only adaptations that were essential to learners' comprehension of texts were allowed, which are documented in the National Adaptation Forms (NAFs) such as, for example, vocabulary, names of people and places, and expressions. The materials (learner, teacher and parent questionnaires, tracking forms, and the instruments) were then sent for international verification before the field test and main data collection (the verifier having the target language as their first language) so that the translations could be verified as accurate and the adaptations relevant (Malak & Trong, 2007). They were also sent to the International Study Centre for international verification of the layout and formatting. According to Howie et al. (2008), this procedure was followed for all South African instruments, including the Tshivenda instrument. The instruments were printed within each country. Each country also had to check their printed booklets before fieldwork and distributing them to learners participating in PIRLS 2006.

The scoring reliability was found to be acceptable at 90% (in most cases). Mullis et al. (2007) find that, "In order to demonstrate the quality of the PIRLS 2006 data, it was important to document the reliability of the scoring process within countries, over time, and across countries" (p. 68).

The reliability of scoring within each country required a random sample of a minimum of 200 learner responses to each item, which was then double-scored. This meant that constructed-response items in a quarter of the test booklets, or over a random sample of 100 booklets per type (excluding booklet 9) (randomly selected using the Windows Within-school Sampling Software), were scored by two independent scorers in each country and thus a reliability score was created for those items.

The PIRLS ISC also investigated every item for every country, looked at unreliable or poorly discriminating items, and examined item-by-country interactions (Mullis & Martin, 2008). The Cronbach's Alpha reliability coefficients were also provided for each block of texts in the thirteen booklets (Mullis et al., 2007); South Africa obtained a Cronbach's Alpha reliability coefficient of .92 for overall reading, which is higher than the international coefficient of .88 (Mullis et al., 2007). Futhermore, Mullis et al. (2007, p.311) also provide

the Average Percent Correct by PIRLS 2006 scale score for all countries, which is compared with the international average. The percent correct score for South Africa is presented in Table 3.2 below alongside the International Average:

Table 3.2: South African and International Average Percent Correct by PIRLS 2006 scale

Country	Overall	Purpose		Processes	
		Literary	Informational	Retrieval and Straightforward inferencing	Interpreting, Integrating and Evaluating
South Africa	21 (0.9)	20 (0.9)	21 (0.8)	28 (0.9)	14 (0.8)
International Average	54 (0.1)	55 (0.1)	52 (0.1)	64 (0.1)	44 (0.1)

Source: Mullis et al., 2007, p.311

All the scored assessment data were captured into a specific database which was further cleaned and analysed by the TIMSS and PIRLS ISC, and Statistics Canada. The statistical analysis of this database was ultimately reported on by the IEA in articles as well as in report documents such as the PIRLS Technical Report. Mullis and Martin (2008) explain that in order to make the data comparable, data entry software, variable codes, and comprehensive training are made available, and a developed database is sent to the PIRLS International Study Centre (ISC) for analysis and reporting. Each country also created its own sampling weights, which were then finalised and adjusted for non-response; these were also sent to the ISC for analysis and reporting. For the assessment data, the IEA conducted item analyses in order to examine the difficulty, discrimination and scoring reliability of the tests (Mullis & Martin, 2008), which contributed to the overall reliability of the instruments.

3.3 Design of this study

In this section, the research design (Section 3.3.1) for the study is described and discussed. Hoshmand (2003) finds that pragmatism provides a way to successfully mix research approaches that will not only attain the best results, but that will also answer the important questions posed in the study. Teddlie and Tashakkori (2006) claim that mixed methods research allows the researcher to ask confirmatory as well as exploratory questions, to not only verify existing theory, but also to create new theory (p.20). In terms of this study, a mixed methods approach allowed for a re-examination of the statistical data by means of Classical Test Theory, as well as an analysis of meaning and content in the translation

through content analysis. In this way, validation of the translation of the instrument could be discussed from several angles.

3.3.1 Research design: secondary analysis

This research was undertaken within a pragmatic research paradigm since the secondary analysis design used mixed methods, a design which is most consistently viewed pragmatically (Creswell, 2003). The main research question determined the choice of a secondary analysis. Because the data had been collected, new interpretations and conclusions could be formed through analysing the data from a different perspective (Dale, Arber & Procter, 1988). Analysis has the potential produce additional or different knowledge, interpretations and conclusions than that of the original study (Hakim, 1982). Heaton (1998, pp. 2-3) discusses three different types of secondary analysis: additional in-depth analysis, which focuses on an aspect that was not specifically addressed in the original study; additional sub-set analysis, which is "[…] a selective focus on a sub-set of the sample from the original study (or studies), sharing characteristics which warrant further analysis" (p. 3); and a new perspective/conceptual focus, which involves looking back at the research as a whole or at subsets of data and then analysing them from a different perspective and in doing this investigating new aspects or concepts which were not central to the original study" (p. 3). This research employs additional in-depth analysis and additional sub-set analysis as the type of secondary analysis since the focus is on an aspect that was perhaps not analysed in isolation in the original study. The Tshivenda language group is a sub-set of the original PIRLS study.

The secondary analysis of this study involved two sub-questions:

How do the Tshivenda results per item relate to those of the other official South African languages?

The PIRLS 2006 results for South Africa were analysed using Classical Test Theory (Crocker and Algina, 1986), a mathematical approach to identifying possible problems in test items and providing relevant methods and mathematical models to overcome these problems, or to minimise them. This was to identify the problem items in the four released passages. Once identified, these could be used to provide direction for the Content analysis.

The second research sub-question was:

How valid were the assessment instruments used to test the learners writing in Tshivenda?

In order to answer this question, a Content analysis of the four released passages and their items was conducted. The Tshivenda translated texts were sent to a back-translator to be translated back into English. A verifier then compared the English Source Text to the back-translated English text and made corrections in track changes. This answered the research question by highlighting problematic sections in the items, and thereby the passages as well. The use of Classical Test Theory also highlighted items that might have been problematic in terms of content. By using both a Content analysis and Classical Test Theory, it was possible to explore the problem areas in the passages and items, and to determine whether these areas were compromised by translation, which in turn answered the main research question:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

3.3.2 Nature of the data for this study

For this research, four of the texts and that were released by the PIRLS National Centre used in PIRLS 2006 were analysed. *Antarctica* and *Searching for food* were informational texts, whereas *An unbelievable night* and *Lump of clay* were literary texts. These two types of texts were chosen in line with the PIRLS missive to test if learners have moved from learning to read, to reading to learn (Martin et al., 2007). The details of these texts are presented in Table 3.3.

Table 3.3: Word and item count per passage

Text title	Word Count	Items
Antarctica	843	11
An unbelievable night	1254	13
Lump of clay	1248	13
Searching for food	1318	15

3.3.3 Analysis of the data

This is a secondary analysis study and the data that was analysed was provided by the National PIRLS Centre. The secondary analysis was done through the application of Classical Test Theory and a Content analysis (back-translation and verification), which are further discussed below.

The use of Classical Test Theory

The test data was analysed by applying Classical Test Theory to the data for all eleven languages in all four passages, using the computer programme, Statistical Package for Social Scientists (SPSS). The Classical Test Theory analysis was important for this study in that it highlighted any anomalies in the results; Classical Test Theory is quite simple at item level as it does not use complex theoretical models to evaluate an examinee's ability to succeed on a specific item (Fan, 1998) and involves the empirical analysis of learners' success rate on a particular item. These results were then examined and interpreted item-by-item by the researcher in tandem with the interpretation of the content analysis.

The Cronbach's Alpha was calculated per passage in order to present the reliability coefficients for those items and passages with a view to indicating problematic or unreliable items in each passage. This provided pointers to the researcher as to which items required specific attention in the interpretation of the content analysis. A Kruskal Wallis test was also done on the results per item per passage for all eleven language groups. There are various views as to the acceptable value of the observed correlation of the Cronbach's Alpha: Field (2009) states that a value between .7 and .8 is acceptable, whilst Tavakol and Dennick (2011) indicate that the value must not exceed .9, otherwise it indicates that the same questions are asked repeatedly in a different manner. However, George and Mallery (2003) are of the opinion that:

≥ .9 is excellent	≥ .8 is good	≥ .7 is acceptable
≥ .6 is questionable	≥ .5 is poor	≤ .5 is unacceptable

Table 3.5 below indicates the overall and per language reliability per passage. It is observed that the reliability across most of the languages is acceptable or good (George & Mallery, 2003). The overall reliability for Lump of clay, Antarctica and Unbelievable Night is acceptable. In Sepedi and Setswana and Xitsonga the reliability is questionable. Furthermore

the only language with a questionable reliability with respect to the passage Lump of clay is Xitsonga. The highest reliability recorded was observed for Unbelievable night in the Setswana language group. The lowest reliability recorded was for learners who wrote *Lump of clay* in Xitsonga. The Tshivenda results for the informational texts suggest that these passages were more reliable for the Tshivenda test, since the coefficient varied between acceptable and good. However, the Tshivenda reliability coefficient for the literary texts was weaker than most of the others.

Table 3.4: Passage Cronbach's Alpha by Language

Cronbach Alpha												
Passage	**Overall**	**Afrikaans**	**English**	**IsiNdebele**	**IsiXhosa**	**IsiZulu**	**Sepedi**	**SeSotho**	**Setswana**	**Siswati**	**Tshivenda**	**Xitsonga**
Lump of clay	.789	.751	.719	.842	.819	.835	.759	.747	.847	.746	*.712*	.668
Unbelievable night	.789	.771	.798	.761	.795	.719	.812	.771	.854	.794	*.734*	.766
Antarctica	.728	.708	.73	.794	.705	.746	.686	.767	*.645*	.745	*.769*	*.659*
Searching for Food	.808	.806	.771	.812	.856	.757	.814	.778	.79	.821	*.828*	.818

Reliability Legend:	Good	Acceptable	Questionable

The content analysis was informed by the framework. Skopostheorie (see Section 2.4) was used to determine whether the *skopos* (aim, purpose) of PIRLS 2006 was achieved. This *skopos* was to test literacy and comprehension levels of Grade 4 and 5 South African learners. After studying the PIRLS 2006 technical report (Martin et al., 2007), it became apparent that while the *skopos* was to test literacy, the IEA was determined to do so in a manner that was appropriate and fair to learners internationally. Functionalism was utilised to understand whether the translator successfully managed to balance loyalty to the author/initiator with loyalty to the readers i.e. the Grade 4 and 5 learners. This also refers to the influence this balance has on the decisions a translator makes when translating a text.

The use of content analysis

This study undertook a summative content analysis (Hsieh & Shannon, 2005) since one of the main issues focused on in this study was the appropriateness of the content and the usage of certain words to adapt the text to learners' contextual understanding, i.e. the functionality of

the translation. Content analysis "starts with identifying […] certain words or content in text with the purpose of understanding the contextual use of the words or content […]. This quantification is an attempt not to infer meaning but, rather, to explore usage" (ibid., p. 1283). In this study, the content analysis was used to assist in determining the method of translation that was used for the Tshivenda translation as well as the contextual, linguistic and knowledge appropriateness of the content of the Tshivenda instrument. Cohen et al. (2005) describe the benefit of content analysis as more than simply throwing light on the text, it also elucidates "the source of the communication, its author, and on its intended recipients, those to whom the message is directed" (p. 165).

The qualitative aspect of the analysis of the Tshivenda instruments involved scrutiny of a back-translation of the Tshivenda instruments into English, which was then verified against the original English instrument. The translator was contacted through a language consultancy which acted as the "middle man". The verification was then done by a language specialist who worked at the language consultancy. Four passages were analysed as explained in Section 3.3. These were then sent for back-translation, along with all items for each of the four texts. In order to conduct a secondary analysis, specific methods were used. This is in line with Crocker and Algina (1986), who state that in order to validate the content of a test, the items must be sent to external experts who can then determine whether the test adequately tested the domain it purported to test. They mention criteria such as "appropriateness or relevance to test specifications", as well as the "technical item-construction flaws", which were reviewed through Classical Test Theory. Their other criteria, "grammar"; "offensiveness or appearance of 'bias'", and the "level of readability", were considered in the content analysis. In this case, the evaluation criteria used by the two language experts were vocabulary, sentence and word order, and equivalence.

As stated by Hsieh and Shannon (2005), "Research using […] content analysis focuses on the characteristics of language as communication with attention to the content or contextual meaning of the text" (p. 1278). This is confirmed in the literature (Budd, Thorp, & Donohew, 1967; Lindkvist, 1981; McTavish & Pirro, 1990; Tesch, 1990).

The adaptation forms and all other reports relating to the Tshivenda instrument were examined in tandem with the back-translations to see if the adaptations made were valid, or whether more could have been done to increase the comprehensibility of the instrument.

3.4 Methodological norms and procedures of this study

In this section, the concepts of validity and reliability of the quantitative data are discussed. The credibility and trustworthiness of the qualitative data is then expounded on, followed by the research ethics of this study.

3.4.1 Validity

According to Onwuegbuzie and Johnson (2006), validity in mixed research should be called legitimation since it straddles the strengths and weaknesses of quantitative and qualitative research. Thorndike, Cunningham, Thorndike and Hagen (1991) claim that there is no test instrument that offers "validity in any absolute sense. Rather, the test scores are valid for some uses and not valid for others" (p. 123). In this study, Classical Text Theory (from a quantitative perspective) and content analysis (from a qualitative perspective) have been integrated to provide validity through complementarity. Complementarity implies "elaboration, illustration, enhancement, and clarification of the findings from one method with the results from the other method" (Onwuegbuzie & Leech., p. 54). The findings from the Classical Text Theory analysis indicated specific items that were problematic and could be looked at in the content analysis, while the findings of the content analysis provided the research with clarification regarding possible reasons for the weak performance of certain items in the Classical Test Theory. According to Cresswell and Miller (2000), the validation of qualitative research must focus on the conclusions and inferences that are drawn from interpretation of the data. This is supported by Cronbach (1971), who states that validation implies collecting evidence to support the inferences that are drawn from the scores. In the case of this study, the Tshivenda learners' performance was analysed across four different passages, and was compared with the performance of learners of the other national languages in South Africa. The statistical evidence gained in this process was evaluated in order to support the inferences of the content analysis.

Reliability, according to Cohen et al. (2011) involves dependability, consistency and replicability, the latter referring to time, instruments and participants. Cohen et al. claim that if the study were to be replicated, and the results were to be the same, that would demonstrate reliability. With regard to the quantitative aspect of this study, all the statistics were acquired from the PIRLS National Centre and were processed through the SPSS computer programme; the data were verified internationally, and the SPSS programme is an internationally recognised statistical package. A Mann Whitney-U test, which measures whether two groups

are similar, and a Kruskal-Wallis test, which measures whether many groups are similar, were conducted on the data to determine if significant differences existed between language groups, and a Cronbach's Alpha and Item Difficulty were calculated per passage. Since SPSS was unable to differentiate between a numbered category and the actual scores, it was necessary to put all the scores on the same scale for the Item Difficulty calculation. In order to do so, in all multiple-choice items only the correct answer was given a score of 1, while all other options were given a score of 0. For constructed-response items that counted 2 marks, learners who scored 1 were given a score of ½, learners who scored 2 were given a score of 1. For constructed-response items that counted 3 marks, learners who scored 1 were given a score of ⅓, learners who scored 2 were given a score of ⅔, and learners who scored 3 were given a score of 1. Both Kruskal-Wallis and Mann Whitney-U are tests of significance that assisted the researcher in determining whether statistical differences between groups exist (Field, 2009). These statistical measures are part of the branch of non-parametric statistics as the data did not meet the requirements for parametric statistical tests (Corder & Foreman, 2009).

The results of these tests and calculations inform the reliability of the quantitative aspect of this study. It is highly likely that another researcher, using similar statistical software, and analysing the same data would come to the same conclusions.

Morrow (2005) explains that credibility is "enhanced by a thorough description of source data and a fit between the data and the emerging analysis" (p. 252). In this study, the source data has been described in detail through the statistical analysis that was conducted and this has been transparently linked to the findings of the content analysis. Interpretations that were made in this regard are thus confirmable. Morrow (2005) speaks of confirmability as a significant aspect of credibility, adding that it "is based on the acknowledgement that research is never objective […] It is based on the perspective that the integrity of findings lies in the data and that the researcher must adequately tie together the data, analytic processes and findings in such a way that the reader is able to confirm the adequacy of the findings" (p. 252).

In their discussion of trustworthiness regarding text analysis, Graneheim and Lundman (2004) state that "Our presumption is that a text always involves multiple meanings and there is always some degree of interpretation when approaching a text. This is an essential issue

when discussing trustworthiness of findings in qualitative content analysis" (p. 106). The trustworthiness of this study in terms of the content analysis was ensured through the use of a verifier who compared the back-translation with the original text. In this way, three separate parties examined the back-translations: the researcher, the back-translator, and the verifier, making it highly probable that if this study were to be replicated, the same results would be achieved.

3.5 Research ethics related to this study

Ethical clearance to conduct this study was given by the Ethics Committee of the Education Faculty of the University of Pretoria. The PIRLS National Centre for South Africa gave permission for four released passages to be analysed in this study. The released passage database that was provided by the PIRLS National Centre contained no information regarding personal details of participants or schools, therefore in this study, their right to anonymity was maintained. The personal details of the verifier and back-translator in this study are withheld for ethical reasons.

The manuals, instruments, guideline documents, all questionnaires and all other data related to PIRLS 2006 in South Africa are currently locked away in storage at the PIRLS National Centre (which is the CEA) and for this study was only accessed by the researcher and the staff of the PIRLS National Centre so as to ensure that no ethical principles were breached. All data utilised in this study are entrusted to the University of Pretoria for safe-keeping.

Orb, Eisenhauer and Wynaden (2000) state that "Ethical responsibility in qualitative research is an ongoing process" (p. 96). This implies that, with regard to this study, the researcher undertakes to safeguard the confidential information entrusted to her by the PIRLS National Centre, and the back-translator and verifier.

In the next Chapter, the Grade 5 Learners' results for PIRLS 2006 are presented per item as well as an analysis of these results. The performance of Tshivenda learners who wrote in their home language is compared to the performance of the Tshivenda learners who wrote the PIRLS 2006 test in a secondary language and an analysis of this is given at the end of each passage analysis.

4. VALIDITY OF THE TSHIVENDA LITERARY TEXTS FROM PIRLS 2006

4.1 Introduction

In this chapter and in Chapter 5, the results of the secondary analysis of the PIRLS 2006 data are presented in anticipation of answering the sub-questions posed by this study, which are:

- **How valid were the assessment instruments used to test the learners writing in Tshivenda?**
- **How do the Tshivenda results per item relate to those of the other official South African languages?**

The main research question, namely, **'**How valid is the performance of the Tshivenda learners and the translated test instruments that they wrote in PIRLS 2006?'is answered in Chapter 6 through the integration of the answers to the two sub-questions.

In this chapter, the findings linked to the secondary analysis of the two released literary texts (*Lump of clay* and *An unbelievable night*) are presented. In Chapter 5, the findings for the two informational passages (*Antarctica* and *Searching for food*) are presented. The findings are presented across these two chapters due to the size of the analysis and for ease of analytical presentation of the two different text genres, representing reading for pleasure and reading for knowledge acquisition respectively. Both genres were chosen for study because of the age of the learners involved: Mullis et al. (2006) explain that "For young readers, emphasis is placed on reading for interest or pleasure and reading to learn" (p. 17).

In both Chapters 4 and 5, the item analysis is presented and considered for the PIRLS 2006 released passages. The original text, translated text and back-translated texts, as well as results of tests such as the Kruskall Wallis test, as referred to in these chapters, are presented in the appendices. When the Kruskall Wallis test was conducted at passage level, a significant difference in performance across language groups was found to exist (see Appendix F, Table 13.5.1). Each item is described, as is the related text. In this way, each text and its items are analysed to identify any possible issues involved in each of the four released[6] PIRLS 2006 texts regarding the Tshivenda achievement anomaly. A back-translator as well as a verifier

[6] The National Research Centre gave permission for this study to use the four passages that were released to the public after 2006, namely, Lump of Clay; Antarctica; An unbelievable night; and Searching for food. The other passages are not used for test security purposes as they are usedi n further cycles of PIRLS.

were appointed to evaluate the quality of the Tshivenda translation as well as the translation differences and similarities between the original and back-translation, and which method of translation had been used in the original translation. The professional opinions of the back-translator and verifier are regarded as a valuable part of determining the content validity (see Chapter 3) and are presented at the beginning of each passage's item analysis. This is done to facilitate the reading of the exact composition of each text while reading the back-translator and verifier's critique of the content. The item content analysis (in terms of the translation) is presented via the integration of the content and statistical analyses. Included in the per item analysis are comments on the comprehension process, or the content analysis or both, depending on the relevance to each question. For example, where there was nothing to comment on for content analysis, the comprehension process is then discussed, or vice versa. In some cases, both the comprehension process and the content analysis are discussed.

Firstly, prior to the presentation of the findings, a synopsis of the analysis strategies for both the literary and informational passages, which are fully discussed in Chapter 3, section 3.3, is given as a precursor to the data presentations in Chapters 4 and 5 (section 4.2). Thereafter, the discussion turns to the consideration of the findings for the secondary analysis of the literary texts specifically. In section 4.2, the secondary analysis of *Lump of clay* is considered and, in section 4.3, the findings for *An unbelievable night* are presented.

4.2 Findings of the analysis for *Lump of clay*

This section gives an overview of the text and test composition of the passage called *Lump of clay*. This is followed by the presentation of the back-translator and verifier's professional opinion of the quality of the translation of the passage into Tshivenda for PIRLS 2006 (Section 4.2.2). In sub-section 4.2.3 a per-item analysis is given and in sub-section 4.2.4 conclusions for *Lump of clay* are presented in the Source Text, Target Text (the original Tshivenda translation), and the back-translation containing the verifier's track changes. These three texts can be found in Appendix A.

4.2.1 Overview of text and test item composition

Table 4.1 below, which addresses text and test item composition, presents the comprehension processes and types of items for the *Lump of clay* text (n = 2776). Due to the fact that a rotational design was employed for the thirteen test booklets, learners did not necessarily receive the same passages. As argued previously in Chapter 2 (Section 2.4.2) word count and

sentence length are factors that may affect learners during tests, especially in national tests where the results of learners of different languages are compared to one another (Van Diepen, et al., 2007). Therefore, the word count for both the Source Text and the Tshivenda translated text is shown below. The number of items which are targeted by a particular comprehension process is presented alongside the percentage that this number represents of the total number of items. The number of multiple-choice items and constructed-response items is also given, for the *Lump of clay* passage.

Table 4.1: Comprehension process and test item composition breakdown for *Lump of clay*

Comprehension processes breakdown	No. of items	**Item breakdown**	No. of items	Mark allocation
Focus on and retrieve explicitly stated information	2	Multiple-choice	6	6
Make straightforward inferences	9	Constructed-response	7	11
Interpret and integrate ideas and information	1	Total	13	17
Examine and evaluate content, language and textual elements	1	**Word count**		
		English 1248		Tshivenda 1563
		Overall Cronbach's Alpha:		Tshivenda Cronbach's Alpha:
Total	13	0.789		0.712

Most of the items (11 out of 13) for this text accessed a higher order of comprehension. The majority of the questions (7 out of 13) required a constructed response, and these questions were weighted more heavily in terms of the mark allocation. This shows that the item design focused more on the ability to write a correct response. The Tshivenda reliability coefficient is lower than the overall coefficient. The word count for the Tshivenda learners for this text was 315 words (approximately a page) more than that of the English text, which means that it would have taken the Tshivenda learners longer to read the passage as compared to their English counterparts. The overall observed Cronbach's Alpha (George & Mallery, 2003) indicates that the internal consistency (Gliem & Gliem, 2003) of the passage is acceptable. The reliability analysis of the Tshivenda learners' items for this passage shows that the internal consistency was also acceptable (Table 4.2). Furthermore, it was observed that the

individual item Cronbach results indicate that the removal of item 7 (see Table 4.12) and item 13 (see Table 4.18) would improve the internal consistency of the passage as a whole; this implies that these items could be potentially problematic. This is indicated in the table below.

Table 4.2: Lump of clay reliability analysis for Tshivenda language test items

Reliability analysis: Tshivenda			
	Overall Cronbach's Alpha	.712	
Item-Total Statistics			
		Corrected Item-Total Correlation	**Cronbach's Alpha if Item Deleted**
Item 1	CLAY/ORDER OF EVENTS IN STORY(1)	.395	.692
Item 2	CLAY/CLAY WAS IN BIN FOR SO LONG(1)	.360	.691
Item 3	CLAY/CLAYS WISH(1)	.560	.662
Item 4	REC_CLAY/CLAY WAS TAKEN OUT OF BIN(A)	.265	.704
Item 5	REC_CLAY/BOYS CARELESS ACTION(C)	.210	.708
Item 6	CLAY/BOY LEFT LUMP OF CLAY IN DANGER(1)	.545	.668
Item 7	REC_CLAY/CLAYS FEELINGS AFTER BOY LEFT(B)	*.124*	*.714*
Item 8	CLAY/WONDERFUL THING THAT HAPPENED(2)	.419	.682
Item 9	REC_CLAY/GIRL KNEW WHAT SHE WANTED 2 MAKE(D)	.211	.708
Item 10	CLAY/CLAYS DIFFERENT FEELINGS(3)	.529	.663
Item 11	CLAY/LITTLE GIRL=IMPORTANT PERSON(2)	.383	.690
Item 12	REC_CLAY/AUTHOR WRITES ABOUT CLAY=PERSON(B)	.178	.711
Item 13	REC_CLAY/MAIN MESSAGE OF STORY(C)	*.028*	*.720*

Table 4.3: Mean Percentage for *Lump of clay* by language group

	Afrikaans n= 323	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Passage mean	34%	31%	15%	17%	17%	15%	18%	17%	17%	17%	17%
S.E of the Mean	0.014	0.012	0.011	0.010	0.008	0.011	0.012	0.012	0.012	0.012	0.010

S.E = Standard Error

The overall passage means per language group as presented in Table 4.3 indicate that the African languages have performed similarly with a variation of 15% to 18%, while Afrikaans (34%) and English (31%) are the two highest achieving languages. The average achievement of African languages is approximately half of the observed achievement level of the highest scoring language, namely, Afrikaans.

4.2.2 Professional opinion of the Tshivenda translation of *Lump of clay*

Table 4.4 below contains the professional opinion of the back-translator and the verifier of the *Lump of clay* text with regard to the question: What are the translation differences and similarities between the original and back-translation? That is, what are the differences between the English Source Text and the Tshivenda Translated Text?

Table 4.4: Differences found between the English Source Text and the Tshivenda Target Text for *Lump of clay*

Back-translator's response	Verifier's response
1. They are not very similar because the back-translation was influenced by the words used by the translation. [Sometimes the translator used the terminology inconsistently and this might have been influenced by the translator.] 2. The meaning was clear and the reader of the back-translation and the original would get the same information. 3. Mistakes made were minimal. E.g. at the end of the document the person being referred to was the Clay (cup) but the translator wrote it as if it was the little girl, meaning that the translator did not understand that the cup was personified. 4. The general meaning does not differ. The two texts could be understood the same way by the readers of the two texts.	Similarities The back-translation of this text has a very high level of correspondence. Almost all of the concepts and terminology have been back translated very closely to the original English text and by just reading the back-translation, one could make clear sense of meaning and message of the text. Differences The differences between the back-translation and the original English text mainly occurred where 'pottery-specific' jargon was used. This could be an indication that the initial Venda translator was not familiar with this concept and/or process. I also picked up slight differences in instances where abstract nouns and adjectives were used in the text, e.g. shocked vs scared, interesting vs fun, and excited vs happy.

Despite the self-contradictory statement given in Point 1 of the back-translator's answer, the back-translator makes it clear that the two texts were extremely similar in his experienced opinion and could be easily understood by learners. The verifier was in agreement with this finding, although both the back-translator and the verifier commented on minor errors that revealed that the translator of the Tshivenda text may not fully have understood the pottery process, and was sometimes confused by the personification of the lump of clay when vocabulary and knowledge specific to the field of pottery were used. Overall, this suggests that there were no serious translation issues that could have interfered with learners' comprehension of the story. The English Source Text, the Tshivenda translation and the back-translation for *Lump of clay* can be found in Appendix A.

Textual examples of translation inaccuracies: This excerpt from the story, "The sky which was passing by felt pity for the little lump of clay" (back-translation) is clearly different from the Source Text: "A passing cloud took pity on the little lump of clay", yet this translation inaccuracy does not compromise understanding of the text meaning. Another such example is found in Item 12: "how does it sound to do something" (back-translation), as opposed to "how it feels to make something" in the Source Text. For this item, 26% of the Tshivenda group marked the correct answer (see Table 4.17). The following two examples are indicative of a translation inaccuracy which may well have affected comprehension. Multiple choice item 7 in the back-translation: "How did the little lump clay feel after the boy left the workshop? [Option B] Shocked" versus the Source Text: "How did the lump of clay feel right after the boy left the pottery workshop? [Option B] Scared". For this item, 30% of the Tshivenda group marked the correct answer, which was the third lowest percentage of correct answers across the eleven languages (see Table 4.12). Multiple Choice item 9 in the back-translation asks, "What shows that the little girl knew what she is going to say on the book?" as opposed to: "Which words in the story show that the little girl knew what she wanted to make?" in the Source Text. For this item, 23% of the Tshivenda group marked the correct answer (see Table 4.14), which was, in fact, the next closest percentage to the highest percentage of correct responses yielded by the English group (25%).

The professional opinions of the back-translator and verifier of the *Lump of clay* text with regard to the second question (In your professional opinion, what method of translation has been used in the original translation?) are presented in Table 4.5.

Table 4.5: Verifier and translator feedback on the methods used for translation for *Lump of clay*

Back-translator's response	Verifier's response
• Word-for-word (direct) • Semantic (concentrated on the overall meaning, but form of original is adhered to)	It is my opinion that the initial Venda translator used two main translation methods: word-for-word or direct translation where 'foreign' concepts were involved and communicative translation where he/she was familiar with the concepts and had more confidence in and understanding of the terminology. It must be noted, however, that my opinion is based on the representation of the Venda in the back-translation only and some allowance must be made for the methods applied by the back translator in his back-translation. Every time a text is worked on by a language practitioner – translation, editing, proofreading, back-translation, verification – each language practitioner in the process leaves a 'fingerprint' of his own style and preferences on the text.

The back-translator indicated that Word-for-word, as well as Semantic translation methods were employed by the Tshivenda translator but, as explained by the verifier, each translator leaves their own unique style fingerprint which makes it difficult for the verifier to judge such a question based only on the back-translation. It would appear that conventional and appropriate translation methods were applied by the Tshivenda translator which would ensure a good quality text, despite errors and lapses in the translator's understanding of the original text, as well problems such as vocabulary issues and an inability to understand the abstract nature of the personification of inanimate objects.

4.2.3 Per- item analysis for Lump of clay

In this sub-section, an overview of what was asked and how it was presented, along with the analysis of each of the items (1-13) from the *Lump of clay* text is discussed. For each item, the Source Text, Target Text (Tshivenda) and back-translation are given, along with the mark allocation and learner mean; thereafter the results for each item are given.

Table 4.6 below presents the Source Text, Target Text, back-translation and response frequencies for Item 1 for *Lump of clay*. This item required learners to focus on and retrieve explicitly stated information, and this was a constructed-response item with a mark allocation of 1. The learner mean, a category in the learner response frequency tables, excludes the omitted category.

In Table 4.6, of the learners who wrote the test in Tshivenda, and who attempted this question, only 7% answered correctly. Learners who were tested in IsiZulu and Sepedi

achieved the lowest averages of correct responses: 3% and 1% respectively. For Item 1, the level of difficulty of the comprehension process accessed in this question was relatively high[7], judging from the percentage of correct responses. Learners who were tested in Sesotho had the highest percentage of learners who answered incorrectly (65%), whilst the language group that achieved the highest percentage of correct answers was Afrikaans (31%). The Sepedi language group (57%) had the highest percentage of omissions for this question.

Content analysis: The back-translation from Tshivenda to English indicates that there were no major translation errors, only minor ones. In the instruction concerning vocabulary, for example, the word "Indicate" was used instead of "Number", which is a simpler word and therefore possibly more appropriate for young learners.

[7] For purposes of making a judgement regarding item difficulty, the following criteria were used: 0-30% of learners with the item correct indicates a difficult item, 31% - 70% indicates a moderate question; and 71% - 100% indicates an easy question (Heaton, 1979).

Table 4.6: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 1, *Lump of clay*

Item 1	Source Text	Target Text	Back-translation
	Number the sentences below in the order the events happened in the story. Number 1 has been done for you. The rain made the lump of clay moist and soft. A boy tried to make the lump of clay into a bowl. A girl made the lump of clay into a cup. The lump of clay dried out. The lump of clay was in the bin.	Nomborani mafhungo a re afho fhasi nga u tevhekane u ya nga he zwiwo zwa bvelela ngaho kha tshiṱori. Nomboro ya 1 no no ḓi itelwa yone. Mvula yo ita uri kugwada kwa vumba ku nukale na u puṱedzea zwavhuḓi. Mutukana o lingedza u vhumba kudongo nga kuputo kwa vumba. Musidzana o vhumba khaphu nga kugwada kwa vumba. Kugwada kwa vumba kwo mbo ḓi oma. Kugwada kwa vumba kwo vha ku nga ngomu binini.	[8]~~Indicate~~ Number the information below as listed by the way the scenes happened in the story. Number 1 was done for you. The rain makes little lump of clay to be wet and soft. The boy tries to potter a clay pot bowl from the little lump of clay soil. The girl created a cup with a little lump of clay. The little lump of clay piece of clay becomes dry. The little lump of clay was inside the bin.

Language	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Learner Mean[9] (% correct of all *attempted* responses)[10]	39% (0.03)	37% (0.025)	7% (0.024)	8% (0.022)	4% (0.013)	3% (0.016)	15% (0.029)	9% (0.027)	8% (0.023)	7% (0.027)	11% (0.033)
Incorrect response	49%	45%	62%	48%	63%	42%	66%	46%	58%	53%	48%
Correct response	31%	27%	4%	4%	3%	1%	11%	4%	5%	4%	6%
Omitted	21%	29%	34%	48%	34%	57%	23%	49%	36%	43%	46%

Due to rounding off to the nearest integer, the presented statistics may not add up to exactly 100%.

[8] This is where the verifier has made changes to the back-translation so that the content will match that of the original Source Text.
[9] The calculation for learner mean is calculated as per Crocker and Algina (1986)
[10] This refers to the percentage of correct responses for items that were at least attempted. This excludes omitted items. The standard error is presented below each learner mean percentage.

Table 4.7 contains the Source Text, Target Text, back-translation and response frequencies for Item 2 of *Lump of clay*. This constructed-response item targeted inferential comprehension and was allocated 1 mark.

In Item 2, only 1% of learners who wrote the test in Tshivenda and who attempted the question provided the correct answer. Once again, the Afrikaans and English groups yielded the largest average of correct responses.

The Xitsonga, language group had the largest percentage of learners who answered incorrectly (91%), which is an extremely high percentage. The Afrikaans language group attained the largest percentage of learners who answered correctly (19%), and the language group with the largest percentage for not attempting this question was the Setswana group (29%), which could be significant when considering at the difficulty of the question.

Comprehension process: Learners were unable to make straightforward inferences from the text regarding this item and appeared to have difficulty answering the item. Between 7% and 29% of the learners writing in an African language omitted this question.

Table 4.7: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 2, *Lump of clay*

Item 2	**Source Text** Why was the lump of clay in the bin for such a long time?			**Target Text** Ndi nga mini kugwada kwa vumba kwo vha ku binini tshifhinga tshilapfu ngauralo?					**Back-translation** Why was the little lump of clay inside the bin for such a long time?		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)[11]	20% (0.023)	16% (0.017)	4% (0.012)	3% (0.012)	3% (0.010)	2% (0.010)	4% (0.015)	3% (0.015)	5% (0.016)	2% (0.011)	2% (0.011)
Incorrect response	73%	76%	76%	79%	83%	78%	87%	69%	76%	86%	91%
Correct response	19%	14%	3%	3%	2%	2%	4%	2%	4%	1%	2%
Omitted	8%	10%	21%	19%	15%	21%	10%	29%	20%	12%	7%

Due to rounding off, the percentages may not add up to 100% in the table.

[11] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.8 shows the Source Text, Target Text, back-translation and response frequencies of Item 3 of *Lump of clay*. This item required the learners to make straightforward inferences and was a constructed-response item, with a mark allocation of 1.

For this item, the Tshivenda language group learner mean was 6%; this is significantly less than the highest learner mean (40%), which was obtained by learners who wrote the test in Afrikaans. However, the Tshivenda learner mean was not the lowest; the learner mean for Sepedi (2%) and Setswana (2%) were lower. For item 3, Xitsonga (84%) had the highest percentage of incorrect answers, followed by the Sepedi language group (77%). Over a third of Setswana learners omitted this question and this was the highest percentage of omissions across the language groups. This question required learners to make straightforward inferences, which, except for 28% and 34% of English and Afrikaans learners respectively, was highly problematic across all the African language groups as is evidenced by the range of 1% to 8% of learners who gave correct responses in the African languages.

Table 4.8: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 3, *Lump of clay*

Item 3	**Source Text** At the beginning of the story, what did the lump of clay wish for?		**Target Text** Naa kugwada kwa vumba kwo tama mini mathomoni a tshiṱori?					**Back-translation** What the little lump of clay ~~of clay want~~**wish for**[12]at the beginning of the story?		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)[13]	40% (0.03)	32% (0.021)	11% (0.03)	5% (0.05)	9% (0.018)	2% (0.010)	10% (0.023)	2% (0.013)	7% (0.021)	6% (0.021)	8% (0.022)
Incorrect response	52%	61%	66%	71%	68%	72%	77%	62%	66%	78%	84%
Correct response	34%	28%	8%	3%	7%	1%	8%	1%	5%	5%	7%
Omitted	13%	11%	26%	26%	25%	26%	15%	37%	29%	17%	9%

Due to rounding off, the percentages may not add up to 100% in the table.

[12] The track changes as seen here are where the verifier has corrected the back-translator's work by looking at how the original English text states the question.
[13] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.9 presents the Source Text, Target Text, back-translation and response frequencies for Item 4 for *Lump of clay* and the comprehension process it targeted, which was to make straightforward inferences. This was a multiple-choice item with a mark allocation of 1.

The Tshivenda group achieved the largest learner mean (31%) of all the African languages for this item. For item 4, the learners who wrote in Afrikaans had the highest percentage of learners who selected the correct answer (37%). The Setswana language group received the smallest percentage for the correct answer category (13%). The Sepedi language group (25%) recorded the largest percentage of omitted responses. Option C was the distractor most frequently chosen by African language learners.

Comprehension process: This question asked learners to make straightforward inferences. However, the answer to this question is obscure as it indicates that the lump of clay was the last piece left in the bin, but not that this is the specific reason why he was chosen (see Appendix A, *Lump of clay* ST), which may mean that it required a more complex thinking process than was generally used.

Table 4.9: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 4, *Lump of clay*

Item 4	**Source Text** Why was the clay eventually taken out of the bin? **A All the other lumps of clay were used.**[14] B It was on top of the other lumps of clay. C The boy chose that lump because he especially liked it. D The teacher told the boy to use that lump	**Target Text** Ndi nga mini mafhedziseloni vumba ḽo bviswa binini? **A Zwipiḓa zwoṱhe zwa vumba zwo mbo ḓi shumiswa.** B Tsho vha tshi nga nṱha ha zwiṅwe zwipiḓa zwa vumba. C Mutukana o nanga vumba ngauri o pfa a tshi khou funesa ḽone. D Mudededzi o vhudza mutukana uri a ḽi shumise.	**Back-translation** Why was little lump clay l taken out of the bin at the end? **A** [15]**All ~~parts of the little~~other lumps of clay were used.** B It was on top of other ~~parts of little~~ lumps of clay. C The little boy chose that lump of clay ~~soil~~ because he liked it. D The teacher told the little boy to use ~~it~~ that lump.

Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)	40% (0.29)	37% (0.022)	28% (0.039)	27% (0.030)	20% (0.024)	20% (0.030)	27% (0.035)	15% (0.027)	21% (0.030)	31% (0.040)	21% (0.035)
A*	37%	33%	24%	21%	17%	15%	22%	13%	17%	28%	17%
B	12%	18%	17%	19%	21%	16%	18%	16%	21%	17%	18%
C	28%	24%	29%	31%	31%	27%	28%	41%	32%	28%	31%
D	14%	16%	15%	7%	15%	17%	15%	17%	12%	15%	15%
Omitted	9%	9%	16%	19%	18%	25%	17%	14%	17%	11%	20%

Due to rounding off, the percentages in this table may not add up to 100%.

[14] The correct answer is indicated with an asterisk
[15] This is where the verifier made changes to the back-translation so that it would match the content of the original Source Text

Table 4.10 summarises the Source Text, back-translation and response frequencies for Item 5 of *Lump of clay* and the comprehension process it targeted. This multiple-choice item required learners to make straightforward inferences. It had a mark allocation of 1.

The range of observed learner means in Table 4.10 is very small for this item. Interestingly, the Afrikaans language group's learner mean (48%) was only one percent higher than that of Tshivenda (47%). The English language group achieved the highest learner mean for this item (54%), which is in contrast to the pattern observed thus far in items 1 to 4 of Lump of clay. The largest percentage of learners who answered incorrectly wrote in Setswana (58%) and the language group with the largest percentage for omitting this question was Sepedi (22%).

Content analysis: The back-translation of this text reveals that there were minor differences, an example of which can be seen in the textual examples (see Section 4.2.2) of translation inaccuracies that could have been found in the original Tshivenda translation, although none of these differences were severe enough to affect the answering of this question. This item is ranked highest in the Tshivenda correct response category for Lump of clay, with 41% of the learners choosing the correct answer.

Table 4.10: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 5, *Lump of clay*

Item 5	Source Text	Target Text	Back-translation
	What did the boy do that was careless? A He left the clay on the potter's wheel. B He was spinning the wheel as fast as he could. **C He put the clay near the window.** D He pushed and pounded the clay.	Naa ndi zwifhio zwe mutukana a ita zwa u sa londa? A O sia vumba kha vhili ḽa muvhumbi. B O vha a tshi khou monisa vhili nga u ṱavhanyesa hu konadzeaho. **C O vhea vumba tsini na fasiṱere.** D O vhumbedzela na u pwaṱukanya vumba.	What did the boy which shows carelessness? A He left the [16]clay ~~soil~~ on the potter's wheel. B He was ~~mounding~~ spinning with the wheel as fast as he could. **C He put little lump of clay next to the window.** D He crushes ~~clay and moulds it~~ and hit the clay.

Language	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Learner Mean (% correct of all *attempted* responses)	48% (0.029)	54% (0.023)	40% (0.043)	53% (0.034)	49% (0.031)	44% (0.037)	45% (0.039)	34% (0.036)	41% (0.037)	47% (0.044)	47% (0.043)
A	10%	13%	21%	19%	16%	14%	22%	25%	15%	15%	16%
B	21%	18%	17%	15%	15%	18%	14%	16%	18%	18%	9%
C*[17]	44%	49%	34%	43%	41%	34%	40%	30%	34%	41%	40%
D	17%	11%	14%	5%	12%	12%	13%	17%	17%	13%	20%
Omitted	8%	8%	14%	17%	17%	22%	11%	14%	16%	13%	16%

Due to rounding off, the percentages may not add up to 100% in the table.

[16] This is where the verifier made changes to the back-translation so that its content would match that of the original Source Text
[17] Correct answer marked with an asterisk

Table 4.11 below depicts the Source Text, Target Text, back-translation and response frequencies of Item 6 of *Lump of clay*. This constructed-response item targeted the inferential comprehension process and had a mark allocation of 1.

In Table 4.11, the Tshivenda group fared the worst of the eleven language groups, with only 1% of the Tshivenda learners producing the correct answer. The isiNdebele group also struggled with this item with 3% of the attempted answers being correct. The range of learner means amongst the African languages is small, varying from 2% to 10%. The Afrikaans and English groups performed better at 22% and 26% respectively. For item 6, the largest percentage of incorrect answers was attained by the Tshivenda (88%), Sesotho (86%) and Xitsonga (83%) language groups. The English group had the largest percentage of learners who answered correctly (24%) and the isiXhosa group had the largest percentage of learners omitting this question (24%). For this item it can be seen that in each language group, the percentages for the incorrect response were unusually large despite the fact that in both the translation and back-translationtext, the word ‘danger’ is.

Content analysis: This item ranks second lowest in the Tshivenda correct responses for *Lump of clay*, since 1% of the group got the answer right. The item refers to the danger that the lump of clay was in after the boy left the workshop. The back-translation of the item itself shows that the item was not badly translated. However, the translation of the passage that this item relates to (paragraph 4) is disjointed and could have been misunderstood, for example: “was not only missing the been to get wet [sic], it was aware that it is in danger”, whereas the original states: “Not only did he miss the moistness of the bin, he knew he was in danger”. This is a low ranking item in terms of correct responses across all languages, the translation problems in the section of the text accessed by this item may have played a role in making this a low ranking item for the Tshivenda group in *Lump of clay*.

Table 4.11: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 6, *Lump of clay*

Item 6	**Source Text** The boy left the lump of clay in danger. What was the danger?			**Target Text** Mutukana o sia kuputo kwa vumba ku khomboni. Ndi khombo-ḓe?					**Back-translation** The little boy left the little lump of clay in danger. Which danger?		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)[18]	22% (0.025)	26% (0.020)	3% (0.016)	4% (0.014)	5% (0.013)	7% (0.019)	5% (0.017)	10% (0.026)	5% (0.017)	2% (0.011)	9% (0.023)
Incorrect response	71%	66%	81%	72%	74%	75%	86%	62%	77%	88%	83%
Correct response	20%	24%	3%	3%	4%	6%	4%	7%	4%	1%	8%
Omitted	9%	10%	16%	26%	23%	19%	10%	31%	19%	11%	9%

Due to rounding off, the percentages may not add up to 100% in the table.

[18] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.12 sketches the Source Text, Target Text, back-translation and response frequencies for item 7 of *Lump of clay*. The comprehension process targeted was to make straightforward inferences. This was a multiple-choice item with a mark allocation of 1.

For item 7, more than 60% of the learners who wrote the test in Afrikaans answered the question correctly. The IsiNdebele group (19%) had the smallest percentage of learners who answered correctly and the Sepedi group (23%) was the largest group omitting the question; option C was the highest performing distractor. The IsiNdebele (64%), Setswana (55%) and IsiZulu (54%) language groups yielded the highest percentage for answering incorrectly. According to the reliability analysis (see Table 4.2), this item negatively affects the reliability of the passage, which means that the scale for the *Lump of clay* items would be more reliable if this item were to be deleted.

Content analysis: This item contained a serious mistranslation in the back-translation in option B: “he was shocked” (Lump of clay, item 7), as opposed to the original English text: “[he was] scared”. Nevertheless, this item ranks second highest in terms of the Tshivenda group performance for *Lump of clay*, with 30% of Tshivenda learners choosing the correct answer.

Table 4.12: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 7, *Lump of clay*

Item 7	**Source Text** How did the lump of clay feel right after the boy left the pottery workshop? A satisfied **B scared** C angry D proud	**Target Text** Kugwada kuṱuku kwa vumba kwo ḓipfa hani nga murahu ha musi mutukana o ṱuwa wekishoponi? A o fushea **B o tshuwa** C o sinyuwa D e wa nṱhesa	**Back-translation** How did the little lump clay feel after the boy left the workshop? A he was satisfied **B he was [19]~~shocked~~ scared** C he was angry D he was proud

Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)	66% (0.028)	45% (0.023)	23% (0.039)	41% (0.036)	34% (0.031)	41% (0.039)	44% (0.042)	35% (0.038)	40% (0.038)	34% (0.043)	38% (0.043)
A	8%	16%	16%	11%	19%	10%	16%	26%	15%	18%	9%
B*[20]	61%	41%	19%	32%	28%	30%	36%	29%	33%	30%	31%
C	9%	19%	26%	26%	20%	16%	13%	14%	23%	22%	22%
D	14%	15%	22%	9%	15%	17%	16%	15%	10%	18%	20%
Omitted	8%	10%	17%	22%	18%	27%	19%	17%	19%	13%	19%

Due to rounding off, the percentages in this table may not add up to 100%.

[19] The crossed out word in the back-translation shows where the verifier corrected the back-translation.
[20] Correct option marked with an asterisk

Table 4.13 presents the Source Text, Target Text, back-translation and item mean for Item 8 of *Lump of clay* which targeted inferential comprehension. This was a constructed-response item with a mark allocation of 2.

The learner means for this item vary from 3% to 29%. For Item 8, the Tshivenda (80%) and Xitsonga (78%) language groups had the greatest percentage of learners who answered incorrectly. The English and Afrikaans (17%) groups each had the highest percentage of learners who answered correctly. The language group that had the largest percentage for omitting this question was Siswati (28%). This inferential question counted for two marks. The low learner means and relatively high incorrect response rates indicate that this item was difficult for learners to answer, regardless of the language group in which the test was written.

Content analysis: In analysing the back-translation of the Tshivenda version of the *Lump of clay* passage, which also may have influenced the learners' ability to understand and answer correctly. All language groups did poorly in this item, although the item itself presents only minor translation errors.

Table 4.13: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 8, *Lump of clay*

Item 8	Source Text			Target Text					Back-translation		
	What wonderful thing happened after the lump of clay had been lying by the window for a long time? Why was this so wonderful for the lump of clay?			Ndi zwifhio zwithu zwa vhuḓisa zwe zwa bvelela nga murahu ha musi kugwada kwa vumba kwo vha ku nṱha ha fasiṱere tshifhinga tshilapfu? Naa ndi nga mini zwo vha zwi zwa vhuḓisa kha kugwada kwa vumba?					What ~~are~~ [21]is the good things~~s~~ that happened when ~~after~~ the little lump of clay was on the window for a long time? Why was it very good for the little lump of clay?		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean[22] (% correct of all *attempted* responses)	29% (0.025)	23% (0.019)	8% (0.022)	8% (0.017)	10% (0.018)	4% (0.013)	6% (0.017)	3% (0.011)	7% (0.016)	4% (0.017)	5% (0.015)
Incorrect response	53%	64%	65%	64%	66%	72%	79%	59%	63%	80%	78%
Partially correct response	17%	7%	7%	9%	6%	4%	4%	4%	9%	3%	6%
Correct response	17%	17%	2%	2%	4%	1%	3%	0%	1%	2%	1%
Omitted	12%	12%	26%	25%	24%	23%	14%	37%	28%	15%	15%

Due to rounding off, the percentages may not add up to 100% in the table.

[21] Thisis where the verifier has corrected the back-translation to match the content of the original Source Text
[22] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.14 shows the Source Text, Target Text, Back-translation and response frequencies for Item 9 of *Lump of clay* which targeted the comprehension process "to focus on and retrieve explicitly stated information". This was a multiple-choice item with a mark allocation of 1.

For item 9, the English language group (25%) had the largest percentage of learners who answered correctly. Interestingly, it is the first question in *Lump of clay* where an African language, Sesotho (31%) and Tshivenda (23%), did better than English (25%) and Afrikaans (19%) respectively. The IsiZulu (22%) and Sepedi (22%) language groups had the largest percentage of learners who omitted this question.

Content analysis: Options A and D, as can be seen in the back-translation, say something different to the original English options, however, the central meaning remains in tact. However, option A reads as: "her fingers felt heavenly" (Source Text) as opposed to, "her nails feels enjoying [sic]" (back translation), without the corrections of the verifier as shown in Table 4.14, this makes no sense and does not say the same as the English Source Text.

Table 4.14: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 9, *Lump of clay*

Item 9	Source Text	Target Text	Back-translation
	Which words in the story show that the little girl knew what she wanted to make? A 'her fingers felt heavenly.' B 'The little girl saw the lump of clay.' C 'The little girl holds him gently.' **D 'her hands moved with purpose.'**	Ndi afhio maipfi kha tshiṱori ane a sumbedza uri kusidzanyana kwo vha ku tshi ḓivha zwe kwa vha ku tshi khou ṱoḓa u vhumba? A 'Ṋala dzawe o pfa dzi tshi khou ḓiphinesa.' B 'Kusidzanyana kwa vhona kugwada kwa vumba.' C 'Kusidzanyana kwa mu farelelesa nga maanḓa zwavhuḓi.' **D 'zwanḓa zwawe zwi tshi khou tshimbila zwi tshi khou nakisa.'**	What shows that the little girl knew what she is going to make with the [23]clay? **A 'her ~~nails~~ fingers ~~feels~~ felt wonderful ~~enjoying~~.'** B 'the little girl saw the lump of clay.' C 'the little girl holds it gently.' **D 'her hands were moving ~~and~~ ~~decorating~~ with purpose.**

Language	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Learner Mean (% correct of all *attempted* responses)	31% (0.025)	21% (0.021)	20% (0.034)	15 (0.026)%	23% (0.029)	25% (0.034)	22% (0.044)	28% (0.035)	31% (0.035)	28% (0.041)	35% (0.034)
A	28%	19%	17%	12%	18%	20%	18%	24%	25%	23%	29%
B	27%	34%	33%	30%	26%	20%	17%	25%	15%	25%	20%
C	16%	12%	21%	27%	17%	22%	15%	18%	24%	14%	19%
D*[24]	19%	25%	12%	10%	17%	16%	31%	20%	18%	23%	15%
Omitted	11%	11%	17%	20%	22%	22%	19%	13%	18%	15%	18%

Due to rounding off, the percentages may not add up to 100% in the table.

[23] This is a direct copy of the back-translation, where the words are crossed out and replaced are where the verifier has corrected the text to look the same as the original text.
[24] The correct option is marked by an asterisk.

Table 4.15 depicts the Source Text, Target Text, back-translation and item mean for Item 10 of *Lump of clay*, which accessed the process of inferential comprehension. This was a constructed-response item, with a mark allocation of 3.

For Item 10, the language groups that had the largest percentage for the incorrect answer were Sesotho (79%), Tshivenda (78%) and Xitsonga (73%). It should be noted that none of the learners from the IsiNdebele, IsXhosa, IsiZulu, Setswana or Tshivenda languages offered correct answers. English (13%) had the highest percentage of learners who answered correctly. The Setswana language group (40%) delivered the highest percentage of learners who omitted this question. Based on the results observed in the table, it is clear that all language groups found this question difficult.

Content analysis: It is significant is that five language groups: IsiNdebele, IsiXhosa, IsiZulu, Setswana and Tshivenda all attained 0% for the correct answer, which may indicate that the comprehension process targeted by this question is beyond the literacy level of these learners. Learners had to describe implicit, implied, as well as explicitly stated feelings of the lump of clay; hen they were to explain why its feelings changed. This requires a higher comprehension process than inferential comprehension, involving interpretation and integration of ideas and information. Identifying the causal relationship between the lump of clay's feelings and the reason why they changed is a higher order thinking which requires learners to interpret the information for themselves instead of simply finding an explicit or implied answer in the text. The back-translation of the text related to this item, which was one of three items that had the highest mark allocation out of all four texts (3 marks), indicates that translation error could have affected learner comprehension. The Back-translation reads, "'When will my turn come?' it becomes shocked", (paragraph 2, see appendices). The original English text reads "'When will it be my turn?' he wondered." (paragraph 2). This item requires learners to identify the lump of clay's *emotions*; the back-translation uses the word "shocked" which could mislead learners in answering this item.

Table 4.15: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 10, Lump *of clay*

Item 10	**Source Text** Describe the different feelings the clay had at the beginning and the end of the story. Explain why his feelings changed.			**Target Text** Ṭalutshedzani vhuḓipfi ho fhambanaho he vumba ḽa vha nayo mathomoni na magumoni a tshiṱori. Ṭalutshedzani uri ndi nga mini vhuḓipfi hawe ho shanduka.					**Back-translation** Explain the different feelings of the clay from the start of the ~~book~~ story until to the end of the story. Explain why the feelings changed..		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)[25]	28% (0.024)	25% (0.019)	1% (0.009)	1% (0.005)	3% (0.010)	2% (0.010)	3% (0.014)	3% (0.011)	8% (0.021)	1% (0.008)	5% (0.013)
Incorrect response	46%	53%	66%	66%	59%	70%	79%	57%	53%	78%	73%
Partially correct response	15%	8%	1%	3%	2%	2%	1%	2%	7%	2%	7%
Almost correct response[26]	9%	7%	1%	0%	2%	1%	1%	1%	1%	1%	1%
Correct response	12%	13%	0%	0%	0%	1%	2%	0%	2%	0%	1%
Omitted	18%	20%	33%	32%	37%	27%	18%	40%	37%	20%	18%

Due to rounding off, the percentages in this table may not add up to 100% in the table.

[25] The calculation for learner mean is calculated as per Crocker and Algina (1986)
[26] This category was taken verbatim from the data set, as received from the PIRLS National centre in the SPSS format

Table 4.16 presents the Source Text, Target Text, back-translation and the response frequencies for Item 11 of *Lump of clay* which targeted the process of inferential comprehension. This was a constructed-response item with a mark allocation of 2.

For Item 11, more thann 60% of the learners who wrote in Sesotho, Tshivenda and Xitsonga answered incorrectly. English (19%) attained the largest percentage of learners who answered correctly. The Afrikaans language group (35%) achieved the largest percentage for getting the answer partially correct. More IsiZulu learners (39%) omitted this item than learners from other language groups. Again, it can be seen that overall the percentages for partially correct and correct responses are especially low for this question. The African languages had correct response rates of 5% or less.

Content analysis: Looking at the results for this item, it seems that there is a pattern of learners struggling to identify key relationships in texts whether they are causal or between characters; this can be seen as learners do poorly in items involving understanding of relationships between characters and/or events (see Table 4.14, Table 4.14 and Table 4.15. The readability and flow of this section of the story is disjointed and difficult to read (refer to Appendix A, Lump of clay BT), although the back-translation of the passage itself presents no serious errors.

Table 4.16: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 11, *Lump of clay*

Item 11	**Source Text** The little girl is an important person in this story. Explain why she was important to what happened.			**Target Text** Kusidzanyana ndi muthu wa ndeme kha tshiṱori itshi. Ṭalutshedzani uri ndi nga mini e wa ndeme kha zwo bvelelaho.					**Back-translation** The little girl is very important character in this story. Explain why she is important ~~on~~ [27]~~the scene~~ to what happened in the story.		
Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)[28]	39% (0.024)	33% (0.021)	12% (0.027)	9% (0.023)	17% (0.027)	10% (0.024)	9% (0.023)	8% (0.022)	6% (0.016)	5% (0.018)	13% (0.023)
Incorrect response	32%	47%	53%	56%	45%	56%	65%	58%	59%	64%	61%
Partially correct response	35%	16%	14%	12%	10%	7%	9%	6%	8%	5%	16%
Correct response	14%	19%	2%	0%	5%	3%	2%	2%	0%	1%	2%
Omitted	19%	19%	31%	32%	39%	34%	24%	34%	33%	30%	21%

Due to rounding off, the percentages may not add up to 100%.

[27] This is where the verifier corrected the back-translation to say the same as the original Source Text
[28] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.17 presents the Source Text, Target Text, back-translation and response frequencies for Item 12 of *Lump of clay* which accessed the comprehension process of examining and evaluating content, language and textual elements. This was a multiple-choice item with a mark allocation of 1.

For item 12, the English (41%) language group had the largest percentage for answering correctly. The language group with the smallest percentage for answering correctly was Sesotho (18%), and the Sepedi language group (21%) had the highest percentage for omitting this question. The Tshivenda learner mean (30%) was the fourth highest recorded learner mean amongst the African languages, surpassed by Siswati, isiXhosa, and Xitsonga.

Content analysis: It appears that learners experience difficulty in critiquing a text. As seen in Table 4.17 in the Tshivenda back-translation, option D of the item does not read exactly the same as the original, which may have presented a problem to learners. Nevertheless, meaning is still apparent.

Table 4.17: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 12, *Lump of clay*

Item 12	**Source Text**	**Target Text**	**Back-translation**
	The author of the story writes about the lump of clay as if it were a person. What is the author trying to make you imagine? A what it is like in the rain **B how a lump of clay might feel** C what it is like to work with clay D how it feels to make something	Muṅwali wa tshiṱori u ṅwala nga ha kugwada kwa vumba sa u tou nga ndi muthu. Naa muṅwali u khou lingedza uri ni humbule mini? A mvulani ho tou itisa hani **B kugwada kwa vumba ku nga ḓipfisa hani** C zwo vha zwi hani u shuma nga vumba D u ita tshithu zwi ita uri u ḓipfe hani	The Author of the story writes about the little lump clay to personify it.[29] ~~The~~ What is the Author ~~is~~ trying to make you imagine ~~find~~ what you think? A how it is when it is raining **B how would the lump of clay feel** C how it is to work with ~~the little lump of~~clay D how does it ~~sound~~ feel to ~~do~~ make something

Language	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Learner Mean (% correct of all *attempted* responses)	47% (0.032)	44% (0.024)	29% (0.046)	39% (0.041)	27% (0.033)	27% (0.042)	20% (0.041)	21% (0.036)	36% (0.044)	30% (0.046)	31% (0.042)
A	11%	13%	23%	10%	14%	15%	20%	20%	13%	15%	15%
B*[30]	44%	41%	25%	32%	24%	22%	18%	19%	30%	26%	27%
C	18%	19%	20%	17%	26%	26%	28%	32%	25%	21%	34%
D	21%	21%	20%	23%	24%	16%	22%	20%	16%	24%	12%
Omitted	6%	7%	12%	17%	12%	21%	13%	9%	17%	14%	13%

Due to rounding off, the percentages may not add up to 100% in the table.

[29] This is where the verifier corrected the back-translation to match the content of the original Source Text
[30] Correct option marked with an asterisk

Table 4.18 presents the Source Text, Target Text, back-translation and response frequencies for Item 13 of *Lump of clay* which necessitated learners "to interpret and integrate ideas and information". This was a multiple-choice item with a mark allocation of 1.

For Item 13, the Afrikaans (41%) and English (36%) language groups obtained the highest percentage of learners who answered correctly, whilst the IsiNdebele (17%), Setswana (18%) and Siswati (18%) language groups attained the lowest percentage of learners who answered correctly. Overall, the statistics for omitting this question were low, unlike the other items for *Lump of clay*. It would appear that the distractor performing at the highest level for this item was option D. The Tshivenda back-translation of Item 13 shows serious errors in distractors A and B. The Cronbach's Alpha reliability analysis (see Table 4.2) indicates that this item negatively affects the overall reliability of the *Lump of clay* scale as a whole, and would improve the reliability of the scale if it were removed.

Table 4.18: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 13, *Lump of clay*

Item 13	**Source Text** What is the main message of this story? A People are easy to knead and shape like clay. B There is a great deal of unhappiness in the world. **C Everything is happiest when it finds a purpose.** D Pottery is the best way to do good in the world.	**Target Text** Mulaedza muhulwane kha tshiṱori ndi ufhio? A Vhathu vha a shanduka tshivhumbeo zwavhuḓi-vhudi sa vumba. B Lifhasini ho dalesa u dinalea. **C Tshiṅwe na tshinwe tshi a takalesa arali tsho swikelela tshipikwa.** D Zwa u vhumba ndi nḓila yavhudi ya u ita zwavhuḓi kha lifhasi.	**Back-translation** What is the [31]**main** message in this story? A People are easy to change ~~their structure~~ and shape like clay. B There is ~~angrier~~ a lot of unhappiness in the world. **C Everything becomes happy if it reaches its goal.** D Pottery is the best way to do good things in the world.

Language	**Afrikaans n= 323**	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Learner Mean (% correct of all *attempted* responses)	43% (0.032)	37% (0.023)	18% (0.039)	23% (0.036)	24% (0.031)	21% (0.038)	25% (0.044)	20% (0.037)	18% (0.035)	22% (0.040)	25% (0.040)
A	18%	25%	13%	28%	18%	25%	18%	20%	30%	25%	29%
B	16%	17%	17%	18%	23%	20%	20%	21%	13%	15%	23%
C*[32]	41%	36%	17%	22%	23%	21%	24%	18%	18%	22%	25%
D	21%	21%	48%	27%	31%	30%	36%	35%	37%	37%	22%
Omitted	4%	2%	6%	5%	5%	4%	2%	6%	3%	1%	2%

Due to rounding off, the percentages may not add up to 100% in the table.

[31] This is where the verifier corrected the back-translation to match the content of the original Source Text
[32] Correct option marked with an asterisk

4.2.4 Lump of clay: the Tshivenda anomaly

Table 4.19 presents theresults of Tshivenda learners who wrote in their home language together with the results of Tshivenda learners who wrote the test in a secondary language. The overall mean of the Tshivenda learners' correct response percentages for this passage indicates that the Tshivenda learners who wrote in their home language did not appear to do as well as the Tshivenda learners who wrote in a secondary language, with a difference of 3%. Of the learners who answered this passage in Tshivenda, most were mother tongue Tshivenda speakers. In the last two items the Tshivenda learners who wrote in a secondary language did 36% and 15% better respectively. Learners who wrote in a secondary language (n= 263) achieved a higher correct response rate than the learners who wrote in their home language (382) in items 3, 4, 5, 6, 13 and 14. Nevertheless, this means that Tshivenda learners who wrote in their home language did better in eight out of the fourteen items for the *Lump of clay* passage.

Table 4.19: Performance of Tshivenda learners who wrote in their home language vs Tshivenda learners who wrote in a secondary language

	Items	*Tshivenda learners who wrote in their home language*			*Tshivenda learners who wrote in a secondary language*		
		n	Mean of learners' %	Standard Error of Mean	n	Mean of learners' %	Standard Error of Mean
Item 1	REC_CLAY/ORDER OF EVENTS IN STORY(1)	40	13%	.05	10	10%	.10
Item 2	REC_CLAY/ORDER OF EVENTS IN STORY(1)	40	13%	.05	10	10%	.10
Item 3	REC_CLAY/CLAY WAS IN BIN FOR SO LONG(1)	57	2%	.02	19	5%	.05
Item 4	REC_CLAY/CLAYS WISH(1)	56	9%	.04	16	13%	.09
Item 5	REC_CLAY/CLAY WAS TAKEN OUT OF BIN(A)	63	41%	.06	20	45%	.11
Item 6	REC_CLAY/BOYS CARELESS ACTION(C)	61	56%	.06	19	68%	.11
Item 7	REC_CLAY/BOY LEFT LUMP OF CLAY IN DANGER(1)	55	4%	.03	18	0%	0.00
Item 8	REC_CLAY/CLAYS FEELINGS AFTER BOY LEFT(B)	56	45%	.07	18	44%	.12
Item 9	REC_CLAY/WONDERFUL THING THAT HAPPENED(2)	45	10%	.04	16	3%	.03
Item 10	REC_CLAY/GIRL KNEW WHAT SHE WANTED 2 MAKE(D)	52	38%	.07	17	35%	.12
Item 11	REC_CLAY/CLAYS DIFFERENT FEELINGS(3)	40	3%	.02	16	0%	0.00
Item 12	REC_CLAY/LITTLE GIRL=IMPORTANT PERSON(2)	34	12%	.04	16	3%	.03
Item 13	REC_CLAY/AUTHOR WRITES ABOUT CLAY=PERSON(B)	48	29%	.07	17	65%	.12
Item 14	REC_CLAY/MAIN MESSAGE OF STORY(C)	49	24%	.06	18	39%	.12
	Overall Mean of learners' %		21%			24%	
	Total number of learners	382			263		

4.2.5 Conclusions for Lump of clay

After analysing the results for *Lump of clay* per question across all eleven official languages, several conclusions can be drawn. Overall, it can be seen that learners from all eleven official languages did not do well in the *Lump of clay* items and therefore generally, South African Grade 5 learners appeared to find the passage and its items difficult. The Afrikaans and English language groups overall performed better on these items than the African languages. However, in Item 9, Sesotho (31%) and Tshivenda (23%) performed better than the Afrikaans learners (19%) and the English learners (25%) respectively.Despite negatively affecting the reliability of the passage (see Table 4.2), multiple-choice item 13 had the largest percentage of responses across all eleven languages, i.e. the omitted percentages were especially low for this item, which could suggest that, although not many learners answered correctly, the learners may have thought the item easy or were thoroughly engaged by this item despite not knowing the answer. This may also have contributed to the lack of reliability of this item, i.e. guessing may have caused this item to be less reliable. As seen in items 10 and 11, learners may have problems with identifying and answering questions regarding relationships between characters and/or objects and/or events (causal relationships included).

The quality of translation was generally good, although minor errors were found in the text and as the items which, by themselves, could cause some confusion, yet as a whole were not serious enough to hinder the reading and comprehension of this text. Despite learners who wrote in their home language performing better in more individual items, the total of the mean of learners' percentage reveals that, overall, Tshivenda learners who wrote in a secondary language did better than those who wrote in their home language in this passage.

4.3 Findings of the analysis for *An unbelievable night*

In this section an overview of the text and test composition of *An unbelievable night* is presented. This is followed by the presentation of the back-translator and verifier's evaluation of the quality of the translation of the passage into Tshivenda for PIRLS 2006 (Section 4.3.2). In sub-section 4.3.3 a per item analysis is given, and in sub-section 4.3.4 initial conclusions for *An unbelievable night* in relation to the research questions are delivered. The Source Text, Target Text (original Tshivenda translation) and back-translation containing the verifier's track changes can be found in Appendix B.

4.3.1 overview of text and test item composition

Table 4.20 below presents an overview of the design and composition for the *An unbelievable night* text (n = 2893). The word count for both languages is shown below. The items for each comprehension process, as well as the number of items of multiple-choice versus constructed-response items are also presented below. Whereas for the *Lump of clay* passage the process that was emphasised through the items was making straightforward inferences (9 items out of 13), in *An unbelievable night*, there is a focus on retrieving explicitly stated information (5 items out of 12). The process of interpreting and integrating ideas and information is also heavily represented (4 items out of 12).

Table 4.20: Comprehension process and test item composition breakdown for *An unbelievable night*

Comprehension processes breakdown	No. of items	**Item breakdown**	No. of items	Mark allocation
Focus on and retrieve explicitly stated information	5	Multiple- choice	6	6
Make straight-forward inferences	2	Constructed-response	6	10
Interpret and integrate ideas and information	4	Total	12	16
Examine and evaluate content, language and textual elements	1	**Word count**		
		English 1254	Tshivenda 1678	
		Overall Cronbach's Alpha:	Tshivenda Cronbach's Alpha:	
Total	12	0.789	.734	

The overall Cronbach's Alpha of this passage (.789) indicates that the passage has an acceptable internal consistency. The Tshivenda reliability coefficient for this passage (.734) is slightly lower than the overall coefficient. The Tshivenda passage has 424 more words than the English Source Text, which means that it could have taken Tshivenda learners longer to read this passage than their English counterparts.

The overall reliability of the Tshivenda passage is acceptable; however, there are five items that decrease the reliability of the passage, with Item 6 affecting the reliability of the passage

the most, which means that if it were omitted, the reliability of the scale would increase from .734 to .760. This is presented in Table 4.21 below.

Table 4.21 An unbelievable night reliability analysis for Tshivenda language test items

Reliability Analysis: Tshivenda			
Overall Cronbach's Alpha		.734	
Item-Total Statistics			
		Corrected Item-Total Correlation	**Cronbach's Alpha if Item Deleted**
Item 1	UNBELIEVABLE NIGHT/SENTENCES IN ORDER(1)	*.272*	.741
Item 2	UNBELIEVABLE NIGHT/ANINA FLAMINGOS(1)	*.081*	.752
Item 3	UNBELIEVABLE NIGHT/MAGAZINE HELPS(2)	*.094*	.739
Item 4	UNBELIEVABLE NIGHT/DIFFICULTY EXPLNG(1)	*.196*	.734
Item 5	UNBELIEVABLE NIGHT/WHAT SHE WAS LIKE(3)	*.169*	.737
Item 6	UNBELIEVABLE NIGHT/ANINAS ADVENTURE(2)	*.057*	.760
Item 7	REC_UNBELIEVABLE NIGHT/SOMETHING UNUSUAL(D)	.536	.694
Item 8	REC_UNBELIEVABLE NIGHT/CROCODILE(B)	.654	.683
Item 9	REC_UNBELIEVABLE NIGHT/SHE WAS FRIGHTENED(A)	.592	.684
Item 10	REC_UNBELIEVABLE NIGHT/ANINA CROCODILE(D)	.582	.688
Item 11	REC_UNBELIEVABLE NIGHT/DOOR GOT BROKEN(A)	.665	.676
Item 12	REC_UNBELIEVABLE NIGHT/HOW ANINA FELT(C)	.567	.687

Table 4.22: Mean Percentage for *An Unbelievable night* by language group

	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Passage mean	48%	39%	25%	24%	22%	16%	30%	28%	20%	22%	22%
S.E of the mean	0.016	0.012	0.014	0.012	0.011	0.009	0.016	0.014	0.012	0.013	0.013

S.E = Standard Error

Overall passage means were calculated for each language group for the passage *An Unbelievable night* . The Afrikaans and English groups have the highest mean score for this passage, while the Tshivenda, Xitsonga and IsiZulu language groups have the same mean score of 22%. The Tshivenda mean score is 26% lower than the highest mean, obtained by learners who wrote in Afrikaans and 17% lower than the passage mean of the learners who wrote in English. The learners who wrote in Sepedi have the lowest mean score at 16%.

4.3.2 Professional opinion of the Tshivenda translation of *An unbelievable night*

Table 4.23 presents the professional opinion of the back-translator and verifier of the *An unbelievable night* text regarding the first question given to them: What are the translation differences and similarities between the original and back-translation?

Table 4.23: Differences found between the English Source Text and the Tshivenda Target Text for *An unbelievable night*

Back-translator's response	Verifier's response
1. The terminology was a little different from the original English because the translator used equivalents which came to mind but it did not affect the translation. 2. There was an instance where the translator said the door had a crack whereas the original was referring to an opening in which the door was slightly open and not a crack in the middle of the door. 3. The back-translation does not differ much with the original English and the reader of the original and the back-translation will get the same message. The translator translated "swamp" as "mud" but there were few mistakes made. 4. The meaning of both texts is the same looking at the answer to the questions asked.	<u>Similarities</u> The back-translation mostly corresponds with the original English text in terms of terminology and concepts. Judging from the back-translation, the translator was familiar with the concepts in the story. <u>Differences</u> The differences between the original English text and the back-translation are minor and could for the most part be attributed to the back-translator's grammatical and language errors (as opposed to mistranslations). Examples are: 'Why did Anina thought...' and '...tip of the crocodile tail pushed the cracked door while entering.' These errors were pointed out to the back-translator and corrected. While most of the differences were minor, there were some differences that are significant and which should have been corrected before the translated text was given to learners. Examples are: 'shy' instead of 'annoyed' and inserting 'I remember you' where there is no such sentence in the original English.

The back-translator specified that the terminology used in the translation was a little different to that of the original text and gave only one example to illustrate this point. Despite this, the back-translator was still of the opinion that differences in terminology would not affect the comprehension of the text. The verifier confirmed this in pointing out that the original translator was clearly familiar with the concepts in this text, although the verifier went on to explain that there were a few mistakes in the text that could have affected comprehension. The English Source Text, Tshivenda Target Text and back-translation of *An unbelievable night* are presented in Appendix B.

Textual examples of translation inaccuracies: The following example presents a translation inaccuracy that would not compromise the comprehension of this text: "The door of her room had a crack" (back-translation), versus: "The door to her room was usually open a crack" (Source Text). The following example is indicative of a translation inaccuracy that may have affected comprehension: "Anina was so surprised" (back-translation), versus: "Anina was

frozen to the spot" (Source Text). This is a problem because multiple-choice Item 3 of *An unbelievable night* asks the reader to identify Anina's emotions based on the wording from the text that is notably missing in the back-translation. For this item, 18% of the Tshivenda group answered this item correctly.

Table 4.24 presents the professional opinion of the back-translator and verifier of the *An unbelievable night* text with regard to the second question given to them: In your professional opinion, what method of translation has been used in the original translation?

Table 4.24: Verifier and translator feedback on methods used for the translation of *An unbelievable night*

Back-translator's response	Verifier's response
• Word-for-word (direct) • Semantic (concentrated on the overall meaning, but form of original is adhered to) • Literal (translated out of context) • Communicative (used correct terms in their context, and overall meaning is also correct).	It would seem to me that the Venda translator used communicative translation in 'An Unbelievable Night' translation and although the back translator may have imprinted his own style and weaknesses on the back-translation, it did not obscure the method, meaning and style of the initial Venda translation.

According to the back-translator's professional opinion, Semantic and Communicative translation were utilised in the translation of *An unbelievable night.* In analysing the verifier's answer, it is apparent that the original translation was carried out in such a way that the verifier was able to see the style imprint of the original translator despite the text being back-translated, and thus given a different translator's style imprint.

4.3.3 Per item analysis for *An unbelievable night*

In this sub-section, an overview of the items, as well as the analysis for items 1-11 of *An unbelievable night* are presented. The Source Text, Target Text, back-translation, learner mean and mark allocation of each item are also given. Included in the per item analysis are comments on the comprehension process, or the content analysis, or both, depending on the relevance to each item.

Table 4.25 presents the Source Text, Target Text, back-translation and response frequencies for Item 1 of *An unbelievable night.* This item required learners to make straightforward inferences and was a multiple-choice item. The learner mean, a category in the learner response frequency tables, excludes the omitted category.

For Item 1, the largest percentage of learners answering correctly was the Afrikaans language group (55%). The IsiXhosa group had the largest percentage of learners who answered incorrectly (19%), and the largest percentage of learners who did not attempt this item was from the Sepedi language group (28%). It can be observed that except for the Sepedi and Xitsonga language groups, the greatest distractor with the highest response rate for this question was option A. This is possibly due to the fact that the word "unusual" (Source Text) or "unbelievable" (back-translation) in the item confused the learners since the only option that describes something *unbelievable* at face value is option A: "the pile of newspapers started to move" (Source Text and back-translation). This item negatively affected the reliability of the passage indicating that its deletion would improve the overall reliability of the *An unbelievable night text* (see Table 4.21).

Content analysis: The back-translation of the first paragraph in the text, it is disjointed in terms of word order and wrong tenses being used for verbs. The text even refers to Anina at one point as "he" (refer to Appendix B, An unbelievable night, BT).

Table 4.25: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 1, *An unbelievable night*

Item 1	Source Text	Target Text	Back-translation
	What was the **first** sign that something unusual was happening? A A pile of newspapers began to move. B Anina saw the magazine cover. C The door to her room was broken. **D Anina heard a hissing sound**.	Na luswayo lwa u thoma u sumbedza uri hu na zwiṅwe zwo khakheaho ndi lufhio? A Buto la gurannḍa ḽo thoma u dzinginyea. B Anina o vhona khava ya magazini. C Vothi la u dzhena rumuni yawe ḽo vha ḽo vundea. **D Anina o pfa mubvumo u no nga wa ṋowa i tshi khou lidza muludzi.**	What is the first sign which shows that there was something happening that was unbelievable? A The pile of newspapers started to move. B Anina saw the cover of the magazine. C The door of her room was broken. **D Anina here the sound like of snake hissing.**

Language	Afrikaans n= 323	English n= 563	IsiNdebele n= 152	IsiXhosa n= 297	IsiZulu n= 339	Sepedi n= 265	Sesotho n= 179	Setswana n= 208	Siswati n= 230	Tshivenda n= 155	Xitsonga n= 182
Learner Mean (% correct of all *attempted* responses)	61% (0.029)	43% (0.022)	31% (0.040)	23% (0.026)	34% (0.029)	29% (0.033)	43% (0.040)	35% (0.035)	28% (0.033)	32% (0.040)	21% (0.033)
A	25%	25%	25%	31%	24%	18%	24%	25%	27%	27%	22%
B	6%	12%	22%	17%	17%	15%	12%	15%	17%	13%	23%
C	5%	14%	15%	18%	12%	19%	12%	19%	14%	19%	21%
D*[33]	55%	38%	28%	19%	28%	21%	36%	32%	22%	27%	18%
Omitted	10%	12%	11%	15%	18%	28%	16%	10%	20%	14%	17%

The statistics may not add up to 100% due to rounding off to the nearest integer.

[33] Correct answer marked with an asterisk

Table 4.26 displays the Source Text, Target Text, back-translation and response frequencies for Item 2 of *An unbelievable night*. It was necessary for the learners to make straightforward inferences. This was a multiple-choice item with a mark allocation of 1.

For Item 2, the Afrikaans language group had the largest percentage of learners who answered correctly (60%). Just over one tenth of the Sepedi language group answered correctly (11%), the lowest across all languages. The largest percentage of learners omitting this question was the Sepedi language group (25%). The overall highest performing distractor for this question was option D. This is a plausible distractor as learners may have relied on their local South African knowledge (contextual) that crocodiles live in water instead of using their inferential skills. In Table 4.21, the Cronbach's Alpha for this item revealed that it negatively affected the reliability of this passage.

Table 4.26: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 2, *An unbelievable night*

Item 2	**Source Text** Where did the crocodile come from? A the bathroom **B a magazine cover** C under the bed D a nearby river	**Target Text** Naa ngweṇa yo da i tshi khou bva ngafhi? A rumuni ya u ṭambela **B kha khava ya magazini** C nga fhasi ha mmbete D mulamboni we wa vha u nga tsini	**Back-translation** Where did the crocodile come from? A bathroom **B on the cover of the magazine** C under the bed D in a nearby river

Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)	64% (0.028)	55% (0.022)	29% (0.039)	37% (0.031)	42% (0.029)	15% (0.025)	38% (0.039)	29% (0.033)	30% (0.034)	32% (0.040)	29% (0.037)
A	13%	19%	21%	24%	17%	24%	26%	20%	18%	19%	24%
B*[34]	60%	48%	26%	30%	35%	11%	34%	26%	24%	28%	25%
C	6%	8%	11%	10%	10%	14%	7%	12%	7%	8%	14%
D	14%	13%	32%	18%	22%	27%	22%	32%	30%	34%	21%
Omitted	7%	12%	11%	19%	17%	25%	11%	11%	22%	10%	15%

Due to rounding off to the nearest integer, the percentages in the table may not add up to 100%.

[34] Correct answer marked with an asterisk

Table 4.27 illustrates the Source Text, Target Text, back-translation and response frequencies for Item 3 of *An unbelievable night*, where learners had to make straightforward inferences. This was a multiple-choice item with a mark allocation of 1.

For Item 3, notably, the IsiNdebele (47%) language group had the largest percentage of learners who answered this question correctly. In this item African language learners performed better than Afrikaans and English learners. The Sepedi group had the largest percentage of learners who answered incorrectly (10%) and this was also the language group that had the largest percentage of learners who did not attempt this item (26%). Tshivenda also performed poorly, being the second lowest performing language group, with only 18% of learners answering the item correctly. The highest performing distractor for this question was option B. The even distribution of percentages for the Tshivenda language group also suggests that these learners may have been guessing the answer to this item. Again, this item negatively affects the reliability of the passage, which means that if it were removed, the overall reliability of this passage would increase (see Table 4.21).

Content analysis: It is a possibility, based on the above results, that learners have difficulty answering items dealing with the emotions of characters in the text. There were no translation problems regarding this item or the portion of text it accesses, although it would seem that there was no equivalent idiomatic expression for “frozen to the spot” (Source Text).

Table4.27: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 3, *An unbelievable night*

Item 3	Source Text	Target Text	Back-translation
	Which words tell you that Anina was frightened? A **"frozen to the spot"** B "could not believe her eyes" C "let her breath out" D "sounded like a quiet hissing"	Ndi afhio maipfi ane a ni vhudza uri Anina o vha o tshuwa? **A "u fhelelwa nga nungo"** B "o vha a sa pfesesi uri maṱo awe a khou vhona zwone naa" C "u femela nṱha" D "u pfala u u nga sa muludzi u no khou lilela fhasi	Which words show that Anina was frightened? **A "was so surprised she could not move"** B "she was not quite sure about what he was seeing" C "she let her breath out" D "it sounded like a quiet hissing noise

Language	Afrikaans n= 323	English n= 563	IsiNdebele n= 152	IsiXhosa n= 297	IsiZulu n= 339	Sepedi n= 265	Sesotho n= 179	Setswana n= 208	Siswati n= 230	Tshivenda n= 155	Xitsonga n= 182
Learner Mean (% correct of all *attempted* responses)	44% (0.029)	51% (0.023)	54% (0.044)	44% (0.032)	30% (0.028)	13% (0.024)	38% (0.39)	40% (0.037)	31% (0.034)	21% (0.036)	40% (0.041)
A*[35]	40%	44%	47%	35%	24%	10%	32%	34%	25%	18%	32%
B	31%	25%	19%	14%	19%	31%	20%	21%	11%	25%	14%
C	7%	7%	8%	10%	21%	21%	17%	17%	27%	27%	18%
D	14%	11%	13%	21%	17%	14%	16%	14%	17%	14%	15%
Omitted	10%	13%	14%	19%	19%	26%	15%	14%	20%	16%	20%

The percentages in this table were rounded off to the nearest integer and therefore may not add up to 100%.

[35] Correct answer marked with an asterisk

Table 4.28 presents the Source Text, Target Text, back-translation and response frequencies for Item 4 of *An unbelievable night,* which was a multiple-choice that targeted the inferential comprehension process. It had a mark allocation of 1.

For Item 4, the Afrikaans language group had the largest percentage of learners who answered correctly (38%). The IsiXhosa (14%) and Sepedi (14%) language groups had the largest percentage of learners who answered incorrectly; and the largest percentage for omission was obtained by the Sepedi language group (24%). Except for the Siswati and Xitsonga language groups, the distractor with the highest response rate for this question was option A. Again, this may be due to learners relying on their local knowledge of how crocodiles indicate that they are about to attack instead of using their inferential skills. The fact that the Siswati language group (24%) attained the same percentage for two options possibly indicates that they were guessing and did not know the answer.

Table 4.28: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 4, *An unbelievable night*

Item 4	Source Text	Target Text	Back-translation
	Why did Anina think the crocodile was going to attack? A It showed its long row of teeth. B It let out a loud hissing sound. C It started grunting and snorting. **D It swung its tail back and forth.**	Naa ndi nga mini Anina o humbula uri ngwena i khou ṱoḓa u muthasela? A Yo sumbedza maṋo ayo malapfu o tevhekanaho. B Yo lidza muludzi u pfalesaho. C Yo thoma u vhomba na u kuma. **D Yo dzungudza mutshila wayo u tshi ya phanḓa na murahu.**	Why did Anina think that the crocodile wanted to attack her? A It shows its long row of teeth. B It made a loud hissing sound. C It started grunting and snoring **D It shook its tale from front and back.**

Language	Afrikaans n= 323	English n= 563	IsiNdebele n= 152	IsiXhosa n= 297	IsiZulu n= 339	Sepedi n= 265	Sesotho n= 179	Setswana n= 208	Siswati n= 230	Tshivenda n= 155	Xitsonga n= 182
Learner Mean (% correct of all *attempted* responses)	43% (0.029)	37% (0.022)	20% (0.035)	17% (0.025)	26% (0.026)	19% (0.028)	29% (0.037)	32% (0.035)	30% (0.034)	23% (0.036)	24% (0.035)
A	31%	23%	37%	32%	24%	24%	35%	26%	18%	34%	20%
B	13%	17%	20%	20%	22%	21%	14%	18%	24%	20%	18%
C	7%	16%	13%	13%	14%	16%	12%	15%	14%	14%	25%
D*[36]	38%	33%	17%	14%	22%	14%	24%	27%	24%	20%	19%
Omitted	12%	11%	13%	22%	18%	24%	15%	14%	20%	12%	18%

The percentages in this table may not add up to 100% as they were rounded off to the nearest integer.

[36] Correct answer indicated with an asterisk

Table 4.29 presents the Source Text, Target Text, back-translation and response frequencies for Item 5 of *An unbelievable night*. The learners were required to focus on and retrieve explicitly stated information; this was a constructed-response item with a mark allocation of 1.

For Item 5, the Sesotho (66%), IsiZulu (64%) and Siswati (63%) language groups had the largest percentage of learners who answered incorrectly, whilst the Afrikaans group (40%) had the largest percentage of learners who answered correctly. The IsiXhosa learners (54%) were the group with the largest percentage for omitting this question; this is a significantly large percentage for one language group to omit an item. The omission rate amongst the African languages exceeded a quarter of the learners, except for the Sesotho language group (22%). This shows a lack of ability amongst these learners to undertake a sequencing/ordering of events task in a test, which may indicate a lack of exposure to literal comprehension tasks. It should be noted that, again, this item negatively affected the reliability of this passage, indicating that its removal would increase the overall passage reliability.

Table 4.29: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 5, *An unbelievable night*

Item 5	Source Text	Target Text	Back-translation
	Put the following sentences in the order in which they happened in the story. The first one has been done for you. Anina saw the crocodile. The crocodile ate two flamingos. Anina tried to explain the broken door to her parents. *1 Anina started to walk to the bathroom.* Anina ran to the bedroom and slammed the door.	Vhekanyani mafhungo a tevhelaho nga nḓila ye a bvelelisa ngayo kha nganea. Fhungo ḽa u thoma no no itelwa lone. Anina o vhona ngweṋa. Ngwena yo ḽa fulamingo mbili. Anina o lingedza u ṱalutshedza vhabebi vhawe nga ha vothi ḽo vundeaho. *1 Anina o thoma u tshimbila a tshi yela thungo ya rumu ya u ṱambela.* Anina o gidimela rumuni yawe ya u eḓela a swika a hanzhamedza vothi.	Put following sentences in the way it had happened in the novelstory[37]. The first one was done for you. Anina saw the crocodile. The crocodile ate two flamingos. Anina tried to explain to her parents about the broken door. *1 Anina started walking to the side of the bathroom.* Anina ran to her room and shut the door hard.

Language	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Learner Mean (% correct of all *attempted* responses)[38]	50% (0.031)	36% (0.023)	13% (0.035)	7% (0.017)	7% (0.022)	10% (0.024)	15% (0.031)	17% (0.031)	3% (0.013)	17% (0.038)	11% (0.031)
Incorrect response	40%	51%	56%	43%	64%	51%	66%	58%	63%	53%	49%
Correct response	40%	29%	9%	3%	5%	5%	12%	12%	2%	10%	6%
Omitted	20%	20%	36%	54%	32%	44%	22%	30%	35%	37%	45%

Due to rounding off, the percentages in this table may not add up to 100%.

[37] The back-translation has been used as it was received from the back-translator
[38] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.30 displays the Source Text, Target Text, back-translation and response frequencies for Item 6 of *An unbelievable night*. This constructed-response item required inferential comprehension from the learners, and had a mark allocation of 1.

For Item 6, the largest percentage of incorrect answers was obtained by the Tshivenda language group (78%). The Afrikaans group (41%) represented the largest percentage of learners who answered this question correctly; and the language group that had the largest percentage for not attempting this item was the IsiXhosa language group (32%). The percentages for the correct response category were particularly low for this item, with six African languages having less than 10% of learners answering this item correctly. This suggests that learners had difficulty with written responses for inferential comprehension. This item also had negative affect on the reliability of this passage (.057) (see Table 4.21), which means that with its removal, the overall reliability of *An unbelievable night* would be improved from an overall coefficient of .734 to .760.

Table 4.30: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 6, *An unbelievable night*

Item 6	**Source Text** Why did Anina call the flamingos?			**Target Text** Na ndi nga mini Anina o vhidza dzifulamingo?					**Back-translation** Why did Anina call the flamingos?		
Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)[39]	47% (0.030)	29% (0.021)	4% (0.019)	6% (0.018)	8% (0.017)	12% (0.023)	17% (0.033)	19% (0.033)	6% (0.019)	6% (0.020)	21% (0.033)
Incorrect response	46%	62%	69%	64%	72%	67%	66%	57%	72%	78%	68%
Correct response	41%	26%	3%	4%	6%	9%	14%	13%	5%	5%	18%
Omitted	13%	12%	28%	32%	22%	24%	20%	30%	24%	18%	13%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[39] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.31 shows the Source Text, Target Text, back-translation and response frequencies for Item 7 of *An unbelievable night.* Learners were asked to focus on and retrieve explicitly stated information. This was a multiple-choice item with a mark allocation of 1.

For Item 7, the Afrikaans (53%) and Tshivenda (53%) language groups had the largest percentages of learners who answered correctly. Within the achievement profile for PIRLS 2006, it is highly unusual for an African language to perform better than one of the top two performers, usually Afrikaans and English. The language groups with the smallest percentages for answering correctly were the IsiZulu (27%) and Siswati (19%) language groups; the Sepedi language group had the most learners who did not attempt this item (26%).

Content analysis: The back-translation shows that the section of text dealing with the crocodile breaking the door with its tail is possibly not very clearly translated, making it difficult to draw the originally intended meaning from the text (see Appendix B, *An unbelievable night,* BT). Nevertheless, this item yielded the largest percentage in terms of correct answers for this text in the Tshivenda group at 53%, which was in fact the highest percentage of correct answers for this group across all four of the texts for this literal comprehension item.

Table 4.31: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 7, *An unbelievable night*

Item 7	Source Text	Target Text	Back-translation
	How did the bedroom door get broken?	Naa vothi ḽa rumu ya u edela lo vunḓeisa hani?	How did the bedroom door break?
	A The crocodile's tail pushed through it.	**A Ngwena yo tou li sukumedza nga mutshila wayo.**	**A The crocodile pushed it with its tale.**
	B The big vase cracked against it.	B Veisi khulu yo tou rwana ṋayo musi i tshi pwashea.	B The big vase hit it while it was breaking.
	C The flamingo's sharp beak crashed into it.	C Mulomo wa Fulamingo une wa vha na ṱhodzi i fhiraho wo tou ḽi pwasha.	C The flamingo's sharp beak crashed into it.
	D The bed smashed against it.	D Mbete wo tou rwana naḽo ḽa pwashea.	D The bed hit it and broke.

Language	Afrikaans n= 323	English n= 563	IsiNdebele n= 152	IsiXhosa n= 297	IsiZulu n= 339	Sepedi n= 265	Sesotho n= 179	Setswana n= 208	Siswati n= 230	Tshivenda n= 155	Xitsonga n= 182
Learner Mean (% correct of all *attempted* responses)	61% (0.030)	59% (0.022)	53% (0.047)	53% (0.034)	35% (0.032)	37% (0.036)	58% (0.043)	52% (0.039)	25% (0.034)	62% (0.043)	47% (0.040)
A*[40]	53%	52%	43%	43%	27%	28%	48%	45%	19%	53%	40%
B	12%	12%	15%	14%	15%	12%	14%	12%	14%	9%	21%
C	3%	11%	15%	16%	16%	17%	9%	16%	24%	12%	14%
D	19%	14%	8%	8%	19%	18%	11%	13%	21%	11%	11%
Omitted	12%	12%	20%	20%	23%	26%	18%	14%	23%	15%	15%

Due to rounding off, the percentages in this table may not add up to 100%.

[40] Correct answer indicated with an asterisk

Table 4.32 shows the Source Text, Target Text, back-translation and response frequencies for Item 8 of *An unbelievable night*, which was a constructed-response item that required learners to interpret and integrate ideas and information. It had a mark allocation of 2.

For Item 8, the Tshivenda (81%) language group had the largest percentage of learners who answered incorrectly. Approximately the same percentages are observed for all the African languages for this item, except for Setswana, where approximately one out of two learners answered the item incorrectly. The Afrikaans group (17%) attained the largest percentage of learners who got the answer partially correct and also had the largest percentage of learners who answered correctly (29%). The IsiXhosa group had the largest percentage of learners (30%) who omitted this item. The African language learners struggled with this item as all the correct response rates were less than 10%.

Content analysis: This item was answered correctly by only 1% of the Tshivenda group, with a ranking of second lowest for *An unbelievable night*. There were no major translation errors in this item or the section of text to which it refers. However, this is a constructed-response item which targets a higher level of comprehension process: to interpret and integrate ideas and information, which may speak to the low results.

Table 4.32: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 8, *An unbelievable night*

Item 8	**Source Text** How did the magazine help Anina? Write two ways.			**Target Text** Naa magazini yo thusa hani Anina? Ṅwalani nḓila mbili					**Back-translation** How did the magazine help Anina? Write two ways		
Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)[41]	42% (0.027)	24% (0.017)	5% (0.017)	3% (0.010)	5% (0.012)	7% (0.014)	8% (0.018)	23% (0.026)	5% (0.012)	6% (0.016)	7% (0.017)
Incorrect response	44%	61%	71%	66%	73%	71%	76%	49%	71%	81%	80%
Partially correct response	17%	16%	7%	4%	7%	8%	13%	25%	9%	9%	9%
Correct response	29%	13%	1%	0%	1%	2%	1%	6%	0%	1%	2%
Omitted	10%	10%	21%	30%	20%	20%	10%	20%	21%	9%	9%

The percentages were rounded off to the nearest integer and therefore may not add up to 100%.

[41] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 4.33 below displays the Source Text, Target Text, back-translation and response frequencies for Item 9 of *An unbelievable night*, which is a multiple-choice item that requires learners to interpret and integrate ideas and information.

For Item 9, at just over half of the learners, the Afrikaans language group (56%) attained the largest percentage for answering correctly. The Setswana (27%) and Sepedi (21%) groups had the largest percentage of African language learners who answered correctly; the language group that had the most learners who did not attempt this item was the Sepedi group (25%).

Content analysis: It would appear that learners had difficulty in discussing and relating to relationships between characters in the text and thus perhaps also with feelings between characters. In this item, for which the Tshivenda learners achieved the second best result for this passage, there is a translation error in the item itself in option D: "Shy" (*An unbelievable night*, Back-translation, Item 9), as opposed to the original English text: "Annoyed" (*An unbelievable night*, Source Text, item 9), although the section of text it refers to contained no serious translation errors.

Table 4.33: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 9, *An unbelievable night*

Item 9	**Source Text** At the end of the story, how did Anina feel toward the flamingos? A guilty B cautious **C grateful** D annoyed	**Target Text** Magumoni a nganea, naa Anina o ḓi pfa hani malugana na dzifulamingo? A e na mulandu B a na vhulondo C **o ḓala dakalo** D o shona	**Back-translation** At the end of the novelstory, how did Anina feel about the flamingos? A guilty B careful C **grateful** D [42] ~~Shy~~ Annoyed

Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)	62% (0.030)	50% (0.023)	35% (0.045)	39% (0.035)	36% (0.034)	28% (0.034)	42% (0.046)	30% (0.038)	41% (0.039)	40% (0.045)	38% (0.040)
A	18%	17%	18%	18%	16%	14%	20%	26%	17%	24%	17%
B	14%	20%	12%	15%	19%	20%	10%	27%	16%	17%	12%
C* [43]	56%	44%	30%	32%	29%	21%	35%	27%	34%	34%	32%
D	2%	7%	26%	17%	17%	20%	17%	8%	16%	9%	24%
Omitted	10%	12%	14%	18%	19%	25%	19%	12%	17%	17%	16%

Due to rounding off to the next integer, the percentages in the table may not add up to 100%.

[42] This is where the verifier corrected the back-translation to match the original English text content
[43] Correct answer indicated with an asterisk

Table 4.34 presents the Source Text, Target Text, back-translation and response frequencies for Item 10 of *An unbelievable night.* The learners had to focus on and retrieve explicitly stated information. This was a constructed-response item with a mark allocation of 1.

For Item 10, the Tshivenda (86%) language group had the largest percentage of learners who answered incorrectly. Approximately one out of two learners who wrote in Afrikaans (51%) answered this item correctly, which is the highest correct response rate over all the language groups tested in this item. The IsiXhosa language group (37%) had the largest percentage for omitting this question.

Content analysis: The back-translation from Tshivenda to English indicates that there were no serious language or flow issues with this section of the text.

Table 4.34 English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 10, *An unbelievable night*

Item 10	**Source Text** Name one thing Anina had difficulty explaining to her parents.			**Target Text** Bulani tshithi tshithihi tshe Anina a ita musi a tshi khou ṱalutshedza vhabebi vhawe.					**Back-translation** Mention one thing that Anina found difficult to explain to her parents.		
Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)[44]	57% (0.031)	48% (0.024)	14% (0.038)	10% (0.026)	6% (0.019)	10% (0.023)	19% (0.037)	20% (0.020)	4% (0.017)	6% (0.020)	13% (0.027)
Incorrect response	38%	46%	60%	57%	70%	68%	69%	62%	67%	86%	78%
Correct response	51%	43%	10%	6%	5%	7%	16%	15%	3%	5%	12%
Omitted	11%	11%	30%	37%	25%	24%	15%	23%	30%	9%	11%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[44] The calculation for learner mean is calculated as per Crocker and Algina (1986)

***No data is available for item 11 as it was deemed to have a lack of validity, thus the data processing centre in Hamburg disregarded the data for this question.**

Table 4.35 shows the Source Text, Target Text, back-translation and response frequencies for Item 12 of *An unbelievable night*, where learners had to interpret and integrate ideas and information. This was constructed-response item with a mark allocation of 2.

For Item 12, the Xitsonga (84%) and IsiNdebele (83%) language groups had the largest percentage of learners who answered incorrectly. The Afrikaans language group had the largest percentage of learners who answered partially correctly (25%)and also had the largest percentage of learners who answered correctly (25%), whereas the Sepedi (21%) language group had the most learners who did not attempt this item. The correct response percentages were especially low across the African languages with five African language groups attaining 0% for this item.

Content analysis: The correct response category had very low percentages for this item, which shows that the abstract nature of the question was perhaps above learners' reading comprehension ability, and thus the process analysed (to interpret and integrate ideas and information) was possibly too complex for these learners. It could also be that learners had problems with this item because it was a constructed-response item. This item was answered correctly by 1% of the Tshivenda group, ranking it the lowest for this group for *An unbelievable night*.

Table 4.35: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 12, *An unbelievable night*

Item 12	**Source Text** Describe what Anina was like and give one example that shows this.			**Target Text** Ṱalutshedzani uri Anina o vha e muthu-ḓe nahone ni dovhe ni nee tsumbo nthihi ine ya sumbedza zwenezwo zwe na zwi amba.					**Back-translation** Explain the characteristics of Anina and give one example which means the same as the things you have mentioned.		
Language	**Afrikaans n= 323**	**English n= 563**	**IsiNdebele n= 152**	**IsiXhosa n= 297**	**IsiZulu n= 339**	**Sepedi n= 265**	**Sesotho n= 179**	**Setswana n= 208**	**Siswati n= 230**	**Tshivenda n= 155**	**Xitsonga n= 182**
Learner Mean (% correct of all *attempted* responses)[45]	41% (0.028)	31% (0.014)	7% (0.007))	7% (0.020)	2% (0.011)	1% (0.007)	4% (0.016)	14% (0.031)	4% (0.012)	7% (0.018)	2% (0.008)
Incorrect response	41%	52%	83%	73%	80%	77%	73%	66%	81%	74%	84%
Partially correct response	25%	19%	1%	7%	3%	2%	7%	9%	6%	9%	3%
Correct response	25%	18%	0%	2%	1%	0%	0%	7%	0%	1%	0%
Omitted	10%	11%	16%	18%	16%	21%	20%	18%	13%	16%	14%

The percentages in this table may not add up to 100% as they were rounded off to the nearest integer.

[45] The calculation for learner mean is calculated as per Crocker and Algina (1986)

***No data is available for question 13 as it was deemed to have a lack of validity, thus the data processing centre in Hamburg disregarded the data for this question.**

4.3.4 an Unbelievable night: the Tshivenda Anomaly

In Table 4.36, it can be seen that the Tshivenda learners who wrote in a secondary language did better than the Tshivenda learners who wrote in their home language, as indicated by the overall mean of learners' percentages for this passage, although there is only a difference of 1%. Items 10 and 11 are the only items where learners who wrote in their home language (n= 382) performed better than their counterparts who wrote the test in a secondary language (n= 263), which means that learners who wrote in a secondary language did better in ten out of twelve items for *An unbelievable night*.

Table 4.36: Performance of Tshivenda learners who wrote in their home language vs Tshivenda learners who wrote in a secondary language

	Item	*Tshivenda learners who wrote in their home language*			*Tshivenda learners who wrote in a secondary language*		
		n	Mean of learners %	Standard Error of Mean	n	Mean of learners' %	Standard Error of Mean
Item 1	REC_UNBELIEVABLE NIGHT/SOMETHING UNUSUAL(D)	78	36%	.05	38	37%	.08
Item 2	REC_UNBELIEVABLE NIGHT/CROCODILE(B)	84	35%	.05	37	38%	.08
Item 3	REC_UNBELIEVABLE NIGHT/SHE WAS FRIGHTENED(A)	78	23%	.05	37	24%	.07
Item 4	REC_UNBELIEVABLE NIGHT/ANINA CROCODILE(D)	82	26%	.05	36	28%	.08
Item 5	REC_UNBELIEVABLE NIGHT/SENTENCES IN ORDER(1)	61	18%	.05	21	24%	.10
Item 6	REC_UNBELIEVABLE NIGHT/ANNINA FLAMINGOS(1)	76	5%	.03	27	11%	.06
Item 7	REC_UNBELIEVABLE NIGHT/DOOR GOT BROKEN(A)	82	66%	.05	32	75%	.08
Item 8	REC_UNBELIEVABLE NIGHT/MAGAZINE HELPS(2)	78	6%	.02	32	11%	.04
Item 9	REC_UNBELIEVABLE NIGHT/HOW ANINA FELT(C)	76	42%	.06	31	42%	.09
Item 10	REC_UNBELIEVABLE NIGHT/DIFFICULTY EXPLNG(1)	77	8%	.03	26	4%	.04
Item 11	REC_UNBELIEVABLE NIGHT/WHAT SHE WAS LIKE(3)	74	4%	.02	23	1%	.01
Item 12	REC_UNBELIEVABLE NIGHT/ANINAS ADVENTURE(2)	65	8%	.03	23	9%	.04
	Overall Mean of learners' %		24%			25%	
	Total number of learners	382			263		

4.3.5 Conclusions for *An unbelievable Night*

After analysing the results per question for *An unbelievable night*, a number of conclusions are made: overall the learners did not achieve high scores for this text; the Sepedi language group had an very high frequency for omitting questions, which also means that this affected their general scoring for this text. In multiple choice Items 3 and 7, an African language did as well as or better than one or both of the leading performers in the "Correct response" category (Afrikaans and English). In constructed response Item 8, the percentages of learners that answered correctly were very low across all eleven languages, which could indicate that the difficulty level of the item was too high. The translation of *An unbelievable night* was of good quality, although there were some errors, with Anina being referred to as "he" or "she" indiscriminately, for example. Some sections of the story, such as the section dealing with how Anina used the magazine to get rid of the crocodile and the flamingos, were confusing and difficult to follow due to incorrect sentence and/or word order. This passage was contextually relevant to South African learners who are familiar with animals such as crocodiles, despite the fact that this passage lies in the fantasy genre, which may fall outside of learners' life/world experiences. As in the case of *Lump of clay*, it can be seen from multiple-choice Item 9 that learners seem to have experienced difficulties in identifying relationships between characters, and/or objects and/or events in the text. It would seem that learners also experienced difficulties with the constructed-response item, Item 12.

4.4 Conclusion

In this chapter, all the factors contributing to the two literary texts *Lump of clay* and *An unbelievable night* were presented. These factors included a breakdown of the text and test composition; a tabulated presentation of the English Source Text, Tshivenda Target Text and back-translation, mark allocation and learner mean for each item. Thereafter, the results for the Grade 5 learners across all eleven official languages were given, followed by an interpretation of these results. And finally, a main conclusion was presented at the end of each text to give an overview of the facts and the conclusions to which they point. In Chapter 5, the same procedures are carried out for the presentation of the two information texts, *Antarctica* and *Searching for food*.

5. VALIDITY OF THE TSHIVENDA INFORMATIONAL TEXTS FROM PIRLS 2006

5.1 Introduction

In this chapter the results of usage of the Classical Test Theory and Content analysis are presented in terms of the two informational texts *(Antarctica* and *Searching for food*). The informational texts are grouped together in order to show the comparison between two texts of the same genre. As explained in Chapter 4, the Classical Test Theory and Content analysis results are presented simultaneously to give the reader a better understanding of the factors analysed in this study, which are translation and learner comprehension. The results of the Kruskall Wallis, Cronbach's Alpha, and Mann Whitney-U test, along with the original, translated and back-translated texts can be found in the appendices (see Appenix C, Appendix D, and Appendix E). The item content analysis (in terms of translation and comprehension) is integrated into each item's statistical analysis.

In the sections below, the general findings for the analysis of *Antarctica* are presented in section 5.2, followed by the findings for *Searching for food* in section 5.3. Finally, overall conclusions for all four passages are discussed (5.4).

5.2 Findings of the analysis for *Antarctica*

This section presents a statistical summary of the text and test composition of the passage called *Antarctica*. The back-translator and verifier's professional opionion of the quality of the translation of the passage into Tshivenda for PIRLS 2006 are then presented in Section 5.2.2, followed by a per item analysis in Section 5.2.3. Finally, the basic conclusions for *Antarctica* are then discussed (Section 5.2.4). The Source Text, Target Text (the original Tshivenda translation), and the back-translation containing the verifier's track changes can be found in Appendix C.

5.2.1 Overview of text and test item composition

Table 5.1 below, which addresses text and test item composition, presents the comprehension processes and types of items for the *Antarctica* text (n = 2833). The word count of the Source Text and the Tshivenda translated text are included, as well as the number of items which are

targeted by a particular comprehension process. The number of multiple-choice items and constructed-response items are also given.

Table 5.1: Comprehension process and test item composition breakdown for *Antarctica*

Comprehension processes breakdown	No. of items	**Item breakdown**	No. of items	Mark allocation
Focus on and retrieve explicitly stated information	5	Multiple-choice	4	4
Make straightforward inferences	4	Constructed-response	7	12
Interpret and integrate ideas and information	1	Total	11	16
Examine and evaluate content, language and textual elements	1	**Word count**		
		English 843		Tshivenda 1086
		Overall Cronbach's Alpha:		Tshivenda Cronbach's Alpha:
Total	11	0.728		.769

The majority of the items required a constructed response, and these items were weighted more heavily in terms of the mark allocation. This implies that the item design focused on the ability to write out a correct response. The Tshivenda text had 243 more words than the English text, thus possibly requiring more time to read than the English counterpart. The overall Cronbach's Alpha of the Antarctica passage is acceptable.

Table 5.2: Antarctica reliability analysis for Tshivenda language test items

Reliability analysis: Tshivenda			
Overall		.769	
Item-Total Statistics			
		Corrected Item-Total Correlation	**Cronbach's Alpha if Item Deleted**
Item 1	ANTARCTICA/LOCATION OF ANTARCTICA(1)	.471	.745
Item 2	ANTARCTICA/COLDEST PART OF ANTARCTICA(1)	.408	.753
Item 3	ANTARCTICA/REASONS FOR VISITING-TIME(2)	.551	.736
Item 4	ANTARCTICA/WAYS PENGUINS KEEP WARM(3)	.528	.739
Item 5	ANTARCTICA/FOOD IN ANTARCTICA(2)	.378	.756
Item 6	ANTARCTICA/WHETHER U WOULD LK 2 VISIT(2)	.444	.749
Item 7	ANTARCTICA/INTERESTING INFORMATION(1)	*.210*	.789
Item 8	REC_ANTARCTICA/RECORDS ANTARCTICA HOLDS(C)	.432	.750
Item 9	REC_ANTARCTICA/MUG OF BOILG WATER FREEZES(D)	.492	.744
Item 10	REC_ANTARCTICA/PURPOSE OF PENGUINS WINGS(B)	.511	.742
Item 11	REC_ANTARCTICA/THICKNESS OF ICE(A)	.319	.763

Table 5.2 indicates that the Cronbach's Alpha for the Tshivenda is higher than that of the overall passage for all eleven languages. However, it was found that Item 7 reduces the reliability of the passage, indicating that if this item were removed, the overall reliability of the passage would increase.

Table 5.3: Mean Percentage for *Antartica* by language group

	Afrikaans n= 323	English n= 538	IsiNdebele n= 159	IsiXhosa n= 277	IsiZulu n= 337	Sepedi n= 248	Sesotho n= 197	Setswana n= 207	Siswati n= 226	Tshivenda n= 153	Xitsonga n= 170
Passage mean	52%	44%	21%	17%	26%	16%	27%	26%	21%	18%	21%
S.E of the mean	0.015	0.012	0.014	0.010	0.011	0.010	0.015	0.015	0.013	0.012	0.013

S.E = Standard Error

From Table 5.3, it can be seen that the learners who wrote in Afrikaans and English achieved a passage mean of 52% and 44% respectively. The learners who wrote in Tshivenda obtained a passage mean of 18%; this is the third lowest passage mean recorded. Overall, it would

seem that learners who wrote in the African languages found this passage more difficult, since their passage means are approximately half of those of the Afrikaans and English groups.

5.2.2 Professional opinion of the Tshivenda translation of Antarctica

Table 5.4 below presents the professional opinion of the back-translator and verifier of the Antarctica text with regard to the first question given to them: What are the translation differences and similarities between the original and back-translation?

Table 5.4: Differences found between the English Source Text and the Tshivenda Target Text for *Antarctica*

Back-translator's response	Verifier's response
1. The back-translation was close to the original English, it was just a wrong choice of words in some instances, e.g. cause instead of reason. 2. The meaning was not completely lost. I think the reader of the original got the same information as the reader of the translation. 3. The difference between the back-translation and the original English had some inconsistency in terminology usage which could have been caused by lack of suitable words used in the translation. But all in all there were many instances where the back-translation went word for word and not using the true sentence structure of the language. The meaning was relevant and it could not make a dfference whether one responded to the questions after reading the original or the back-translation.	Similarities When the back-translation is compared to the original English text, there is a high level of correspondence with regards to general concepts, such as hot and cold, day and night, the seasons, months of the year, etc. The letter from Sara also seems to present the least problems when it comes to correspondence with the original English. I would ascribe this to the simpler style, register and terminology used in the letter, as well as the shorter sentences. Differences However, where the text refers to what would be considered 'foreign' concepts in the local Venda culture, such as ice and penguins, the back-translation differs significantly to the original English, especially in the details where these concepts are being described. A major factor that could contribute to the differences between the two texts could be the fact that the back-translation was done by a second/third language English speaker. The rule of thumb would be to assign the back-translation to a native English speaker. However, where the nine 'indigenous' official languages of South Africa are concerned, this proved to be a challenge. Therefore, back-translations and translations of original Venda texts are usually done by native Venda speakers.

The back-translator's answer is non-specific: he says the text was quite similar to the original English text and would not have hindered learners' comprehension thereof. However, the back-translator does allude to inconsistencies in terminology, which the verifier clarifies as concepts that are culturally foreign to the average Tshivenda learner, such as 'penguins' or 'ice', which may have been difficult to translate and may therefore have been confusing to learners. The verifier also comments that the letter from Sara within the text, specifically, had

the least translation issues; this can be attributed to the simpler register and language that was utilised. Importantly, the verifier mentions that the letter from Sara was easier to read due to shorter sentences; this again points to the role of changing sentence and word length from one language to another and how this affects learners' literacy skills, especially within tests such as those in PIRLS 2006. The English Source Text, Tshivenda Target Text and back-translation for *Antarctica* can be found in appendix C.

Textual examples of translation inaccuracies: The following two examples show translation errors that are too minor to obstruct comprehension: "Antarctica is a country in the South planet." (back-translation) as opposed to: "Antarctica is a continent that is right at the south of the planet" (Source Text) and: "Minus means colder than the point the cold should be end in" (back-translation) versus: "Minus means colder than the freezing point" (Source Text). Two examples of translation errors that could compromise comprehension are: "It is covered by ice in which their **length** [emphasis added] can be 1 500 or more" (back-translation) versus: "[it] is covered with a blanket of ice that can be as **thick** [emphasis added] as 1,500 metres or more" (Source Text).

Table 5.5 illustrates the professional opinion of the back-translator and verifier of the Antarctica text with regard to the second question given to them: In your professional opinion, what method of translation has been used in the original translation?

Table 5.5: Verifier and translator feedback on the methods used for translation for *Antarctica*

Translator's response	Verifier's response
• Semantic (concentrated on the overall meaning, but form of original is adhered to)	It is my opinion that the initial Venda translator used two main translation methods: word-for-word or direct translation where 'foreign' concepts were involved and communicative translation where he/she was familiar with the concepts and had more confidence in and understanding of the terminology. It must be noted, however, that my opinion is based on the representation of the Venda in the back-translation only and some allowance must be made for the methods applied by the back translator in his back-translation. Every time a text is worked on by a language practitioner – translation, editing, proofreading, back-translation, verification – each language practitioner in the process leaves a 'fingerprint' of his own style and preferences on the text.

The back-translator indicated that a semantic translation method was utilised. Although the verifier declares that it is difficult to answer this question based on the back-translation alone, he/she does indicate that the Tshivenda translator utilised word-for-word translation in dealing with concepts foreign to him/her and possibly foreign to the Venda culture, and

communicative translation when dealing with concepts more familiar to him/her. It may have been more appropriate for the Tshivenda translator to utilise idiomatic translation in certain situations within the story as this may have led to a clearer telling and comprehension of the story.

5.2.3 Per item analysis for *Antarctica*

In this sub-section, an analysis of each of the items (1-11) from the *Antarctica* text is conducted. For each item, the Source Text, Target Text (Tshivenda) and back-translation are given, along with the mark allocation and learner mean; thereafter the results for each item are given. In this way, the reader has an overview of what was asked and how it was presented in the original, target text and back-translations; how many marks each item was allocated as well as the learner mean, which could then be compared with the results across all eleven official languages. Also, an analysis of the content or comprehension process (or both) is given after each item analysis, as is relevant to each item in particular.

Table 5.6 below depicts the Source Text, Target Text, back-translation and response frequencies for Item 1 of *Antarctica.* The learners were required to focus on and retrieve explicitly stated information and it was a constructed-response item with a mark allocation of 1.

For Item 1, it can be seen that more than two thirds of the Tshivenda language group (77%) answered incorrectly, followed by the Setswana language group (72%). The Afrikaans language group (59%) present the largest percentage of learners who answered correctly, and also only had 2% of learners who did not attempt this item, which means that almost the entire Afrikaans language group attempted this item. The language group that had the greatest percentage of learners who did not attempt this item was the Sepedi group (20%). The incorrect response rates for all the African languages are above 50% for this item.

Content analysis: The Tshivenda back-translation reads “Where could you get Antarctica on the **globe** [emphasis added]?” using what is quite possibly a low frequency word in Tshivenda.

Table 5.6: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 1, *Antarctica.*

Item 1	**Source Text** Where can you find Antarctica on a map?			**Target Text** Naa Antarctica ni nga ḽi wana nga ngafhi kha guḽoubu ?					**Back-translation** Where could you get Antarctica on the globe?		
Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[46]	60% (0.028)	58% (0.022)	23% (0.038)	20% (0.026)	33% (0.027)	20% (0.028)	30% (0.034)	15% (0.027)	35% (0.035)	10% (0.027)	22% (0.33)
Incorrect response	39%	40%	65%	67%	59%	65%	66%	72%	58%	77%	73%
Correct response	59%	54%	20%	17%	30%	16%	28%	13%	31%	9%	21%
Omitted	2%	6%	16%	16%	11%	20%	6%	16%	11%	14%	6%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[46] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.7 presents the Source Text, Target Text, back-translation and response frequencies for Item 2 of *Antarctica*. This multiple-choice item necessitated learners to focus on and retrieving explicitly stated information. It had a mark allocation of 1.

For Item 2, the Afrikaans language group (45%) yielded the largest percentage of learners who answered this question correctly. The Siswati language group had the largest percentage of learners who omitted this question. Except for the English, Setswana, and Xitsonga language groups, the greatest distractor with the most responses for this item is option B. Also, the Sesotho language group (28%) achieved the same percentage for distractor B and the correct answer (C), which could be an indication that these learners were guessing.

Content analysis: There were no translation errors in this item or the section of text that it refers to.

Table 5.7: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 2, *Antarctica.*

Item 2	Source Text	Target Text	Back-translation
	Antarctica is the coldest place on Earth. What other records does it hold?	Antarctica ndi hone fhethu hune ha rotholesa kha Ḽ̂ifhasi. Naa ḽ̂i na dziṅwe rekhodo dzifhio?	Antarctica is the place where it is the coldest in the world. What are the other records?
	A driest and cloudiest	A u omesa na u vhesa na makole	A it is very dry and very cloudily
	B wettest and windiest	B u nukalesa ḽ̂a dovha ḽ̂a vha na muyesa	B it is very wet and very windy
	C windiest and driest	**C u vha na muyesa na u omesa**	**C it is very windy and very dry**
	D cloudiest and highest	D u vhesa na makole na u vhesa ḽ̂one ḽ̂a nṱ̂hesa	D it is very cloudy and [47] ~~on the top~~ the highest

Language	Afrikaans n= 313	English n= 547	IsiNdebele n= 148	IsiXhosa n= 287	IsiZulu n= 355	Sepedi n= 246	Sesotho n= 187	Setswana n= 211	Siswati n= 213	Tshivenda n= 150	Xitsonga n= 176
Learner Mean (% correct of all *attempted* responses)	49% (0..030)	36% (0.022)	22% (0.036)	32% (0.030)	30% (0.026)	31% (0.033)	32% (0.036)	28% (0.033)	20% (0.031)	23% (0.037)	28% (0.036)
A	13%	22%	12%	17%	14%	20%	18%	20%	19%	33%	27%
B	23%	13%	36%	29%	31%	29%	28%	18%	29%	17%	23%
C*[48]	45%	33%	20%	26%	27%	26%	28%	25%	16%	21%	24%
D	12%	23%	24%	11%	17%	7%	13%	26%	17%	19%	14%
Omitted	8%	9%	8%	17%	11%	17%	12%	12%	19%	11%	12%

The percentages in this table may not add up to 100% due to rounding off to the nearest integer.

[47] Where words are crossed out and new words inserted in red are where the verifier has corrected the back-translation to say the same thing as the original English text.
[48] Correct answer marked with an asterisk

Table 5.8 below demonstrates the Source Text, Target Text, back-translation and response frequencies for Item 3 of *Antarctica*. This constructed-response asked learners to focus on and retrieve explicitly stated information. It had a mark allocation of 1.

For Item 3, the IsiNdebele (80%) group had the largest percentage of learners who answered this item incorrectly, followed by Sepedi (79%), IsiXhosa (78%) and Tshivenda (76%). At just over half of the learners, the Afrikaans group (59%) attained the largest percentage in the correct response category and the IsiXhosa and Siswati language groups had the largest percentage of learners (15%) who did not attempt this item.

Content analysis: There were no translation or flow problems with this item or the section of text that it refers to.

Table 5.8: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 3, *Antarctica.*

Item 3	**Source Text** What is the coldest part of Antarctica?			**Target Text** Naa ndi tshifhio tshipiḓa tsha Antarctica tshi rotholesaho?					**Back-translation** What is the coldest part of Antarctica?		
Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[49]	61% (0.028)	51% (0.022)	9% (0.025)	9% (0.018)	27% (0.025)	7% (0.018)	39% (0.037)	34% (0.035)	32% (0.035)	14% (0.030)	28% (0.035)
Incorrect response	37%	46%	80%	78%	64%	79%	58%	58%	58%	76%	68%
Correct response	59%	47%	7%	8%	24%	6%	37%	30%	28%	12%	26%
Omitted	4%	6%	13%	14%	13%	15%	5%	12%	14%	12%	6%

The percentages in this table may not add up to 100% as they have been rounded off to the nearest integer.

[49] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.9 below presents the Source Text, Target Text, back-translation and response frequencies for Item 4 of *Antarctica.* It targeted the process of inferential comprehension and was a constructed-response item with a mark allocation of 2.

For Item 4, the Tshivenda language group (74%) had the largest percentage for answering incorrectly. The Afrikaans (53%) group had the largest percentage for partially answering correctly. The English (12%) and Afrikaans (11%) language groups had the largest percentage of learners who answered correctly, although percentages were low overall for this question, and the IsiNdebele (24%) language group had the largest number of learners who did not attempt this item. The learners who wrote in Tshivenda obtained the lowest learner mean (10%) across all language groups.

Content analysis: This item ranked second lowest in the correct response category for the Tshivenda group, with 3% of the learners getting the answer correct. The percentages for this item were largest in the incorrect and partially correct categories. In this item, the back-translation is flawed, indicating that the original translation of the item may have been faulty and could have affected learner comprehension: "Think about what the article says about the Antarctica. Mention **two** causes why many people who visit Antarctica choose **usa** of that place during between April and September." (Item 4, *Antarctica* back-translation), as opposed to: "Think about what the article says about Antarctica. Give two reasons why most people who visit Antarctica choose **not** to go there between April and September" (Item 4, *Antarctica*, Source Text). This item also requires learners to identify a causal relationship, which, as seen in the *Lump of clay* text, is problematic.

Table 5.9: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 4, *Antarctica.*

Item 4	**Source Text**	**Target Text**	**Back-translation**
	Think about what the article says about Antarctica. Give **two** reasons why most people who visit Antarctica choose **not** to go there between April and September.	Humbulani nga ha zwine dziatikili dza ambesa nga ha Antarctica. Neani zwiitisi **zwivhili** zwauri ndi ngani vhunzhi ha vhathu vhane vha dalela Antarctica vha tshi nanga **usa** ya fhethu afho nga tshifhinga tsha vhukati ha Lambamai na Khubvumedzi.	Think about what the article says about the Antarctica. Mention **two** ~~causes~~ reasons why many people who visit Antarctica choose ~~usa~~ **not** ~~of~~ to go to that place during between April and September.

Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[50]	40% (0.018)	34% (0.015)	22% (0.029)	14% (0.015)	26% (0.016)	17% (0.020)	28% (0.027)	28% (0.027)	18% (0.023)	10% (0.021)	21% (0.021)
Incorrect response	29%	42%	48%	63%	47%	59%	45%	50%	64%	74%	53%
Partially correct response	53%	41%	24%	23%	39%	21%	44%	26%	19%	13%	34%
Correct response	11%	12%	5%	1%	4%	4%	4%	11%	7%	3%	2%
Omitted	7%	6%	24%	13%	10%	16%	7%	13%	10%	11%	11%

Due to rounding off, the percentages in this table may not add up to 100%.

[50] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.10 presents the Source Text, Target Text, back-translation and response frequencies for Item 5 of *Antarctica*. This multiple-choice item targeted the inferential comprehension process and had a mark allocation of 1.

For Item 5, the Afrikaans language group (70%) had the greatest percentage of learners who answered correctly, while the Sepedi language group (20%) had the smallest percentage of learners who answered correctly; the IsiXhosa group (19%) yielded the largest percentage for omitting this question. IsiNdebele (43%), IsiZulu (41%), Tshivenda (39%) and Sesotho (39%) were the highest achieving African language groups. The greatest distractor with the most responses overall for this item was option C. It should be noted that the Sepedi language group (24%) and the Setswana language group (17%) attained the same percentage for two options, which may be evidence that the learners of these groups were guessing. The learner mean across all languages lies across a large range, between 24% and 74% for all the African languages. The correct response percentage for this item in the Tshivenda group is 39%, making it the highest percentage of correct answers for this language group across this text.

Content analysis: There were no serious translation errors in this item or the section of text to which it refers.

Table 5.10: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 5, *Antarctica*.

Item 5	**Source Text**	**Target Text**	**Back-translation**
	Why does the article tell you that 'a mug of boiling water thrown in the air would freeze before it hit the ice'? A to tell you how hot the water is in Antarctica B to show you what they drink in Antarctica C to tell you about scientists' jobs in Antarctica **D to show you how cold it is in Antarctica**	Naa ndi ngani atikili i tshi ni vhudza uri 'maga ya maḓi ane a khou vhila yo posiwa muyani i nga firiza i saathu na u swika kha aisi.'? A u ni vhudza uri maḓi a fhisa u guma-fhi ngei Antarctica B u ni sumbedza zwine vhanwa nge Antarctica C u ni vhudza nga ha mushumo wa vhorasaintsi ngei Antarctica **D ni sumbedza uri ngei Antarctica hurothola u guma ngafhi**	Why the article tells you that 'a mug of warm water thrown up to the air can freeze before it reaches the ice.'? A to tell you how warm the water it is in Antarctica B to show you what they drink in Antarctica C to tells you about the works that scientist do in Antarctica **D to show you how cold is Antarctica**

Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)	74% (0.026)	59% (0.022)	48% (0.044)	37% (0.032)	48% (0.029)	24% (0.030)	46% (0.040)	41% (0.036)	38% (0.037)	45% (0.044)	36% (0.040)
A	6%	14%	17%	22%	16%	24%	22%	21%	23%	16%	19%
B	7%	10%	12%	10%	10%	17%	9%	17%	12%	8%	14%
C	11%	14%	18%	19%	18%	24%	15%	17%	18%	24%	23%
D*[51]	70%	54%	43%	31%	41%	20%	39%	37%	32%	39%	32%
Omitted	6%	8%	10%	19%	14%	15%	15%	9%	15%	14%	13%

The percentages in this table may not add up to 100% due to rounding off to the nearest integer.

[51] Correct answer marked with an asterisk

Table 5.11 shows the Source Text, Target Text, back-translation and response frequencies for Item 6 of *Antarctica.* Learners were required to focus on and retrieve explicitly stated information. This was a multiple-choice item, with a mark allocation of 1.

For Item 6, the Afrikaans (72%) language group delivered the largest percentage of learners who answered correctly. The Siswati language group (21%) had the smallest percentage of learners who answered correctly and the IsiXhosa group (16%) had the largest percentage of learners that did not attempt this item. The learner means for the Afrikaans and English language groups exceeded 70%, whilst the observed learner mean for the African language groups ranged from 29% to 40%. This is a clear indication that learners who wrote in an African language found this question significantly more difficult than their Afrikaans and English counterparts.

Content analysis: The statistics suggest that learners may not be on a literary level where they are able to focus on and retrieve explicitly stated information. There were no problems with the translation of this item that would impact comprehension.

Table 5.11: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 6, *Antarctica*.

Item 6	Source Text	Target Text	Back-translation
	According to the article, what do penguins use their wings for?	U ya nga ha atikili, naa phingwini dzi shumisa phapha dzadzo u ita mini?	According to the article, what do penguins use their wings for?
	A flying	A u fhufha	A to fly
	B swimming	**B u bambela**	**B to swim**
	C keeping chicks warm	C u dudedza zwikukwana	C to warm-up ~~small birds~~ their babies
	D walking upright	D u tshimbila zwavhuḓi	D to ~~travel safe~~ walk by standing up straight

Language	Afrikaans n= 313	English n= 547	IsiNdebele n= 148	IsiXhosa n= 287	IsiZulu n= 355	Sepedi n= 246	Sesotho n= 187	Setswana n= 211	Siswati n= 213	Tshivenda n= 150	Xitsonga n= 176
Learner Mean (% correct of all *attempted* responses)	75% (0.025)	71% (0.020)	35% (0.042)	29% (0.031)	32% (0.039)	26% (0.031)	40% (0.036)	40% (0.036)	24% (0.033)	39% (0.043)	25% (0.035)
A	6%	9%	24%	26%	25%	28%	20%	23%	27%	23%	21%
B*[52]	72%	67%	33%	24%	28%	23%	35%	37%	21%	34%	23%
C	12%	11%	30%	26%	29%	20%	24%	17%	25%	19%	34%
D	6%	7%	7%	8%	8%	16%	10%	15%	12%	13%	14%
Omitted	5%	5%	6%	16%	10%	14%	11%	8%	15%	11%	9%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[52] Correct answer marked with an asterisk

Table 5.12 presents the Source Text, Target Text, back-translation and response frequencies for Item 7 of *Antarctica*. This constructed-response item targeted the process of inferential comprehension and had a mark allocation of 1.

For Item 7, the Tshivenda (69%), Siswati (68%) and Xitsonga (68%) language groups yielded the largest percentage for answering incorrectly, although the Xitsonga language group had the largest percentage for answering partially correctly (20%). The Afrikaans language group attained the largest percentage of learners in the "Almost correct response" category as well as the "Correct response" category with 14% and 34% respectively. The IsiNdebele language group had the largest percentage of learners who omitted this question (26%). The learner mean follows a similar pattern with Afrikaans and English learners obtaining noticeably higher learner mean scores than their African language counterparts. It should also be noted that the reliability correlation for this item indicates that if it were removed, the overall reliability of the passage would increase (see Table 5.2).

Content analysis: This question may have been difficult for learners to answer due to the fact that, as seen in the Tshivenda back-translation, the translation of the penguin paragraph of this story is difficult to read because wrong tenses and incorrect word order were used (see Appendix C, *Antarctica* back-translation). The back-translation for this item, which is the second of three items that had the highest mark allocation across all four texts (3 marks), shows that the item itself is mistranslated: "Mention *two* ways that penguins can warm up themselves in Antarctica." (Antarctica, back-translation, item 7), instead of the original English text's "Give *three* ways penguins are able to keep warm in Antarctica." (Antarctica, original text, item 7). In the passage itself, certain terms are also mistranslated. For example, "Penguins have lots of overlapping wings." (Paragraph 4), instead of "Penguins have many feathers that overlap each other." (Paragraph 4). These mistranslations in the Target Text indicate what may have occurred with the original Tshivenda translation, which could well have had an impact on the learners' performance. This could be related to the reliability analysis results discussed above.

Table 5.12: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 7, *Antarctica.*

Item 7	**Source Text** Give **three** ways penguins are able to keep warm in Antarctica.			**Target Text** Ṋeani nḓila tharu dzine phingwini dza kona u ḓidudedza ngadzo ngei Antarctica.					**Back-translation** Mention ~~two~~ three ways that penguins can warm up themselves in Antarctica.		
Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[53]	53% (0.025)	39% (0.020)	10% (0.021)	6% (0.013)	11% (0.015)	12% (0.017)	14% (0.022)	19% (0.024)	9% (0.017)	10% (0.020)	10% (0.015)
Incorrect response	28%	46%	57%	67%	65%	62%	65%	59%	68%	69%	68%
Partially correct response	16%	8%	11%	4%	11%	10%	10%	11%	12%	8%	20%
Almost correct response	14%	13%	5%	2%	4%	8%	8%	11%	2%	8%	3%
Correct response	34%	25%	1%	2%	3%	1%	3%	6%	3%	1%	1%
Omitted	7%	8%	26%	25%	17%	19%	14%	13%	16%	15%	9%

Due to rounding off, the percentages in this table may not add up to 100%.

[53] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.13 displays the Source Text, Target Text, back-translation and response frequencies for Item 8 of *Antarctica*. Learners had to make straightforward inferences for this constructed-response item with a mark allocation of 2.

For Item 8, the language group that had the largest percentage for answering incorrectly was the Tshivenda (68%) group, followed by Sepedi (66%), IsiXhosa (65%) and Xitsonga (63%). The Xitsonga group (19%) had the largest percentages of learners who answered partially correctly. In this item, an African language performed as well as or better than the two non-African languages (English and Afrikaans) in the partially correct category. The Afrikaans language group (43%) achieved the greatest number of learners who answered correctly and the IsiNdebele group (26%) had the largest percentage for omitting this question. The pattern observed in the correct reponse category is similar to the other items thus far, with the learners who wrote in Afrikaans and English performing markedly better than their African language counterparts.

Content analysis: In the Tshivenda to English back-translation , the verifier had to add “the food in”, thus this question originally only asked about what the learner has learnt about Antarctica in general, and not specifically food, which could alter their answers.

Table 5.13: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 8, *Antarctica.*

Item 8	**Source Text** What are **two** things you learn about food in Antarctica from Sara's letter?			**Target Text** Ndi zwifhio zwithu zwivhili zwe na guda nga ha zwiḽiwa zwa ngei Antarctica kha luṅwalo lwa Sara?					**Back-translation** What are the two things you learn about the food in[54] Antarctica in Sara's letter ?		
Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[55]	57% (0.028)	52% (0.021)	25% (0.038)	11% (0.019)	32% (0.027)	10% (0.021)	29% (0.029)	20% (0.029)	10% (0.019)	18% (0.032)	19% (0.026)
Incorrect response	30%	34%	49%	65%	48%	66%	52%	58%	64%	68%	63%
Partially correct response	15%	18%	14%	10%	13%	6%	15%	12%	11%	11%	19%
Correct response	43%	37%	12%	4%	19%	5%	17%	10%	2%	11%	7%
Omitted	11%	10%	26%	22%	20%	23%	16%	19%	22%	11%	11%

The percentages in this table were rounded off to the nearest integer and may therefore not add up to 100%.

[54] This is where the verifier corrected it to match the content of the original English text
[55] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.14 presents the Source Text, Target Text, Back-translation and response frequencies for Item 9 of *Antarctica.* Learners were required to interpret and integrate ideas and information. This was a constructed-response item with a mark allocation of 2.

For Item 9, 75% of the Tshivenda language group answered this item incorrectly. The Afrikaans (28%) and Xitsonga (17%) language groups had the largest percentage of learners who answered partially correctly. In this item, an African language group did as well as a non-African language (English and Afrikaans) in this category. The Afrikaans group had the largest percentage of learners who answered correctly (22%) and the Sepedi language group had the greatest number of learners who did not attempt this item (39%). Learners who wrote in the other African languages were unable to achieve a correct response rate above 10%.

Content analysis: The results for this item show that many language groups did especially poorly in this item. A possible reason for this is that this particular item may be too abstract, and thus the comprehension process (to interpret and integrate ideas and information) was too complex for learners who had not yet mastered learning to read for knowledge acquisition. It also shows that learners may have problems responding to constructed-response items. There were no problems with the translation of this item or the section of text that it refers to that could affect comprehension.

Table 5.14: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 9, *Antarctica.*

Item 9	**Source Text**	**Target Text**	**Back-translation**
	Think about whether you would like to visit Antarctica. Use what you have read in both Introducing Antarctica and A Letter from Antarctica to explain why you would or would not like to visit.	Humbulani arali ni tshi nga tama u dalela Antarctica. Shumisani zwe na vhala kha U ḓivhadza Antarctica na Vhurifhi vhu bvaho Antarctica ni ṱalutshedze uri ndi nga mini ni tshi nga funa kana ni si nga si fune u hu dalela.	Think if you wish to visit Antarctica. Use what you have read in ~~*introducing*~~ *Introduce Antarctica* and the ~~letter~~ *Letter* ~~*which come from Antarctica*~~ and explain why you would like or you won't like to visit.

Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[56]	42% (0.026)	34% (0.020)	5% (0.020)	6% (0.016)	20% (0.023)	8% (0.018)	13% (0.022)	16% (0.028)	9% (0.022)	8% (0.025)	12% (0.020)
Incorrect response	35%	48%	56%	65%	47%	53%	61%	59%	59%	75%	63%
Partially correct response	28%	16%	5%	6%	16%	7%	15%	10%	7%	3%	17%
Correct response	22%	21%	1%	2%	6%	1%	2%	7%	3%	5%	1%
Omitted	15%	16%	38%	28%	31%	39%	22%	24%	31%	17%	18%

Due to rounding off, the percentages in this table may not add up to 100%.

[56] The calculation for learner mean is calculated as per Crocker and Algina (1986).

Table 5.15 presents the Source Text, Target Text, back-translation and response frequencies for Item 10 of *Antarctica*. In this multiple-choice item, learners had to focus on and retrieve explicitly stated information. It had a mark allocation of 1.

For Item 10, learners who wrote in Afrikaans achieved the largest percentage (31%) correct response rate, across all language groups. The Sesotho language group got the same percent for two options (21%), which may indicate that they were guessing.The isiXhosa language group (7%) had the smallest percentage of learners who answered correctly and the Sepedi and Tshivenda groups had the largest percentage for omitting this item (12%), although the percentages for omitting this question were generally very low. Generally, the distractor with most responses for this item was option B.

Content analysis: It can be observed in the Tshivenda back-translation of item 10 that there was a problem with the term “thickness”, which was mistakenly put down as “length”, which has nothing to do with thickness and therefore may confuse learners.

Table 5.15: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 10, *Antarctica.*

Item 10	**Source Text**	**Target Text**	**Back-translation**
	Which section of the article tells you how thick the ice is in Antarctica?	Ndi khethekanyo ifhio kha atikili ine ya ni vhudza nga ha vhudenya ha aisi ngei Antarctica?	Which section of the article tells you about the ~~length~~ [57] thickness of ice in Antarctica?
	A What is Antarctica?	**A Naa Antarctica ndi mini?**	**A What is Antarctica?**
	B The Weather in Antarctica	B Mutsho ngei Antarctica	B Weather in Antarctica
	C Penguins in Antarctica	C Phingwini ngei Antarctica	C Penguins in Antarctica
	D A Letter from Antarctica	D Vhurifhi vhu bvaho Antarctica	D A Letter from Antarctica

Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)	33% (0.029)	27% (0.020)	10% (0.029)	8% (0.020)	9% (0.018)	14% (0.027)	13% (0.029)	15% (0.030)	19% (0.032)	12% (0.031)	15% (0.030)
A*[58]	31%	26%	9%	7%	9%	12%	12%	13%	17%	11%	14%
B	31%	39%	45%	42%	46%	23%	35%	34%	41%	31%	27%
C	13%	13%	14%	12%	19%	25%	21%	22%	15%	27%	21%
D	21%	18%	22%	28%	20%	28%	21%	18%	17%	19%	29%
Omitted	4%	5%	11%	11%	7%	12%	11%	13%	10%	12%	9%

The percentages in this table may not add up to 100% as they were rounded off to the nearest integer.

[57] This is where the verifier corrected this item to match the content of the original English Source Text.
[58] Correct answer marked with an asterisk

Table 5.16 shows the Source Text, Target Text, back-translation and response frequencies for Item 11 of *Antarctica.* Learners were required to examine and evaluate content, language and textual elements for this constructed-response item with a mark allocation of 1.

For Item 11, the Tshivenda language group (68%) had the largest percentage of learners who answered incorrectly, although the percentages overall for answering incorrectly were high for this question. The English language group attained the largest percentage of learners who answered correctly (25%) and the Sepedi language group (39%) had the largest number of learners who omitted this item. The pattern that has been observed in previous items of *Antartica* is present in this item as well: learners who wrote in the African languages were unable to attain a correct response rate above of 10%, which is less than half of the rate obtained by their counterparts who wrote in a non-African language.

Content analysis: This item, as can be seen by the comprehension process focused on, requires personal reflection on the text which is at a higher level of comprehension than other items for the text. Thus the fact that the percentages for omitting and answering incorrectly are so elevated may demonstrate that, generally, learners had not fully achieved the level of literacy that was the expected standard for learners at this stage of schooling (as discussed in Section 3.2).

Table 5.16: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 11, *Antarctica.*

Item 11	**Source Text**	**Target Text**	**Back-translation**
	In this article, there are two different ways of finding out about Antarctica: • Introducing Antarctica • A Letter from Antarctica Which of these kinds of information do you find more interesting, and why?	Kha hei atikili, hu na nḓila mbili dzo fhambanaho dza u ḓivha nga ha Antarctica: • U ḓivhadza Antarctica • Vhurifhi vhu bvaho Antarctica Ndi lushaka lufhio kha tshakha idzi dza mafhungo ine na wana i yone i takadzaho nga maanḓa, ndi nga mini ni tshi ralo?	In this article, there are two different ways to ~~know~~ find out things about Antarctica: • ~~*Inform about*~~ *Introduce Antarctica* • *A Letter from Antarctica* What type of information do you find more interesting, and why are you saying that?

Language	**Afrikaans n= 313**	**English n= 547**	**IsiNdebele n= 148**	**IsiXhosa n= 287**	**IsiZulu n= 355**	**Sepedi n= 246**	**Sesotho n= 187**	**Setswana n= 211**	**Siswati n= 213**	**Tshivenda n= 150**	**Xitsonga n= 176**
Learner Mean (% correct of all *attempted* responses)[59]	25% (0.028)	32% (0.024)	4% (0.023)	4% (0.015)	4% (0.016)	3% (0.016)	4% (0.019)	9% (0.026)	5% (0.021)	13% (0.035)	4% (0.018)
Incorrect response	64%	54%	61%	66%	59%	59%	66%	63%	61%	68%	77%
Correct response	22%	25%	3%	2%	3%	2%	3%	6%	3%	10%	3%
Omitted	15%	20%	37%	32%	38%	39%	31%	31%	36%	23%	20%

Due to rounding off to the nearest integer, the percentages in this table might not add up to 100%.

[59] The calculation for learner mean is calculated as per Crocker and Algina (1986)

5.2.4 Antarctica: The Tshivenda anomaly

The overall mean of the Tshivenda learners' correct response percentage for this passage shows that the Tshivenda learners who wrote in a secondary language performed better than the Tshivenda learners who wrote in their home language, even though there was only a difference of 1%. In the Antarctica Passage, in five of the eleven items Tshivenda learners who wrote the test in a language other than their home language (n= 263) performed better than those who wrote the test in their home language (n= 382), which means that Tshivenda learners who wrote in their mother tongue performed better in the majority of items based on an item by item comparison.

Table 5.17: Performance of Tshivenda learners who wrote in their home language vs Tshivenda learners who wrote in a secondary language

		Tshivenda learners who wrote in their home language			*Tshivenda learners who wrote in a secondary language*		
	Item	n	Mean of learners' %	Standard Error of Mean	n	Mean of learners' %	Standard Error of Mean
Item 1	REC_ANTARCTICA/LOCATION OF ANTARCTICA(1)	69	13%	.04	20	15%	.08
Item 2	REC_ANTARCTICA/RECORDS ANTARCTICA HOLDS(C)	73	30%	.05	22	27%	.10
Item 3	REC_ANTARCTICA/COLDEST PART OF ANTARCTICA(1)	69	22%	.05	22	9%	.06
Item 4	REC_ANTARCTICA/REASONS FOR VISITING-TIME(2)	67	13%	.03	20	13%	.05
Item 5	REC_ANTARCTICA/MUG OF BOILG WATER FREEZES(D)	68	56%	.06	20	70%	.11
Item 6	REC_ANTARCTICA/PURPOSE OF PENGUINS WINGS(B)	68	50%	.06	21	57%	.11
Item 7	REC_ANTARCTICA/WAYS PENGUINS KEEP WARM(3)	58	14%	.03	20	10%	.06
Item 8	REC_ANTARCTICA/FOOD IN ANTARCTICA(2)	58	23%	.05	19	34%	.10
Item 9	REC_ANTARCTICA/WHETHER U WOULD LK 2 VISIT(2)	51	15%	.05	19	5%	.05
Item 10	REC_ANTARCTICA/THICKNESS OF ICE(A)	57	19%	.05	19	5%	.05
Item 11	REC_ANTARCTICA/INTERESTING INFORMATION(1)	45	13%	.05	17	35%	.12
	Overall mean of learners' %		24%			25%	
	Total number of learners	382			263		

5.2.5 Conclusions for Antarctica

Overall, the learners that received the "Antarctica" text and its items did not do very well. As seen in the literary texts, the Afrikaans and English language groups generally had the largest percentages for answering correctly, although in Item 3, the percentage attained by the Sepedi language group is close to that of the Afrikaans and English language groups. In constructed response Items 4, 7, 8 and 9, an African language did as well as or better than Afrikaans and English in the "partially correct" and/or "almost correct" categories. Parts of the back-translated text, such as the section regarding penguins, are disjointed and difficult to read due to incorrect use of tenses, word order and incorrect vocabulary, which could cause confusion. The translation of this text was not as good as that of the literary texts due to the omission of words and incorrect use of words both respectively important to meaning. It was noted by the verifier that the most successfully translated section of text is where the sentences are shorter (Sara's letter) – this means that this section could have been easier for learners to read. In constructed response Items 1, 7 and 8, and multiple choice Item 10, the translation of terms was either incorrect, or words important to the meaning of the item were omitted. The fact that four out of eleven items had incorrect translations that could impact the comprehension of those items means that this text may have presented a problem to learners. The following section continues with the statistical and content analysis for the *Searching for food* passage and its items.

5.3 Findings of the analysis for *Searching for food*

In this section, a statistical summary of the text and test composition of the passage called *Searching for food* is presented. The back-translator and verifier's professional opinion of the quality of the translation of the passage into Tshivenda for PIRLS 2006 is then presented in Section 5.3.1, followed by a per item analysis in Section 5.3.2. And finally, the basic conclusions for *Searching for food* are then discussed in Section 5.3. The Source Text, Target Text (the original Tshivenda translation), and the back-translation containing the verifier's track changes can be found in Appendix D.

5.3.1 Overview of text and test item composition

Table 5.18 below details the assessment framework for the *Searching for food* text (n = 2785). The word count for both the Source Text (English) and the back-translation are shown below. The number of items which are targeted by a particular comprehension process, as well as the number of multiple-choice and constructed-response items are also given.

Table 5.18: Comprehension process and test item composition breakdown for *Searching for food.*

Comprehension processes breakdown	No. of items	**Item breakdown**	No. of items	Mark allocation
Focus on and retrieve explicitly stated information	3	Multiple-choice	6	7
Make straightforward inferences	4	Constructed-response	8	10
Interpret and integrate ideas and information	5	Total	14	17
Examine and evaluate content, language and textual elements	2	**Word count**		
		English 1318		Tshivenda 1607
		Overall Cronbach's Alpha:		Tshivenda Cronbach's Alpha:
Total	14	.808		.828

The items for this text accessed a lower order and higher order of comprehension equally. The majority of the questions, however, required a constructed response, and these questions were weighted more heavily in terms of the mark allocation. The overall internal consistency of the passage is good as indicated by the Cronbach's Alpha (0.808), although Table 5.18 indicates that the Tshivenda overall reliability coefficient is .020 higher than that of the overall coefficient for all languages for this passage's items. Therefore it can be said that the Tshivenda instrument was more reliable than all the other language instruments. The Tshivenda passage word count is 289 words more than that of the English passage, which possibly took longer to read than the English passage.

Table 5.19: Searching for food reliability analysis forTshivenda language test items

Reliability analysis: Tshivenda			
Overall Cronbach's Alpha		.828	
Item-Total Statistics			
		Corrected Item-Total Correlation	**Cronbach's Alpha if Item Deleted**
Item1	SEARCHING FOR FOOD/ANTS SCURRY(1)	.369	.823
Item 2	SEARCHING FOR FOOD/PICTURE PILL BUGS(2)	.437	.819
Item 3	SEARCHING FOR FOOD/MOVE THE LEAVES(1)	.457	.817
Item 4	SEARCHING FOR FOOD/SIMILAR WAY(1)	.414	.820
Item 5	SEARCHING FOR FOOD/MAKING WORMERY(1)	.272	.837
Item 6	SEARCHING FOR FOOD/IN WORMERY(1)	.575	.809
Item 7	SEARCHING FOR FOOD/ONION AND POTATO(1)	.486	.815
Item 8	SEARCHING FOR FOOD/INTERESTING PROJCT(2)	.366	.824
Item 9	REC_SEARCHING FOR FOOD/PURPOSE OF ARTICLE(A)	.543	.811
Item 10	REC_SEARCHING FOR FOOD/CARE OF CREATURES(D)	.556	.810
Item 11	REC_SEARCHING FOR FOOD/APPLE BY ANTS NEST(B)	.671	.802
Item 12	REC_SEARCHING FOR FOOD/HOW ANTS FIND FOOD(C)	.618	.806
Item 13	REC_SEARCHING FOR FOOD/PILL BUGS FOOD(B)	.470	.817
Item 14	REC_SEARCHING FOR FOOD/PROJECT HAPPENS(D)	.313	.828

The internal consistency of the Searching for food passage for learners who wrote in Tshivenda is good, as there was only one item, item 5, that if removed would improve the reliability of the scale.

Table 5.20: Mean percentage for *Searching for food* obtained byeach language group

	Afrikaans n= 323	**English n= 538**	**IsiNdebele n= 159**	**IsiXhosa n= 277**	**IsiZulu n= 337**	**Sepedi n= 248**	**Sesotho n= 197**	**Setswana n= 207**	**Siswati n= 226**	**Tshivenda n= 153**	**Xitsonga n= 170**
Passage mean	36%	29%	16%	17%	17%	16%	20%	23%	17%	15%	18%
S.E of mean	0.014	0.011	0.011	0.009	0.008	0.011	0.012	0.013	0.01	0.012	0.012

S.E = Standard Error

The *Searching for Food* passage, as seen in Table 5.20, was a difficult passage for the learners to answer as the highest correct response rate, achieved by learners who wrote in Afrikaans, was only 36%, followed by English (29%). All the other language groups except Setswana achieved percentages of 20% or below. It would seem that the cognitive level at

which this passage was set was beyond the understanding of the learners who read and attempted to answer it.

5.3.2 Professional opinon of the Tshivenda translation of *searching for food*

Table 5.21 below presents the professional opinion of the back-translator and verifier of the *Searching for food* text with regard to the first question given to them: What are the translation differences and similarities between the original and back-translation?

Table 5.21: Differences found between the English Source Text and the Tshivenda Target Text *Searching for food*

Back-translator's response	Verifier's response
1. They are not very similar because the back-translation was influenced by the words used by the translation. Sometimes the translator used the terminology inconsistently. 2. The meaning was clear and the reader of the back-translation and the original would get the same information. 3. There was no consistency in the original English document when it comes to the first part on bullet number two, Study pill bugs and the heading which says "Learn about pill bugs". In this instance, the translator translated the two in the same words to mean "Gudani zwivhungu zwa phili si" but the overall translation and the back-translation had the same meaning as the original translation. 4. The general meaning of the original and the back-translation is the same. The only difference is that I chose some of the words which differed from the original but that did not affect the meaning.	Similarities Although the back-translation seems to show a fair level of correspondence to the original English text, there also seems to be a lot of problems with the translation. Differences Judging from the back-translation alone, I would have to say that the translator did not give the translation his/her best effort. In most instances the translator did not make a distinction between 'bug' and 'worm'. The back-translation also indicates that the instructions contained in the text were done without the proper attention to detail. This text, for me, proved the most challenging to verify.

The back-translator's answer to this question is confused. The gist apparently is that the translation conveyed the exact same message as the original text, except for a few inconsistencies in terminology, also that these inconsistencies were rather in the original text than in the translation. The verifier disagrees with the translator in saying that there were serious translation issues, especially with regard to the use of the correct name for the insects in the text, "pill bugs" versus the translator's version of "pill worms". The verifier asserts that this text was the most difficult to verify, although this does not establish whether the poor effort of translation lay with the original translator or with the back-translator. The English Source Text, Tshivenda Target Text and back-translation for *Searching for food* can be found in appendix D.

Textual examples of translation inaccuracies: The next two examples demonstrate translation errors that would not affect comprehension: "Pill worms bugs like moist places" (back-translation) versus: "Pill bugs like damp, dark places" (Source Text); and: "Mention one thing that you may do to take care of creatures? [Option A] to look under small risks and stones" (back-translation) versus: "What is one thing you should do to take care of the creatures? [Option A] search for them under rocks and stones" (Source Text). In this item, 32% of the Tshivenda group answered correctly. Two examples of translation errors that could well have affected comprehension are: "Make a Warmer" (back-translation) versus: "Make a Wormery" (Source Text); and: "Why do the ants run around very slowly after you have sprinkled the soil?" (back-translation) versus: "Why do the ants scurry around after you've sprinkled the soil?" (Source Text). In this item, 28% of the Tshivenda group answered correctly.

Table 5.22 presents the professional opinion of the back-translator and verifier of the *Searching for food* text with regard to the second question given to them: In your professional opinion, what method of translation has been used in the original translation?

Table 5.22: Verifier and translator feedback on the methods used for translation for *Searching for food*

Back-translator's response	Verifier's response
• Semantic (concentrated on the overall meaning, but form of original is adhered to) • Communicative (used correct terms in their context, and overall meaning is also correct).	In 'Search for Food' I believe that the Venda translator varied between direct translation and free translation, which resulted in a translation of poor quality and obscured meaning.

With regard to this question, the back-translator and verifier are at odds. The back-translator claims that Semantic and Communicative translation were used, which are both appropriate methods of translation; whereas the verifier indicates that Direct and Free translation were used, which would be inappropriate methods for this type of text. Again, this could either point to the poor translation methods of the original translator, or it could point to the fact that the back-translator putting little effort into his/her back-translation, and using inappropriate translation methods. The back-translation of this text is of poor quality whether through the fault of the original translator or through that of the back-translator him/herself.

5.3.3 Per item analysis for *Searching for food*

In this sub-section, an analysis of each of the items (1-15) from the *Searching for food* text is considered. For each item, the Source Text, Target Text (Tshivenda) and back-translation are given, along with the mark allocation and learner mean; thereafter the results for each item are given. The learner mean, a category in the learner response frequency tables, excludes the omitted category.Included in the per item analysis are comments on the comprehension process, or the content analysis or both, depending on the relevance to each question. For example, where there was nothing to comment on for content analysis, the comprehension process is then discussed, or vice versa. In some cases, both the comprehension process and the content analysis are discussed.

Table 5.23 presents the Source Text, Target Text, back-translation and response frequencies for Item 1 of *Searching for food.* Learners had to interpret and integrate ideas and information for this multiple-choice item with a mark allocation of 1.

For Item 1, the Afrikaans language group (43%) had the largest percentage of learners who answered this question correctly. The Tshivenda language group (11%) had the largest percentage of learners who answered incorrectly. The Sepedi language group had the most learners who did not attempt this item (20%) and the distractor that obtained the most responses for this item was option B.

Comprehension process: The very first item of this passage addresses such a complex process (to interpret and integrate ideas and information). The pattern in the other three passages has been a build-up to such complex processes towards the end of the items per passage.

Table 5.23: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 1, *Searching for food.*

Item 1	**Source Text** What is the main purpose of the article? **A** **to describe different projects you can do** B to give information about ant trails C to show what small creatures look like D to explain what worms eat	**Target Text** Na tshipikwa tshihulwane tsha atikili ndi tshifhio? **A** **u ṱalutshedza thandela dzo fhambanaho dzine ni nga dzi ita** B u ḓivhadza mafhungo nga ha nḓila ya masunzi C u sumbedza uri zwikhokhonono zwiṱuku zwi vhonala sa mini D u ṱalutshedza zwine vhuswiḓu ha ḽa zwone	**Back-translation** What is the main purpose of the article? **A** **to explain different projects which you may do** B to gives information on the route of ants C to show what small creatures look like D to tell you about what worms eat

Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)	48% (0.030)	37% (0.022)	31% (0.041)	36% (0..31)	38% (0.029)	24% (0.031)	38% (0.038)	31% (0.035)	28% (0.033)	13% (0.030)	33% (0.038)
A*[60]	43%	34%	28%	31%	33%	19%	35%	27%	23%	11%	30%
B	16%	25%	33%	28%	25%	23%	17%	28%	29%	45%	24%
C	18%	18%	13%	18%	17%	20%	13%	18%	21%	19%	19%
D	13%	15%	15%	9%	11%	19%	28%	14%	13%	9%	17%
Omitted	11%	9%	11%	13%	14%	20%	8%	14%	15%	15%	11%

Due to rounding off to the nearest integer, this table may not add up to 100%.

[60] Correct answer marked with an asterisk

Table 5.24 presents the Source Text, Target Text, back-translation and response frequencies for Item 2 of *Searching for food*. For this multiple-choice item, learners were required to focus on and retrieve explicitly stated information.

For Item 2, the Afrikaans (46%) and English (42%) language groups achieved the largest percentage of learners who answered correctly. The Setswana (18%) and Sepedi (17%) language groups had the largest percentage of learners who answered incorrectly, and the Sepedi language group (18%) had the greatest percentage for omitting this question. The statistics reveal that the Tshivenda (15%), Xitsonga (15%) and Setswana (18%) language groups were possibly guessing when answering, as they delivered the same statistic for two of the four options. The Tshivenda learners had the highest percentage of correct answers (32%) amongst the African languages in this item. This was also the largest percentage of correct answers for this text for the Tshivenda group.

Content analysis: There were no serious translation errors in this item or the section of text to which it refers.

Table 5.24: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 2, *Searching for food.*

Item 2	**Source Text**	**Target Text**	**Back-translation**
	What is one thing you should do to take care of the creatures?	Naa ndi tshifhio tshithu tshithihi tshine na fanela u tshi ita u thogomela zwikhokhonono?	Mention one thing that you may do to take care of creatures?
	A search for them under rocks and stones	A u zwi ṱoḓa fhasi ha matombo matombo maṱuku na mahulwane	A to look under small rocks and stones
	B find out all about them	B u wana zwoṱhe nga hazwo	B Search all information concerning them
	C collect as many as you can	C u kuvhanganya zwinzhi u ya nga hune wa kona ngaho	C to collect as many as you can
	D put them back where you found them	**D u zwi vhuyedzedza he wa zwi wana hone**	**D to return them where you found them**

Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)	50% (0.029)	46% (0.022)	21% (0.035)	31% (0.030)	26% (0.026)	21% (0.029)	30% (0.036)	20% (0.030)	25% (0.032)	37% (0.042)	26% (0.035)
A	20%	20%	33%	28%	18%	24%	23%	29%	15%	26%	38%
B	17%	21%	22%	15%	27%	25%	26%	23%	31%	15%	15%
C	8%	8%	18%	17%	20%	16%	14%	18%	18%	15%	15%
D*[61]	46%	42%	19%	27%	22%	17%	26%	18%	22%	32%	24%
Omitted	9%	9%	9%	14%	13%	18%	11%	13%	14%	13%	9%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[61] Correct answer marked with an asterisk

Table 5.25 gives the Source Text, Target Text, back-translation and response frequencies for Item 3 of *Searching for food.* The comprehension process it targeted was to make straightforward inferences. This was a multiple-choice item with a mark allocation of 1.

For Item 3, the Afrikaans language group (55%) had the largest percentage of learners who answered this question correctly. The Sepedi (24%), Siswati (24%) and IsiXhosa (23%) language groups had the greatest percentage of learners who answered incorrectly. The Sepedi language group (20%) had the most learners who did not attempt this item. It can be observed that the IsiNdebele (22%), IsiXhosa (23%), and Sepedi (18%) language groups received the same percentage for two of the four options, which possibly indicates that they were guessing. Tshivenda was the second highest perorming language (30%) across all the African languages, only surpassed by isiNdebele (33%).

Content analysis: There were no translation errors in the item or the text to which it refers.

Table 5.25: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 3, *Searching for food.*

Item 3	Source Text	Target Text	Back-translation
	Why do you put the apple by the ants' nest?	Naa ndi nga mini ni tshi vhea apula nga tsini na tshitaha tsha masunzi?	Why do you put an apple next to the ants' nest?
	A to block the ants' trail	A u thivhela nḓila ya masunzi	A to close the ants' route
	B so the ants will make a trail	**B uri masunzi a kone u ita nḓila**	**B so that ants can make a route**
	C to confuse the ants	C u ḓaḓisa masunzi	C to confuse the ants
	D so the ants will scurry around	D uri masunzi a kone u mona naḽo	D to make ants to move around quickly

Language	Afrikaans n= 321	English n= 546	IsiNdebele n= 147	IsiXhosa n= 283	IsiZulu n= 335	Sepedi n= 238	Sesotho n= 182	Setswana n= 200	Siswati n= 214	Tshivenda n= 150	Xitsonga n= 169
Learner Mean (% correct of all *attempted* responses)	60% (0.029)	52% (0.022)	37% (0.042)	27% (0.028)	30% (0.027)	30% (0.033)	31% (0.036)	28% (0.034)	28% (0.034)	35% (0.043)	31% (0.037)
A	18%	15%	22%	23%	24%	20%	26%	29%	23%	18%	29%
B*[62]	55%	47%	33%	23%	26%	24%	28%	25%	24%	30%	28%
C	6%	11%	13%	11%	13%	18%	15%	15%	20%	16%	19%
D	12%	19%	22%	28%	25%	18%	21%	20%	22%	21%	15%
Omitted	10%	8%	9%	14%	13%	20%	10%	12%	12%	15%	10%

The percentages in this table may not add up to 100% due to the fact that they were rounded off to the nearest integer.

[62] Correct answer marked with an asterisk

Table 5.26 presents the Source Text, Target Text, back-translation and response frequencies for Item 4 of *Searching for food.* Learners had to focus on and retrieve explicitly stated information and this was a multiple-choice item with a mark allocation of 1.

For Item 4, with a difference of only 2% between them, the Afrikaans (32%) and English (30%) language groups held the largest percentage of learners who answered correctly. The IsiXhosa (85%) language group had the largest percentage of learners who answered this item incorrectly; and the Sepedi language group (18%) had the largest score for omitting this question. With the exception of three language groups, distractor that received the most responses for this item was option A. The highest achieving African language group is IsiZulu (26%), followed by Xitsonga (25%).

Content analysis: There were no translation errors found in the item or the section of text in the passage that it refers to.

Table 5.26: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 4, *Searching for food.*

Item 4	Source Text	Target Text	Back-translation
	Once an ant finds some food, how do the other ants from the nest find it too?	Musi sunzi ḽo wana zwiḽiwa,naa mańwe masunzi ane a vha tshiṱahani a wana hani zwiḽiwa?	When the ant finds food, how do other ants in the nest find food?
	A They watch the first ant and follow it.	A A sedza ḽa u thoma a kona u ḽi tevhela.	A They look at the first ant and follow it.
	B They run around until they find the food.	B A gidima a tshi mona hoṱhe u swika a tshi wana zwiḽiwa.	B They run all over until they get food.
	C They sense the scent left by the first ant.	**C A pfa munukho wo siwaho nga sunzi ḽa u thoma.**	**C They smell the scent left by the first ant**
	D They smell the food on the piece of paper.	D A pfa munukho wa zwiḽiwa u re kha Bammbiri	D They smell the scent of food on the paper

Language	Afrikaans n= 321	English n= 546	IsiNdebele n= 147	IsiXhosa n= 283	IsiZulu n= 335	Sepedi n= 238	Sesotho n= 182	Setswana n= 200	Siswati n= 214	Tshivenda n= 150	Xitsonga n= 169
Learner Mean (% correct of all *attempted* responses)	36% (0.028)	33% (0.021)	25% (0.038)	17% (0..024)	29% (0.027)	23% (0.030)	26% (0.034)	24% (0.032)	24% (0.032)	27% (0.039)	28% (0.036)
A	20%	24%	29%	30%	30%	24%	13%	21%	39%	30%	28%
B	17%	20%	27%	27%	24%	18%	33%	32%	15%	20%	20%
C*[63]	32%	30%	23%	15%	26%	19%	23%	22%	20%	23%	25%
D	21%	17%	13%	14%	9%	22%	21%	16%	11%	14%	17%
Omitted	10%	8%	8%	14%	11%	18%	10%	10%	14%	14%	10%

Due to rounding off to the nearest integer, the percentages in this table might not add up to 100%.

[63] Correct answer indicated with an asterisk

Table 5.27 displays the Source Text, Target Text, back-translation and response frequencies for Item 5 of *Searching for food*. This constructed-response item targeted the inferential comprehension process. It had a mark allocation of 1.

For Item 5, across all language groups at least one out of two learners answered the question incorrectly, with Tshivenda learners (85%) having the largest percentage of incorrect answers. The Afrikaans (40%), Setswana (29%), Xitsonga (24%) and English (23%) language groups had the largest percentages of learners who answered correctly. The IsiXhosa language group (26%) had the most learners who did not attempt this item. It should be noted that, according to Table 5.19, this item's reliability correlation coefficient indicated that if it were removed, the overall reliability of this passage's items would increase.

Content analysis: The answer to this question was not easily accessible in the text, and more than that, the back-translation shows that the word "quickly" was translated as its antonym, "slowly" which may have confused learners (see Appendix D, *Searching for food* BT). There were no problems with the translation of this item or the section of text that it refers to.

Table 5.27: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 5, *Searching for food.*

Item 5	**Source Text** Why do the ants scurry around after you've sprinkled the soil?			**Target Text** Naa ndi nga mini masunzi a tshi gidima nga luvhilo luṱuku a tshi mona na mona nga murahu ha musi no no fafadzela mavu?					**Back-translation** Why do the ants run around ~~very slowly~~[64] quickly after you have sprinkled the soil?		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[65]	44% (0.029)	25% (0.019)	13% (0.031)	8% (0.019)	9% (0.017)	14% (0.024)	11% (0.024)	33% (0.035)	5% (0.018)	8% (0.023)	28% (0.037)
Incorrect response	51%	68%	70%	68%	82%	78%	82%	60%	75%	85%	64%
Correct response	40%	23%	10%	6%	8%	12%	10%	29%	4%	7%	24%
Omitted	10%	9%	20%	26%	10%	10%	8%	11%	21%	8%	11%

The percentages in this table may not add up to 100% as they were rounded off to the nearest integer.

[64] This is where the verifier made corrections so that this item would match the content in the original English Source Text.
[65] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.28 gives the Source Text, Target Text, Back-translation and response frequencies for Item 6 of *Searching for food.* Learners were required to focus on and retrieve explicitly stated information and this was a multiple-choice item with a mark allocation of 1.

For Item 6, with a 12% percentage point difference between them, the Afrikaans (52%) and English (40%) language groups had the largest percentage of learners who answered this question correctly. The IsiNdebele (70%) and Xitsonga (70%) language groups had the largest percentage of learners who answered incorrectly. The Sepedi language group (23%) had the largest score for omitting this question and, with the exception of three language groups, the greatest distractor that obtained the most responses for this item was option C. It should be noted that the IsiXhosa, Sepedi, Sesotho, Siswati, Tshivenda and Xitsona language groups received the same percentage for two or more options, which indicated that they may have been guessing. This is an unusually large number of language groups where there may be higher numbers of learners guessing, which indicates that learners found this item difficult.

Content analysis: It should be noted that the back-translation speaks of “pill worms” instead of “pill bugs” (refer to Appendix D, *Searching for food* BT). There were no problems with the translation of this item or the section of text that it refers to.

Table 5.28: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 6, *Searching for food.*

Item 6	**Source Text** How do pill bugs find the food? A They walk down the passage. **B They sense food with their antennae.** C They follow the scent trail. D They see the food in the dark.	**Target Text** Naa zwivhungu zwa phili̓si zwi wanisa hani zwi̓liwa? A Zwi tshimbila nga fhasi ha phaseidzhi. **B Zwi pfa kana u phuphuledza zwi̓liwa nga zwiphuphuledzi zwazwo.** C Zwi tevhela nḓila ine ya vha na munukho D Zwi vhona zwi̓liwa arali hu na swiswi.	**Back-translation** How do pill worm bugs find food? A They walk through the passage **B They feel food with their antennae** C They follow the route which has a scent D They see food when it is dark

Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)	57% (0.057)	45% (0.023)	24% (0.038)	31% (0.030)	35% (0.028)	39% (0..037)	42% (0.039)	42% (0..037)	35% (0..035)	33% (0.042)	23% (0.034)
A	12%	20%	18%	24%	14%	14%	12%	10%	12%	12%	30%
B*[66]	52%	40%	23%	28%	31%	30%	37%	38%	31%	28%	21%
C	15%	14%	32%	24%	36%	17%	19%	25%	31%	28%	19%
D	12%	15%	20%	12%	8%	17%	21%	18%	14%	17%	21%
Omitted	9%	11%	8%	12%	11%	23%	12%	9%	12%	15%	10%

Due to rounding off to the next integer, the percentages may not add up to 100% in this table.

[66] Correct answer indicated with an asterisk

Table 5.29 illustrates the Source Text, Target Text, back-translation and response frequencies for Item 7 of *Searching for food*. The comprehension process it targeted was to make straightforward inferences. This was a constructed-response item with a mark allocation of 2.

For Item 7, the Tshivenda language group (87%) had the largest percentage of learners who answered incorrectly. The English (11%) and Sepedi (10%) groups attained the largest percentage of learners who answered partially correctly. Despite the low percentages, the Afrikaans (16%) and English (11%) language groups achieved the largest percentage of learners who answered correctly, and the IsiXhosa (28%) language group had the greatest percentage of omission for this item.

Content analysis: The process targeted by this question was to make straightforward inferences, yet asking the learners to connect the picture from the text with the instructions given to them about caring for pill bugs may fall within a higher comprehension process, such as to interpret and integrate ideas and information, than it was originally categorised under in PIRLS 2006. The fact that so many language groups attained zero for answering correctly may demonstrate that the learners had perhaps not yet reached the level of reading and comprehension that was required for an item such as this one. In this item, only 1% of Tshivenda learners wrote the correct answer. There were no translation errors in the back-translation.

Table 5.29: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 7, *Searching for food.*

Item 7	**Source Text** Look at the picture for Study Pill Bugs. How does the picture help you understand what to do in the experiment?			**Target Text** Sedzani kha tshifanyiso tsha u Guda Zwivhungu zwa Philisi. Tshifanyiso tshi ni thusisa hani uri ni pfesese zwine na fanela u ita musi ni tshi khou ita tshiedza?					**Back-translation** Look at the picture for Study Pill Bugs. How does the picture help you to understand what you should do when you are doing the experiment?		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[67]	24% (0.024)	19% (0.016)	1% (0.008)	2% (0.008)	2% (0.007)	6% (0.011)	1% (0.005)	11% (0.022)	4% (0.010)	3% (0.012)	6% (00.016)
Incorrect response	60%	68%	78%	70%	81%	76%	87%	70%	73%	87%	80%
Partially correct response	8%	11%	2%	2%	1%	10%	1%	7%	6%	4%	7%
Correct response	16%	11%	0%	0%	1%	0%	0%	6%	0%	1%	2%
Omitted	16%	10%	20%	28%	18%	14%	12%	18%	21%	9%	12%

The percentages may not add up to 100% as they were rounded off to the nearest integer.

[67] The calculation for learner mean is calculated as per Crocker and Algina (1986)

*** No data is available for item 8 as it was deemed to have a lack of validity, thus the data processing centre in Hamburg disregarded the data for this question.**

Table 5.30 presents the Source Text, Target Text, Back-translation and response frequencies for Item 9 of *Searching for food*. Learners were required to interpret and integrate ideas and information and this was a constructed-response item with a mark allocation of 1.

For Item 9, the Tshivenda language group (87%) had the largest percentage of learners who answered incorrectly, while the Afrikaans (38%) and English (18%) language groups held the largest percentage of learners who answered correctly, and IsiXhosa had the most learners who did not attempt this item (34%). According to the learner means of Siswati and Tshivenda, 99% of all learners who attempted the question were unable to answer the question correctly.

Content analysis: The fact that the statistics for answering correctly were so extremely low may indicate that learners were not at the literacy level that was expected of them at this level of schooling, and thus they were not able to answer questions with such a high comprehension process (to interpret and integrate ideas and information). There were no problems with the translation of this item or the section of text that it refers to.

Table 5.30: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 9, *Searching for food.*

Item 9	**Source Text** In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?			**Target Text** Kha Ḽiga 3 ḽa thandela ya zwivhungu zwa philisi, ni vhona u nga hu nga bvelela mini arali na sendedzela maṱari o ṋukalaho nyana thungo ya tsha khona ya monde ya bogisi?					**Back-translation** In step 3 of the pill wormsbugs' project, what do you think will happen if you move the moist leaves to the other corner on the left side of the box?		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[68]	42% (0.030)	19% (0.018)	4% (0.019)	2% (0.012)	0% (0..004)	5% (0.017)	3% (0.014)	17% (0.030)	1% (0.007)	1% (0.009)	10% (0.026)
Incorrect response	52%	74%	75%	65%	83%	81%	80%	69%	74%	87%	76%
Correct response	38%	18%	3%	2%	0%	4%	2%	14%	1%	1%	9%
Omitted	10%	9%	22%	34%	17%	15%	18%	17%	26%	13%	15%

Due to rounding off, the percentages in this table may not add up to 100%.

[68] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.31 shows the Source Text, Target Text, back-translation and response frequencies for Item 10 of *Searching for food.* Learners had to interpret and integrate ideas and information. This was a constructed-response item with a mark allocation of 1.

For Item 10, 85% of learners who wrote in Tshivenda were unable to answer the question correctly, which is also the largest percentage of learners who answered incorrectly across all language groups. The Afrikaans language group achieved the largest percentage of learners who answered correctly (35%), and the IsiXhosa language group had the largest percentage for omission (35%).

Content analysis: The results for answering correctly demonstrate that learners were unable to cope with an item dealing with such a high comprehension process (to interpret and integrate ideas and information). There were no problems with the translation of this item or the section of text that it refers to.

Table 5.31: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 10, *Searching for food.*

Item 10	**Source Text** What is similar in the way ants and pill bugs find their food?			**Target Text** Ndi zwifhio zwine zwa fana kha nḓila dzine masunzi na zwivhungu zwa phili̓si zwa wana ngayo zwi̓liwa					**Back-translation** What are the similarities in the way ants and pill ~~worms~~[69] bugs find their food?		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[70]	39% (0.030)	29% (0.021)	7% (0.026)	4% (0.016)	4% (0.013)	8% (0.022)	14% (0.030)	34% (0.038)	2% (0.011)	3% (0.15)	14% (0.030)
Incorrect response	54%	63%	74%	62%	78%	78%	73%	56%	74%	85%	73%
Correct response	35%	26%	6%	3%	3%	7%	12%	28%	1%	2%	12%
Omitted	11%	11%	20%	35%	19%	15%	16%	16%	25%	13%	15%

These percentages may not add up to 100% as they were rounded off to the nearest integer.

[69] This is where the verifier corrected the item so that it would match the content of the original English Source Text.
[70] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.32 shows the Source Text, Target Text, back-translation and response frequencies for Item 11 of *Searching for food*. Learners were necessitated to make straightforward inferences for this constructed-response item with a mark allocation of 1.

For Item 11, the Sesotho (80%), Setswana (80%) and IsiNdebele (76%) language groups had the largest percentages of learners who answered incorrectly. The learner mean for isiNdebele and isiXhosa were in fact 0. The Afrikaans (20%) and English (15%) language groups had the largest percentage of learners who answered correctly, although scores were generally very low for this question. The IsiXhosa language group (43%) had the largest percentage for omitting this question.

Content analysis: Despite the lower order comprehension process targeted by this item (to make straightforward inferences), making sense of and ordering several sentence options that are given may be confusing to learners if they did not fully and correctly understand the text. This might also indicate a lack of exposure to sequence/order of events tasks. There were no problems with the translation of this item or the section of text that it refers to.

Table 5.32: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 11, *Searching for food.*

Item 11	**Source Text**	**Target Text**	**Back-translation**
	Number the steps according to the directions for Making a Wormery.	Nomborani maga ane a fanela u tevhelwa u ya nga nḍila ine zwa fanelwa u tevhelwa yone musi hu tshi khou itwa womari.	Number the steps that should be followed when making a wormery.
	The first one has been done for you.	Nḍila ya u thoma no no itelwa yone.	The first one has been done for you.
	Put the bottle in the shoebox	Vheani boḍḍelo kha tshibogisi tsha ttshienda	Put the bottle inside the shoebox.
	Poke holes in the top of the shoebox	Phulani mabuli nga nṭṭha ha tshibogisi tsha zwienda	Poke holes in top of the shoebox
	Drop in the worms	Dzhenisani vhuswiudḍu	Put in the worms.
	Add potato and onion	Ddzhenisani dḍabula na nyala	Put onion and potatoes in.
	Fill the bottle with soil and sand	Dḍadzani boḍḍelo nga mavu na muṭṭavha	Make the bottle full of soil and sand.
	1…… Make a door for the shoebox	*1…….. itani muṇango wa tshibogisi tsha zwienda*	*1…… Make a door for the shoebox*

Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[71]	22% (0.026)	17% (0.018)	0% (0.000)	0% (0.000)	3% (0.011)	1% (0..008)	4% (0.017)	4% (0.016)	4% (0.018)	12% (0.034)	5% (0.022)
Incorrect response	68%	70%	76%	57%	73%	67%	80%	80%	70%	60%	61%
Correct response	20%	15%	0%	0%	2%	1%	3%	3%	3%	8%	3%
Omitted	13%	15%	24%	43%	25%	33%	17%	17%	28%	32%	36%

Due to rounding off to nearest integer, the percentages in this table may not add up to 100%.

[71] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.33 presents the Source Text, Target Text, back-translation and response frequencies for Item 12 of *Searching for food*. Learners needed to interpret and integrate ideas and information and it was a constructed-response item, with a mark allocation of 1.

For Item 12 the Tshivenda language group (84%) had the largest percentage of learners who answered incorrectly. The Afrikaans (15%) and English (12%) language groups had the largest percentage of learners who answered correctly, although generally percentages were low for this question. The IsiXhosa (37%) language group had the largest percentage for omitting the item. The learners who wrote the test in the African languages were unable to achieve a correct response rate in excess of 10%; however, the learners who wrote in English and Afrikaans also performed poorly with similar albeit marginally better results. This could be an indication that this item was difficult or unclear in its instruction.

Content analysis: The low scores may demonstrate that learners were not yet at a level where they could reason and deduce information that was not explicitly or even implicitly stated in the text. There were no problems with the translation of this item or the section of text that it refers to.

Table 5.33: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 12, *Searching for food.*

Item 12	**Source Text** Explain why it is important to put layers of soil and sand in the wormery.			**Target Text** Talutshedzani uri ndi nga mini u vhea mbemba dza mavu na mutṱavha kha womari.					**Back-translation** Explain why it is important that you put a layer of soil and sand in wormery.		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[72]	17% (0.024)	13% (0.016)	3% (0.018)	6% (0.019)	1% (0.005)	7% (0.021)	5% (0.020)	12% (0.027)	1% (0.009)	1% (0.010)	6% (0.021)
Incorrect response	72%	77%	81%	60%	79%	75%	82%	76%	77%	84%	79%
Correct response	15%	12%	3%	4%	0%	6%	4%	10%	1%	1%	5%
Omitted	14%	11%	17%	37%	21%	20%	14%	14%	22%	16%	17%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[72] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.34 gives the Source Text, Target Text, back-translation and response frequencies for item 13 of *Searching for food*. Learners had to interpret and integrate ideas and information and it was a constructed-response item with a mark allocation of 1.

For Item 13, the Sesotho (83%) and Tshivenda (82%) language groups had the largest percentage of learners who answered incorrectly, while at the same time the English (19%) and Afrikaans (17%) language groups had the largest percentage of learners who answered correctly, and the IsiXhosa (40%) language group had the most learners who did not attempt this item. A similar pattern is observed in this item as observed in Item 12, where the learners who wrote in African languages were unable to achieve a correct response rate in excess of 10%, except for Setswana (13%).

Comprehension process: Percentages for answering correctly were very low for this question, which again may indicate that learners could not yet reason or deduce new information that was not explicitly or implicitly stated in the text. In other words, it seems that learners could not cope with items that deal with such complex comprehension processes. There were no problems with the translation of this item or the section of text that it refers to.

Table 5.34: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 13, *Searching for food.*

Item 13	**Source Text** Explain why putting the onion and potato on the surface of the soil is important to the wormery project.			**Target Text** Ṱalutshedzani uri ndi nga mini u vhea nyala na ḓabula fhasi nṱha ha mavu zwi zwa ndeme kha thandela ya womari.					**Back-translation** Explain why it is important to put onion and potatoes on top of the soil in this wormery project.		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[73]	20% (0.026)	22% (0.020)	1% (0.011)	2% (0.014)	1% (0.008)	8% (0.023)	1% (0.009)	17% (0.033)	11% (0.029)	4% (0.020)	10% (0.027)
Incorrect response	68%	69%	75%	59%	75%	73%	83%	67%	69%	82%	78%
Correct response	17%	19%	1%	2%	1%	6%	1%	13%	8%	3%	9%
Omitted	15%	12%	24%	40%	24%	21%	16%	20%	23%	15%	13%

Due to rounding off to the nearest integer, the percentages in this table may not add up to 100%.

[73] The calculation for learner mean is calculated as per Crocker and Algina (1986)

Table 5.35 shows Item 14 of *Searching for food*. This multiple-choice item required learners to examine and evaluate content, language, and textual elements and has a mark allocation of 1.

For Item 14, the Afrikaans (28%) and English (27%) language groups attained the largest percentage of learners who answered correctly. The IsiXhosa (14%), IsiNdebele (14%) and Tshivenda (10%) language groups had the largest percentage of learners who answered incorrectly. The Sepedi (21%) language group had the greatest percentage for omitting this item. The IsiNdebele (14%), Setswana (19%), Sesotho (19%) and Xitsonga (19%) language groups received the same statistic for two of the four options, which possibly indicates that they were guessing.

Content analysis: It is unusual for this many language groups to guess the answer; this shows that either the text or the question were confusing to learners, but perhaps also that the comprehension process analysed by this item, to examine and evaluate content, language, and textual elements, was simply too complex for learners. There were no problems with the translation of this item or the section of text that it refers to.

Table 5.35: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 14, *Searching for food.*

Item 14	Source Text	Target Text	Back-translation
	Why does each project have What Happens and Why in a separate box? A to tell you the steps of the project B to tell you what you need for the project C to tell you what to do when you're finished **D to tell you what you have seen**	Naa ndi nga mini thandela iṅwe na iṅwe i na ho itea mini na zwauri ndi ngani kha tshibogisi tshiṅwe? A u ni vhudza maga a thandela B u ni vhudza zwine na tea u vha nazwo kha thandela C u ni vhudza zwine na tea u ita musi no no fhedza **D u ni vhudza zwe na zwi vhona**	Why does every project have what happens and why in a separate box? A to tell you the steps of the project B to tell you what you need for the project C to tell you what you should do when you finish **D to tell you what you have seen**

Language	Afrikaans n= 321	English n= 546	IsiNdebele n= 147	IsiXhosa n= 283	IsiZulu n= 335	Sepedi n= 238	Sesotho n= 182	Setswana n= 200	Siswati n= 214	Tshivenda n= 150	Xitsonga n= 169
Learner Mean (% correct of all *attempted* responses)	31% (0.029)	30% (0.022)	16% (0.037)	16% (0.028)	22% (0.030)	20% (0.035)	30% (0.043)	21% (0.035)	20% (0.036)	12% (0.035)	20% (0.037)
A	26%	23%	31%	20%	14%	11%	19%	19%	10%	20%	19%
B	19%	23%	30%	34%	36%	19%	19%	31%	25%	28%	28%
C	17%	17%	14%	21%	20%	33%	24%	19%	34%	23%	19%
D*[74]	28%	27%	14%	14%	20%	16%	27%	18%	17%	10%	16%
Omitted	9%	10%	13%	12%	10%	21%	11%	13%	15%	19%	17%

The percentages in this table may not add up to 100% due to the fact that they were rounded off to the nearest integer.

[74] The correct answer is indicated by the Asterisk

Table 5.36 displays the Source Text, Target Text, back-translation and response frequencies for Item 15 of *Searching for food.* Learners were required to examine and evaluate content, language, and textual elements. This was a constructed-response item with a mark allocation of 2.

For Item 15, the Tshivenda (85%), Sesotho (82%) and Xitsonga (82%) language groups had the largest percentage of learners who answered incorrectly. The Afrikaans (11%) and Setswana (14%) language groups had the largest percentage of learners who answered partially correctly. The Afrikaans (24%) and English (10%) language groups had the largest percentage of learners who answered correctly, although the percentages were low for this question overall. The IsiXhosa (41%) language group had the most learners who did not attempt this item. The learners who wrote in the African languages performed very poorly in this item with the largest learner mean being only 14%.

Content analysis: This item required the learners to express their opinion, based on an evaluation of the whole text. It yielded the lowest percentage of correct responses for the Tshivenda group in this text, namely 0%. This may suggest that learners were incapable of expressing a literary opinion or it may suggest that they had not been exposed to this type of comprehension question. There were no translation errors in this item.

Table 5.36: English, Tshivenda and back-translations with learner response frequencies across South African languages for Item 15, *Searching for food.*

Item 15	**Source Text** Which of the three projects did you find the most interesting? Use information from the text to explain your answer.			**Target Text** Ndi dzifhio thandela tharu dze na wa hu dzone dze dza ni takadzesa? Shumisani mafhungo a bvaho kha mafhungo e na ṋewa u ṱalutshedza phindulo yaṋu.					**Back-translation** Which three projects did you find to be most interesting? Use the information given to you in the text to explain your answer.		
Language	**Afrikaans n= 321**	**English n= 546**	**IsiNdebele n= 147**	**IsiXhosa n= 283**	**IsiZulu n= 335**	**Sepedi n= 238**	**Sesotho n= 182**	**Setswana n= 200**	**Siswati n= 214**	**Tshivenda n= 150**	**Xitsonga n= 169**
Learner Mean (% correct of all *attempted* responses)[75]	34% (0.029)	16% (0.017)	0% (0.000)	0% (0.005)	1% (0.005)	4% (0.014)	1% (0.008)	14% (0.027)	2% (0.015)	0% (0.000)	2% (0.017)
Incorrect response	51%	68%	75%	59%	77%	72%	82%	59%	70%	85%	82%
Partially correct response	11%	7%	0%	1%	1%	3%	2%	14%	2%	0%	3%
Correct response	24%	10%	0%	0%	0%	1%	0%	4%	0%	0%	0%
Omitted	14%	16%	25%	41%	21%	24%	15%	23%	28%	15%	15%

Due to rounding off, the percentages in this table may not add up to 100%.

[75] The calculation for learner mean is calculated as per Crocker and Algina (1986)

5.3.4 Searching for Food Tshivenda home language vs test language

As seen in Table 5.37 below, the learners who wrote in a secondary language performed better than the learners who wrote in their home language in the majority of the items with a 4% difference between them. However, in multiple-choice Items 1, 2 and constructed-response Item 9, learners who wrote in their home language (n= 382) achieved a higher learner mean percentage. This means that learners who wrote in a secondary language (n= 263) performed better in 11 out of 15 items. There were three items where learners who wrote in their home language attained the same learner mean percentage as those who wrote in a secondary language.

Table 5.37: Performance of Tshivenda learners who wrote in their home language vs Tshivenda learners who wrote in a secondary language

Item		*Tshivenda learners who wrote in their home language*			*Tshivenda learners who wrote in a secondary language*		
		n	Mean of learners' %	Standard Error of Mean	n	Mean of learners' %	Standard Error of Mean
Item 1	REC_SEARCHING FOR FOOD/PURPOSE OF ARTICLE(A)	79	18%	.04	34	3%	.03
Item 2	REC_SEARCHING FOR FOOD/CARE OF CREATURES(D)	82	41%	.05	36	36%	.08
Item 3	REC_SEARCHING FOR FOOD/APPLE BY ANTS NEST(B)	80	31%	.05	36	50%	.08
Item 4	REC_SEARCHING FOR FOOD/HOW ANTS FIND FOOD(C)	79	25%	.05	36	33%	.08
Item 5	REC_SEARCHING FOR FOOD/ANTS SCURRY(1)	78	6%	.03	34	12%	.06
Item 6	REC_SEARCHING FOR FOOD/PILL BUGS FOOD(B)	75	35%	.06	34	35%	.08
Item 7	REC_SEARCHING FOR FOOD/PICTURE PILL BUGS(2)	72	2%	.02	33	6%	.03
Item 8	REC_SEARCHING FOR FOOD/PILL BUGS PROJECT(B)	0			0		
Item 9	REC_SEARCHING FOR FOOD/MOVE THE LEAVES(1)	67	1%	.01	30	0%	0.00
Item 10	REC_SEARCHING FOR FOOD/SIMILAR WAY(1)	63	3%	.02	29	3%	.03
Item 11	REC_SEARCHING FOR FOOD/MAKING WORMERY(1)	50	10%	.04	23	22%	.09
Item 12	REC_SEARCHING FOR FOOD/IN WORMERY(1)	54	0%	0.00	28	4%	.04
Item 13	REC_SEARCHING FOR FOOD/ONION AND POTATO(1)	54	2%	.02	28	11%	.06
Item 14	REC_SEARCHING FOR FOOD/PROJECT HAPPENS(D)	56	13%	.04	24	17%	.08
Item 15	REC_SEARCHING FOR FOOD/INTERESTING PROJCT(2)	50	0%	0.00	24	0%	0.00
	Overall mean of learners %		13%			17%	
	Total number of learners	382			263		

5.3.5 Conclusion for *Searching for food*

Learners that received the *Searching for food* passage did not achieve high scores. In constructed response Item 5, an African language (Xitsonga) attained a larger percentage than one of the top performers (English) in that category (correct response), this item also had a low reliability coefficient. It should be noted that the very first item of this passage focused on a complex comprehension process (to interpret and integrate ideas and information). This is contrary to the pattern followed in the other three passages in that those passages typically utilised such a complex comprehension process later in the items, rather than at the beginning. Generally, it would appear that learners do worse in more abstract questions, which demonstrates that across all eleven languages learners struggle with higher order comprehension items. It can also be seen that in multiple choice Items 2, 3 and 14, one or more language groups were guessing as they attained the same percentage for two options. The translation of terminology regarding insects was inaccurate and the instructions for this information text were not accurate (see Table 5.21 and Appendix D). This, along with the fact that this text had the lowest percentages for answering correctly among the four released texts, reveals that this could have been a problematic text.

5.4 Conclusion

After analysing these two released passages from PIRLS 2006, it is clear that learners did not perform well in general. The "incorrect response" and "partially correct response" categories received the highest percentage overall, which shows that there was either a problem with learners' comprehension skills, or with the content, or with the translation itself. With reference to the translation, the back-translation demonstrated that the *Antarctica* and *Searching for food* texts were disjointed and difficult to read due to incorrect terminology, incorrect tense and incorrect sentence/word order, with some serious errors that could lead to confusion and lack of comprehension. It can be seen from these two passages that the two literary texts read more easily and have fewer errors in them, whereas the two informational passages have small errors and do not read as easily as the original English Source Text. A possible conclusion that can be drawn from this is that it is easier to translate literary, narrative texts as there is a greater and more standardised vocabulary for such texts, and that the terminology in minority African languages (such as Tshivenda) for scientific and informative passages is not as extended as in majority African languages Afrikaans and English (see Section 1.1)It is impossible to rule out the human factor as it is possible that the

level of experience or knowledge of the back-translator may also factor into this analysis. Nevertheless, it should be said that the back-translator was secured through a language consultancy of proven quality.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study was prompted by the South African results of the PIRLS 2006 study which revealed, amongst other findings, that the Grade 5 Tshivenda learners performed better in a secondary language than in their mother tongue (Howie et al., 2008). This study hypothesised that the translation of the original English text into Tshivenda may have played a role in these learners' results (see Section 1.1), especially as Tshivenda is a minority language in South Africa (Hanisch, 2002). It was the aim of this research to establish the validation of the translation and performance of Tshivenda learners in PIRLS 2006. A theme emerged that was not originally focused on or anticipated before analysing the data, which was learner comprehension and associated problems, such as problems with multiple-choice items. The overarching research question for this study was:

How valid is the performance of the Tshivenda learners who wrote in PIRLS 2006 and to what extent was the performance affected by the translated instruments?

The sub-questions linked to the main question for this study were:

- **How valid were the assessment instruments used to test the learners writing in Tshivenda?**
- **How do the Tshivenda results per item relate to those of the other official South African languages?**

This chapter will provide a brief summary of the research conducted (Section 6.2); followed by the key findings (Section 6.3), reflections on the conceptual framework and methodology (Section 6.4) and main conclusions (Section 6.5). Lastly, recommendations for further research, policy and practice are given (Section 6.6).

6.2 Summary of the research

This study was a secondary analysis of the PIRLS 2006 assessment data. This involved an item analysis of the overall South African data together with a content analysis of the instruments as well as the translated texts and processes.

The literature review highlighted several key issues with regard to this study, inter alia the processes involved in translation as well as the role that culture and language play in society and how this is related to tests such as PIRLS 2006. This revealed that Tshivenda as a minority language in South Africa does not enjoy as much media exposure as do other South African languages. For many parents, English is the preferred language for the education of their children despite the fact that their home language is an African language. By contrast, there is also a concern amongst many parents that their home language will be lost (see Section 1.3). The discussion on the LoLT in South African classrooms highlighted that in some classrooms, the teachers are required to do code switching to help the learners understand the content as some learners attend schools where the LoLT is not their home language (see Section 2.2.1). This is of particular relevance to this study since the sample for this study was the Grade 5 Tshivenda learners, some of whom wrote in their mother tongue and others in a secondary language. The other ten South African languages were included in the Classical Test theory for comparison and context. The literature review also revealed that, regarding PIRLS per se, some researchers argued for PIRLS based on its contribution to furthering education, while other researchers such as Hilton (2008) argued that there were fundamental problems with the principle tenets of PIRLS testing. Finally, translation and validity of the PIRLS instrument were discussed and it was found that the quality of the translation of an instrument has the power to alter it in a way that may affect the validity of the instrument (Ercikan, 1998).

The analysis of the existing literature led to the compilation of the conceptual framework based on the need for an analysis of the learners' performance, as well as a study of the translation of the test instruments in order to establish validity. This was done using Skopostheorie and Functionalism. The translation was analysed using the principles of Skopostheorie, since this was found to be the major guiding principle in modern translation studies (see Section 2.6.1). Functionalism was used to analyse the learners' performance, as this concept relates the *skopos* (the aim of the translation) to the accessibility of the translated text by the target audience.

A secondary analysis design was chosen as it was appropriate for the questions asked and allowed this study to look at the original study from a different vantage point (see Section 3.1). In this study, primary data collected in 2006 were analysed in order to examine a particular aspect of the data that may not have been analysed in the original PIRLS 2006

study, namely, translation factors affecting the performance of the Tshivenda group. In looking at PIRLS 2006 from a different point of view, new insights were gleaned from the data. By combining qualitative and quantitative analysis, a more comprehensive picture of the Tshivenda anomaly could be attained. The data was viewed within a pragmatic paradigm, this leads to using the methods best suited to answering the research questions rather than alignment of methods to philosophical outlooks. The secondary analysis involved the statistical analysis of the items in order to sufficiently understand where learners encountered problems in the four released passages. A combination of statistical analysis through Classical Test Theory, and Content analysis of the assessment passages and their items (using back-translation and verification against the original English source text) were used. Permission was obtained from the National Centre for PIRLS for secondary analysis of the PIRLS 2006 released passages (*Lump of clay; Antarctica; An unbelievable night;* and *Searching for food*) and the South African learner achievement results linked to these passages.

Item analysis was carried out using a Classical Test Theory whereby the Grade 5 results across all eleven official languages were analysed and compared. The Grade 5 learner response frequencies were reviewed with a view to establishing how the Tshivenda results per item related to those of the other ten South African languages in the released passages of PIRLS 2006. The analysis of these statistics informed the content analysis of the back-translated instruments and therefore these two analyses were complementary.

The content analysis required sending the Tshivenda versions of the four released passages and the comprehension items for each to a back-translator to translate back into English, whereafter a verifier compared these to the original English versions of the four released passages. The back-translator and verifier were also asked to answer two questions regarding the quality of the back-translation and the methods utilised. The content analysis itself involved examination of the back-translation and its verification to validate the readability of the back-translation, which is an indicator of how the Tshivenda translation might have read for the learners who participated in PIRLS 2006. The criteria which were used to validate the readability of the back-translation included sentence and word order, tense (i.e. past tense or future tense), correct terminology that matched that of the English original source text, and information added or removed that did not belong in the original source text and which could affect the way that learners understood the text.

6.3 Key findings

In this section, key findings are presented in relation to the sub-question they answer.

6.3.1 Instrument validity

Sub-question 1: How valid were the assessment instruments used to test the learners writing in Tshivenda?

An important aspect related to validity is the reliability of the instrument. The Cronbach's Alpha for each passage revealed that for the *Lump of clay* and *Antarctica* texts, the internal consistency was acceptable (0.789 and 0.728 respectively, see Table 3.4). The Cronbach's Alpha for the *An unbelievable night* text had an acceptable internal consistency (0.789), while the *Searching for food* text revealed good internal consistency (0.808).

The overall reliability per passage varied from acceptable to good. In terms of the reliability of the Tshivenda instrument, for the *Lump of clay* text, the reliability of the passage was questionable (n = 153; α = .712), but this could be improved with the removal of items 7 and 13. *An unbelievable night*'s Cronbach's Alpha showed that the passage's reliability was acceptable (n = 155; α = .734), however, the internal consistency could be improved with the removal of at least 1 problematic item; 4 other items had very low item-total correlation coefficients. For the *Antarctica* text, the Cronbach's Alpha was found to be acceptable (n = 150; α = .769), nevertheless, item 7 could have been problematic as it reduced the Cronbach's Alpha of the passage. In *Searching for food*, despite item 5 reducing the internal consistency of the passage, the overall internal consistency was good (n = 150; α = .828). According to the literature, validity is the degree to which the instrument measures what it is supposed to measure (see Section 2.1), therefore three of the Tshivenda texts measured what they were supposed to measure, while one text (*Lump of clay*) cannot unequivocably be said to do so. The statistical analysis of the four passages also revealed that learners performed worse with constructed-response items than in multiple-choice items.

The Content analysis was carried out specifically on the Tshivenda instrument for the four texts in question. In the literature, Dellinger and Leech (2007) explain that content validity can be established using expert judgement (see Section 2.1). In this study, the expert judgement was sought from the back-translator, an expert in Tshivenda-English translations;

and a verifier who was an expert in the principles and techniques of translation. From the responses from the back-translator and verifier regarding translation methods and quality, and from the verifier's comparison between the English Source Text and the back-translation, a number of findings came to light. Overall, the translation of the four texts was acceptable with a low frequency of major errors, i.e errors that could have affected learners' results. It should be noted that, while one or two minor errors do sometimes make their way into translations, generally, translators are held to a very high standard and therefore try to limit these, which shows that the number of minor errors (see Section 4.2.3; Section 4.3.2; Section 5.22; and Section 5.3.2) in the four released passages is unacceptable according to these standards. These minor issues came down to word choice, for example "indicate" instead of "number". There were, however, two instances where the back-translated items did not say the same thing as the English Source Text at all (Item 7, *Lump of clay*, see Table 4.12; and Item 3, *An unbelievable ni*ght, see Table 4.27).

In the *Lump of clay* text, out of the 13 items only three items had no translation errors (Table 4.6; Table 4.7; and Table 4.11). Of the remaining 10 items, one item had words added that were not in the original; four items were confusingly written, although not incomprehensible; four items had one or more incorrectly translated words and one item did not say the same as the original English Source Text. It may also be that there is a paucity of idioms in Tshivenda that contributed to the translation problems. Additionally, the back-translator found that Word-for-word and Semantic translation were used, whereas the verifier found that Direct translation and Communicative translation were used – Word-for-word translation being used only where there were concepts that were foreign to the translator. Using Word-for-word translation to translate foreign concepts may not be the best strategy as it attempts to remain loyal to the original, but may not help the Target Reader to understand what is actually meant. In other words, while the *skopos* of the translation may remain intact, functionality is compromised, making it an invalid translation. However, as indicated by the back-translator, in this case the Word-for-word method was used in combination with Semantic translation method; therefore although this text had many minor errors, the translation was still valid.

An unbelievable night had only minor translation issues, which means that theword order, sentence order and/or use of tenses were not always correct, but this did not hamper the learners' comprehension. This also included the intermittent swapping of the use of "he" or "she" when referring to the main character of the story, Anina. Neither the content nor the

translation should have posed a problem for learners as the content had the potential to be contextually appropriate for South African learners, especially those who live in rural areas, due to the fact that animals such as crocodiles are common in South Africa and are considered dangerous. The translation was good as well due to the fact that there were fewer errors (major and minor), and the readability and flow were better than in the other three texts. Out of the eleven items for *An unbelievable night,* nine items had no translation errors, while the remainder consisted of one item where the wrong word (see Table 4.33, "shy" instead of "annoyed") was used and one item which did not say the same thing as the English Source Text. This indicates that this text was the best translated of the four released (and back-translated) texts. Both the back-translator and verifier found very few differences, with only minor grammatical and terminological errors; they both also found that Semantic and Communicative translation methods were used. This text demonstrated the highest quality of translaton of all four texts in that it reads the best, has the best results and has had an excellent review from the back-translator and verifier. The back-translator was loyal to the original, but managed to convey the meaning in a comprehensible manner to the Target Reader, therefore the translation may be considered as valid.

For *Antarctica,* four out of eleven of the items were incorrectly translated. Only three out of the eleven items for this text had no translation errors in them (see Table 5.6; Table 5.8; and Table 5.10). The other items consisted of three cases where the wrong word was used ("mention two ways" as opposed to "mention three ways", see Table 5.12), although it was still comprehensible; two items that were confusingly written (word order was wrong), but again still comprehensible; and one item where a word was omitted. The vocabulary errors found in this text were mainly related to terminology that may be less familiar to the Tshivenda back-translator, e.g. "Penguins have lots of overlapping wings." (Appendix C, back-translation, Paragraph 4), instead of "Penguins have many feathers that overlap each other." (Appendix C, Source Text, Paragraph 4). The nature of these vocabulary errors was that the incorrect word or terminology was used for an item, or that less familiar terminology was utilised, as demonstrated in the above sentence. As pointed out by the verifier, sentence length could also play an important role in learners' problems with comprehension. This can be seen in the section from the passage on *Antarctica* that was written using shorter sentences, which was better translated, and read better than the rest of the passage. In terms of translation method used, the back-translator and verifier found that there were some inconsistencies in terminology (see examples of translation inaccuracies in Chapter 4 and 5).

The back-translator found that the Semantic method of translation had been used, while the verifier again found in favour of Word-for-word and Communicative translation, thus making the translation valid.

Overall, the *Searching for food* passage was adequately translated, although there were a few terminology issues. Not only was the insect terminology consistently incorrect for three items (see Section 5.2), but the verifier also explains that very little attention was given to translating the instructions correctly. Out of fifteen items in *Searching for food,* nine had no obvious translation errors, while there was one item that was confusingly written; three cases where the wrong terminology was utilised and one item where the antonym of the correct word was used. The back-translator blames the terminology and style of the English Source Text for any misunderstanding that he/she may have carried forward from the Tshivenda text, and found that the Semantic and Communicative methods were used. However, the verifier found this text to be poorly back-translated, with little attention to the instructions or to correct terminology. The results of the Classical Test Theory analysis for this passage shows it to have been the text with the poorest results of the four (see Table 5.20), despite a valid translation.

Through the statistical analyses, and an analysis of the quality of translation, it is possible to draw conclusions regarding the validity of the instruments. Not only was the translation for all four texts acceptable, the reliability of all four texts ranged from acceptable to good, which when considered with the valid translation, indicates that these instruments were valid.

6.3.2 Comparison of the Tshivenda results with the other official South African languages

Sub-question 2: How do the Tshivenda results per item relate to those of the other ten South African languages?

In Table 6.1, it can be seen how the Tshivenda group performed compared to the other ten South African languages. The reliability coefficients of the Tshivenda informational passages were better than those of the literary passages, and were also higher than those of the overall Grade 5 South African reliability coefficients for the informational passages. This indicates that the internal consistency of the Tshivenda translated texts were higher than that of the overall Grade 5 language groups. The lowest internal consistency in the Tshivenda passages is 0.712 (see Table 6.1) for the *Lump of clay* text, which is acceptable, whereas the overall

reliability coefficient is 0,789, which indicates that the reliability observed overall for the passage is better than the Tshivenda translated text. Interestingly, the highest reliability coefficient is observed for the Searching for Food passage, which was the most difficult passage for the learners with an average correct response rate of 5%. The verifier commented that for the *Searching for food* text, the instructions to the learners were poorly translated and that little attention was given to detail.

Table 6.1: reliability co-efficient per passage and Correct response average for PIRLS 2006

	Lump of clay	Unbelievable night	Antartica	Searching for Food
Overall Reliability co-efficient	.789	.789	.728	.808
Tshivenda Reliability co-efficient	.712	.734	.769	.828
Overall correct response average per passage	20%	28%	26%	5%
Afrikaans	38%	54%	52%	12%
English	33%	44%	45%	9%
IsiNdebele	16%	24%	19%	2%
IsiXhosa	18%	23%	16%	2%
IsiZulu	17%	22%	25%	2%
Sepedi	16%	17%	16%	4%
Sesotho	18%	29%	26%	4%
Setswana	15%	30%	24%	7%
Siswati	18%	20%	20%	3%
Tshivenda	17%	24%	18%	2%
Xitsonga	19%	24%	20%	5%

Generally, learners from all the South African language groups attained poor results for PIRLS 2006. The performance of the learners who answered in Afrikaans or English consistently ranked as the top two groups.

The Tshivenda correct response averages between 2% for Searching for food to 24% for An unbelievable night. In *Lump of clay*, the Tshivenda group attained the third lowest correct response average along with the IsiZulu language group; only 17% of the learners answered correctly. For *An unbelievable night* along with the Xitsonga language group, their average was the third lowest, with 24%. For *Antarctica*, the Tshivenda average was the second lowest

with 18%, and in *Searching for food* Tshivenda achieved the lowest learner average along with the IsiZulu, IsiXhosa and IsiNdebele language groups at 2%. This effectively means that of the nine African language groups, Tshivenda ranked between the lowest and the fourth lowest. Thus the Tshivenda group performance was not the lowest of all the African language groups, but it was consistently in the bottom half of the percentages.

The content analysis across the four texts (see analysis of each item table in Chapters 4 and 5) revealed that regardless of language of testing, the learners had problems with items in the text that required evaluation and appreciation comprehension; that is, items that required learners to examine and evaluate content, language, and textual elements. Across all languages, the data show that learners had problems with literal and inferential comprehension processes as well, namely, items requiring learners to focus on and retrieve explicitly-stated information. It would also appear that learners had difficulty in identifying relationships between characters and/or events as the results for these items regarding such relationships were especially weak (this forms part of literal comprehension). Learners performed generally better with the fictional passages (*Lump of clay; An unbelievable night*), than with the informational texts (*Antarctica; Searching for food*), although they did marginally better with the Antarctica text (18%).

All learners, including the Tshivenda learners, generally performed better in the multiple-choice items than in the contructed-response items as in the latter they can guess the answer with a 25% chance of getting it correct. The *Lump of clay* text had six multiple-choice items as opposed to seven constructed- response items, which represented half of the mark allocation. The *Antarctica* passage had only four multiple-choice items as opposed to a majority of seven constructed-response items, which represent most of the mark allocation. *An unbelievable night* had six multiple- choice items and six constructed-response items, although the constructed-response items represented most of the mark allocation. Lastly, *Searching for food* had six multiple-choice items as opposed to eight constructed-response items which represent more than half of the mark allocation.

6.4 Reflections on the conceptual framework and methodology

In this section, the conceptual framework and methodology used in this study are reviewed and reflected upon.

6.4.1 Reflections on the Conceptual framework

The conceptual framework for this study (see Figure 2.3) is underpinned by Skopostheorie and Functionalism. This allowed this study to look at the purpose of PIRLS 2006, as well as the functionality of the instrument. The findings show that while the translation was valid, although not always equivalent (Skopotheorie, see section 2.6.1), this did not appear to have a bearing on the learners' performance (Functionalism, see section 2.6.2). The conceptual framework of this study, as presented in Figure 2.3 (Chapter 2), while allowing the translation and the learner performance to be examined in the quest for validation, does not clearly indicate a direct link between the validation of translation equivalence and the validation of learner performance, however, by examining translation equivalence in tandem with learner performance, translation as a factor is directly related to performance since the instruments themselves, in theory, were equivalent across all official South African languages. Although the conceptual framework used in this study, in terms of its own *skopos* and functionality, appeared appropriate in view of the findings, in retrospect the link discussed above between translation equivalence and learner performance could have been strengthened, particularly in the visual representation in the Conceptual Framework section (see Figure 2.3).

6.4.2 Methodology reflections

This study was designed as a secondary analysis, and used both quantitative and qualitative methods in this analysis.

Athough it was decided that Classical Test Theory and Content analysis would provide sufficient detail regarding the validation of learners' performance and the quality of translation of the PIRLS 2006 data, Rasch analysis was also considered initially. It is recognised that Rasch analysis could have added depth to this study. Cavanagh, Kent and Romanoski (2005) explain that "A Rasch analysis […] combine[s] data from the pre and post-treatment tests [to] calibrate item difficulty against student ability and estimate the fit of individual items" (p.10). Classical Test Theory offers a means of measuring the variables that are being studied, as well as methods to test the accuracy of the measurement procedures

(Crocker & Algina, 1986). The Cronbach's Alpha was reported for all items per passage in Chapters 4 and 5. The use of Classical Test Theory in the statistical analysis provided direction for the qualitative aspect of the study and highlighted the anomalies in the texts and passages.

The Content analysis comprised back-translation, verification and comparison. In the case of this study, the Content analysis included the evaluation of the instruments by two language experts in judging whether the items and passages adequately represented the domain that they were supposed to be testing (Crocker & Algina, 1986): learner comprehension and literacy skills. The evaluation criteria used consisted of vocabulary, sentence and word order, as well as equivalence (see Section 2.5.1). Crocker and Algina (1986), referring to the validation of content, state that, "A typical procedure is to have a panel of independent experts (other than the item writers) judge whether the items adequately sample the domain of interest" (p. 218). In retrospect, further detail and depth may have been provided by having the original English Source Text re-translated into Tshivenda and then have the two Tshivenda translations compared by a Tshivenda expert. In this way, a cross analysis could have been conducted with the two Tshivenda texts being compared and the two English texts being compared.

The Content analysis of the translation was insightful and provided vital information on what the original Tshivenda translator may have experienced and done. It also shed some light on the types of translation method considered and possibly used in the Tshivenda translation of the four released passages. However, it should be noted that each translator has a unique personal translation style, and therefore the back-translation may not be definitive in assessing the quality of the original Tshivenda translation. This back-translation is an *indication* of the possible quality and methods used to translate between Tshivenda and English. It must be remembered that the original translator was translating into his/her mother tongue (as prescribed for translators), whereas the back-translator had to translate into a secondary language (English).

Other documents also analysed were the adaptation forms from PIRLS 2006 which show that, in terms of the four released texts, mostly minor adjustments were necessary for contextualising the assessments; for example, converting measurements to the metric system, and the use of commas in multi-decimal numbers. There were cases of adaptations that were

made that might have had a bearing on translation and comprehension; for example, the conversion of the word "pill bugs" to "wood lice" (isiXhosa; Sepedi, Sesotho; Setstwana), the use of "insects" instead of "pill bugs" (isiZulu), and the use of the isiZulu word for "flowers" instead of the isiZulu word for "sunflowers". Due to the fact that there was no adaptation form completed for the Tshivenda texts (see Section 2.4.2), the internationally verified versions that addressed the major African languages, namely isiXhosa, isiZulu, Sepedi, Sesotho and Setswana adaptation forms, were analysed as they showed an example of the kinds of adaptations made in the African languages.

This study was designed to use both statistical analysis and content analysis; however, during the course of the research the statistical analysis aspect dominated the content analysis aspect of the study due to the fact that more time and analytical processes were required by the statistical analysis. The conceptual framework allowed for an equivalent investigation of these two aspects, but the methodology gave dominance to the quantitative aspect. In retrospect, it may have been prudent to maintain the balance between these two aspects in a more stringent way, so that the length of the dissertation might therefore have been reduced. The methods selected have been argued (see chapter 3) as being most appropriate to address the questions successfully, and in Section 6.3, the key findings were presented in relation to the questions.

6.5 Main conclusions

In this section, the four main conclusions of this study are presented and discussed based on the findings which emerged from addressing the overarching research question for this study: **How valid is the performance of the Tshivenda learners and the translated test instruments that they wrote in PIRLS 2006?**

- **Main conclusion 1**: **The quality of the translation of the four released texts and their items cannot be identified as the main contributing factor in the Tshivenda anomaly.**

Maneesriwongul and Dixon (2004, p.175) highlight the importance of carrying out an analysis of the quality of translation and the validity of an instrument as this ensures "that the results obtained in cross-cultural research are not due to errors in translation, but rather are due to real differences or similarities between cultures in the phenomena being measured".

Therefore, these analyses were done for this study. Based upon both the item analysis and the content analysis of the four passages, there is no clear indication that translation made a negative contribution to the Tshivenda results. As can be seen by the analysis in Chapters 4 and 5, the translation of the four passages and their items into Tshivenda had a number of mostly minor errors. In fact, the Tshivenda anomaly i.e that Tshivenda learners performed better in a secondary language than in their own, cannot be attributed to a pattern in the results, such as mark allocation, as the learners did better in the multiple-choice items (see Section 4.3.5) which had lower mark allocations than the constructed-response items (see Table 4.1); or weighting as the constructed-response items outnumbered the multiple-choice items. In *Lump of clay*, six out of the fourteen items were better answered in a secondary language (see Table 4.19); in *An unbelievable night*, ten of the twelve items were answered better in a secondary language (see Table 4.36); in *Antarctica*, five of the eleven items were answered better in a secondary language (see Table 5.17); and in *Searching for food*, eight of the fifteen items were answered better in a secondary language (see Table 5.37). Thus, overall, 29 of the 52 items were better answered by Tshivenda learners who wrote PIRLS 2006 in a secondary language. The anomaly regarding these four passages is therefore based on a marginal difference in performance, i.e. 56% of the items were better answered by Tshivenda learners who wrote PIRLS 2006 in a language other than their mother tongue. There is no evidence that the reason for this was the quality of translation into Tshivenda.

With regard to instruments that contain translation errors, Ercikan (1998) says "their properties may change for the groups taking the test in different languages. These changes in properties of items can affect what is being assessed by the test as well as altering the difficulty of the item for different groups" (pp. 444-445). However, the *skopos* of PIRLS 2006, which was to test the reading and literacy levels of Grade 4 (and 5) learners through comprehensible texts and items, in general, was met. As Dam-Jensen and Heine (2013) describe it, "In translation, the text producer analyzes the meaning of the Source Text and, on that basis, tries to find equivalents that convey the meaning in the target language (with a view to the *skopos*)". Thus, overall, it can be said that the back-translations were functional in that they generally conveyed the meaning intended by the author of the Source Text. This concurs with the findings of Stubbe (2011) and van Dyk et al. (2011) (see Section 2.3) who state that back-translation is effective in the validation of the accuracy of translation. The back-translations also indicate that the *skopos* was met, i.e that the texts were made comprehensible and contextually appropriate for the Target Reader. This corresponds with

Sperber's (2004) statement that: "The additional challenge is to adapt it in a culturally relevant and comprehensible form while maintaining the meaning and intent of the original items" (p. 2). It may be concluded that the integrity of the meaning and intent was maintained.

- **<u>Main conclusion 2</u>: South African learners were unable to articulate their written responses when responding to constructed-response items.**

The overall performance of the Tshivenda learners in PIRLS 2006 indicates that items that required written responses were found difficult and the statistics showed that the responses to several of the items were inaccurate and incorrect (for example, see Table 4.32; Table 5.36; Table 5.34; Table 5.16). For the constructed-response items, the Tshivenda learners were required to "focus on and retrieve specific ideas, make inferences, interpret and integrate information and ideas; and examine and evaluate text features" (Mullis, Kennedy, Martin, & Sainsbury, 2006, p.12) by using their own language ability to formulate an answer that descriptively conveys their understanding. Constructed-response items require the learner (in this case) to recall the appropriate section of text without being given any "retrieval cues" (Wolf, 1993, p.474). The learner must generate their own retrieval cues in order to answer the item. According to Edwards and Ngwaru (2011b), in the African languages, historically there is an emphasis on an oral culture, instead of a written one. The effects of multiple-choice versus constructed-response items may be a factor in the achievement of South African learners in PIRLS 2006.

The fact of constructed-response items being difficult has been a consistent and persistent finding reported on in South Africa (Howie et al., 2008, 2012). Paxton (2000) not only agrees with this, but expounds on it by explaining that multiple-choice questions tend to encourage learners to see the content in terms of small "bites" of knowledge, instead of helping them to develop an understanding of how all the concepts in the text fit together and impact one another. In contrast, Wolf (1993) states that learners do well in multiple-choice items and ascribes this to the fact that they only require comprehension and selection, whereas constructed-response items require comprehension and production (p. 481), although guessing also plays a role in the success of multiple-choice items. As noted earlier, there were several multiple-choice items throughout the four released passages that showed that one or several language groups were possibly guessing (as they obtained the same result for two

different options). Most texts also had fewer multiple-choice items than constructed-response items (see Section 6.3.2), and therefore the constructed-response items were weighted more heavily in the marking. The inability of the learners to write answers to the comprehension questions appears to have contributed substantially to the poor performance.

- **Main conclusion 3: South African learners performed better in the literary texts than in the informational texts**

The statistical analysis shows that in the literary texts, *Lump of clay* and *An unbelievable night*, in general, learners performed better than in the informational texts, *Antarctica* and *Searching for food*, although they performed marginally better in the *Antarctica* text than the *Lump of clay* text. The translation of the fictional texts was also much better in comparison with their informational counterparts (see Section 5.4), which often had grammatical errors, terminology errors and in some cases, the word order was scrambled. This could be a contributing factor to the difference in performance between literary and informational texts.

In this regard is it important to note that learners at Grade 4 level should be at a reading level where they are reading to learn, and not learning to read (Mullis et al., 2006). It is vital for learners to be given a consistent combination of fictional and informational texts in a classroom context. Moss (2005) agrees with this as she clarifies that narrative texts are used to help learners from Grades 1 to 3 to "break the code" (p. 48), but it is necessary to introduce informational texts in order to prepare learners for high school where the use of textbooks is predominant; thus learning to read informational texts is a taught skill. Venezky (2000) emphasises the fact that non-fictional texts are not preferred in classrooms as they are seen as "unpleasant and boorish intruders into the otherwise serene, romantic kingdom of plot, character and author's viewpoint" (p. 19). Thus it is clear that the gradual inclusion of informational texts in learners' reading repertoire is key to learning skills that will help learners later in their schooling career, as well as later on in life.

Duke (2004) finds that informational texts are required to build literacy skills, but also indicates that most children (and adults) have difficulty comprehending such texts. Thus, according to Duke and Kays (1998), it is necessary that teachers include the reading of informational texts in their curriculum so that learners may become familiar with the conventions and characteristics of such texts. In doing so, learners can not only build literacy skills, but also recall skills and the skill of linking and applying prior knowledge to what they

are reading. Duke (2004) goes on to explain that it is imperative that teachers teach learners the difference between informational texts and fictional texts, because the way in which fictional texts are read (at a steady pace from beginning to end) differs from the way informational passages are read (reading only the parts that are of interest, and re-reading what is not understood). In view of what the literature says, it can be inferred that informational texts may not be fairly represented in the South African classroom, as learners did so poorly in these, but it can also be inferred that informational texts present a problem linguistically, as the translator had difficulty getting the exact meaning and correct terminology across at all times for the two informational texts (*Antarctica* and *Searching for food*). Wildsmith-Cromarty (2008) indicates that in some target languages there is the issue of a lack of vocabulary of the target audience when it comes to academic and scientific fields; this has been found repeatedly in this study, particularly in the informational texts where words such as "pill bug" were incorrectly translated as "pill worm" (see Table 5.16), or "Antarctica" mistranslated as "usa" (see Table 5.9).

- **<u>Main conclusion 4</u>: Despite being assessed in their mother tongue, the Tshivenda learners were not able to manage the demands of PIRLS 2006**

The development of the PIRLS 2006 instruments was informed by the purpose of PIRLS, which is to assess the reading literacy levels of learners, especially the transition from 'learning to read to reading to learn' (Martin, Mullis, & Kennedy, 2007). The performance of the Tshivenda (a minority group in South Africa, see Section 1.3.1) learners in PIRLS 2006, with reference to the four passages discussed in this study, indicates that the reading literacy levels of these learners is not at the level that is expected at their age and Grade. The statistics show that writing in their mother tongue, Tshivenda, did not give the learners who wrote PIRLS 2006 in this language any advantage (see Main conclusion 1).

The Tshivenda anomaly, which cannot be adequately explained by translation considerations, points to the fact that although these learners were being taught in their mother tongue, their comprehension skills were not enhanced by this LoLT, and to the fact that the sample of Tshivenda learners who wrote in a secondary language was smaller (see Section 3.2.1). Blank (1975) and Heath (1983) find that the reason why learners do more poorly in abstract questions comes down to two factors: either there is a lack of knowledge or learners do not understand what is expected from the form of question – in other words, the abstract question

format confuses learners and they do not know what kind of response is required of them. This study finds that despite writing the test in their mother tongue, this does not necessarily mean that the reasoning process required by the learners to answer abstract questions was facilitated, since these are taught skills.

Based on the PIRLS 2006 results, it could be said that learners not only display a lack of knowledge in terms of reading literacy, but display a lack of exposure to comprehension tests and the various question types associated with these. This is supported by Zimmerman (2010) who found that there was little evidence that PIRLS 2006 learners from low-performing schools were being given "written comprehension activities" (p. 309) in their classrooms. Cromley and Azevedo (2007) state that background knowledge and vocabulary play a large role in how learners link up sets of information within texts. It has been shown that learners who had larger vocabularies or prepared themselves for the vocabulary that they would need for a certain text achieved higher results than learners who were unprepared and did not have a large vocabulary with respect to the text at hand (Cromley & Azevedo, 2007) (see Section 1.2).

6.6 Recommendations for further research, policy and practice

This study was concerned with the validation of the quality of the translation and the performance of the Grade 5 Tshivenda learners who took part in PIRLS 2006. While the quality of the translation cannot be identified as a contributing factor in the Tshivenda anomaly, it has emerged that comprehension issues also played a role in these results. The following recommendations for further study are thus made:

More research into the translations and translation practices that are used for the PIRLS tests in South Africa is required. Since this study looked in depth at only the Tshivenda results with reference to the translation, studies which investigate the translation practices for the other nine South African languages would facilitate an overall understanding of the language performance aspect of PIRLS in South Africa. It would also be useful if further research were to be conducted to establish why articulation of written responses for constructed-response items is so difficult for learners, and to suggest policy or improved practices to address this issue in the classroom. There needs to be more research on how to improve practice with regard to the development and utilisation of technical terminology in the African languages, as this is an impediment not only to the translation of technical (informational) texts, but also

in the reading of these texts. Thus a restricted technical vocabulary also obstructs learning as language forms a barrier that learners struggle to surpass.

In terms of recommendations for policy, the results of this study show that learners may benefit from a revision of the LiEP policy (Department of Education, 1997) since its current application has not given the Tshivenda learners who wrote PIRLS 2006 in Tshivenda any advantage. However, regardless of the LoLT, the quality of reading comprehension teaching is of concern in schools in South Africa.

In terms of recommendations for practice, learners need to be further exposed to informational texts in the classroom environment, as they will be predominantly using such texts in the form of textbooks later on in their school careers. Teachers not only need to spend more time on informational texts within the classroom, but they also need to provide learners with comprehension test experience and experience with such informational text and exercise items. In this regard, policy and strategies need to be developed to implement this as practice nationally.

If the back-translation is any kind of example of the Tshivenda texts that were used in PIRLS 2006, the quality of these can be improved. The texts must be systematically and thoroughly reviewed by a translator who is not only fluent in both the Source Language and the Target Language, but who is also a specialist in children's literature used in comprehension tests as this would imply experience and vocabulary in this type of literature, which would facilitate equivalence in translation. In this way, the appropriateness of these texts can be assured from a perspective of what is appropriate for children of a certain age, and what is appropriate for the types of comprehension being assessed.

6.6.1 Closing thoughts

This study highlighted the link between translation and learner performance, which is only one aspect of what may have contributed to the Tshivenda anomaly, and was able to show that translation was not a significant role-player in the performance of the Grade 5 Tshivenda learners who took part in PIRLS 2006. South Africa is a pioneering country in that it tested PIRLS 2006 learners in all eleven official languages, which places the spotlight on language and translation. In focusing on the translation factor of PIRLS 2006, this study has thrown some light on the translation process and problems encountered in a study of this magnitude,

as well as emerging themes such as learner comprehension. In doing so, it has also laid the foundation for further research regarding other factors involved in PIRLS testing which may have contributed to the Tshivenda anomaly.

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8. APPENDIX A: LUMP OF CLAY

8.1 Original English source text for Lump of clay

The Little Lump of Clay

by Diana Engel

Way up high, in an old tower, there was a workshop. It was a pottery workshop, filled with barrels of colourful glazes, potter's wheels, kilns and, of course, clay. Near the window stood a big wooden bin with a heavy lid. There the clay was kept. Way at the bottom, squashed into the corner, was the oldest lump of clay. He barely remembered the last time he had been handled, a long time ago. Every day the heavy lid would open. Hands reached in, quickly grabbing bags or balls of clay. The little lump of clay could hear the cheerful sounds of people busy at their work."When will it be my turn?" he wondered. As each day passed in the darkness of the bin, the little lump of clay lost hope.

One day a large group of children came into the workshop with their teacher. Many hands reached into the bin. The little lump of clay was the last to be chosen, but he was out! "Here's my big chance!" he thought, squinting in the light. A boy put the clay on the potter's wheel, spinning it as fast as he could. "This is fun!" thought the little lump of clay. The boy tried pulling the clay up as the wheel went around. The little lump of clay felt the excitement of becoming *something* ! After trying to make a bowl, the boy gave up. He pushed and pounded the clay into a neat ball."Time to clean up," said the teacher. The workshop was filled with the sounds of children sponging and wiping and washing and drying. Water dripped everywhere.The boy plopped the lump of clay near the window and rushed to join his friends. After a while, the workshop emptied. The room was quiet and dark.

The little lump of clay was terrified. Not only did he miss the moistness of the bin, he knew he was in danger."It's all over," he thought. "I'll just sit here and dry out until I'm as hard as a rock." He sat by the open window, unable to move, feeling the moisture seep out of him. The sunlight beat down, the night breezes blew in, until he was rock hard. He was so hard he could hardly think. He only knew that he was filled with hopelessness. But somewhere deep inside the little lump of clay, a tiny drop of moisture was left, and he refused to let it go.

"Rain," he thought.
"Water," he sighed.
"Please," he finally squeezed out of his dry hopeless self.

A passing cloud took pity on the little lump of clay, and a wonderful thing happened. Huge raindrops hammered through the open window, falling on the little lump of clay. All night it rained, and by morning he was as soft as his old self. Voices drifted into the workshop. "Oh no," said a woman. She was a potter who often used the workshop. "Someone has left the window open all weekend! We've got a mess to clean up. You can work with some clay while I find the towels," she said to her daughter. The little girl saw the lump of clay sitting at the window. "This looks like a perfect lump for me," she said. Soon she was pressing and kneading the clay into pleasing shapes.

To the little lump of clay, her fingers felt heavenly. The girl thought as she worked, and her hands moved with purpose. The little lump of clay felt himself being gently pushed into a rounded, hollow shape. A few pinches, and he had a handle.

"Mommy, Mommy," called the girl, "I made a cup!"

"It's wonderful!" said her mother. "Put it on the shelf and it will be fired in the kiln. Then you can glaze it any colour you like." Soon the little cup was ready to be taken to his new home. Now he lives on a shelf in the kitchen, next to the other cups and saucers and mugs. They are all very different and some are very beautiful. "Breakfast!" calls the mother, setting the new cup on the table and filling him with hot chocolate. The little girl holds him gently. How happy he feels with the smooth lines of his new shape. How well he does his job! The little cup sits proudly. "At last—at last I am something."

Questions for Lump of Clay

1. Number the sentences below in the order the events happened in the story. Number 1 has been done for you.

   The rain made the lump of clay moist and soft.
   A boy tried to make the lump of clay into a bowl.
   A girl made the lump of clay into a cup.
   The lump of clay dried out.
   The lump of clay was in the bin.

---

2. Why was the lump of clay in the bin for such a long time?

---

3. At the beginning of the story, what did the lump of clay wish for?

---

4. Why was the clay eventually taken out of the bin?
   - A All the other lumps of clay were used.
   - B It was on top of the other lumps of clay.
   - C The boy chose that lump because he especially liked it.
   - D The teacher told the boy to use that lump.

---

5. What did the boy do that was careless?
   - A He left the clay on the potter's wheel.
   - B He was spinning the wheel as fast as he could.
   - C He put the clay near the window.
   - D He pushed and pounded the clay.

---

6. The boy left the lump of clay in danger. What was the danger?

---

7. How did the lump of clay feel right after the boy left the pottery workshop?
   - A satisfied
   - B scared
   - C angry
   - D proud

---

8. What wonderful thing happened after the lump of clay had been lying by the window for a long time? Why was this so wonderful for the lump of clay?

9. Which words in the story show that the little girl knew what she wanted to make?
   A 'her fingers felt heavenly.'
   B 'The little girl saw the lump of clay.'
   C 'The little girl holds him gently.'
   D 'her hands moved with purpose.

10. Describe the different feelings the clay had at the beginning and the end of the story. Explain why his feelings changed.

11. The little girl is an important person in this story. Explain why she was important to what happened.

12. The author of the story writes about the lump of clay as if it were a person. What is the author trying to make you imagine?
   A what it is like in the rain
   B how a lump of clay might feel
   C what it is like to work with clay
   D how it feels to make something

13. What is the main message of this story?
   A People are easy to knead and shape like clay.
   B There is a great deal of unhappiness in the world.
   C Everything is happiest when it finds a purpose.
   D Pottery is the best way to do good in the world.

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8.2 Tshivenda translation of Lump of clay

Kugwada kwa vumba
nga Diana Engel

Nṱha-nṱha, thawarani ya kale, ho vha hu na wekishopo. Yo vha i wekishopo ya u vhumba dzikhali, yo vha yo ḓala nga dzibareḽe dza mavhala-mavhala dzi penyaho, dzine dza vha dza muvhumbi wa khali Vhili ḽa u monisa hu tsho vhumbwa khali, honndo na vumba. Tsini na fasiṱere ho vha hu na bini ḽihulu ḽo itwaho nga thanda ḽine ḽa vha na mutibo u lemelaho. Ndi hone henefho he ha vha hu tshi vhewa vumba. Fhasi fhasi binini, ho vha hu na tshipiḓa tsha vumba tsha kale-kale, tsho patiwa henefhaḽa khuḓani. O vha a si tsha tou humbula zwavhuḓi tshifhinga tshe a fhedzisela ngatsho u shumisa, ndi tshifhinga tsha kale-kale.Ḓuvha ḽinwe na ḽinwe hu tibulwa mutibo une wa lemela. Zwanḓa zwa dzhena nga ngomu, nga u ṱavhanya zwa fara bege kana dzibola dza vumba. Kugwada kwa vumba ku ḓo pfa mibvumo ya vhathu vho takalaho vha tshi khou shuma mishumo yavho.

“Naa tshanga tshifhinga tshi ḓo swika lini?” kwa mangala. Musi ḓuvha ḽiṅwe na ḽinwe ḽi tshi khou ḓi pfuka haningei swiswini ḽa bini, kugwada kwa vumba kwa laṱa fulufhelo.
Ḽiṅwe ḓuvha ha ḓa tshigwada tshihulwane tsha vhana vhe na mudededzi wavho. Zwanḓa zwinzhi zwa dzheniswa nga ngomu binini. Kugwada kwa vumba kwo vha kwone kwa u fhedzisela u nangiwa, fhedzi kwa fhedza ku nnḓa!A humbula uri, “Hetshi ndi tshone tshifhinga tshanga tshihulwane!” o touvula maṱo zwiṱuku henefhala tshedzani.Mutukana a vhea vumba kha vhili ḽa u monisa musi hu tshi vhumbwa khali, a ḽi monisa nga u ṱavhanyesa. “Hezwi zwi a takadza!” ndi kuvumba ku tshi khou humbula. Mutukana a lingedza u kokodzela vumba nṱha musi vhili ḽi tshi khou mona. Kugwada kwa vumba kwa pfa kwo ḓala dakalo musi ku tshi humbula u ya u vha tshiṅwe tshithu! Ngamurahu ha u lingedza u vhumba dongo, mutukana a pfa e na gonobva ḽa u lingedza a tshi ya phanḓa. A putedza na u suka vumba ḽi tshi vha bola yavhuḓi.

Mudededzi a ri, “Ndi tshifhinga tsha u kunakisa,” Wekishopo yo vha yo ḓala phosho ya vhana vha no khou suvhisa, u phumula na u ṱana na u anea. Maḓi a rothela hoṱhe-hoṱhe. Mutukana a vhea kugwada kwa vumba tsini na fasiṱere a gidimela u ṱangana na khonani dzawe. Nga murahunyana, wekishoponi ha sala hu si tshe na na muthu na muthihi. Lufherani ho vha ho tou tshete! Nahone hu na swiswi. Kugwada kwa vumba kwo vha kwo tshuwa nga maanḓa. O vha a sa khou ṱuvha fhedzi u nukala ha bini, o vha a tshi zwi ḓivha na zwauri u khakhathini. A amba ari, “Zwo fhela, ndi ḓo sokou dzula hanefha nda oma u swika ndi tshi nga sala ndo oma u nga sa tombo ḽo khwaṱhaho.” A dzula tsini na fasiṱere ḽo vulwaho, a sa koni na u dzinginyea, a tshi khou pfa u nukala hu tshi khou fhela nga zwiṱuku. Masana a ḓuvha a ngalangala, muya wa vhusiku wa thoma u vhudzula, u swika a tshi vha tombo ḽo khwaṱhaho. O vha o khwaṱhesa lwe a balelwa na u humbula. O vha a tshi tou ḓivha fhedzi uri o vha a si tshe na na fulufhelo.Hu na huṅwe fhethu nga ngomu-ngomu ha kugwada kwa vumba he ha vha ho salaho nukalanyana, nahone a sa tende hu tshi fhela.

“Mvula,” A humbula.
“Maḓi,” A femuluwa.

“Nga khumbela,” nga zwiṱuku a ṱomowa kha vhuimo ha u sa ḓifulufhela.Gole ḽe ḽa vha ḽi tshi khou pfuka ḽa pfela vhuṱungu kugwada kwa vumba, nahone ha mbo ḓi itea zwithu zwi mangadzaho. Marotha mahulu-hulu a dzhena nga fasiṱere ḽo vuleaho a tshi wela kha kugwada kwa vumba. Ya na vhusiku hoṱhe, nga matsheloni o vha o vhuyelela u vha a puteaho sa onouḽa wa kale. Ha pfala maipfi ane a khou dzhena wekishoponi. “Hai nandi,” a amba mufumakadzi. O vha e muvhumbi ane a anzela u shumisa wekishopo. “Hu na muthu we sia o vula fasiṱere mafhelo oṱhe a vhege! Ri na tshinyalelo ya u kunakisa. A amba na kusidzanyana kwawe ari,” Iṅwi ni nga vha ni tshi khou shuma nga ḽiṅwe vumba ṅe ndi tshi khou ṱoḓa thavhula. Kusidzanyana kwa vhona kugwada kwa vumba ku kha fasiṱere. Kwari, “hitshi tshi vhonala tshi tshone tshipiḓa tshavhuḓisa kha ṅe.” Hu si kale a vha a tshi khou suka na u vhumbedzela vumba uri ḽi bve zwivhumbeo zwavhuḓi. Ṋala dzawe o pfa dzi tshi khou ḓiphinesa musi a tshi dzi dzhenisa kha kugwada kwa vumba. Musidzanyana a tshi khou ḓi isa phanḓa na u humbula a tshi shuma nahone zwanḓa zwawe zwi tshi khou tshimbila zwi tshi khou nakisa. Kugwada kwa vumba kwa pfa u vhumbedzelwa zwavhuḓi, ku tshi itwa tshivhumbeo tsha tshitendeledzi tshi re na mulomo wo vuleaho. U vhumbedzela nyana, a mbo ḓi vhumba na mukungelo. “Mmawe, Mmawe,” ndi musidzana ane a vhidzelela, “Ndo vhumba khali!” “Zwi a takadza!” ndi mme vhane vha ralo. “Ivheeni kha sheḽefu I ḓo fhiswa honndoni. Zwenezwo ni nga

kona u pennda nga muvhala muṅwe na muṅwe une na u funa.” Hu si kale kukapu kwa vha kwo no lugela u iswa hayani hawe. Zwa zwino u dzula kha shelefu ine ya vha tshiṱangani, tsini na dziṅwe khaphu na dzisosara na dzimaga. Dzo fhambana nga maanḓa nahone dziṅwe dzo naka nga maanḓa. “Vhurangane!” ndi mme vhane vha vhidzelela, vha tshi khou vhea khaphu ntswa kha ṱafula na u l ḓadza nga tshokoḽeidi. Kusidzanyana kwa mu farelelesa nga maanḓa zwavhuḓi. Ku pfa kwo takala nga maanḓa nga u suvhelela ha mitalo ya tshivhumbeo tshawe tshiswa. Naa mushumo wawe o u itisa hani! Kukapu kwa dzula kwo ḓikukumusa. “Magumoni—magumoni ndi tshiṅwe tshithu.”

Mbudziso Kugwada kwa vumba (Questions for Lump of Clay)

1. Nomborani mafhungo a re afho fhasi nga u tevhekane u ya nga he zwiwo zwa bvelela ngaho kha tshiṱori. Nomboro ya 1 no no ḓi itelwa yone.

   Mvula yo ita uri kugwada kwa vumba ku nukale na u puṱedzea zwavhuḓi.
   Mutukana o lingedza u vhumba kudongo nga kuputo kwa vumba.
   Musidzana o vhumba khaphu nga kugwada kwa vumba.
   Kugwada kwa vumba kwo mbo ḓi oma.
   Kugwada kwa vumba kwo vha ku nga ngomu binini.

2. Ndi nga mini kugwada kwa vumba kwo vha ku binini tshifhinga tshilapfu ngauralo?

3. Naa kugwada kwa vumba kwo tama mini mathomoni a tshiṱori?

4. Ndi nga mini mafhedziseloni vumba ḽo bviswa binini?
   A Zwipiḓa zwoṯhe zwa vumba zwo mbo ḓi shumiswa.
   B Tsho vha tshi nga nṯha ha zwiṅwe zwipiḓa zwa vumba.
   C Mutukana o nanga vumba ngauri o pfa a tshi khou funesa ḽone.
   D Mudededzi o vhudza mutukana uri a ḽi shumise

5. Naa ndi zwifhio zwe mutukana a ita zwa u sa londa?
   A O sia vumba kha vhili ḽa muvhumbi.
   B O vha a tshi khou monisa vhili nga u ṱavhanyesa hu konadzeaho.
   C O vhea vumba tsini na fasiṱere.
   D O vhumbedzela na u pwaṱukanya vumba.

6. Mutukana o sia kuputo kwa vumba ku khomboni. Ndi khombo-ḓe?

7. Kugwada kuṱuku kwa vumba kwo ḓipfa hani nga murahu ha musi mutukana o ṱuwa wekishoponi?
   A o fushea
   B o tshuwa
   C o sinyuwa
   D e wa nṯhesa

8. Ndi zwifhio zwithu zwa vhuḓisa zwe zwa bvelela nga murahu ha musi kugwada kwa vumba kwo vha ku nṯha ha fasiṱere tshifhinga tshilapfu? Naa ndi nga mini zwo vha zwi zwa vhuḓisa kha kugwada kwa vumba?

9. Ndi afhio maipfi kha tshiṱori ane a sumbedza uri kusidzanyana kwo vha ku tshi ḓivha zwe kwa vha ku tshi khou ṱoḓa u vhumba?
   A ‘Ṅala dzawe o pfa dzi tshi khou ḓiphinesa.’
   B ‘Kusidzanyana kwa vhona kugwada kwa vumba.’
   C ’Kusidzanyana kwa mu farelelesa nga maanḓa zwavhuḓi.’
   D ‘zwanḓa zwawe zwi tshi khou tshimbila zwi tshi khou nakisa.’

10. Ṭalutshedzani vhuḓipfi ho fhambanaho he vumba ḽa vha nayo mathomoni na magumoni a tshiṱori. Ṭalutshedzani uri ndi nga mini vhuḓipfi hawe ho shanduka.

11. Kusidzanyana ndi muthu wa ndeme kha tshiṱori itshi. Ṭalutshedzani uri ndi nga mini e wa ndeme kha zwo bvelelaho.

12. Muṅwali wa tshiṱori u ṅwala nga ha kugwada kwa vumba sa u tou nga ndi muthu. Naa muṅwali u khou lingedza uri ni humbule mini?
   A mvulani ho tou itisa hani
   B kugwada kwa vumba ku nga ḓipfisa hani
   C zwo vha zwi hani u shuma nga vumba
   D u ita tshithu zwi ita uri u ḓipfe hani

13. Mulaedza muhulwane kha tshiṱori ndi ufhio?
   A Vhathu vha a shanduka tshivhumbeo zwavhuḓi-vhudi sa vumba.
   B Lifhasini ho dalesa u dinalea.
   C Tshiṅwe na tshinwe tshi a takalesa arali tsho swikelela tshipikwa.
   D Zwa u vhumba ndi nḓila yavhudi ya u ita zwavhuḓi kha lifhasi.

Magumo a tshipiḓa tsha kubugwana ukwu. Litshani u shuma.

8.3 English back-translation of tshivenda text

Little lump of clay

by Diana Engel

On the top of an old tower, there was a workshop. It was a clay pot creation workshop, full of different barrels of different shining colours, moulding wheels that were for the potter when clay pots are created, ovens and clay. Near the window there was a big bin which was created by wood with a heavy lid. It was a place where clay was stored. Deep inside of the bin, there was a very old piece of clay, kept in the corner. He could not remember well the last time he was used, it was a long time ago. They would open the heavy lid daily. The hands reached inside, very quickly grabbing the clay bags or clay balls. The little piece of clay will hear the happy sound of people doing their work. “When will my turn come?” it wondered. As every day passed in the darkness of the bin, the little lump of clay lost hope. “The other day a teacher came with her kids into the workshop. Many hands reached inside the bin. The little lump of clay of was last to be selected, but it ended up outside! He was thinking, “This is my chance” opening his eyes only a little to the light.
The little boy put the clay on the moulding wheel when clay pot is made, and spun it very fast. “This is fun!” the lump of clay was thinking. The little boy tried to pull the clay up when the wheel went around. The little lump of clay was very excited when it thinking that it is going to be *something*! After trying to create a clay bowl, the little boy gave up. He presses and hit the clay until it became a nice ball. The teacher said, “it is time to clean,” There was noise of the children at the workshop who were sponging, rubbing, washing and drying. Water splashed all over. The little boy put little lump of clay next to the window and ran away to meet his friends. Thereafter, the workshop was empty. Inside the room it was quiet and dark. The little lump of clay was very afraid. He was not only missing the wetness of the bin, it was aware that it is in danger.

He said, “It is finished, I will just sit here until I get dry like a hard as a stone.” He sat next to the open window, he could not move, he was feeling that the moisture was going little by little. The sunlight disappeared, evening wind started to blow, until he became a hard as a stone. He was so hard that he could not think. He could only know that he lost hope. But in a place deep inside the piece of clay there was a small drop of water, and he resists to the end. “Rain,” he was thinking. “

“Water,” he takes a breath. “

“Please” he finally moved from the state of losing hope. “

The cloud which was passing by felt pity for the little lump of clay, and a surprising thing happened. Big drops of rain got inside the open window dropping into the litte lump of clay. It rained the whole night, by the morning it was soft like before. Voices of words came entering the workshop. “Oh no,” said the women. She was a potter who usually did her work at the workshop. There is someone who left the window open for the whole weekend! We have to clean the mess. She said to her young daughter,” You may work with some clay while I look for the towels. “ The young girl saw the lump of clay at the window. She said, “This is a very good lump to me.” Thereafter she started to press and moulding the clay into good shapes. To the lump of clay her fingers felt wonderful. The young girl continued to think while working and her hands moved with a purpose. The little lump clay of clay felt being pushed into a circle structure with a hollow inside. After pinching the clay a bit, he has a handle. “Mother, Mother,” the little girl is calling, “I have made a cup! “It is nice!” said the mother. “Put it on a shelf it will be heated on the oven. After that you can paint it with any colour you like.

After that the clay cup was ready to be taken to his new home. Now it is kept on the shelf in the kitchen, next to the other cups, saucers and mugs. They are different and some of them are very

beautiful.“Breakfast!” the mother called, putting the new cup on the table and pouring hot chocolate in it. The little girl holds it firmly. The cup feels happy by its new smooth lines of his shape. How well he does his job! The small cup was proud. “At the end—end I am something.”

Questions for Lump of Clay

1. Number the information below as listed by the way the scenes happened in the story.Number 1 was done for you.
   The rain makes little lump of clay to be wet and soft.
   The boy tries to potter a clay bowl from the little lump of clay.
   The girl created a cup with a little lump of clay.
   The little lump of clay becomes dry.
   The little lump of clay was inside the bin.

2. Why was the little lump of clay inside the bin for such a long time?

3. What the little lump of clay wish for at the beginning of the story?

4. Why was little lump clay l taken out of the bin at the end
   A All other lumps of clay were used.
   B It was on top of other lumps of clay.
   C The little boy chose that lump of clay because he liked it.
   D The teacher told the little boy to use that lump.

5. What did the boy which shows carelessness?
   A He left the clay on the potter’s wheel.
   B He was spinning with the wheel as fast as he could.
   C He put little lump of clay next to the window.
   D He crushes and hit the clay.

6. The little boy left the little lump of clay in danger. Which danger?

7. How did the little lump clay feel after the boy left the workshop?
   A he was satisfied
   B he was scared
   C he was angry
   D he was proud

8. What is the good thing that happened when the little lump of clay was on the window for a long time? Why was it very good for the little lump of clay?

9. What shows that the little girl knew what she is going to make with the clay?
   A ‘her fingers felt wonderful.’
   B ‘the little girl saw the lump of clay.’
   C ’the little girl holds it gently.
   D ‘her hands were moving with purpose.

10. Explain the different feelings of the clay from the start of the story until to the end of the story. Explain why the feelings changed.

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11. The little girl is very important character in this story. Explain why she is important to what happened in the story.

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12. The Author of the story writes about the little lump clay to personify it. What is the Author trying to make you imagine?
    - A how it is when it is raining
    - B how would the lump of clay feel
    - C how it is to work with clay
    - D how does it feel to make something

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13. What is the main message in this story?
    - A People are easy to change and shape like clay.
    - B There is a lot of unhappiness in the world.
    - C Everything becomes happy if it reaches its goal.
    - D Pottery is the best way to do good things in the world.

9. APPENDIX B: AN UNBELIEVABLE NIGHT

9.1 Original English source text for An unbelievable night

An Unbelievable Night

by Franz Hohler

Anina was ten years old, so even half asleep she could find her way from her room to the bathroom. The door to her room was usually open a crack, and the nightlight in the hallway made it light enough to get to the bathroom past the telephone stand.One night, as she passed the telephone stand on her way to the bathroom, Anina heard something that sounded like a quiet hissing. But, because she was half asleep, she didn't really pay any attention to it. Anyway, it came from pretty far away. Not until she was on her way back to her room did she see where it came from. Under the telephone stand there was a large pile of old newspapers and magazines, and this pile now began to move. That was where the noise was coming from. All of a sudden the pile started to fall over – right, left, forwards, backwards – then there were newspapers and magazines all over the floor. Anina could not believe her eyes as she watched a grunting and snorting crocodile come out from under the telephone stand.Anina was frozen to the spot. Her eyes wide as saucers, she watched the crocodile crawl completely out of the newspapers and slowly look around the apartment. It seemed to have just come out of the water because its whole body was dripping wet. Wherever the crocodile stepped, the carpet under it became drenched. The crocodile moved its head back and forth letting out a loud hissing sound. Anina swallowed hard, looking at the crocodile's snout with its terribly long row of teeth. It swung its tail slowly back and forth. Anina had read about that in "Animal Magazine"– how the crocodile whips the water with its tail to chase away or attack its enemies.Her gaze fell on the last issue of "Animal Magazine," which had fallen from the pile and was lying at her feet. She got another shock. The cover of the magazine used to have a picture of a big crocodile on a river bank. The river bank was now empty!

Anina bent down and picked up the magazine. At that moment the crocodile whipped his tail so hard that he cracked the big vase of sunflowers on the floor and the sunflowers scattered everywhere. With a quick jump Anina was in her bedroom. She slammed the door shut, grabbed her bed and pushed it up against the door. She had built a barricade that would keep her safe from the crocodile. Relieved, she let her breath out. But then she hesitated. What if the beast was simply hungry? Maybe to make the crocodile go away you had to give it something to eat? Anina looked again at the animal magazine. If the crocodile could crawl out of a picture then perhaps other animals could too. Anina hastily flipped through the magazine and stopped at a swarm of flamingos in a jungle swamp. Just right, she thought. They look like a birthday cake for crocodiles. Suddenly there was a loud crack and the tip of the crocodile's tail pushed through the splintered door. Quickly, Anina held the picture of the flamingos up to the hole in the door and called as loud as she could, "Get out of the swamp! Shoo! Shoo!" Then she threw the magazine through the hole into the hallway, clapped her hands and yelled and screamed.

She could hardly believe what happened next. The entire hallway was suddenly filled with screeching flamingos wildly flapping their wings and running around all over the place on their long, skinny legs. Anina saw one bird with a sunflower in its beak and another grabbing her mother's hat from its hook. She also saw a flamingo disappear into the crocodile's mouth. With two quick bites he swallowed the flamingo and quickly followed it with another, the one with the sunflower in its beak. After two portions of flamingo the crocodile seemed to have had enough and lay down contentedly in the middle of the hallway. When he had closed his eyes and no longer moved, Anina quietly opened her door and slipped through it into the hallway. She placed the empty magazine cover in front of the crocodile's nose. "Please," she whispered, "please go back home." She crept back into the bedroom and looked through the hole in the door. She saw the crocodile back on the cover of the magazine. She now went cautiously into the living room where the flamingos were crowded around the sofa and standing on the television. Anina opened the magazine to the page with the empty picture. "Thank you," she said, "thank you very much. You may now go back to your swamp." In the morning, it was very difficult for her to explain the giant wet spot on the floor and the broken door to her parents. They weren't convinced about the crocodile even though her mother's hat was nowhere to be found.

Questions for an Unbelievable Night

1. What was the first sign that something unusual was happening?
   - A A pile of newspapers began to move.
   - B Anina saw the magazine cover.
   - C The door to her room was broken.
   - D Anina heard a hissing sound.

2. Where did the crocodile come from?
   - A the bathroom
   - B a magazine cover
   - C under the bed
   - D a nearby river

3. Which words tell you that Anina was frightened?
   - A "frozen to the spot"
   - B "could not believe her eyes"
   - C "let her breath out"
   - D "sounded like a quiet hissing"

4. Why did Anina think the crocodile was going to attack?
   - A It showed its long row of teeth.
   - B It let out a loud hissing sound.
   - C It started grunting and snorting.
   - D It swung its tail back and forth.

5. Put the following sentences in the order in which they happened in the story.

   The first one has been done for you.

   Anina saw the crocodile.
   The crocodile ate two flamingos.
   Anina tried to explain the broken door to her parents.
   1 Anina started to walk to the bathroom.
   Anina ran to the bedroom and slammed the door.

6. Why did Anina call the flamingos?

7. How did the bedroom door get broken?
   - A The crocodile's tail pushed through it.
   - B The big vase cracked against it.
   - C The flamingo's sharp beak crashed into it.
   - D The bed smashed against it.

8. How did the magazine help Anina? Write two ways.

9. At the end of the story, how did Anina feel toward the flamingos?

A guilty
B cautious
C grateful
D annoyed

10. Name one thing Anina had difficulty explaining to her parents.

11. What was the best idea Anina had in the story? Explain why you think so.

12. Describe what Anina was like and give one example that shows this.

13. The author does not tell us whether Anina's adventure was all a dream. Find one piece of evidence that it may have been a dream. Find one piece of evidence that it may not have been a dream.

    1 It was a dream because

    1 It was not a dream because

9.2 Tshivenda translation of An unbelievable night

Vhusiku vhune u nga si vhu kholwe
Nga Franz Hohler

Anina o vha e na miṅwaha ya fumi, naho a tshi khou kumedza o vha a tshi kona u wana nḓila yawe ya u bva rumuni yawe a ya rumuni ya u ṱambela. Vothi ḽa u dzhena rumuni yawe ḽo vha ḽi na mutwe, nahone tshedza tsha vhusiku tsha nḓila ya u yela holoni tsho vha tshi tshi kona u vhonetshela lune muthu a nga kona u vhona nḓila ya u dzhena rumuni ya u ṱambela o fhira nga tsini na tshitende tsha luṱingo.Vhuṅwe vhusiku, musi a tshi tou pfuka hune ha vha na tshitende tsha luṱingo, a tshi khou ya rumuni ya u ṱambela, Anina a pfa tshiṅwe tshithu tshi no nga muludzi wa ṋowa . Fhedzi ngauri o vha a tshe na khofhe, ha ngo vhuya a u dzhiela nṱha. Nahone wo vha u tshi khou pfala u kule. Ha ngo pfa he wa vha u tshi khou bva u hone u swika musi e nḓilani yawe yo livhaho rumuni yawe he a vho kona u pfa uri u khou pfala u nga ngafhi. Nga fhasi ha tshitende tsha luṱingo ho vha hu na buto ḽihulu ḽa gurannḓa dza kale khathihi na dzimagazini, nahone heḽi butoḽla thoma u dzinginea. Hafho ndi hone he phosho ya vha i tshi khou pfala i tshi bva hone. Nga khathihi fhedzi, buto ḽa mbo ḓi thoma u wela – thungo ya tshauḽa, ya tsha monde, phandḓ, murahu – ha mbo ḓi vha ho no sokou ḓala magurannḓa fhasi hoṱhe. Anina ha ngo ṱoḓou zwi tenda zwavhuḓi musi a tshi vhona ngweṇa ine ya khou vhomba na u pfumbula-pfumbula i tshi bva nga fhasi ha tshitende tsha luṱingo.Anina zwa mu akhamadza. Maṱo awe o hula u nga sa sosara, a lavhelesa musi ngweṇa i tshi khou kovha i tshi bva nga fhasi ha gurannḓa nahone i tshi khou sedza hafha nga ngomu ṋa rumu ya u awetshela . Yo vha i tshi vhonala sa ine ya kha ḓi tou bva u bva maḓini ngauri muvhili wayo woṱhe wo vha wo ṋukala nahone u tshi kha ḓi rotha maḓi. Hoṱhe nṱha ha khaphethe he ya vha i tshi khou kwama hone musi i tshi kokovha ho vha hu tshi khou sala ho ṋukala.

Ngwena ya imisela ṯhoho yayo nṱha na fhasi i tshi khou lidza muludzi wayo. Anina a pfa a si na na mare musi a tshi vhona ningo na mulomo une wa vha na maṋo malapfu o tembaho nga ngomu ha ngwena. Ya monisa mutshila wayo i tshi u isa phanḓa na murahu. Anina o vha o no tou zwi vhala kha “Magazini ya Dziphukha”– ndila ine ngwena ya kumba ngayo maḓi nga mutshila wayo u itela u pandela kana u ṯhasela maswina ayo.Maṱo awe o mbo di sedza kha “Magazini ya Dziphukha,” ya u fhedzisela u bviswa ye ya wa kha buto nahone ya vha yo wela nṱha ha milenzhe yawe. A dovha a tshuwa. Khava ya magazini yo vha i na tshifanyiso tsha ḽigwena ḽihulu ḽeḽa vha ḽi khunzikhunzini ya mulambo. Nga tshenetsho tshifhinga, khunzikhunzini ho vha hu tshi vhonala hu si tshe na tshithu!
Anina a kotama uri a dobe magazini. Nga tshenetsho tshifhinga, ngweṇa ya rwa mutshila wayo nga maanḓa lwe ya pwasha veisi ya maluvha a mulivha ḓuvha ya wela fhasi, a sa kou ḓala hoṱhe-hoṱhe. Nga u bonya ha iṱo, Anina a vha o no fhufhela rumuni yawe ya u eḓela. A hanzhamedza vothi, a hwala mmbete wawe a u gogodedza uri u tike vothi. A vha o no ḓifhatela luvhondo lwa u mutsireledza kha ngweṇa. A femela nṱha nga nḓila ya u sumbedza uri zwino o tshila a hu tshe na khombo.Zwenezwo, a mbo tima-tima. A humbula uri izwi khamusi buka iḽo a ḽi na nḓala? Khamusi uri ḽi ṱuwe tsha khwine ndi u i fha zwiḽiwa uri ḽi ḽe? Anina a dovha a lavhelesa kha magazini ya dziphukha. Arali ngweṇa i tshi nga kona u kokovha ya bva kha tshifanyiso, ṯhanwe na dziṇwe phukha dzi nga zwi kona. Anina a vula magazini nga u ṱavhanya a ima kha musi a tshi vhona tshikhuvhugu tsha dzifulamingo dze dza vha dzi thopheni. A humbula uri, hezwo ndi zwone-zwone. Dzi vhonala dzi tshi nga ndi khekhe ya ḓuvha ḽa mabebo a ngweṇa. Zwenezwo ha pfala phosho khulu nahone ṯhodzi ya mutshila wa ngweṇa wa thudza vothi lo phamuwaho I tshi khou dzhena nga ḽo.Nga u ṱavhanya, Anina a imisa tshifanyiso tsha dzifulamingo kha buli ḽi re kha vothi a vhidzelela nga ipfi ḽawe ḽo guma, “Ibvai matopeni! Shoo! Shoo!” A mbo ḓi posa magazini nga buli ḽi no dzhenela kha nḓila ya holoni, a vhanda zwanḓa, a tshi khou vhidzelela na u tzhema. Zwe zwa bvelela nga murahu, ha ṱoḓi u tou zwi tenda zwavhuḓi.

Nḓila yoṱhe ya u dzhena holoni yo mbo ḓi ḓala nga dzifulamingo dze dza vha dzi tshi khou ita phosho dzi tshi dzungudza phapha dzadzo na u sokou gidima-gidima dzi tshi mona hoṱhe-hoṱhe nga milenzhe yadzo misekene-sekene. Anina a vhona tshiṇoni tshithihi tshi na ḽiluvha ḽa mulivhaḓuvhakha ṯhodzi ya mulomo watsho, na tshiṇwe tshe tsha vha tshi tshi khou dzhia muṅwadzi wa mme awe he wa vha wo hakiwa hone. O vhona hafhu na fulamingo i tshi khou ngalangala nga ngomu mulomoni wa ngwena. Nga u ṱavhanya, ngweṇa ya mila fulamingo, ya dovha ya mila iṅwe fulamingo ye ya vha i na ḽiluvha ḽa mulivha ḓuvha kha ṯhodzi ya mulomo wayo. Nga murahu ha u ḽa zwipiḓa zwivhili zwa dzifulamingo, ngweṇa ya vhonala yo fura ya mbo ḓi lala hanefho fhasi vhukati ha nḓila ya u ya holoni. Musi ngwenṇa yo no vala maṱo ayo i sa tsha

tsukunyea, Anina a vula vothi zwavhuḓi a sa i ti phosho, a mbo ḓi bva ngalo a ṱutshela thungo ya holoni. A vhea khava ya magazini i si tshe naho tshifanyiso tsha ngweṇa nga phanḓa ha ningo ya ngwena. A hevhedza a ri, “Ndi a u humbela “ṱuwai u ye hayani hau.” A humela kamarani yawe ya u eḓela a ṱolela nga buli line la vha kha vothi. A vhona ngwena yo vhuelela kha khava ya magazini. A ṱutshela thungo ya rumuni ya u dzula nga vhuronwane he ha vha ho ḓala dzifulamingo kha masofa na nṱha ha thelevishini. Anina a vula magazini kha siaṱari ḽe ḽa vha ḽi si na tshifanyiso. A ri “Ndi a li vhuwa,” “ndi a ni livhuwa nga maanḓa. Zwino ni nga ṱuwa na ya thopheni yaṇu .” Nga matsheloni, zwo mu konḓela nga maanḓa u ṱalutshedza fhethu ho ṇukadzwaho nga ḓithu na vothi ḽo phamuwaho kha vhabebi vhawe. Vho vha vha si khou zwi kholwa zwa ngweṇa naho muṅwadzi wa mme awe wo vha u sa khou vhonala.

Zwo dzhiwa kha Eine Wilde Nacht kha Der Große Zwerg und Andere Geschichten nga Franz Hohler. Yo gandisiwa nga ṅwaha wa 2003 nga Deutscher Taschenbuch Verlag, Munchen, Germany. Illustrations copyright © 2003, IEA. Ho itwa maga othe a u wana thendelo ya nzivhanyedziselo.

Mbudziso Vhusiku vhune u nga si vhu Kholwe (Questions for an Unbelievable Night)

1. Na luswayo lwa u thoma u sumbedza uri hu na zwiṅwe zwo khakheaho ndi lufhio?
   - A Buto la gurannḓa ḽo thoma u dzinginyea.
   - B Anina o vhona khava ya magazini.
   - C Vothi la u dzhena rumuni yawe ḽo vha ḽo vundea.
   - D Anina o pfa mubvumo u no nga ẖa ṇowa i tshi khou lidza muludzi.

2. Naa ngweṇa yo da i tshi khou bva ngafhi?
   - A rumuni ya u ṱambela
   - B kha khava ya magazini
   - C nga fhasi ha mmbete
   - D mulamboni we wa vha u nga tsini

3. Ndi afhio maipfi ane a ni vhudza uri Anina o vha o tshuwa?
   - A “u fhelelwa nga nungo”
   - B “o vha a sa pfesesi uri maṱo awe a khou vhona zwone naa”
   - C “u femela nṱha”
   - D “u pfala u u nga sa muludzi u no khou lilela fhasi

4. Naa ndi nga mini Anina o humbula uri ngwena i khou ṱoḓa u muthasela?
   - A Yo sumbedza maṇo ayo malapfu o tevhekanaho.
   - B Yo lidza muludzi u pfalesaho.
   - C Yo thoma u vhomba na u kuma.
   - D Yo dzungudza mutshila wayo u tshi ya phanḓa na murahu.

5. Vhekanyani mafhungo a tevhelaho nga nḓila ye a bvelelisa ngayo kha nganea.

   Fhungo ḽa u thoma no no itelwa lone.
   Anina o vhona ngweṇa.
   Ngwena yo ḽa fulamingo mbili.
   Anina o lingedza u ṱalutshedza vhabebi vhawe nga ha vothi ḽo vundeaho.
   1 Anina o thoma u tshimbila a tshi yela thungo ya rumu ya u ṱambela.
   Anina o gidimela rumuni yawe ya u eḓela a swika a hanzhamedza vothi.
   .

6. Na ndi nga mini Anina o vhidza dzifulamingo?

7. Naa vothi ḽa rumu ya u edela lo vunḓeisa hani?
   - A Ngwena yo tou li sukumedza nga mutshila wayo.
   - B Veisi khulu yo tou rwana ṇayo musi i tshi pwashea.
   - C Mulomo wa Fulamingo une wa vha na ṭhodzi i fhiraho wo tou ḽi pwasha.
   - D Mbete wo tou rwana naḽo ḽa pwashea.

8. Naa magazini yo thusa hani Anina? Ṅwalani ndila mbili

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9. Magumoni a nganea, naa Anina o ḓi pfa hani malugana na dzifulamingo?
   A e na mulandu
   B a na vhulondo
   C o ḓala dakalo
   D o shona

---

10. Bulani tshithi tshithihi tshe Anina a ita musi a tshi khou ṱalutshedza vhabebi vhawe.

---

11. Naa muhumbulo wa khwinesa we Anina a vha nawo kha nganea ndi ufhio? Ṱalutshedzani uri ndi nga mini ni tshi ralo.

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12. Ṱalutshedzani uri Anina o vha e muthu-ḓe nahone ni dovhe ni nee tsumbo nthihi ine ya sumbedza zwenezwo zwe na zwi amba.

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13. Muṅwali ha ngo ri ṱalutshedza uri zwithu zwi mangadzaho zwe zwa bvelela kha Anina wo vha u tshi tou vha muḽoro. Wanani tshipiḓa tshithihi tshine tsha khwaṱhisedza uri u nga vha wo vha u muḽoro. Wanani tshipiḓa tshithihi tshine tsha khwaṱhisedza uri u nga vha wo vha u si muḽoro.

   Wo vha u muḽoro ngauri

   Wo vha u si muḽoro ngauri

9.3 English back-translation of the tshivenda text (An unbelievable night)

The night that you won't believe
By Franz Hohler

Anina was ten years old, so even when she was feeling asleep she could find the way to go from her room to the bathroom. The door of her room was usually open a bit, and the light of the night in the hall was clear in such a way that a person could see the route to the bathroom passing past the phone stand. The other night when she passed by the phone stand, when she was going to the bathroom, Anina heard a soft sound like a snake. But because she was still feeling asleep, she did not take it serious. It in any case seemed to be far away. She did not know where it was coming from until she was going to her room where she was able to hear where it was coming from. Under the phone stand there was a pile of old newspapers and magazines, and the pile started to move. This is where the noise was coming from. Suddenly, the pile started to fall over - to the right side, to the left, front, back- the newspapers and magazines were all over. Anina did not want to accept it when he saw a crocodile which was grunting and snorting under the stand of the phone. Anina was so surprised she could not move. Her eyes were big like a saucer, she looked at the crocodile when he was coming out under the newspapers while looking at the rest of the apartment slowly. It seemed as if it came from the water because his body was still wet and the water was still dripping. All over the carpet where the crocodile stepped it was left wet.

The crocodile was moving his head up and down while making a loud hissing sound. Anina could not say a word when she saw the nose and mouth with long teeth inside the crocodile. It shook its tale from front and back. Anina knew about it from reading the magazine "Animal magazine" – the way the crocodile whips water with its tail in order to chase away or attack his enemy.
Her eyes caught the "Animal Magazine" latest release which fell from the pile to her feet. She had another shock. The cover of the magazine had a picture of a huge crocodile on the river bank. Now the river bank seemed to be empty! Anina bent down to collect the magazine. At that time, the crocodile whipped his tale and it broke the sunflower vase on the floor, and the sunflowers fell all over. Within a short period, Anina got inside her bedroom. She shut the door hard, and put her bed next to the door. She had built a safety wall to keep her safe from the crocodile. She let out a deep breath to show that she is now relieved. Suddenly, she hesitated. She thought that maybe the beast is hungry? Maybe in order for the crocodile to go she must give it food to eat? Again Anina looked at the animal magazine. If the crocodile can crawl from the picture, maybe the other animals can also do so. Anina opened the magazine very fast and stopped when she saw groups of flamingo in a jungle swamp. She thought, this was just right. This looks like a crocodile birthday cake.

Suddenly she heard a noise like a loud crack and the tip of the crocodile tail pushed through the splintered door. Very fast, Anina raised the flamingo pictures to the crack of the door and shouted with her voice as loud as she could, "Get out from the swamp! Shoo! Shoo!" She threw the magazine through the crack in the hall, and clapped her hands, while calling out and screaming. What happen thereafter, she did not want to believe it. The whole hall was full of flamingos which were making noises and moving their wings wildly and running around all over on their long thin legs Anina saw one bird with a sunflower in its beak, and the other one took her mother's hat from the hook. She saw the flamingo go missing inside the crocodile's mouth. Very fast, the crocodile swallowed the flamingo, and swallowed another flamingo with the sunflower in its beak. After eating the two portions of flamingos, the crocodile seemed to be full and lay down in the middle of the hall. When the crocodile closed its eyes and did not move, Anina opened the door smoothly without making any noise, and went out to the hall. He put the cover of the magazine without the pictures of the crocodile on the front in front of the crocodile's nose. She spoke with a low voice and sad, "Please, go away to your home", she said softly. She went back to her bedroom and watched through the crack in the door. She saw the crocodile has gone back into the cover of the magazine.

Carefully she went to the sitting room where it was full of flamingos around the couch and on the top of television. Anina opened the page from the magazine which did not have the pictures. She said "Thank you," "I thank you very much". Now you can go back to your swamp." In the morning, it was difficult for her to explain to her parents about the wet place on the floor and the broken door. They did not believe about the crocodile even though they could see the hat of her mother were lost.

The night that you won't believe

1. What is the first sign which shows that there was something happening that was unbelievable?
   - A The pile of newspapers started to move.
   - B Anina saw the cover of the magazine.
   - C The door of her room was broken.
   - D Anina here the sound like of snake hissing.

2. Where did the crocodile come from?
   - A bathroom
   - B on the cover of the magazine
   - C under the bed
   - D in a nearby river

3. Which words show that Anina was frightened?
   - A "was so surprised she could not move"
   - B "she was not quite sure about what he was seeing"
   - C "she let her breath out"
   - D "it sounded like a quiet hissing noise

4. Why did Anina think that the crocodile wanted to attack her?
   - A It shows its long row of teeth.
   - B It made a loud hissing sound.
   - C It started grunting and snoring
   - D It shook its tale from front and back.

5. Put following sentences in the way it had happened in the story.

   The first one was done for you.

   Anina saw the crocodile
   The crocodile ate two flamingos.
   Anina tried to explain to her parents about the broken door.
   1 Anina started walking to the bathroom.
   Anina ran to her room and shut the door hard.

6. Why did Anina call the flamingos?

7. How did the bedroom door break?
   - A The crocodile pushed it with its tale.
   - B The big vase hit it while it was breaking.
   - C The flamingo's sharp beak crashed into it.
   - D The bed hit it and broke.

8. How did the magazine help Anina? Write two ways

9. At the end of the story, how did Anina feel about the flamingos?

A guilty
B careful
C grateful
D annoyed

10. Mention one thing that Anina found difficult to explain to her parents.

11. What is the best idea that Anina had in the story? Explain why you think so.

12. Explain the characteristics of Anina and give one example which means the same as the things you have mentioned.

13. The author did not explain to us if the adventure which happened to Anina was just a dream. Find one part that indicates that it was a dream. Find one part which indicates that it was not a dream.
    1 It was dream because

    1 It was not a dream because

10. APPENDIX C: ANTARCTICA

10.1 Original English source text of Antarctica

Antarctica: Land of Ice
Introducing
Antarctica

What is Antarctica?
Antarctica is a continent that is right at the south of the planet. (If you try to find it on a globe, you will see that it is at the bottom.) It takes up one-tenth of the Earth's surface and is covered with a blanket of ice that can be as thick as 1,500 metres or more. The South Pole is right in the middle of Antarctica.
Antarctica is the coldest continent, as well as the driest, the highest and the windiest. Very few people live there all year round. Scientists stay there for short periods, living in specially built research stations.Summer in Antarctica is between October and March. During this time there is non-stop daylight. In winter, April to September, the opposite happens and Antarctica is plunged into six months of constant darkness.

The Weather in Antarctica
In Antarctica, it is colder than you can possibly imagine, even in the summer! The South Pole is the coldest part of Antarctica. The average temperature for January, the middle of the summer, is minus 28 degrees Celsius (written as -28°C). Minus means colder than the freezing point, which is 0°C.In the winter, April to September, the average temperature at the South Pole can be as cold as -89°C. When it is that cold, a mug of boiling water thrown in the air would freeze before it hit the ice. Sometimes the scientists have to use fridges to keep their samples warm!

Penguins in Antarctica
There are more penguins in the Antarctic than any other bird. They cannot fly but use their short wings as swimming flippers. They are superb swimmers. On land, they waddle upright or move in short hops.Penguins have many feathers that overlap each other. These, together with woolly down feathers and a thick layer of fat, keep out the cold air, wind and water. For extra warMother Tongueh, penguins huddle together in groups.

A Letter from Antarctica Sara Wheeler is one of the scientists working in Antarctica. By reading her letter to her nephew Daniel, you can learn more about her Antarctic experience.

Antarctica
Friday, 9 December

Dear Daniel,
Here is the letter I promised to write to you from Antarctica, and a photograph. Imagine how excited I am to be here at last, following in the footsteps of so many famous explorers. It is very different from the world I am used to.There is nothing fresh down here—and no supermarkets—so we have to eat a lot of dried, tinned or frozen food (it doesn't have to be put in the freezer—you can just leave it outside). We cook on small gas stoves, which take much longer than cookers at home. Yesterday I made noodles with tomato paste and vegetables out of a tin, followed by dried strawberries that tasted like cardboard.

I miss fresh apples and oranges—I wish you could send me some!
Love from Sara

Antarctica: Land of Ice

1. Where can you find Antarctica on a globe?

2. Antarctica is the coldest place on Earth. What other records does it hold?
   - A driest and cloudiest
   - B wettest and windiest
   - C windiest and driest
   - D cloudiest and highest

3. What is the coldest part of Antarctica?

4. Think about what the article says about Antarctica. Give two reasons why most people who visit Antarctica choose not to go there between April and September.

5. Why does the article tell you that 'a mug of boiling water thrown in the air would freeze before it hit the ice'?
   - A to tell you how hot the water is in Antarctica
   - B to show you what they drink in Antarctica
   - C to tell you about scientists' jobs in Antarctica
   - D to show you how cold it is in Antarctica

6. According to the article, what do penguins use their wings for?
   - A flying
   - B swimming
   - C keeping chicks warm
   - D walking upright

7. Give three ways penguins are able to keep warm in Antarctica.

8. What are two things you learn about food in Antarctica from Sara's letter?

9. Think about whether you would like to visit Antarctica. Use what you have read in both Introducing Antarctica and A Letter from Antarctica to explain why you would or would not like to visit.

10. Which section of the article tells you how thick the ice is in Antarctica?
    - A What is Antarctica?
    - B The Weather in Antarctica
    - C Penguins in Antarctica
    - D A Letter from Antarctica

11. In this article, there are two different ways of finding out about Antarctica:

    - Introducing Antarctica
    - A Letter from Antarctica

    Which of these kinds of information do you find more interesting, and why?

10.2 Tshivenda translation of Antarctica

Antarctica: Shango ḽa Aisi
U ḓivhadza
Antarctica

Antarctica ndi mini?
Antarctica ndi dzhango ḽine ḽa tou vha tshipembe ha puḽanethe. (Arali na lingedza u ḽi sedza kha khungulu, ni ḓo zwi vhona uri ḽi tou vha nga fhasi.) Ḽi dzhia tshipiḓa tshi linganaho na thihi tsha fumi tsha nyalo ya Ḽifhasi nahone ḽo fukedzwa nga gwada ḽa aisi ḽine vhudenya haḽo ha nga kha ḓi vha dzimithara dza 1 500 kana dzi no fhira dzenedzo. Phouḽu ya Tshipembe i tou vha vhukati ha Antarctica.Antarctica ndi dzhango ḽi rotholesaho, hafhu ḽo omesa, ḽi ntṱhesa ḽa dovha ḽa vha na muya munzhi. Ndi tshivhalo tshiṱuku tsha vhathu vhane vha dzula hone ṅwaha woṱhe. Vhorasaintsi vha dzula lwa tshifhinganyana, vhe zwiṱitshini zwo fhaṱwaho lwa sipeshaḽa zwa tshifhinganyana.ṱhoḓisiso. Tshilimo tsha Antarctica tshi vha hone vhukati ha Tshimedzi na Ṱhafamuhwe. Nga hetshi tshifhinga hu vha hu na tshedza tsha ḓuvha tshi sa dzimiho. Nga Vhuriha, vhukati ha Lambamai na Khubvumedzi, hu bvelela zwo fhambanaho na izwo zwo bulwaho nahone Antarctica ḽi vha kha miṅwedzi ya rathi ya swiswi fhedzi.

Mutsho wa ngei Antarctica
Hangei Antarctica, hu rothola u fhirisa zwine na nga humbulelisa zwone, naho hu tshilimo! Phouḽuni ya Tshipembe ndi tshipiḓa tshi rotholesaho tsha Antactica. Tshikati tsha thempharetsha ya Phando hune ha vha vhukati ha tshilimo, ndi mainasi 28 digirii Seḽishiasi (ine ya ṅwalwa sa -28°C). Mainasi zwi amba u rotholesa u fhirisa phoindi ine u rothola ha tea u guma khayo, ine ya vha 0°C. Nga Vhuriha, Lambamai u swika Khubvumedzi, tshikati tsha thempharetsha ya phouḽu ya Tshipembe I nga rothola u swika kha -89°C. Musi hu tshi khou rothola ngauralo, maga ya maḓi ane a khou vhila yo posiwa muyani i nga firiza i saathu na u swika kha aisi. Tshiṅwe tshifhinga vhorasaintsi vha fanela u shumisa zwixwatusi uri sambula dzavho dzi dudelwe!

Phingwini ngei Antarctica
Phingwini ngei Antarctic dzo ḓalesa u fhirisa zwiṅwe zwinoni. A dzi koni u fhufha, fhedzi dzi shumisa mafhafha mapfufhi sa dzifiḽipasi dza u bambela. Ndi vhomakone kha u bambela. Shangoni, dzi tshimbila nga u dzi tshi ya nṱha kana dza tshimbila nga u thamuwa hupfufhi.Phingwini dzi na mathenga manzhi a ṱoṱomowaho/fhirafhiranaho. Aneo mathenga o khathihi na na maṅwe a re nga fhasi hao a ngaho wuḽu na luvhemba lu denya lwa mapfura, zwi thivhela muya wa u rothola, maḓumbu na maḓi. U itela vhuṅwe vhududo ha nyengedzedzo, phingwini dzi kuvhatedzana nga zwigwada nga zwigwada.Vhurifhi vhu bvaho Antarctica

Sara Wheeler ndi muṅwe wa vhorasaintsi vhane vha khou shuma Antarctica. Nga u vhala vhurifhi he a nṅwalela muḓuhulu wawe Daniel, ni nga guda zwinzhi nga ha tshenzhemo yawe ya ngei Antarctica.

Antarctica

Ḽavhuṱanu, 9 Nyendavhusiku

Ha Daniel,

Hovhu ndi hone vhurifhi he nda ni fulufhedzisa uri ndi ḓo ni ṅwalela ndi Antarctica, na tshinepe. Humbulani uri ndi nga vha ndo takala hani u ḓiwana ndo fhedza ndo swika fhano, u kanda muṱalani wa vhaṅwe vhatanduli vha bvumo/ḓivhaeaho. Hafha ho fhambana nga maanḓa na shango ḽe nda ḽi ḓowela.

A huna na tshithu tshitete fhano—nahone ahuna dzisuphamakete— zwenezwo ri tea u ḽesa nga maanḓa mitshelo yo omiswaho, ya zwikoṱini kana zwiḽiwa zwo xwatuswaho (a zwi tewi u vhewa firidzhini—ni nga so kou zwi vhea nnḓa). Ri bika nga tshiṱofu tshi ṱuku tsha gese, tshine tsha fhedza tshifhinga tshilapfu u fhirisa tshiṱofu tsha hayani. Mulovha ndo bika dzinodlosi dzi na muthotho wa maṱamaṱisi na miroho ine ya bva tshikoṱini, ya tevhelwa nga zwiṱirouberi zwo tou omiswaho zwine muthetshelo wazwo wa nga khadibodo.

Ndo ṱuvha maapula na maswiri matete—Ndi tama uri ngavhe no vha ni tshi nga kona u nthumela

zwiṅwe!
Ndi ṅne mufunwa wanu Sara

Antarctica: Shango ḽa Aisi (Antarctica: Land of Ice)

1. Naa Antarctica ni nga ḽi wana nga ngafhi kha guḽoubu ?

2. Antarctica ndi hone fhethu hune ha rotholesa kha Ḽifhasi. Naa ḽi na dziṅwe rekhodo dzifhio?
   - A u omesa na u vhesa na makole
   - B u nukalesa ḽa dovha ḽa vha na muyesa
   - C u vha na muyesa na u omesa
   - D u vhesa na makole na u vhesa ḽone ḽa nṱhesa

3. Naa ndi tshifhio tshipiḓa tsha Antarctica tshi rotholesaho?

4. Humbulani nga ha zwine dziatikili dza ambesa nga ha Antarctica. Neani zwiitisi zwivhili zwauri ndi ngani vhunzhi ha vhathu vhane vha dalela Antarctica vha tshi nanga usa ya fhethu afho nga tshifhinga tsha vhukati ha Lambamai na Khubvumedzi.

5. Naa ndi ngani atikili i tshi ni vhudza uri ’maga ya maḓi ane a khou vhila yo posiwa muyani i nga firiza i saathu na u swika kha aisi.’?
   - A u ni vhudza uri maḓi a fhisa u guma-fhi ngei Antarctica
   - B u ni sumbedza zwine vhanwa ngei Antarctica
   - C u ni vhudza nga ha mushumo wa vhorasaintsi ngei Antarctica
   - D u ni sumbedza uri ngei Antarctica hu rothola u guma ngafhi

6. U ya nga ha atikili, naa phingwini dzi shumisa phapha dzadzo u ita mini?
   - A u fhufha
   - B u bambela
   - C u dudedza zwikukwana
   - D u tshimbila zwavhuḓi

7. Ṋeani nḓila tharu dzine phingwini dza kona u ḓididudedza ngadzo ngei Antarctica.

8. Ndi zwifhio zwithu zwivhili zwe na guda nga ha zwiḽiwa zwa ngei Antarctica kha luṅwalo lwa Sara?

9. Humbulani arali ni tshi nga tama u dalela Antarctica. Shumisani zwe na vhala kha U ḓivhadza Antarctica na Vhurifhi vhu bvaho Antarctica ni ṯalutshedze uri ndi nga mini ni tshi nga funa kana ni si nga si fune u hu dalela.

10. Ndi khethekanyo ifhio kha atikili ine ya ni vhudza nga ha vhudenya ha aisi ngei Antarctica?
    - A Naa Antarctica ndi mini?
    - B Mutsho ngei Antarctica
    - C Phingwini ngei Antarctica
    - D Vhurifhi vhu bvaho Antarctica

10.3 English back-translation of tshivenda text (Antarctica)

Antarctica: Country of Ice
Introduce
Antarctica

What is Antarctica?
Antarctica is a continent at the South of the planet. (If you try to look at it on the globe, you will see that it is at the bottom.) It takes a part which is close to one tenth of the surface of the World and it is covered by ice in which their thickness can be 1 500 metres or more. The South Pole is in the centre of Antarctica. Antarctica is the coldest continent; it is also the driest, the highest and with the most wind. Only few people stay there for the whole year. Scientist they stay there for a short period, and stay at the special stations for research.In Antarctica summer comes between October and March. During this time there will be light from the sun which does not stop. Winter, between April and September, different things happen and Antarctica becomes dark the whole time for six months.

Antarctica Weather
In Antarctica, it is very cold more than what you can imagine, even when it is summer! The South Pole is part of Antarctica which is the coldest. The average of temperature in January which is the middle of summer is minus 28 degree Celsius (which is written as 28°C). Minus means colder than the point where things freeze, which is 0°C In winter, April until September, the average for South Pole temperature can be cold up to -89°C. When it is cold like that, a mug with hot water that is thrown in the air may freeze before it reaches the ice. Sometimes the scientists have to use a fridge so warm up their samples!

Penguins in Antarctica
The penguins in Antarctica are more than the other birds.
They cannot fly, but they use their short wings as flippers to swim. They are very good at swimming. On land they walk with shorts steps while standing up straight or move with short jumps. Penguins have lots of overlapping feathers. Those feathers together with the under wings which looks like wool and the thick layer of fat, prevent the cold air, wind and water from coming in. To keep them warm the penguins stay close together in groups.

Letter from Antarctica
Sara Wheeler is one of the scientists who are working in Antarctica. By reading the letter that she wrote to her nephew Daniel, you can learn more on her experience in Antarctica.

Antarctica

Friday, 9 December

Dear Daniel

This is the letter that I promised you that I will write for you when I am in Antarctica, and a photo. Imagine how happy I feel by arriving here at last, to follow in the footstep of other well-known explorers. It is very different to the world that I am used too.
There are no fresh things here—and there is no supermarket here—so we must eat lots of dry foods, canned or frozen food (they don't need to be put in the freezer—you can just put them outside). We cook with a small gas stove, which takes more time than the stove at home. Yesterday I cooked the noodles with tomato sauce and canned vegetables, and then dried strawberries which taste like cardboard.

I miss fresh apples and oranges—I wish you could send me some of the things!
Love, from Sara

Antarctica: Country of Ice

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1. Where could you get Antarctica on the globe?

---

2. Antarctica is the place where it is the coldest in the world. What are the other records?

A it is very dry and very cloudily
B it is very wet and very windy
C it is very windy and very dry
D it is very cloudy and the highest

3. What is the coldest part of Antarctica?

4. Think about what the article says about the Antarctica. Mention two reasons why many people who visit Antarctica choose not to go to that place during between April and September.

5. Why the article tells you that 'a mug of warm water thrown up to the air can freeze before it reaches the ice.'?
   A to tell you how warm the water it is in Antarctica
   B to show you what they drink in Antarctica
   C to tells you about the works that scientist do in Antarctica
   D to show you how cold is Antarctica

6. According to the article, what do penguins use their wings for?
   A to fly
   B to swim
   C to warm-up their babies
   D to wak by standing up straight

7. Mention three ways that penguins can warm up themselves in Antarctica.

8. What are the two things you learn about the food in Antarctica in Sara's letter ?

9. Think if you wish to visit Antarctica. Use what you have read in Introduce Antarctica and the Letter from Antarctica and explain why you would like or you won't like to visit.

10. Which section of the article tells you about the thickness of ice in Antarctica?
    A What is Antarctica?
    B Weather in Antarctica
    C Penguins in Antarctica
    D A Letter from Antarctica

11. In this article, there are two different ways to find out things about Antarctica:
    Introduce Antarctica
    A Letter from Antarctica
    What type of information do you find more interesting, and why are you saying that?

11. APPENDIX D: SEARCHING FOR FOOD

11.1 Original English source text of searching for food

Searching for Food

Here are three projects about the things small creatures eat and the ways they search for food. First you need to find actual ants, pill bugs, and worms. Treat them carefully and make sure you put them back where you found them after you have finished studying them.

- Follow an Ant Trail
- Study Pill Bugs
- Make a Wormery

Where to find ants, pill bugs, and worms

Ant trails are found in summer. At one end will be some food; at the other you should find the entrance to a nest.

Ant

Pill bugs like damp, dark places. They can be found under logs, under piles of dead leaves, and in walls.

Pill bug

Worm

Worms live under stones, in freshly dug soil or near compost heaps. They come to the surface at night.

Follow an Ant Trail

Ants live together in nests. When an ant finds some food it makes a trail for others to follow. To do this experiment you will need to find an ants' nest. You will also need the following materials: a sheet of paper, a small piece of apple, a handful of soil.

1. Put the piece of apple on the sheet of paper and lay the paper close to an ants' nest. Wait for some ants to find the apple. They should all follow the same trail.
2. Move the apple. Do the ants go straight to it? Now sprinkle soil on the paper to cover the trail
3. The ants should scurry around for a while. Do they make a new trail?

What happens?

Even after the food has moved, the ants still follow the old trail until a new one is laid.

Why?

Once an ant has found some food, it produces special chemicals that leave a scent trail. Other ants from the nest use their antennae, or feelers, to sense this scent.

Study Pill Bugs

Pill bugs have sensitive antennae. Make this box, then collect six pill bugs in a container. Watch how they find their way when you put them in a box. You will need: a small empty box with a lid, scissors, adhesive tape, and dead, damp leaves.

Cardboard strips – don't leave gaps at the bottom
Leaves
Passage should be just wide enough for pill bugs
Pill bugs
start here

1. Use the lid to make three long strips for making the passages in the picture.
2. Let your pill bugs walk along the passage one at a time. When they reach the end of the passage, some will turn left and some will turn right.
3. Put damp leaves in the right hand side of the box. Now let the pill bugs walk through the box again. Which way do they go?

What happens?

The pill bugs will turn to the right toward the food.

Why?
The pill bugs can sense the food with their antennae. They use them to find the leaves.

Make a Wormery
Worms are hard to study because they don't like the light. As soon as they sense it, they wriggle away, trying to find a dark place again. To see how worms live and feed, make a wormery like the one shown here. Then find two or three worms to put in it. It is important to remember not to pull on the worms or you may hurt them. They are covered with bristles that grip the soil tightly.

1. Tape one side of the shoe box lid to the box, so it opens like a door. Poke holes in the top of the box with the pen to let air and light into the wormery.
2. Cut the top off the bottle. Then fill it with loosely packed layers of soil and sand. Scatter potato and onion on the surface.
3. Gently drop in your worms and stand the wormery in its box with the door closed. Leave it outside in a cool, dry place for four days.
4. After four days, go back and look at the wormery. What is different about the sand and soil?

Don't forget: when you've finished with this project, put the worms back where you found them.
You will need

- Shoe box
- Adhesive tape
- Pen
- Scissors
- Large plastic bottle
- 1 mug of sand
- 3 mugs of damp, crumbly soil
- Small cubes of onion and potato

What happens?
After four days, the layers of sand and soil will have been mixed together.

Why?
The worms mix the sand and soil coming to the surface to eat the food and then tunneling underground to get away from the light.
Lid taped to box
Holes
Onion and
Potato cubes
5 cm damp soil
1 cm sand between each layer
From Animal watching in the Usborne Big Book of Experiments published in 1996 by Usborne Publishing Ltd., London. An effort has been made to obtain copyright permission.

Searching for Food

1. What is the main purpose of the article?
   - A to describe different projects you can do
   - B to give information about ant trails
   - C to show what small creatures look like
   - D to explain what worms eat

2. What is one thing you should do to take care of the creatures?
   - A search for them under rocks and stones
   - B find out all about them
   - C collect as many as you can
   - D put them back where you found them

3. Why do you put the apple by the ants' nest?

A to block the ants' trail
B so the ants will make a trail
C to confuse the ants
D so the ants will scurry around

4. Once an ant finds some food, how do the other ants from the nest find it too?
   A They watch the first ant and follow it.
   B They run around until they find the food.
   C They sense the scent left by the first ant.
   D They smell the food on the piece of paper.

5. Why do the ants scurry around after you've sprinkled the soil?

6. How do pill bugs find the food?
   A They walk down the passage.
   B They sense food with their antennae.
   C They follow the scent trail.
   D They see the food in the dark.

7. Look at the picture for Study Pill Bugs. How does the picture help you understand what to do in the experiment?

8. What is the purpose of Step 2 of the pill bugs project?

9. In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?

10. What is similar in the way ants and pill bugs find their food?

11. Number the steps according to the directions for Making a Wormery.
    The first one has been done for you.

    put the bottle in the shoebox
    poke holes in the top of the shoebox
    drop in the worms
    add potato and onion
    fill the bottle with soil and sand
    1 make a door for the shoebox

12. Explain why it is important to put layers of soil and sand in the wormery.

13. Explain why putting the onion and potato on the surface of the soil is important to the wormery project.

14. Why does each project have What Happens and Why in a separate box?
    A to tell you the steps of the project
    B to tell you what you need for the project
    C to tell you what to do when you're finished
    D to tell you what you have seen

15. Which of the three projects did you find the most interesting?
    Use information from the text to explain your answer.

11.2 Tshivenda translation of antarctica

U ṱoḓa Zwiḽiwa

Hedzi ndi thandela tharu malugana na zwithu zwine zwa ḽiwa nga zwikhokhonono na nḓila dzine zwa ḓiṱoḓela ngadzo zwiḽiwa. Tsha u thoma ni tea u wana masunzi a vhukuma, zwivhungu zwa Philisi na vhuswiḓu. Zwi fareni zwavhuḓi ni vhone uri ni a zwi vhuyedzedza he na zwi wana hone musi no no fhedza u guda nga hazwo.

- Tevhelelani Nḓila ye lusunzi lwa tshimbila ngayo
- Gudani nga zwivhungu zwa Philisi
- Itani Womari(tshibogisi tsha u vhea vhuswiḓu)

Ndi ngafhi hune ni nga wana hone masunzi, Zwivhungu zwa Philisi, na vhuswiḓu

Ndila dza masunzi dzi wanala tshilimo. Mafheleloni a iṅwe nḓila hu ḓo vha na zwiḽiwa; kha iṅwe nḓila hu ḓo wanala nḓila ya u dzhena tshiṱahani.

Sunzi

Zwivhungu zwa Philisi zwi funa ho ṋukalaho nyana, fhethu hune ha vha na swiswi. Zwi a kona u wanala fhasi ha zwiguthe zwa miri yo remiwaho, fhasi ha maṱari o sinaho, na kha dzimbondo.

Zwivhungu zwa philisi

zwivhungu

Zwivhungu zwi dzula fhasi ha matombo, kha mavu avhuḓi o gwiwaho kana tsini na thulwi dza pfudzethukhwi. Zwi bvela khagala nnḓa vhusiku.

Tevhelelani Ndila ya Sunzi

Masunzi a dzula a manzhi zwiṱahani zwao. Musi sunzi ḽo wana zwiḽiwa, ḽi ita nḓila u itela uri maṅwe a ḓo kona u ḽi tevhela ngayo. Uri ni kone u ita tshiedza itshi ni ḓo tea u wana tshiṱaha tsha masunzi. Ni ḓo dovha na tea u vha na matheriaḽa a tevhelaho: bammbiri, kupiḓa kuṱuku kwa apula, mavu a no ḓadza tshanḓa.

1. Vheani tshipiḓa tsha apula nṱha ha bammbiri ni vhee bammbiri tsini na tshiṱaha tsha masunzi. Lindelani maṅwe masunzi a tshi wana apula. A tea uri oṱhe a tevhela nḓila nthihi.
2. Tshimbidzani apula. Naa masunzi a ṱuwa o livha kha apula? Zwino fafadzelani mavu kha bammbiri u itela u thivhedza nḓila
3. Masunzi a tea u gidima nga u ongolowa a tshi mona fhethu huthihi lwa tshifhinganyana. Naa a khou ita iṅwe ndila ntswa?

Naa ho bvelela mini?

Na musi zwiḽiwa zwo no pfuluswa, masunzi a ḓi dovha a tevhelela yeneila nḓila ya kale u swika hu tshi itwa nḓila ntswa.

Ndi nga mini?

Musi sunzi ḽo wana zwiḽiwa, ḽi bvisa dzikhemikhala dza tshipentshela dzine dza sia munukheleloo kha nḓila ya masunzi. Manwe masunzi a shumisa zwiphuphuledzi, u pfa munukhelelo.

Gudani Zwivhungu zwa philisi

Zwivhungu zwa philisi zwi na zwiphuphuledzi zwi no pfesa. Itani hetshi tshibogisi, kuvhanganyani zwivhungu zwa philisi zwa rathi ni zwi vhulunge kha tshifaredzi. Sedzani uri zwi wanisa hani nḓila musi ni tshi zwi vhea kha bogisi. Ni ḓo ṱoḓa: uri ni vhe ni na kubogisi kuṱuku ku si na tshithu ku re na tshithivho, tshigero, theiphi ya u nambatedza, na maṱari o faho a dovha a vha o ṋukalaho nyana.

Zwiṱiripi zwa khadibodo – ni songo sia mavhaka nga fhasi

Maṱari

Phaseidzhi i tea u vha yo ṱanḓavhuwaho u itela uri zwivhungu zwa philisi

zwivhungu zwa phili si
thomani hafha

1. Shumisani tshithivho u ita zwiṱiripi zwiraru zwilapfu zwa u ita phaseidzhi kha tshifanyiso.

2. Itani uri zwivhungu zwaṋu zwa philisi zwi tshimbile nga phaseidzhi nga tshithihi tshithihi. Musi zwi tshi swika magumoni a phaseidzhi, zwiṅwe zwi ḓo khonela kha tsha monde ngeno zwiṅwe zwi tshi ḓo khonela kha tshauḽa.

3. Vheani maṱari o ṋukalaho thungo ya tshnḓa tsha ula tsha tshibogisi. Zwino itani uri tshivhungu tsha philisi tshi dovhe tshi tshimbile nga kha bogisi. Naa o ṱutshela thungo ifhio?

Naa ho itea mini?

Zwivhungu zwa philisi zwi ḓo vhuyela kha thungo ya tshauḽa hune ha vha na zwiḽiwa.

Ndi ngani?

Zwivhungu zwa philisi zwi a kona u nukhedza zwiḽiwa nga zwiphuphuledzi zwazwo. Zwi shumisa zwiphuphuledzi u wana maṱari.

Itani Womari

Zwi a konda u guda vhuswiḓu ngauri a vhu funi tshedza. Musi vhu tshi tou pfa munukho wa zwiḽiwa, vhu a shavhela kule nga zwiṱuku, vhu tshi khou lingedza u wana fhethu hune ha vha na swiswi. U itela uri ni kone u vhona uri vhuswiḓu vhu tshilisa hani khathihi nauri vhu ḽisa hani, itani womari i no nga sa hei yo sumbedzwaho afha. Wanani vhuswiu vhuvhili kana vhuraru ni vhu dzhenise khayo. Ndi zwa ndeme u humbula uri ni si kokodze vhuswiḓu ni sa do vhu vhaisa. Vhu vha ho putelwa nga maveve ane a fara mavu nga maanḓa.

1. Nambatedzani lurumbu luthihi lwa tshivalo tsha tshibogisi tsha tshienda kha bogisi, uri ḽi vulee sa vothi. Phulani mabuli nga nṱha ha tshibogisi nga peni uri hu dzhene tshedza na muya kha womari.

2. Ṱhukhulelani kule ṱhodzi ya bodelo. I dadzeni nga luvhemba lwa mavu na muṱavha.. Balanganyani nyala na ḓabula hanefho fhasi hayo.

3. Dzhenisani zwavhuḓi vhuswiḓu haṋu hoṱhe kha womari ni vhee womari kha tshibogisi tshayo ho valiwa vothi. Tshi litsheni nnḓa hu sa rotholesi nahone hu sa fhisesi, ho omaho lwa tshifhinga tsha maḓuvha maṋa.

4. Nga murahu ha maḓuvha maṋa, humelani murahu ni sedze kha womari. Naa ho shanduka mini kha mavu na muṱavha?

Ni songo hangwa: musi no no fhedza nga ha thandela, ni vhuedzedze vhuswiḓdu he na vhu wana hone.

Ni ḓo ṱoḓa

- Tshibogisi tsha zwienda
- theiphi ya u nambatedza
- Peni
- Tshigero
- Boḓelo ḽihulwane ḽa puḽasiṱiki
- Maga (1) ya muṱavha
- Maga (3) dza mavu o ṋukalaho nyana nahone a no zuzea
- Zwipida zwiṱuku zwa nyala na ḓabula

Naa ho bvelela mini?

Nga murahu ha maḓuvha maṋa mbemba dza mavu na dza muṱavha dzi ḓo vha dzo ṱangana dzoṱhe.

Ndi ngani?

Vhuswiḓu vhu ṱanganyisa muṱavha na mavu vhu tshi khou bvela nga nnḓa uri vhu kone u ḽa zwiḽiwa u bva hanefho ha dzhena fhasi mavuni uri vhu si vhe tshedzani.

Tshivalo tsho nambatedzwaho kha bogisi
Mabuli
Zwibuloko zwa nyala na
ḓabula
5 cm ya mavu o ṉukalaho nyana
1 cm ya muṱavha une wa vha vhukati ha mbemba iṅwe na iṅwe

Zwi bva kha *Animal watching in the Usborne Bugu khulwane ya zwiedza*yo ganḓiswanga ṅwaha wa 1996 nga vha Khamphani ya Usborne Ltd., London.Ho itwa maga othe a u wana thendelo ya nzivhanyedziselo.

U ṱoḓa Zwiḽiwa (Searching for Food)

1. Na tshipikwa tshihulwane tsha atikili ndi tshifhio?
   - A u ṱalutshedza thandela dzo fhambanaho dzine ni nga dzi ita
   - B u ḓivhadza mafhungo nga ha nḓila ya masunzi
   - C u sumbedza uri zwikhokhonono zwiṱuku zwi vhonala sa mini
   - D u ṱalutshedza zwine vhuswiḓu ha ḽa zwone

2. Naa ndi tshifhio tshithu tshithihi tshine na fanela u tshi ita u thogomela zwikhokhonono?
   - A u zwi ṱoḓa fhasi ha matombo matombo maṱuku na mahulwane
   - B u wana zwoṱhe nga hazwo
   - C u kuvhanganya zwinzhi u ya nga hune wa kona ngaho
   - D u zwi vhuyedzedza he wa zwi wana hone

3. Naa ndi nga mini ni tshi vhea apula nga tsini na tshitaha tsha masunzi?
   - A u thivhela nḓila ya masunzi
   - B uri masunzi a kone u ita nḓila
   - C u ḓaḓisa masunzi
   - D uri masunzi a kone u mona naḽothe ants will scurry around

4. Musi sunzi ḽo wana zwiḽiwa,naa maṅwe masunzi ane a vha tshiṱahani a wana hani zwiḽiwa?
   - A A sedza ḽa u thoma a kona u ḽi tevhela.
   - B A gidima a tshi mona hoṱhe u swika a tshi wana zwiḽiwa.
   - C A pfa munukho wo siwaho nga sunzi ḽa u thoma.
   - D A pfa munukho wa zwiḽiwa u re kha bammbiri

5. Naa ndi nga mini masunzi a tshi gidima nga luvhilo luṱuku a tshi mona na mona nga murahu ha musi no no fafadzela mavu?

6. Naa zwivhungu zwa phili si zwi wanisa hani zwiḽiwa?
   - A Zwi tshimbila nga fhasi ha

phaseidzhi.

B Zwi pfa kana u phuphuledza zwiḽiwa nga zwiphuphuledzi zwazwo.

C Zwi tevhela nḓila ine ya vha na munukho

D Zwi vhona zwiḽiwa arali hu na swiswi..

---

7. Sedzani kha tshifanyiso tsha u Guda Zwivhungu zwa Philisi. Tshifanyiso tshi ni thusisa hani uri ni pfesese zwine na fanela u ita musi ni tshi khou ita tshiedza?

---

8. Naa tshipikwa tsha Ḽiga ḽa i (2) la thandela ya Zwivhungu zwa philisi ndi tshifhio?

---

9. Kha Ḽiga 3 ḽa thandela ya zwivhungu zwa philisi, ni vhona u nga hu nga bvelela mini arali na sendedzela maṱari o ṉukalaho nyana thungo ya tsha khona ya monde ya bogisi?

---

10. Ndi zwifhio zwine zwa fana kha nḓila dzine masunzi na zwivhungu zwa philisi zwa wana ngayo zwiḽiwa?

---

11. Nomborani maga ane a fanela u tevhelwa u ya nga nḓila ine zwa fanelwa u tevhelwa yone musi hu tshi khou itwa womari.
Nḓila ya u thoma no no itelwa yone.

vheani boḓelo kha tshibogisi tsha tshienda
phulani mabuli nga nṱha ha tshibogisi tsha zwienda
dzhenisani vhuswiḓu
dzhenisani ḓabula na nyala
ḓadzani boḓelo nga mavu na muṱavha
1 itani muṉango wa tshibogisi tsha zwienda

---

12. Ṱalutshedzani uri ndi nga mini u vhea mbemba dza mavu na muṱavha kha womari.

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13. Ṱalutshedzani uri ndi nga mini u vhea nyala na ḓabula fhasi nṱha ha mavu zwi zwa ndeme kha thandela ya womari.

---

14. Naa ndi nga mini thandela iṅwe na iṅwe i na ho itea mini na zwauri ndi ngani kha tshibogisi tshiṅwe?

A u ni vhudza maga a thandela
B u ni vhudza zwine na tea u vha nazwo kha thandela
C u ni vhudza zwine na tea u ita musi no no fhedza
D u ni vhudza zwe na zwi vhona

---

15. Ndi dzifhio thandela tharu dze na wa hu dzone dze dza ni takadzesa?
Shumisani mafhungo a bvaho kha mafhungo e na ṉewa u ṱalutshedza phindulo yaṉu.

11.3 English back-translation of tshivenda text (searching for food)

Searching for food

These are three projects related to the food that small creatures eat and the way in which they search for their food. The first thing you must do is get real ants and pill bugs and worms. Treat them gentle and make sure you return them to where you found them after you finish to study them.

- Follow the route that the ant walks on
- Study pill bugs
- Make a wormery (box to put worms)

Where you can get ants, pill bugs and worms

Ants' routes are found in summer. At the one end of the route there will be some food and at the other end there will be an entrance to enter the nest.
Ant
Pill bugs like moist places, where it is dark. They can be found under the logs of cut trees, decomposed leaves, and in the walls.

Pill bug
Worm
Worms stay under stones, in freshly dug soil or next to compost heaps They come to the surface at night.

Follow the route of an ant

Ants stay in a group in their nest. When the ant finds food, it makes a route so that the other may follow it. In order for you to make this experiment you must find a nest of ants. You will have to get the following materials: Paper, small piece of apple, a handful of soil.

1. Put the piece of apple on top of the paper and put the paper next to the ants nest. Wait until some ants find the apple. All must follow the same route.
2. Move the apple. Do the ants follow the apple immediately? Now sprinkle soil on the paper in order to hide the route.
3. Ants will run moving around quickly for few times. Are they making another new route?

What happens?

Even when the food has been moved, the ants follow that old route again until they make a new route

Why?

When the ant has found some food, it releases special chemicals which leave fragrance in the ant route. Other ants use their antennae, or feelings to feel the scent

Learn about pill bugs

Pill bugs have sensitive antennae. Make this box, collect six pill bugs and put them in the container. Look at how they find their way when you put them in a box. You will need: an empty small box which has a lid, scissors, adhesive tape and dry moist leaves.
Strips of cardboard – do not leave gaps under the cardboard
The passage must be just wide enough for the pill bugs
Pill bugs
Start here

1. Use the lid to make three long strips for making a passage in the picture.

2. Make your pill bugs walk in the passage one by one. When they reach the end of the passage some will turn to the left while others will turn to the right.

3. Put moist leaves on the right side of the box. Now make the pill bugs walk again through the box. Which way do they go?

What happens?

Pill bugs will come to the right where there is food.

Why?

Pill bugs are able to sense the food with their antennae. They use antennae to find leaves.

Make a Wormery

It is difficult to learn about worms because they do not want light. When they feel the light, they wriggle away slowly, trying to find a place where it is dark. In order to find out how the worms live and how they eat, make a wormery like this one shown here. Find two or three worms and put them inside. It is important to remember not to pull the worms so that you do not hurt them. They are covered by short stiff hair which grabs the soil tightly.

1. Attach one side of the shoe box lid to the box, so that it can open like a door. Poke holes in top of the box by pen so that light and air can enter in a wormery.

2. Cut the top part of the bottle off. Fill it with loose layers of soil and sand. Scatter onion and potatoes on the surface.

3. Put your worms gently in the wormery and put the wormery in its box with the door closed. Leave it outside where it is not cold or hot and where it is dry, for four days.

4. After four days, return back to check the wormery. What is the change in the soil and sand?

Do not forget: after you have completed the project, you return the worms where you found them.

You will need

- Shoe box
- Adhesive tape
- Pen
- Scissors
- Long plastic bottle
- 1 cup of sand
- 3 cups of moist soil that crumbles
- Small pieces of onion and potatoes

What happens?

After four days layers of soil and sand will be all mixed.

Why?

Worms mix sand and soil when they come to the surface so that they can eat food and thereafter they go inside the soil so that they are not in the light.

Lid attached to the bob
Holes
Blocks of onion and potatoes
5 cm of moist soil
1 cm of sand in between each layer

From *Animal watching in the Usborne Big Book of Experiments* published in 1996 by Usborne Publishing Ltd., London. An effort has been made to obtain copyright permission.

Searching for Food

1. What is the main purpose of the article?
   - A to explain different projects which you may do
   - B to gives information on the route of ants
   - C to show what small creatures look like
   - D to tell you about what worms eat

2. Mention one thing that you may do to take care of creatures?
   - A to look under small rocks and stones
   - B Search all information concerning them
   - C to collect as many as you can
   - D to return them where you found them

3. Why do you put an apple next to the ants' nest?
   - A to close the ants' route
   - B so that ants can make a route
   - C to confuse the ants
   - D to make ants to move around quicklyuri masunzi a kone u mona nalothe ants will scurry around

4. When the ant finds food, how do other ants in the nest find food?
   - A They look at the first ant and follow it.
   - B They run all over until they get food.
   - C They smell the scent left by the first ant
   - D They smell the scent of food on the paper

5. Why do the ants run around very quickly after you have sprinkled the soil?

6. How do pill bugs find food?
   - A They walk through the passage
   - B They feel food with their antennae
   - C They follow the route which has a scent
   - D They see food when it is dark.

7. Look at the picture for Study Pill Bugs. How does the picture help you to understand what you should do when you are doing the experiment?

8. What is the aim of step 2 of the pill bugs' project?

9. In step 3 of the pill bugs' project, what do you think will happen if you move the moist leaves to the other corner on the left side of the box?

10. What are the similarities in the way ants and pill bugs find their food?

11. Number the steps that should be followed when making a wormery. The first one has been done for you.

    put the bottle inside the shoebox
    poke holes in top of the shoebox
    put in the worms
    put onion and potatoes in
    make the bottle full of soil and sand
    Make a door for the

12. Explain why it is important that you put a layer of soil and sand in wormery.

13. Explain why it is important to put onion and potatoes on top of the soil in this wormery project.

14. Why does every project have what happens and why in a separate box?
    - A to tell you the steps of the project
    - B to tell you what you need for the project
    - C to tell you what you should do when you finish
    - D to tell you what you have seen na zwi vhona

15. Which three projects did you find to be most interesting? Use the information given to you in the text to explain your answer.

12. APPENDIX E: ITEM TABLE

Item Code	Type of Item	Comprehension process	N	Item Difficulty	Item Discrimination	Point Biserial Correlation
R011A01C	CR	Focus on and retrieve explicitly stated information	1859	0.354	0.213	.002
R011A02M	MCQ	Focus on and retrieve explicitly stated information	1875	0.321	0.133	-.006
R011A03C	CR	Focus on and retrieve explicitly stated information	1856	0.325	0.225	0.073
R011A04C	CR	Inferential comprehension	1820	0.258	0.127	.025
R011A05M	MCQ	Inferential comprehension	1842	0.482	0.228	0.061
R011A06M	MCQ	Focus onand retrieve explicitly stated information	1846	0.451	0.237	.022
R011A07C	CR	Inferential comprehension	1673	0.224	0.125	.002
R011A08C	CR	Straightforward inferences	1570	0.313	0.184	0.055
R011A09C	CR	Interpret and integrate ideas and information	1381	0.208	0.123	.014
R011A10M	MCQ	Focus on and retrieve explicitly stated information	1622	0.182	0.089	-.040
R011A11C	CR	Examine and evaluate content, language and textual elements	1226	0.143	0.088	-.001
R011C01C	CR	Focus on and retrieve explicitly stated information	1183	0.184	0.097	0.069
R011C02C	CR	Inferential comprehension	1508	0.078	0.061	0.067
R011C03C	CR	Straightforward inferences	1408	0.160	0.104	0.062
R011C04M	MCQ	Straightforward inferences	1614	0.279	0.091	.012
R011C05M	MCQ	Straightforward inferences	1623	0.470	0.080	.042
R011C06C	CR	Inferential comprehension	1452	0.120	0.075	.042
R011C07M	MCQ	Straightforward inferences	1525	0.425	0.103	.034
R011C08C	CR	Inferential comprehension	1276	0.133	0.068	0.055
R011C09M	MCQ	Focus on and retrieve explicitly stated information	1404	0.229	0.057	.018
R011C10C	CR	Inferential comprehension	1081	0.117	0.045	.048
R011C11C	CR	Inferential comprehension	1046	0.199	0.078	.022
R011C12M	MCQ	Examine and evaluate content, language and textual elements	1273	0.351	0.074	.005
R011C13M	MCQ	Interpret and integrate ideas and information	1259	0.283	0.070	.031
R021S01M	MCQ	Interpret and integrate ideas and information	2185	0.344	0.234	.009
R021S02M	MCQ	Focus on and retrieve explicitly stated information	2208	0.329	0.245	-.012
R021S03M	MCQ	Straightforward inferences	2213	0.381	0.258	-.028
R021S04M	MCQ	Focus on and retrieve explicitly stated information	2207	0.276	0.181	-.029
R021S05C	CR	Inferential comprehension	2060	0.197	0.154	-.015
R021S06M	MCQ	Focus on and retrieve explicitly stated information	2154	0.391	0.257	-.042
R021S07C	CR	Straightforward inferences	1904	0.092	0.079	-0.049
R021S09C	CR	Interpret and integrate ideas and information	1813	0.128	0.109	-0.052
R021S10C	CR	Interpret and integrate ideas and information	1745	0.181	0.133	-.046
R021S11C	CR	Straightforward inferences	1553	0.097	0.064	-.011
R021S12C	CR	Interpret and integrate ideas and information	1599	0.082	0.055	-0.06
R021S13C	CR	Interpret and integrate ideas and information	1522	0.119	0.071	-.017

Item Code	Type of Item	Comprehension process	N	Item Difficulty	Item Discrimination	Point Biserial Correlation
R021S14M	MCQ	Examine and evaluate content, language and textual elements	1677	0.238	0.113	-.011
R021S15C	CR	Examine and evaluate content, language and textual elements	1410	0.103	0.066	-.034
R021U01M	MCQ	Straightforward inferences	2185	0.365	0.273	.008
R021U02M	MCQ	Straightforward inferences	2226	0.404	0.304	-0.05
R021U03M	MCQ	Straightforward inferences	2179	0.385	0.278	-0.048
R021U04M	MCQ	Inferential comprehension	2177	0.290	0.200	-.013
R021U05C	CR	Focus on and retrieve explicitly stated information	1690	0.216	0.164	-0.051
R021U06C	CR	Inferential comprehension	1863	0.193	0.163	-.035
R021U07M	MCQ	Focus on and retrieve explicitly stated information	2018	0.503	0.295	.013
R021U08C	CR	Interpret and integrate ideas and information	1837	0.155	0.122	-0.07
R021U09M	MCQ	Interpret and integrate ideas and information	1894	0.425	0.244	-.011
R021U10C	CR	Focus on and retrieve explicitly stated information	1625	0.257	0.185	.003
R021U12C	CR	Interpret and integrate ideas and information	1328	0.161	0.099	-0.08

13. APPENDIX F: SPSS OUTPUT FILES – ON COMPACT DISC (CD)