The design and refinement of a test of early academic literacy

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Abstract

The language of teaching and learning is a very important issue, especially in multilingual contexts. Despite having eleven official languages in South Africa, only two of these languages, English and Afrikaans, are used beyond the foundational phase of education. Consequently, many of the learners who only study English as their L2 from grade 0 to 3 must make the shift from a mother-tongue education to English medium instruction once they enter the intermediate phase (grade 4 - 6). This means that, like native speakers of English and learners who use English as their language of teaching and learning (LoLT) during their early education, these learners will have to be able to use English proficiently enough to receive all further instruction in English. This study looked at the design of a new test that measures a student’s ability to use English for academic purposes at this level. The newly designed construct was used to design a test and this prototype was then administered to a small cohort of 179 grade 3 and 4 learners (9 and 10 years old). The piloting results were used to evaluate the productivity of the test items and the overall performance of the test. With a Cronbach alpha of 0.91, this test appears to be very reliable. Two items were flagged and need further refinement before application of the developed instrument. The final product of this study, the Test of Early Academic Literacy or TEAL, must now be subjected to further piloting and evaluation.
# Table of Contents

Acknowledgements

Abstract 1

Table of contents 2

List of tables and figures 3

1. Introduction 4

2. Background and theoretical context 7
   2.1. Foundation phase education in South Africa 7
   2.2. Multilingualism and dual-language contexts 8
   2.3. Perspectives on early literacy development and emergent literacy 10
   2.4. The material lingual sphere of academic discourse 13
   2.5. Academic literacy and test design 13

3. Research questions and aims 18

4. Methodology 19
   4.1. Design 19
   4.2. Piloting and refinement 20

5. The design process and the prototype 23

6. Piloting results and discussion 27

7. Refinement 36
   7.1. Refinement based on the piloting results 37
      A) Item 2 38
      B) Item 22 39
   7.2. Suggestions for further refinements 39
      C) Scrambled story 39
      D) Which word works? 39
      E) Picture story 40
      F) Verses and rhymes 40

8. Conclusion 41

9. Suggestions for further research 42

References 43
APPENDIX A  CAPS: Language skills to be taught in the first additional – grade 3  46
APPENDIX B  Categorization according to components of the definition of academic literacy  48
APPENDIX C  Test specifications and task types  52
APPENDIX D  Test of Early Academic Literacy (TEAL) – piloted prototype  56
Declaration of originality  73

List of tables and figures:

Table 1  Accomplishments of a successful grade 3 learner  11
Table 2  Specifications and task types of TALL  15
Table 3  Scale statistics (Iteman 3.6)  28
Table 4  Summary statistics TEAL (first pilot)  29
Table 5  Item statistics for TEAL (first pilot)  30
Table 6  Subtest intercorrelations  33
Table 7  Reliability statistics  34
Table 8  Flagged items in Iteman 4.3  38
Table 9  Item statistics for item 2 (Iteman 4.3)  39
Table 10  Item statistics for item 22 (Iteman 4.3)  39

Figure 1  The test design cycle  20
Figure 2  Graph illustrating the distribution of scores  27
Figure 3  Dimensionality of TEAL  34

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1. Introduction

The readiness of students to enter the higher and tertiary education systems has been a dominant topic in research regarding education in South Africa for some time. According to Jansen (2008, p. xiii) there is an overemphasis on the final three years of high school and an obsession with performance in the National Senior Certificate examination. Consequently, many studies have been conducted to investigate issues pertaining to high school education and its problems, as well as the assessment and development of academic literacy (Jansen, 2008, p. xiii). Despite an increasing number of reports that suggest many of the problems found in the later years of high school can be traced back to shortcomings in the foundational years of schooling, research in early education and its role in the development of academically literate individuals have not received much attention (Jansen, 2008, p. xiii).

If we turn our attention to this end of the education spectrum, i.e. early education, the majority of studies about this phase in development and education have focused on reading ability. Farver, Lonigan and Eppe (2009, p. 4) identify three skills in the preschool period that predict reading ability - (a) phonological awareness; (b) print knowledge; and (c) oral language – which is equated with early literacy in their research. Some earlier definitions of literacy were based on the concept of reading “readiness”, but these ideas have been replaced by a few new approaches to literacy such as the concept of “emergent literacy” and “literacy as social practice” (Makin & Whitehead, 2004, p. 9). One pervasive view in all these definitions is that early literacy can be associated with the development of pre-reading and pre-writing skills, but for the purpose of this study a more detailed definition and a framework is needed to design an instrument that can measure this competency and, more specifically, the skills that are precursors to the abilities associated with academic literacy.

In light of South Africa’s multilingual situation, language teaching and assessment can be a complicated matter. In November 1993 the Constitution was amended to provide for eleven official languages (Deprez & Du Plessis, 2000). However, only two of these languages are currently used as medium of instruction at all levels of education. The Department of Basic Education has ensured that mother-tongue education is possible in the foundation phase, i.e. grades 0 to 3, but from grade 4 onwards schooling continues in either English or Afrikaans (Department of Basic Education, 2011). Consequently, a large number of learners need to make this shift from learning English as a second language (called the “first additional language”) to being taught almost exclusively in English once they enter grade 4. This means...
that, like native speakers of English and learners who use English as their language of
teaching and learning (LoLT) during their foundation phase education, these learners will
have to be able to use English proficiently enough to receive all further instruction in English
(Department of Basic Education, 2011).

The need for a standardised assessment at the end of the foundation phase has already
been identified by the Department of Basic Education in creating Annual National
Assessments (ANAS), a set of tests that will be administered across the board for grade 1 – 6
and grade 9, to address to this need (Department of Basic Education, 2011). However, a test
of early academic literacy, such as the one designed for the purpose of this study, could
provide us with additional information regarding a student’s readiness, as they mature, to start
handling texts for academic purposes. The focus will therefore be on the skills that they will
need in the next phase of their education and not, as is the case with many other tests at this
level in South Africa, limited to the skills that were explicitly taught and mastered in the first
phase of their education.

This study will investigate the possibilities of testing early academic literacy by
constructing a definition that resonates with the definition of academic literacy that is used at
present for secondary and higher education (see below), but is also appropriate for this level,
i.e. foundation phase in South Africa. Ideally this new test should not only be applicable in the
South African context, but also be viable in other contexts where this language shift takes
place or mother-tongue education isn’t possible. For that reason, the South African curriculum
cannot be the only framework that is taken into account when defining the construct for this
new test. The main research aim is to design a test of early academic literacy and this will be
based on two research questions: (a) what constitutes early academic literacy in comparison to
existing definitions of early literacy, and are the skills it entails present in the revised
curriculum for the foundation phase? and (b) how can early academic literacy be tested and
what will be the construct of this test?

In this study, the available definitions of early literacy and the requirements of the new
curriculum statement (CAPS) (Department of Basic Education, 2011) will be examined and
adapted to fit the criteria set out in the definition of academic literacy used to create tests of
academic literacy at higher levels of education, such as the Test of Academic Literacy Levels
(TALL), the Toets van Akademiese Geletterdheidsvlakke (TAG) and the Test of Academic
Literacy for Postgraduate Students (TALPS), designed by the Inter-institutional Centre for
Language Development and Assessment or ICELDA (Weideman, 2003, p. 61; ICELDA,
This framework for early academic literacy will then be used to design a set of assessments that will fulfil the role of a test of academic literacy for grade 3 learners, to be called the Test of Early Academic Literacy (TEAL). This will be followed by the piloting of the test prototype and the subsequent refinement process that will produce the final version of TEAL. ICELDA will eventually distribute the final version of this test and therefore their studies regarding academic literacy and test design will be used as models for this study.

This paper will discuss the context of education in South Africa and specifically the implications of its multilingual situation on the learning environment. Existing ideas regarding the concepts of early literacy (such as ‘emergent’ literacy) on the one side of the spectrum and academic literacy on the other side will be reviewed in an attempt to conceptualise and articulate a definition of early academic literacy. The thinking behind tests that are administered at the same level, such as the South African Annual National Assessment, will also be taken into account.

The study will be in two parts. In the first part the design process and the chosen construct will be explained in detail with examples from the prototype test and how these items reflect the test construct. The refinement process that involves piloting the test, analysing the results of the pilots and refining the test items accordingly, will then be discussed in the second part. Finally, this report will review the findings of the study and discuss the utility of this test within the target context.
2. Background and theoretical context

2.1. Foundation phase education in South Africa

In 2012 the South African Department of Basic Education implemented a new curriculum statement – the National Curriculum Statement Grades R - 12 – which provides specifications regarding the outcomes and aims from grade R to 12 for each term individually (Department of Basic Education, 2011, p. iv). For the purpose of this study, the Curriculum and Assessment Policy Statement Grade 1-3: English First Additional Language (see Appendix A) is used as a framework for the requirements and aims that regulate foundation phase instruction. It is important to keep in mind that many of the learners who study English as first additional language from grade 1 to 3 start using English as their Language of Learning and Teaching (LoLT) from grade 4 onwards. Consequently, their competence in English must be at a high level and they must be able to read and write in English (Department of Basic Education, 2011, p. 8). These learners will use English textbooks in the Intermediate phase and must therefore also know a wide range of English vocabulary in addition to demonstrating sufficiently high levels of literacy (Department of Basic Education, 2011, p. 12) in the next phase.

The curriculum outline provides specifications (Appendix A) regarding the skills that are to be taught in the first additional language in each year from grade 1 to 3 (Department of Basic Education, 2011). The majority of these skills can be associated with certain aspects of the abilities mentioned in the definition of academic literacy. There are, for example, certain outcomes specified in the CAPS document that are closely related to the “vocabulary knowledge” component in the definition of academic literacy, and others that require basic distinction making skills, another component of the definition. So in terms of the former example, the CAPS states that a learner must build some conceptual vocabulary (e.g. comparing, describing) at this level. Whilst ‘academic vocabulary’ is not something a grade 3 learner is likely to understand and use, they may however be able to handle some complex words and could identify words that go with functions such as comparing, describing and explaining. Therefore, the vocabulary items that can be used for a test at this level cannot be restricted to those items found in academic discourse. This necessitates an adaptation of the definition of academic literacy into a framework that is appropriate for this level and will be discussed in the section on the design process.
At present, in terms of formal assessment, learners are given specific tasks to complete in class or at home – completed individually, in pairs or larger groups. These assignments then form part of a continuous assessment mark (Department of Basic Education, 2011). The teacher is free to include additional assessments such as spelling tests and class tests, but this is not strictly part of the curriculum. Since 2011, all grade 3 learners write the Annual National Assessment (ANA) which consists of a home language paper and a mathematics paper (Department of Basic Education, 2010). The first additional language, however, is not assessed in a formal examination and the test developed in this study could perhaps fill this gap.

By keeping the content and task types confidential, as is the case with most of the tests designed by ICELDA, teachers would not be privy to exact details about the tests and this could limit washback. The term washback refers to the influence or effect of a test on teaching or even on learning (Fulcher, 2010, p. 6). When standardized tests are introduced, teachers sometimes start to train learners to complete these tests successfully rather than studying the content of the subject. This would be negative washback, as certain skills will inevitably be neglected (Fulcher, 2010, p. 6, 7). In the case of this proposed new test, TEAL, this will be counteracted in part by the fact that this would be one of many assessments (considering all the tasks that form part of the continuous assessment), but also due to the limited access teachers would have to the exact content of the test.

2.2. Multilingualism and dual-language contexts

According to the census results of 2011, only 10 % of South African households use English as a first language at home. This makes it the fourth largest language community after IsiZulu (23 %), IsiXhosa (16 %) and Afrikaans (13 %) (Statistics SA, 2011). The majority of the non-native speakers of English in South Africa – which make up 90 % of the population – are taught through the medium of English if not from grade 1, then from grade 4 onwards. Kamwangamalu (2003) posits that the language policy in education, i.e. English and Afrikaans being the only two languages used as media of instruction at all levels of education, has contributed to the language shift towards English that is taking place in South Africa. Although this may become important in future, the language shift itself is not at issue in this study.

Having large numbers of students that are studying in a language other than their mother-tongue is by no means a uniquely South African phenomenon. In the United States,
for instance, more than 20% of the children and adolescents enrolled in preschool to 12th grade – roughly 11 million students – do not speak English at home. These children are classified as “dual language learners” because they learn their first and their second language (English) simultaneously or they start learning the one shortly after the other (Durgunoğlu & Goldenberg, 2011). They are also divided into two further groups: (a) the bilingual learners who are as proficient as their native speaker-peers; and (b) the English language learners, or ELLs, who are still developing their proficiency in English and still have limited English language skills (Durgunoğlu & Goldenberg, 2011).

Public schools in the United States are obligated to assess the English language proficiency of all students who are non-native speakers of English in order to distinguish between these two groups (Wolf & Lopez, 2014; Hauck, Wolf, & Mislevy, 2013). Those who are classified as ELLs are then entitled to receive additional instruction to improve their English proficiency. In a recent study conducted by Wolf and Lopez (2014) they investigated the possible misidentification of ELLs based on these tests, which has cast some doubt on the validity of the assessment instruments that are used for this classification (for more detail see Wolf & Lopez, 2014; Hauck, Wolf, & Mislevy, 2013). This means that using the same instrument in the South African context might not be the best solution. However, given the similarities between the linguistic landscape within the South African education system and that of the United States, their research regarding the multilingualism and teaching is of particular interest.

Schools have a responsibility to accommodate learners with a limited or insufficient proficiency in English (Snow, Burns, & Griffin, 1998, p. 10, 11). Thus a focus on early academic literacy seems appropriate, as it involves both the abilities a learner will need to be proficient enough for study in English and to be successful academically. Snow et al. (1998) have been doing research teaching through the medium of a second language for quite some time. Their specific concern has been the development of literacy in a second language of dual language learners and the influences that the first language might have on this (Snow et al., 1998; Snow, Griffin, & Burns, 2005). They suggest two possible ways to approach this challenge:

If language-minority children arrive at school with no proficiency in English but speaking a language for which there are instructional guides, learning materials, and locally available proficient teachers, these children should be taught how to read in their native language while acquiring proficiency in spoken English and then subsequently taught to extend their skills to reading in English.
If language-minority children arrive at school with no proficiency in English but speak a language for which the above conditions cannot be met and for which there are insufficient numbers of children to justify the development of the local community to meet such conditions, the instructional priority should be to develop the children’s proficiency in spoken English. Although print materials may be used to develop understanding of English speech sounds, vocabulary, and syntax, the postponement of formal reading instruction is appropriate until an adequate level of proficiency in spoken English has been achieved. (Snow et al., 1998)

In the South African setting, a combination of these two approaches seems to be the order of the day. Mother-tongue education is encouraged and provided for whilst the second language proficiency is developed in preparation for the change in medium of instruction. The key difference though is that these home languages are not all minority languages, but there is a lack of learning materials in some of these languages that, at this stage, hinders the use of them as instruction medium beyond the foundation phase (Kamwangamalu, 2003).

It is clear that reading and writing in the second language are crucial skills that learners need to acquire before entering the intermediate phase in grade 4. On closer examination, one finds references to activities in the current curriculum that are meant to be used to categorise learners into groups that are reminiscent of the bilingual and English language learner classification mentioned earlier. For example, according to the curriculum outline (CAPS), learners start with an activity called Group Guided Reading in their first additional language in grade 2. The teacher must divide the class into groups of 6 to 10 children by assessing their reading ability and grouping them accordingly. This means that, at this early stage in their school careers, students’ abilities are already assessed and learners categorised according to their performance and ability (Department of Basic Education, 2011). However, it is unclear whether these classifications are used for specific interventions and moreover, the exact nature and justification of the use of these tasks for this purpose seem to be absent. TEAL could potentially be used as a diagnostic tool to identify high-risk candidates and perhaps this could also lead to the design of specific interventions that could smooth their transition from one medium of instruction to the other.

2.3. Perspectives on early literacy development and emergent literacy

Most sources on early literacy seem to focus on the development of very young learners (Whitehead, 2009; Howes, Downer, & Pianta, 2011). They discuss the roles of parents and early schooling (until the age of 7 or 8) in creating the ideal learning environments for literacy development to take place. Although this study is concerned with a slightly older group, their insights into development contribute to our understanding of what literacy entails. Makin and Whitehead (2004, p. 10) refer to two approaches to early literacy in their research in child
development, namely emergent literacy and literacy as social practice. Emergent literacy refers to the literacy knowledge children acquire and the skills that manifest before they become readers and writers. This is a developmental approach and considers everything from their scribbles to interaction with technology. Literacy as social practice, on the other hand, refers to the knowledge children construct through their social interaction within their homes, in the community and in early childhood settings such as preschool (Makin & Whitehead, 2004). Unfortunately, these definitions are discussed in fairly broad terms and the skills that are addressed are not particularly relevant to the age group that is dealt with in this study.

The research of Snow et al. (1998, p. 10, 11, 79, 83) has looked at the language skills that students need to acquire – at different stages – in order to be successful academically. One of the stages or levels they have examined is grade 3 (third grade in the United States) and this is perhaps a better framework for the present study. They identify a list of skills a successful grade 3 learner is likely to have accomplished. These skills are summarised in table 1 (Snow et al., 1998, p. 83).

<table>
<thead>
<tr>
<th>Table 1: Accomplishments of a successful grade 3 learner (Snow et al., 1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner ...</td>
</tr>
<tr>
<td>1. reads aloud with fluency and comprehension any text that is appropriately designed for grade level.</td>
</tr>
<tr>
<td>2. uses letter–sound correspondence knowledge and structural analysis to decode words.</td>
</tr>
<tr>
<td>3. reads and comprehends both fiction and nonfiction that is appropriately designed for grade level.</td>
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<tr>
<td>4. reads longer fictional selections and chapter books independently.</td>
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<tr>
<td>5. takes part in creative responses to texts such as dramatizations, oral presentations, fantasy play, etc.</td>
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<tr>
<td>6. can point to or clearly identify specific words or wordings that are causing comprehension difficulties.</td>
</tr>
<tr>
<td>7. summarizes major points from fiction and nonfiction texts.</td>
</tr>
<tr>
<td>8. (in interpreting fiction) discusses underlying theme or message.</td>
</tr>
<tr>
<td>9. asks how, why, and what-if questions in interpreting nonfiction texts.</td>
</tr>
<tr>
<td>10. (in interpreting nonfiction) distinguishes cause and effect, fact and opinion, main idea and supporting details.</td>
</tr>
<tr>
<td>11. uses information and reasoning to examine bases of hypotheses and opinions.</td>
</tr>
<tr>
<td>12. infers word meanings from taught roots, prefixes, and suffixes.</td>
</tr>
<tr>
<td>13. correctly spells previously studied words and spelling patterns in own writing.</td>
</tr>
<tr>
<td>14. begins to incorporate complex words and language patterns in own writing (e.g., elaborates descriptions, uses figurative wording).</td>
</tr>
<tr>
<td>15. with some guidance, uses all aspects of the writing process in producing own compositions and reports.</td>
</tr>
<tr>
<td>16. combines information from multiple sources in writing reports.</td>
</tr>
<tr>
<td>17. with assistance, suggests and implements editing and revision to clarify and refine own writing.</td>
</tr>
<tr>
<td>18. presents and discusses own writing with other students and responds helpfully to other students’ compositions.</td>
</tr>
<tr>
<td>19. independently reviews work for spelling, mechanics, and presentation.</td>
</tr>
<tr>
<td>20. produces a variety of written works (e.g., literature responses, reports, “published” books, semantic maps) in a variety of formats, including multimedia forms.</td>
</tr>
</tbody>
</table>

Not all of the abilities listed above are of equal relevance and importance in terms of early academic literacy skills. Eight of these accomplishments seem to be linked to the definition of
academic literacy that is used in higher education (discussed in 2.5. Academic literacy and test design). According to these accomplishments the learner should be able to: summarize major points from fiction and nonfiction texts; discuss the underlying theme or message of a text; distinguish between cause and effect, fact and opinion, a main idea and supporting details; use information and reasoning to examine bases of hypotheses and opinions; infer word meanings from taught roots, prefixes, and suffixes; correctly spell previously studied words and spelling patterns in own writing; incorporate complex words and language patterns in their own writing; and combine information from multiple sources in writing reports.

Summarizing the main points in a text (7) presupposes the ability to distinguish between essential and non-essential information, a critical component of academic literacy. Similarly, in order to identify the underlying theme or message of a text (8), one must be able to make inferences and extrapolate information. The accomplishments listed as number 10, “distinguishes cause and effect, fact and opinion, main idea and supporting details”, and 11, “uses information and reasoning to examine bases of hypotheses and opinions”, similarly describe components of academic literacy.

In general, the specifications provided in CAPS seem to be aligned with the list provided by Snow et al. (1998, p. 83). Many of these accomplishments can be associated with two or three specific outcomes in CAPS. For instance, according to the outcomes in CAPS, a grade 3 learner should be able to understand and respond to questions about a sequence of events or time (“When…?”), as well as cause and effect (“Why…?”). They also need to be able to summarize and recount a story or non-fiction text and answer comprehension questions. These two outcomes involve making distinctions between cause and effect, main ideas and their supporting details (accomplishment 10).

In this study, the learner accomplishments listed in Snow et al. (1998, p. 83) were compared to the outcomes for grade 3 learners specified in the CAPS document, as well as the definition of academic literacy used by ICELDA, in order to create a new definition that is applicable to academic literacy at this level, or early academic literacy. The design process, including this comparative study and the articulation of the definition of early academic literacy, is discussed later on in this paper.

The accomplishments listed provide us with a more detailed view of what a grade 3 learner ought to be able to do in terms of reading and writing. This type of outline in turn
enables the test designer to incorporate many and varied specific skills that pertain to the attribute (and in this case also the specific level), as is the case with the designs of ICELDA’s tests of academic literacy.

2.4. The material lingual sphere of academic discourse

Academic literacy tests belong to the material lingual sphere of academic discourse and by limiting the domain that is to be tested to only that which is relevant to academic literacy one places these assessments or tests in this sphere. What Weideman (2009, p. 39) calls “material lingual spheres” may be used as a substitute for the term “context”. The term “context” poses a problem because it is a factual given that is claimed to have a normative force. The notion of the typicality of discourse embodied in the idea of material lingual spheres allows one to conceive of differences in fact being related to variations in normative requirements. Utterances are inextricably linked to the concrete situations in which they are uttered and can only be understood in the given setting which is typically determined by the character of the discourse in the particular situation (Weideman, 2009: 39).

The various lingual spheres are distinguished by material differences and the aspects that distinguish each sphere are far too diverse to be described merely as being either formal or informal language or as belonging to a certain register (Weideman, 2009: 41, 42; Patterson & Weideman, 2013a, 2013b). The test designed in this study tests early academic literacy and as such belongs within the sphere of academic discourse. Although the texts that form part of this test are not academic texts per se, they are used to measure abilities (and precursors to abilities) that are associated with functions in this domain.

For the sake of clarity, it is important to make this distinction, as there are a myriad of other specific purposes language can be used for – some of which would fall in other discourse domains – and each would have different implications for testing.

2.5. Academic literacy and test design

In South Africa, academic literacy tests were developed to determine students’ readiness to enter higher and tertiary education. These tests include the Test of Academic Literacy Levels (TALL), its Afrikaans counterpart, the Toets van Akademiese Geletterdheidsvlakke (TAG), and the Test of Academic Literacy Levels for Postgraduate Students (TALPS), all designed and distributed by ICELDA. These designs are based on a number of components that define
academic literacy or competence. According to Weideman (2011, p. xi; Weideman, 2003, p. 61) students are regarded as academically literate if they are able to:

1. understand a range of academic vocabulary in context;
2. interpret the use of metaphor and idiom in academic usage, and perceive connotation, word play and ambiguity;
3. understand relations between different parts of a text, be aware of the logical development of an academic text, via introductions to conclusions, and know how to use language that serves to make the different parts of a text hang together;
4. interpret different kinds of text type (genre), and have a sensitivity for the meaning they convey, as well as the audience they are aimed at;
5. interpret, use and produce information presented in graphic or visual format;
6. distinguish between essential and non-essential information, fact and opinion, propositions and arguments, cause and effect, and classify, categorise and handle data that make comparisons;
7. see sequence and order, and do simple numerical estimations and computations that are relevant to academic information, that allow comparisons to be made, and can be applied for the purpose of an argument;
8. know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand;
9. understand the communicative function of various ways of expression in academic language (such as defining, providing examples, arguing); and
10. make meaning (e.g. of an academic text) beyond the level of the sentence.

In order to operationalize this definition as a test construct, a number of subtests were designed for use in TALL, TAG and TALPS. As illustrated in the table below (table 2), the components or abilities listed in the definition of academic literacy are tested in one or more of these subtests.
<table>
<thead>
<tr>
<th>Specification (component of construct)</th>
<th>Task type(s) measuring this component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary comprehension</td>
<td>Vocabulary knowledge test, longer reading passages, text editing</td>
</tr>
<tr>
<td>Understanding metaphor and idiom</td>
<td>Longer reading passages</td>
</tr>
<tr>
<td>Textuality (cohesion and grammar)</td>
<td>Scrambled text, text editing, (perhaps) register and text type, longer reading passages, academic writing tasks</td>
</tr>
<tr>
<td>Understanding text type (genre)</td>
<td>Register and text type, interpreting and understanding visual and graphic information, scrambled text, text editing, longer reading passages, academic writing tasks</td>
</tr>
<tr>
<td>Understanding visual and graphic information</td>
<td>Interpreting and understanding visual and graphic information, (potentially) longer reading passages</td>
</tr>
<tr>
<td>Distinguishing essential/non-essential</td>
<td>Longer reading passages, interpreting and understanding visual and graphic information, academic writing tasks</td>
</tr>
<tr>
<td>Numerical computation</td>
<td>Interpreting and understanding visual and graphic information, longer reading passages</td>
</tr>
<tr>
<td>Extrapolation and application</td>
<td>Longer reading passages, academic writing tasks, (potentially) interpreting and understanding visual and graphic information</td>
</tr>
<tr>
<td>Communicative function</td>
<td>Longer reading passages, (possibly also) text editing, scrambled text</td>
</tr>
<tr>
<td>Making meaning beyond the sentence</td>
<td>Longer reading passages, register and text type, scrambled text, interpreting and understanding visual and graphic information</td>
</tr>
</tbody>
</table>

The designers of TALL experimented with a variety of subtests before identifying the (seven) items that are used in the current format of the test (Van Dyk & Weideman, 2004b). Of these subtests, only five are relevant to the present study.

In the first of these subtests, the “Scrambled text”, the candidate is given a sequence of sentences that have been shuffled and they must determine the correct order of these sentences. This tests the candidate’s ability to see sequence and order, as well as their understanding of the relations between the different parts of a text. The “Vocabulary knowledge” section consists of a number of multiple-choice questions in the cloze test format. This tests the candidate’s comprehension of academic vocabulary and phrases that are often used in academic tests (based on Coxhead’s Academic Wordlist). The “Interpreting graphs and visual information” subtest consists of questions on graphs and simple numerical computations. Here, the candidate’s ability to understand and interpret information in graphic or visual form is tested. This section also measures their ability to make comparisons and apply this to their arguments (Van Dyk & Weideman, 2004b).
In the “Text comprehension” section, candidates must answer questions about the given text. This involves the candidate’s verbal reasoning skills, ability to extrapolate information and make inferences. In the last subtest, “Grammar and text relations”, the candidate is presented with a text that has been systematically mutilated and the candidate must determine where words have been deleted and which words belong in these places. Again, this tests the candidate’s understanding of text relations and cohesive ties in addition to their grammar skills (Van Dyk & Weideman, 2004b).

The definition of academic literacy and the blueprint of the tests of academic literacy used as models for this study (TALL, TAG, TALPS) must be adapted in order to be appropriate for each level it is designed for. In the case of this grade 3 test, TEAL, it may be more difficult to apply the construct to a design for this level and therefore careful amendments to the existing template are necessary. (The design of the test construct and subtests is discussed in detail in “The design process and the prototype”, p. 23)

The requirements for responsible test design, as proposed by Weideman (2012, p. 8), may provide a framework for both the design and evaluation of the tests – that incorporates aspects of the conventional theories of validity, while taking social considerations into account. These requirements are the following:

- Systematically integrate multiple sets of evidence in arguing for the validity of a test.
- Specify clearly and to the public the appropriately limited scope of the test, and exercise humility in doing so.
- Ensure that the measurements obtained are adequately consistent, also across time.
- Ensure effective measurement by using a defensibly adequate instrument.
- Have an appropriately and adequately differentiated test.
- Make the test intuitively appealing and acceptable.
- Mount a theoretical defence of what is tested in the most current terms.
- Make sure that the test yields interpretable and meaningful results.
- Make not only the test, but information about it, accessible to everyone.
- Obtain the results efficiently and ensure that they are useful.
- Align the test with the instruction that will either follow or precede it, and as closely as possible with the learning.
- Be prepared to give account to the public of how the test has been used.
• Value the **integrity of the test**; make no compromises of quality that will undermine its status as an instrument that is fair to everyone.

• Spare no effort to make the test **appropriately trustworthy**.

Given the scope of the present study, it may not be possible to attend to all of these requirements. Particularly with regards to the last seven requirements, the test must be subjected to a few more rounds of administration and refinement before it is possible to determine whether they have been met.

Whether the test performs consistently can only be determined once the test has been administered a number of times, but the results from the first piloting session can at least indicate the reliability of the test items. In terms of validating the construct and the test, a panel evaluation would subject both to close scrutiny and the expert panel of judges could provide invaluable input regarding the refinement of the test.

This study endeavoured to design a test that is theoretically defensible and to provide a clear justification of the new design. The subsequent sections of this paper will give an outline of the research aims and the methodology used of this study, before discussing the stages in the test design process: the design of a construct and items, the administration of the test, the evaluation of the piloting results, and finally, the refinement of the test items.
3. Research questions and aims

The methodology adopted for this study is modelled on similar studies regarding the design of academic literacy tests (Du Plessis, 2012; Van Dyk & Weideman, 2004a; Van Dyk & Weideman, 2004b) and is both qualitative and quantitative. The test design process involves a conceptual clarification of the purpose of the test, the definition of the construct, and the design of the task types and test items. Then, after the administration of the prototype, a quantitative analysis of the test’s performance follows. The refinement of the test is then based on both the qualitative discussion of the test’s design and the quantitative results.

This study aims to investigate the possibilities of testing early academic literacy by constructing a definition that resonates with the definition of academic literacy that is used at present, but is also appropriate for this level, i.e. foundation phase in South Africa. There are two main research questions:

- What constitutes early academic literacy in comparison to existing definitions of early literacy, and are the skills it entails present in the revised curriculum for the foundation phase?
- How can early academic literacy be tested? What will the construct of this test entail?

The main aim of this study will be to design a test of early academic literacy that will illustrate the implementation of this suggested construct. This test will be designed with the intention to administer it to grade 3 learners. For each earlier level – grade 1 or 2 – this construct would have to be altered to make it appropriate for the relevant level. This paper will discuss the initial design of the test, the results of the first round of piloting and the refinement that will follow.
4. Methodology

This study consists of two phases, the first being the design process, and the second the piloting of the prototype and subsequent refinement of the test. This description of the proposed methodology will therefore outline these two phases separately.

4.1. Design

In order to design a test of early academic literacy (TEAL), we first had to determine which abilities constitute early academic literacy. Articulating a definition of early academic literacy and a construct that reflects this is an essential part of the design process, as the design of task types and items is dependent on having a clear view of what the test has to measure and how. As mentioned before, an existing definition of academic literacy (see “Background and theoretical context”) was used as a model for the definition of early academic literacy. Furthermore, the test construct of TALL (Test of Academic Literacy Levels) was used as a rough template for the subtest and item designs in TEAL.

The first step was to compare the construct of tests such as TALL, and the definition of academic literacy the construct is based on, with the outcomes stipulated in the CAPS document (Appendix A), as well as the accomplishments of a successful grade 3 learner (see “Theoretical context”) as listed by Snow et al. (1998, p. 83). The skills specified in the last two lists were then organized according to their relevance to different parts of the definition of academic literacy. Once these abilities had been categorized, a definition of early academic literacy was compiled based on these findings. This definition was used to create the construct for the TEAL design. The test design cycle (figure 1) proposed by Fulcher (2010, p. 94) provides an overview of the design process (discussed in the next section) that follows once the construct is set.
This test is intended for grade 3 learners that have received some English instruction and will likely be using English as the medium of instruction later in their school careers. To ensure that the test is appropriate for students at this level, the texts selected for this test had to have a Flesch-Kincaid Grade Level of between 2 and 3 and their Flesch Reading Ease level had to be higher than 75. These two measures were calculated using MS Word’s option to show the readability statistics of the texts.

4.2. Piloting and refinement

The initial prototype of TEAL was administered in a mini-pilot to determine how long it would take to complete the tasks and to identify any problems that were overlooked during the design of the test. A few alterations were made and it was determined that 60 minutes should be given for the completion of the test.

Participants:

The altered version of TEAL was piloted on a cohort of 179 grade 3 and 4 learners. The cohort consisted of the following:

- 150 grade 3 and 4 learners from South African schools in the Bloemfontein area (where one branch of ICELDA is located). These students are predominantly non-native speakers of English who have received English instruction since grade 1 and
will continue their education in settings where English will be the medium of instruction for all fields of study.

- The test was also piloted on a sample of 29 learners from International schools in the Netherlands. These learners were also predominantly non-native speakers of English. This added a group to the cohort with a similar language education background as their South African peers, but without the added variable of possible differences in the quality of education between privileged and underprivileged South African schools. In addition, because a different curriculum is followed in these schools, this also helps to see if the test is applicable outside of the South African context. It is important to note that these were in classes that are thought to be the equivalent of grade 3 and 4, although the groups are named differently in this system.

The aim of the piloting is to measure the performance of the test at test, subtest and item level, and to gather information for its refinement. Consequently, although it is important to mention these differences, the performance of the individual school groups are not at issue here.

Procedure and analysis:

The test was administered and then marked (partly by hand and partly using optical reading sheets that are marked by a computer). The results were entered in a MS Excel document to form the dataset for the analysis. A detailed data analysis was conducted using the Iteman 3.6, Iteman 4.3 and TiaPlus programs for test and item analysis. These programs compute the item point-biserial correlation and the facility indices, which are used to judge the performance of the test items, as well as the test in its entirety, and the relations between the subtests. The parameters used for the evaluation of the test items discussed below are all based on those used in previous studies on the design of academic literacy tests for ICELDA, such as Du Plessis’s (2012) design of a second version TALPS and Van der Walt and Steyn’s (2007) work on test validation.

The Pearson item point-biserial (rpbis) correlation refers to a measure of differentiating strength of an item that ranges between – 0.0 and 1.0. An item that discriminates well between examinees with high and low ability will have a positive point-biserial (but rarely higher than 0.50). An item with a negative point-biserial, where candidates with higher overall ability give an incorrect response while the poorer candidates answer correctly, is regarded as a poor item (Guyer & Thompson, 2011, p. 30). For the purpose of the proposed study, the minimum item-total correlation is 0.20 and the maximum, 1.0.
Differential item functioning (DIF) refers to the event when the performance of an item differs for the candidates within a test group, and this is generally seen as an indicator of potential bias against a certain group of candidates. When the $p$ value of an item is less than 0.05, the item is marked as having a significant DIF. If a group’s responses show a $p$ value lower than 0.05, an item is deemed to be biased against this group because of the lower probability that the responses of this group will be correct (Guyer & Thompson, 2011, p. 31, 32).

Item difficulty, or facility value, is expressed by an item $P$ value. This $P$ is the proportion of candidates that have answered a specific item correctly (Guyer & Thompson, 2011, p. 30; Bachman, 2004, p. 122). For the purpose of the study, $P$ should be above 0.15, but below 0.84.

The total rpbis-value of each item was used as the main indicator of discrimination, but the discrimination index computed in the analyses generated by the older version of Iteman was used as an additional measure. This is associated with the reliability of a test item. Cronbach’s alpha can be used to determine the internal reliability of the test as a whole. The ‘alpha’ is a statistical measure of the consistency of a test across all the items of the test (Weideman, 2006, p. 77). In Iteman 4.3 the alpha is calculated using the Kuder-Richarson formula 20 (KR20). Another measure of reliability that can be used is Greatest Lower Bound. This is especially used for tests that measure multiple abilities, such as the test designed in this study (Ten Berge & Sočan, 2004, p. 614).

The analysis of the productivity of the test items and the performance of the test as a whole was based on these four questions and the parameters they set:

1. Do the items discriminate well? (item point-biserial above 0.2, or discrimination index above 0.25)
2. Are the items appropriate in terms of facility value? ($P$ above 0.15, below 0.84)
3. Are the subtest intercorrelations satisfactory? (between 0.2 and 0.5)
4. What is the overall reliability level of the test? (Cronbach's alpha and Greatest Lower Bound)
5. The design process and the prototype

In order to articulate this definition of early academic literacy, the definition used by TALL, TAG and TALPS for academic literacy at higher levels of education was used as a guide to categorize the relevant outcomes and skills from the CAPS and the list of learner accomplishments (Snow et al., 1998, p. 83), mentioned earlier in this paper, that pertain to language skills at grade 3 level.

Using the ten components of the definition of academic literacy as a guide, the outcomes mentioned in the CAPS document (Appendix B) were examined and items that were deemed relevant to academic literacy were identified. From the “Phonics” section of CAPS, for example, “Recognises more complex word families (e.g. ‘catch’, ‘match’)” and “Builds and sounds out words using sounds learnt” were marked as elements that would relate to vocabulary knowledge and grammar skills. The list of learner accomplishments was examined in the same way. From this list, skills such as “distinguishes cause and effect, fact and opinion, main idea and supporting ideas”, which suggests the ability to differentiate and extrapolate information, and “infer word meanings from taught roots, prefixes and suffixes”, which relates to vocabulary knowledge, were identified as relevant skills. The selected items were then systematically organized in a table according to the component(s) of academic literacy they could be associated with. (Certain skills are associated with more than one of the components.) In tabular form it was easier to collate these skills and then change each component of the definition to make it appropriate for grade 3 level (early academic literacy). (Appendix B shows the complete table that was constructed as part of this comparative study.) There are certain skills that are precursors to the abilities outlined in the definition of academic literacy. Others are basically the same skills as those stipulated in the existing definition but are at a lower level of complexity.

The following definition of early academic literacy has been derived from this process. Students show signs of early academic literacy if they are able to:

a) understand and use a wide range of vocabulary, in context, which includes conceptual vocabulary (used for various communicative functions such as comparing, describing and expressing like or dislike), language patterns and slightly more complex words, and word families;
b) understand basic idioms and figures of speech, can identify connected words and text relations, and understand the basic structure of texts (particularly introductions and conclusions, beginnings and endings);  

c) distinguish between different text types, such as instructions, reports and stories (this component is not yet addressed in the proposed test);  

d) interpret, use and produce information presented in graphic or visual format – illustrations, graphs, charts and tables – at the appropriate level;  

e) distinguish between essential and non-essential information, fact and opinion, propositions and arguments, cause and effect, and classify, categorise and handle data that make comparisons in texts of the appropriate level;  

f) see sequence and order, recount events, instructions, retell a story and predict what will happen next;  

g) know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand – in texts of the appropriate level; and  

h) understand the communicative function of various ways of expression, in texts of the appropriate level, such as explaining or defining, providing examples, arguing;  

i) understand basic grammar and spelling rules, can use degrees of comparison, can use basic verbs (in different tenses), prepositions, nouns and pronouns accurately.  

The construct of a test is an outline of all the abilities that the final instrument intends to measure (Fulcher, 2010, p. 96). For a test of early academic literacy, the construct would therefore consist of all the components that have been identified in the definition of this concept. In order to operationalize the construct, the test designer must create task types (with item specifications) that will measure these abilities (Fulcher, 2010, p. 127).  

In keeping with the format of TALL and TALPS, the following subtests and item specifications were designed. (Appendix C is a detailed articulation of the construct and subtests.) TEAL consists of the following subtests:  

1. Scrambled story: The students are given a text to read and they then have to complete two exercises based on this. The first exercise involves a number of pictures that depict what was said in the text. They are scrambled and each pupil must place them in the correct order. For the second half of this subtest, the pupil must match a number of sentences to a selection of illustrations based on the text.
This task is reminiscent of the “Scrambled text” subtest featured in TALPS. It tests the candidate’s ability to identify the sequence of events in a story or lesson, as well as their ability to interpret, and make connections between visual and textual information.

2. **Which word works?** Incomplete sentences are given, with a number of options for the missing word.

This subtest is similar to the “Vocabulary knowledge” section of TALPS, but instead of testing the candidate’s knowledge of academic vocabulary, it looks at the candidate’s understanding of a range of vocabulary items and word families, as well as basic spelling and grammar rules.

3. **Picture story:** Pupils are presented with a rebus story. A rebus story contains graphics and illustrations that replace or accompany certain words in a text (Machado, 2007: 524). The questions involve the identification of the missing words, as well as a few comprehension questions.

In TEAL, the “Interpreting graphs and visual literacy” section has been replaced by a rebus story that tests a different type of visual literacy. The candidate’s ability to make connections between different types of information – in this case a text and pictures – is tested. In addition, their ability to make distinctions, extrapolate and find evidence is tested with a few comprehension questions.

4. **Verses and Rhymes:** A poem is given and questions are asked about the structure of the poem and the meaning of its contents.

TEAL does not have a section dedicated solely to text comprehension, as in TALPS, but comprehension questions have been included in more than one of the subtests. (Specifically, section 3 and 4, but section 6 is also a comprehension exercise.) Presented in a familiar format (a rhyme or song), the “Verses and Rhymes” section consists of content questions that rely on inferencing and distinction making skills, as well as questions pertaining to word families, rhyming words and so on.

5. **Grammar:** The given text is modified to contain options regarding the use of certain verbs (concord), tenses and also adverbs and adjectives that convey degrees of comparison.

TALPS has a “Grammar and text relations” subtest that tests grammar, vocabulary comprehension and cohesive ties in a cloze test format. To simplify this for TEAL, the “Grammar” section, also in a cloze test format, tests only the relevant grammar skills: concord use, tenses, and the use of adverbs and adjectives.
6. **Organizing information:** A situation is described. Based on the given information, the pupil must complete a table or a graph or both in order to make inferences about the information in the given text. This task requires verbal reasoning skills, as well as graphic and visual literacy.

This subtest is not related to a specific subtest in TALPS or TALL. It was specifically created to test the candidate’s ability to interpret information (distinction making, inferencing) and to create a visual representation in the form of a table or graph.

Each test item that is designed based on a construct, such as the one articulated here, is created with the intention to test a specific aspect of that construct (Fulcher & Davidson, 2009, p.128). Appendix D is a copy of the complete prototype that was administered during this first pilot.

In the next section of this paper, the results of the piloting procedure and the subsequent evaluation of the test items will be discussed. This will be followed by a description of the preliminary refinement of the prototype and suggestions for further refinement.
6. Piloting results and discussion

Test development does not end when the test construct has been drawn up and the test items have been written. Evaluating, prototyping and piloting (Fulcher, 2010, p. 94 – see figure 1) the designed items is an essential part of the design process and provides the designer with important information regarding item productivity and the overall performance of a test. The results of this kind of trialling process will then inform the further refinement of the test and, in some cases, the administration thereof, in order to ensure that all the requirements for responsible test design (see “Theoretical context”) are met (Weideman, 2012, p. 8; Du Plessis, 2012, p. 68).

The results of this round of piloting – with 179 candidates from both the Netherlands and South Africa – were analysed using three test item analysis programs. Iteman 3.6 and a later version, Iteman 4.3, produced the primary reports that were used for the evaluation of the test items, whilst the Tiaplus report provided a few additional statistics and visual information that were used to corroborate and cross-check the results of the other analyses.

Before we look at the statistics that will be used to analyse the individual test items and the reliability of the test, the descriptive statistics can tell us something more about the score characteristics of the cohort.

![Figure 2: Graph illustrating the distribution of scores](image)

The distribution of the scores is slightly peaked and is negatively skewed (as seen in figure 2 above), but this is typical for the distribution of the scores of criterion-referenced tests, such as TEAL (Bachman, 2004, p. 50). According to the scale statistics in the table
below (table 3), the skewness is -0.811 and the kurtosis, 0.095 which suggests a relatively
normal distribution as both skewness and kurtosis are well within the –2 and +2 range
(Bachman, 2004, p. 74, 75). The alpha of 0.911 indicates that this test is very reliable and
slight skewness suggests that the piloting cohort were perhaps a very strong group.

<table>
<thead>
<tr>
<th>Table 3: Scale statistics (Iteman 3.6)</th>
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</thead>
<tbody>
<tr>
<td>N of Items</td>
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<tr>
<td>N of Examinees</td>
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<tr>
<td>Mean</td>
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<tr>
<td>Variance</td>
</tr>
<tr>
<td>Std. Dev.</td>
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<tr>
<td>Skew</td>
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<td>Kurtosis</td>
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<tr>
<td>Minimum</td>
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<td>Maximum</td>
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<td>Median</td>
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<tr>
<td>Alpha</td>
</tr>
<tr>
<td>SEM</td>
</tr>
<tr>
<td>Mean Pcnt Corr</td>
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<tr>
<td>Mean Item-Tot.</td>
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<tr>
<td>Mean Biserial</td>
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<tr>
<td>Max Score (Low)</td>
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<tr>
<td>N (Low Group)</td>
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<tr>
<td>Min Score (High)</td>
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<tr>
<td>N (High Group)</td>
</tr>
</tbody>
</table>

The cohort consisted of both grade 3 and grade 4 learners. On average, the grade 4 learners
(M = 47.6, SD = 10.5) outperformed the grade 3 learners (M = 45.3, SD = 8.9), but this
difference was not significant (t(177) = -1.558; p = 0.121). The two groups were not equal in
size –105 grade 3 learners and 74 grade 4 learners. Although examining the difference
between the performance of the South African students and that of the Dutch students was not
one of the research aims of the present study, it is interesting to note that, on average, the
Dutch group (M = 51.04, SD = 7.37) outperformed the South African group (M = 45.29, SD =
9.81) and this difference was significant (t(177) = 2.995; p = 0.003). However, once again,
these groups were not equal in size. The South African group (150 students) had more than
five times as many students as the Dutch group (29 students) and this result is therefore
inconclusive.

Table 4 is a summary of the descriptive statistics as they pertain to the individual
subtests, as well as the entire test.
In terms of the inferential statistics used to evaluate the productivity of the test and its items there are four main questions that need to be answered:

5. Do the items discriminate well? (item point-biserial above 0.2, or discrimination index above 0.25)
6. Are the items appropriate in terms of facility value? (P above 0.15, below 0.84)
7. Are the subtest intercorrelations satisfactory? (between 0.2 and 0.5)
8. What is the overall reliability level of the test? (Cronbach's alpha and Greatest Lower Bound)

In terms of the individual items, the first two questions are pertinent. Table 5 below shows the statistics regarding discrimination and facility value for all the items. The productivity of the test items, based on these values, forms part of the evidence we use to substantiate the usefulness of the interpretation of the test’s scores and the actions that follow (Bachman, 2004, p. 135; Du Plessis, 2012, p. 68). According to these results, there are only two items that are in violation of all the parameters.
<table>
<thead>
<tr>
<th>Subtest</th>
<th>Item nr</th>
<th>Rpbis</th>
<th>Disc index</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Scrambled story</td>
<td>1</td>
<td>0.21</td>
<td>0.12</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>2</td>
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<td></td>
<td>30</td>
<td>0.46</td>
<td>0.55</td>
<td>0.68</td>
</tr>
<tr>
<td>Verses and rhymes</td>
<td>31</td>
<td>0.33</td>
<td>0.36</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>0.24</td>
<td>0.38</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>0.21</td>
<td>0.33</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>0.37</td>
<td>0.48</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>0.33</td>
<td>0.42</td>
<td>0.68</td>
</tr>
</tbody>
</table>
Although there are other items that have a facility value that is slightly higher than desirable, only item 2 and item 22 really do not discriminate well. The former has a very low point-biserial (Rpbis) correlation and a very high facility value. However, because it is part of a 5-item task within this subtest (“Scrambled story”) and the other items in this task conform to the set parameters, this is not a cause for concern. The facility value of the items that make up this first task are quite high, but this is an acceptable deviation, as it is the first item of the test. As for item 22, the Rpbis is a little too low and the facility value of the item is very high. This item is part of an exercise where the candidates had to identify the words that have been replaced by pictures in a text. It is perhaps possible to improve this item by selecting a different picture for this word or a different word-picture combination altogether.

In a few cases there are items with a discrimination value that is on the margin, but this can be attributed to the high facility values that suggest that most of the candidates answered these items correctly. When tested on a larger cohort, these values may shift to a more
satisfactory position. There are two specific subtests that have tasks with very high facility values. The first is the 5-item task in the “Scrambled story” that was referred to earlier. In this section, the students had to place a selection of pictures in the correct chronological order according to the text they were given. During the piloting sessions it was observed that many of the students were familiar with the content of this text and were therefore able to complete this section without depending on the text. The second half of this subtest was more challenging and this is reflected in facility values and the discrimination values of these items. (The refinement of the test items will be discussed later in this paper.)

The results for the third section, “Picture story”, shows that most of the items in the first exercise of this subtest have a facility value that is slightly too high. (This is the section with item 22.) Students were asked to identify which word was replaced by each of the pictures that were used in this rebus story. These items were included because they not only test one’s ability to make connections between visual and verbal input, but the task also encourages more engagement with the text, which is essential for the completion of the comprehension section of the task. Although the high facility values of these two sections are acceptable, it would be prudent to re-evaluate these items and look for possible ways to refine them.

Van Dyk and Weideman (2004b, p.17, 18) sort task types, and their individual items, into four categories based on the productivity of the items, but also their alignment with the construct. These categories are:

a) “acceptable” - a high degree of alignment with the test construct, but apparently not productive;
b) “unacceptable” – a small degree of alignment with the construct and low productivity;
c) “desirable” – a high degree of alignment with the construct coupled with productive items;
d) “not ideal” – only a small degree of alignment with the construct, but the items seem to be productive.

The discussion of the design of this test in the preceding chapter endeavoured to justify the design according to the components of the construct that are assumed to be tested in each of these sections. This suggests that only two categories are relevant here – “acceptable” and “desirable”. However, to ensure that the evaluation of the items in terms of their alignment
with the construct is accurate, these items should be subjected to a panel evaluation by test
 designers and language testing experts at some stage following the initial refinement of the
test.

This next table (table 6) shows the intercorrelations between the subtests. With the
exception of two intercorrelations (“Scrambled story” and “Which word works?”; “Picture
story” and “Grammar”) that have slightly stronger relationships, the subtest intercorrelations
are between 0.2 and 0.5. Van der Walt and Steyn (2007) argue that if these parameters are
met, it suggests that each subtest is testing a different aspect of the construct.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Scrambled story</th>
<th>Which word works?</th>
<th>Picture story</th>
<th>Verses and rhymes</th>
<th>Grammar</th>
<th>Organising information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrambled story</td>
<td>*</td>
<td>0.597</td>
<td>0.342</td>
<td>0.276</td>
<td>0.381</td>
<td>0.328</td>
</tr>
<tr>
<td>Which word works?</td>
<td>0.597</td>
<td>*</td>
<td>0.501</td>
<td>0.345</td>
<td>0.457</td>
<td>0.427</td>
</tr>
<tr>
<td>Picture story</td>
<td>0.342</td>
<td>0.501</td>
<td>*</td>
<td>0.446</td>
<td>0.583</td>
<td>0.383</td>
</tr>
<tr>
<td>Verses and rhymes</td>
<td>0.276</td>
<td>0.345</td>
<td>0.446</td>
<td>*</td>
<td>0.342</td>
<td>0.369</td>
</tr>
<tr>
<td>Grammar</td>
<td>0.381</td>
<td>0.457</td>
<td>0.583</td>
<td>0.342</td>
<td>*</td>
<td>0.356</td>
</tr>
<tr>
<td>Organising information</td>
<td>0.328</td>
<td>0.427</td>
<td>0.383</td>
<td>0.369</td>
<td>0.356</td>
<td>*</td>
</tr>
</tbody>
</table>

The dimensionality of the test can be evaluated using a factor analysis. The Tiaplus
program performs a factor analysis for each of the subtests and then generates a scatterplot
based on the item intercorrelations. This illustrates whether a test is one-dimensional, testing
only one ability, or multi-dimensional, testing a number of abilities (Du Plessis, 2012, p. 83).
The scatterplot below (figure 3) indicates a certain degree of heterogeneity, which would be
expected from a construct that endeavours to test a number of attributes, but items seem to be
grouped in two main groups that are related (Du Plessis, 2012, p. 83). There are a few outliers
– items 2, 14 and even perhaps 38 – but in general, the items seem to suggest that the
majority of the items are related to each other in some way.
In terms of the overall reliability of the test, we have two statistics that indicate the level of reliability, namely Cronbach’s alpha and the Greatest Lower Bound. All three programs calculated the Cronbach’s alpha to be 0.91, which means this test is very reliable. Tiaplus also computes the Greatest Lower Bound which is often used when a test has subtests that measure different attributes (Ten Berge & Sočan, 2004, p. 614). The GLB of this test is 0.98, which again suggests that this is a very reliable test. The table below (table 7) features all the reliability statistics generated by Iteman 4.3.

<table>
<thead>
<tr>
<th>Score</th>
<th>Alpha</th>
<th>SEM</th>
<th>Split-Half</th>
<th>Split-Half</th>
<th>Split-Half</th>
<th>S-B</th>
<th>S-B</th>
<th>S-B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Random)</td>
<td>(First-Last)</td>
<td>(Odd-Even)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scored items</td>
<td>0.912</td>
<td>2.871</td>
<td>0.824</td>
<td>0.634</td>
<td>0.889</td>
<td>0.903</td>
<td>0.776</td>
<td>0.941</td>
</tr>
<tr>
<td>Scrambled story</td>
<td>0.746</td>
<td>0.954</td>
<td>0.410</td>
<td>0.134</td>
<td>0.749</td>
<td>0.582</td>
<td>0.236</td>
<td>0.857</td>
</tr>
<tr>
<td>Which word works?</td>
<td>0.700</td>
<td>0.955</td>
<td>0.591</td>
<td>0.476</td>
<td>0.636</td>
<td>0.743</td>
<td>0.645</td>
<td>0.777</td>
</tr>
<tr>
<td>Picture story</td>
<td>0.646</td>
<td>1.148</td>
<td>0.398</td>
<td>0.398</td>
<td>0.461</td>
<td>0.570</td>
<td>0.570</td>
<td>0.631</td>
</tr>
<tr>
<td>Verses and rhymes</td>
<td>0.489</td>
<td>0.971</td>
<td>0.336</td>
<td>0.237</td>
<td>0.367</td>
<td>0.503</td>
<td>0.384</td>
<td>0.537</td>
</tr>
<tr>
<td>Grammar</td>
<td>0.744</td>
<td>1.133</td>
<td>0.481</td>
<td>0.505</td>
<td>0.693</td>
<td>0.650</td>
<td>0.671</td>
<td>0.819</td>
</tr>
<tr>
<td>Organising information</td>
<td>0.894</td>
<td>1.388</td>
<td>0.888</td>
<td>0.788</td>
<td>0.887</td>
<td>0.941</td>
<td>0.881</td>
<td>0.940</td>
</tr>
</tbody>
</table>

Table 7: Reliability statistics
Based on this table, all the individual alphas are satisfactory. The subtest with the lowest alpha, “Verses and Rhymes”, at 0.489 is still within the acceptable parameters. This subtest’s alpha could be improved by adding some more items, but at this stage this is not necessary.

The amendments that were made during the refinement of TEAL will be discussed in the next section of this paper. Also included in this discussion are a few suggestions for further amendments that could be made if another round of piloting suggests they are necessary.
7. Refinement

A couple of alterations were made based on observations during the mini-pilot. In the first version of TEAL, the teacher or invigilator would read the text in the first section aloud (while the students read along in their scripts) and then the students would complete this task based on what they had heard and read. During the mini-pilot it became clear that some students preferred to read the text on their own and would rather not have it read to them. When the test was administered during piloting, with the new version of the test, the candidates were left to read the text on their own. Two other changes were made.

In question 32, students found the phrase “with these” confusing and could not understand which words they were supposed to find a rhyming word for.

**Original question:**

32. In the second verse (below) of this song, the words ‘cat’ and ‘flat’ rhyme.

   My bunny lies over my doggy.
   My doggy's on top of my cat.
   My kitty is over my froggy,
   and that's why my froggy is flat.

   Where in the rest of the song do we find words, at the end of lines, that rhyme with these? In the...

   A. first verse.
   B. third verse.
   C. chorus.

**Refined question:**

32. In the second verse (below) of this song, the words ‘cat’ and ‘flat’ rhyme.

   My bunny lies over my doggy.
   My doggy's on top of my cat.
   My kitty is over my froggy,
   and that's why my froggy is flat.
Where in the rest of the song do we find words – at the end of lines – that rhyme with ‘cat’ and ‘flat’? In the ...

A. first verse.
B. third verse.
C. chorus.

In question 33, the participants did not understand the word ‘pronoun’.

**Original question:**

33. Which pronoun in verse 3 refers to the same person as the word ‘my’?

A. ‘he’
B. ‘I’
C. ‘them’

**Refined question:**

33. Which word (pronoun) in verse 3 refers to the same person as the word ‘my’?

A. ‘he’
B. ‘I’
C. ‘them’

7.1. Refinement based on the piloting results

In addition to items 2 and 22, Iteman 4.3 flagged item 4 due to a low discrimination value (r-pbis). Item 4, although on the margin, does conform to the parameters (see table 8). There are also quite a few items that have been flagged for their high facility value, but they have been judged as acceptable items.
Although possible reasons for the underperformance of items 2 and 22 have been identified (see “Piloting results and discussion”) we should still endeavour to improve their productivity. Furthermore, there are slight alterations to the various subtests that might be considered for refinement.

A) Item 2:
Iteman 4.3 calculates each item’s contribution to the test as a whole and indicates what the overall alpha of the test would be if the specific item was left out. (Van der Slik & Weideman, 2005, p. 24).

Based on the item statistics shown in table 9, the alpha of the test would remain the same without item 2. Removing this item would not improve the reliability of the test and it is part of a 5-item task which makes this a difficult item to alter. For the time being, this item will not be changed. If, after further piloting, the productivity remains unchanged, the whole task (items 1 tot 5) should be revised.
Table 9: Item statistics for item 2 (Iteman 4.3)

<table>
<thead>
<tr>
<th>N</th>
<th>P</th>
<th>Domain Rpbis</th>
<th>Domain Rbis</th>
<th>Total Rpbis</th>
<th>Total Rbis</th>
<th>Alpha w/o</th>
</tr>
</thead>
<tbody>
<tr>
<td>179</td>
<td>0.961</td>
<td>0.240</td>
<td>0.549</td>
<td>0.023</td>
<td>0.054</td>
<td>0.912</td>
</tr>
</tbody>
</table>

B) Item 22:
Based on the item statistics shown in table 10, as with item 2, the alpha of the test would remain the same without item 22. Removing this item would not improve the reliability of the test. It can, however, perhaps be improved if the picture cue for this is changed.

Table 10: Item statistics for item 22 (Iteman 4.3)

<table>
<thead>
<tr>
<th>N</th>
<th>P</th>
<th>Domain Rpbis</th>
<th>Domain Rbis</th>
<th>Total Rpbis</th>
<th>Total Rbis</th>
<th>Alpha w/o</th>
</tr>
</thead>
<tbody>
<tr>
<td>179</td>
<td>0.922</td>
<td>0.190</td>
<td>0.349</td>
<td>0.144</td>
<td>0.264</td>
<td>0.912</td>
</tr>
</tbody>
</table>

Original question:

22. 

Refined question:

22. 

This cue would be less obvious and would perhaps make it more difficult to answer (with snout as a close distractor). The main issue with this item is that it is too easy and therefore doesn’t discriminate well.

7.2. Suggestions for further refinement:

C) Scrambled story:
The current text about the development of frogs could be replaced with content that is less familiar.

D) Which word works?
This section could be expanded to more than eight questions. This would enable us to test certain features and forms more than once or twice.
E) Picture story
Some additional comprehension questions could be developed for this subtest.

F) Verses and rhymes
Five items is perhaps not enough for this subtest. More items could be designed to go with this text.
8. Conclusion

Due to the language policy in the South African education system, many learners face a transition from mother-tongue education to English instruction once they enter grade 4. Although mother-tongue education is encouraged, it is only available from grade 0 to 3. This study investigated the possibility of creating an instrument that could determine the readiness of students to make this shift. Modelled on studies conducted by the Inter-Institutional Centre for Language Development and Assessment (ICELDA) on academic literacy and their designs for tests of academic literacy, this study looked at the entire process of creating a test of early academic literacy, from deriving a definition for this concept and designing the first version of the Test of Early Academic Literacy (TEAL) to piloting the prototype and refining the test.

The results from this initial pilot were very positive. The high alpha is in keeping with the high standards of other tests designed by ICELDA. There was also relatively little refinement necessary thus far. However, given the nature of this test as a potential diagnostic tool, it is important that extensive further piloting take place. Furthermore, a thorough evaluation of the test construct and the performance results of the individual items is necessary to validate the use of this test for that purpose. The ideal would be to have a panel of language testing experts scrutinize the construct and the performance of the items, as well as look at the alignment of the items with the construct and advise on refinement accordingly. (This has been done with other new designs for ICELDA.)

At this stage, the recommendation would be to use this test in the third term of grade 3 in order to identify areas that students might have problems with and endeavour to rectify this before the end of the grade 3. High stakes tests are unusual at this level and this test was not designed to be used as an admission test for grade 4, but rather to potentially identify risk bands and act accordingly.

This paper has tried to distinguish early academic literacy as a specific set of skills that pertains to the use of language in early academic contexts, and that articulates the abilities that it encompasses. The test, TEAL, designed to operationalize this definition, has been subjected to its first round of piloting and refinement. But these are merely the first steps towards addressing the issues regarding the readiness of non-native speakers of English to use this language as the only medium of instruction in the classroom.
9. Suggestions for further research

In addition to the need for further piloting to inform refinement, the current test of only 60 items could be expanded to include more tasks. During discussions with the teaching staff at one of the participating schools, the need for a language production component, either in written or oral format (even both) was expressed.

Also, given the growing trend to send students to English medium schools later on in their schooling, for example when they enter high school, perhaps similar tests could be developed at other levels (tests for grade 9 and grade 12 already exist).

In this study the differences in the participating groups were not examined in detail. It would perhaps be useful to look at the performance of students who only study English as a second language (in bilingual schools, for example) in school compared to their peers who receive all instruction in English. Perhaps the test could even be administered to a group of native speakers of English.

Specifically in terms of the South African setting, where the only other language of teaching and learning is Afrikaans, it would be useful to design an Afrikaans counterpart for this test. (Perhaps called Toets vir Vroeë-Akademiese geletterdheid or TVA.)
References


### Overview of the language skills to be taught in the first additional – grade 3

**Listening and Speaking**
- Continues to build an oral vocabulary using topics chosen by the teacher (e.g. Finding out)
- Builds some conceptual vocabulary (e.g. comparing, describing)
- Follows and gives instructions
- Responds to and makes requests
- Talks about a picture or photograph
- Asks for clarification (e.g. I don’t understand, please say that again.)
- Gives a simple oral recount (recalls experiences in the right sequence)
- Listens to stories and personal recounts and answers comprehension questions
- Predicts what will happen next in a story or personal recount
- Expresses feelings about a story
- Retells the story
- Listens to a non-fiction text (factual recount, procedure or information report) and answers comprehension questions
- With the teacher’s help, gives a simple summary of the non-fiction text
- Participates in a short conversation on a familiar topic
- Understands and responds to questions such as ‘When …?’ and ‘Why …?’ (e.g. Why did the house fall down?)
- Performs a rhyme, poem or song
- Plays language games

**Phonics**
- Identifies letter-sound relationships of all single letters in HL and FAL and is aware of any differences
- Recognises consonant digraphs (sh-, -sh, ch-, -ch, th-, -th and wh-) at the beginning and end of words
- Recognises at least 10 vowel digraphs (e.g. ‘oa’ as in boat, ‘ar’ as in far, ‘er’ as in her, ‘ir’ as in bird, ‘or’ as in short, ‘ur’ as in hurt)
- Recognises silent ‘e’ in words (e.g. cake, time)
- Uses consonant blends to build up and break down words (e.g. ri-ng, i-nk,)
- Recognises known rhyming words, (e.g. fly, sky)
- Distinguishes between long and short vowel sounds e.g. (‘boot’ and ‘book’)
- Distinguishes between onset and rime [sic.] in more complex syllables (e.g. ‘dr-eam’, ‘scr-eam’)
- Recognises more complex word families (e.g. ‘catch’, ‘match’)
- Recognises and uses some suffixes (e.g. ‘-es’, ‘-ies’, ‘-ly’, ‘-ing’, ‘-ed’)
- Builds and sounds out words using sounds learnt

**Environmental print**
- Reads simple posters or headings of posters in the environment

**Shared reading**
- Reads fiction and non-fiction texts with the teacher, using the illustrations to support vocabulary development
- Answers literal and very simple inferential questions that support comprehension of the text
- Retells a story or recount, identifying the sequence of events
- Summarises a non-fiction text (e.g. information report)

**Group guided reading**
- Reads both silently and out loud from own book in a guided reading group with the teacher i.e. whole group reads the same text
## APPENDIX A

<table>
<thead>
<tr>
<th>Reading and viewing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses the reading strategies taught in the HL to make sense of text and monitor self when reading (phonics, context clues, structural analysis, sight words)</td>
</tr>
<tr>
<td>Uses diagrams and illustrations in text to increase understanding</td>
</tr>
<tr>
<td>Reads aloud, with increasing speed and fluency, using correct pronunciation and stress</td>
</tr>
<tr>
<td>Demonstrates an understanding of punctuation for direct speech, by varying voice pitch when reading aloud</td>
</tr>
<tr>
<td>Uses some self-correcting strategies</td>
</tr>
<tr>
<td>Paired/Independent reading</td>
</tr>
<tr>
<td>Reads own and others’ writing</td>
</tr>
<tr>
<td>Reads aloud to a partner</td>
</tr>
<tr>
<td>Reads independently simple fiction and non-fiction books, books read in Guided reading sessions, and children’s magazines and comics</td>
</tr>
<tr>
<td>Uses children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses handwriting skills taught in HL</td>
</tr>
<tr>
<td>Writes more complex lists with headings (e.g. Insects: ants, bees, butterflies)</td>
</tr>
<tr>
<td>Writes sentences from dictation</td>
</tr>
<tr>
<td>Writes a simple text (e.g. a birthday card)</td>
</tr>
<tr>
<td>With guidance, writes a personal recount of experiences using a frame (e.g. ‘Yesterday I…, Then …, After that…, Finally…’)</td>
</tr>
<tr>
<td>With guidance, writes a simple set of instructions (e.g. recipe)</td>
</tr>
<tr>
<td>Together with the teacher, writes a simple story and copies it (shared writing)</td>
</tr>
<tr>
<td>Organises information in a chart, table or bar graph</td>
</tr>
<tr>
<td>Writes sentences on a familiar topic (at least 6-8 sentences, one or two paragraphs)</td>
</tr>
<tr>
<td>Uses the writing process (drafting, writing, editing and publishing)</td>
</tr>
<tr>
<td>Uses punctuation already taught in HL (full stops, commas, question marks, exclamation marks and inverted commas) and apostrophes in contractions (e.g. can’t, don’t)</td>
</tr>
<tr>
<td>Spells common words correctly and attempts to spell unfamiliar words using phonics knowledge</td>
</tr>
<tr>
<td>Uses present, past and future tenses with increasing accuracy</td>
</tr>
<tr>
<td>Uses prepositions, nouns, verbs and pronouns with increasing accuracy</td>
</tr>
<tr>
<td>Builds own word bank and personal dictionary</td>
</tr>
<tr>
<td>Uses children’s dictionaries (monolingual and bilingual)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language structure and use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develops understanding and ability to use language structures in the context of meaningful spoken and written language.</td>
</tr>
<tr>
<td>Understands and uses the simple present, present progressive, simple past and future tenses</td>
</tr>
<tr>
<td>Understands and uses countable (e.g. book) and uncountable nouns (e.g. chalk)</td>
</tr>
<tr>
<td>Understands and uses the articles ‘a’ and ‘the’ with nouns</td>
</tr>
<tr>
<td>Understands and uses the possessive form of nouns (e.g. Thandi’s face)</td>
</tr>
<tr>
<td>Understands and uses ‘There is/ are’ (e.g. There is a book on the table)</td>
</tr>
<tr>
<td>Understands and uses comparative adjectives (e.g. fast, faster, fastest)</td>
</tr>
<tr>
<td>Understands and uses demonstrative pronouns: this, that, those, these</td>
</tr>
<tr>
<td>Understands and uses a variety of question forms (e.g. ‘Which…?’, ‘Why…?’)</td>
</tr>
<tr>
<td>Understands 1,500–2,500 words in context by the end of Grade 3*</td>
</tr>
</tbody>
</table>

* Based on the Children’s Printed Word Database compiled by researchers from the Department of Psychology at the University of Essex.  [http://www.essex.ac.uk/psychology/cpwd – (Masterson et al., 2003)]
## APPENDIX B

<table>
<thead>
<tr>
<th>Components of academic literacy:</th>
<th>Relevant components identified in CAPS/List of predicted accomplishments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary comprehension: understand a range of academic vocabulary in context; interpret the use of metaphor and idiom in academic usage, and perceive connotation, word play and ambiguity.</td>
<td>Continues to build an oral vocabulary using topics chosen by the teacher (e.g. Finding out) Builds some conceptual vocabulary (e.g. comparing, describing, like, unlike) Recognises more complex word families (e.g. ‘catch’, ‘match’) Recognises and uses some suffixes (e.g. ‘-es’, ‘-ies’, ‘-ly’, ‘-ing’, ‘-ed’) Builds and sounds out words using sounds learnt Uses children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words Writes more complex lists with headings (e.g. Insects: ants, bees, butterflies) Spells common words correctly and attempts to spell unfamiliar words using phonic knowledge Uses present, past and future tenses with increasing accuracy Uses prepositions, nouns, verbs and pronouns with increasing accuracy Understands 1,500–2,500 words in context by the end of Grade 3 Uses letter-sound correspondence knowledge and structural analysis to decode words Can point to or clearly identify specific words or wordings that are causing comprehension difficulties. Infers word meanings from taught roots, prefixes, and suffixes. Correctly spells previously studied words and spelling patterns in own writing. Begins to incorporate literacy words and language patterns in own writing (e.g., elaborates descriptions, uses figurative wording).</td>
</tr>
<tr>
<td>Text relations (grammar &amp; cohesion): understand relations between different parts of a text, be aware of the logical development of an academic text, via introductions to conclusions, and know how to use language that serves to make the different parts of a text hang together.</td>
<td>Gives a simple oral recount (recalls experiences in the right sequence) Predicts what will happen next in a story or personal recount With the teacher’s help, gives a simple summary of the non-fiction text Answers literal and very simple inferential questions that support comprehension of the text Retells a story or recount, identifying the sequence of events Summarises a non-fiction text (e.g. information report) Recognises more complex word families (e.g. ‘catch’, ‘match’) Recognises known rhyming words, (e.g. fly, sky,) Writes more complex lists with headings (e.g. Insects: ants, bees, butterflies) With guidance, writes a personal recount of experiences using a frame (e.g. ‘Yesterday I…, Then …, After that…, Finally…’) Organises information in a chart, table or bar graph In interpreting fiction, discusses underlying theme or message In interpreting nonfiction, distinguishes cause and effect, fact and opinion, main idea and supporting details Uses information and reasoning to examine bases of hypotheses and opinions. Independently reviews work for spelling, mechanics, and presentation. With assistance, suggests and implements editing and revision to clarify and refine own writing.</td>
</tr>
</tbody>
</table>
### Understanding text type (genre sensitivity):
- Interpret different kinds of text type (genre), and have a sensitivity for the meaning they convey, as well as the audience they are aimed at.

<table>
<thead>
<tr>
<th>Understanding graphic &amp; visual information: interpret, use and produce information presented in graphic or visual format.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental print: Reads simple posters or headings of posters in the environment.</td>
</tr>
<tr>
<td>Uses diagrams and illustrations in text to increase understanding.</td>
</tr>
<tr>
<td>Organises information in a chart, table or bar graph.</td>
</tr>
<tr>
<td>Talks about a picture or photograph.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Distinguishing between essential &amp; non-essential information; fact and opinion; propositions and arguments; cause and effect; classify, categorise &amp; handle data that make comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listens to stories and personal recounts and answers comprehension questions.</td>
</tr>
<tr>
<td>Predicts what will happen next in a story or personal recount.</td>
</tr>
<tr>
<td>Listens to a non-fiction text (factual recount, procedure or information report) and answers comprehension questions.</td>
</tr>
<tr>
<td>Understands and responds to questions such as ‘When . . . ?’ and ‘Why . . . ?’ (e.g. ‘Why did the house fall down?’).</td>
</tr>
<tr>
<td>Answers literal and very simple inferential questions that support comprehension of the text.</td>
</tr>
<tr>
<td>Summarises a non-fiction text (e.g. information report).</td>
</tr>
<tr>
<td>Uses the reading strategies taught in the HL to make sense of text and monitor self when reading (phonics, context clues, structural analysis, sight words).</td>
</tr>
<tr>
<td>Uses diagrams and illustrations in text to increase understanding / Organises information in a chart, table or bar graph.</td>
</tr>
<tr>
<td>Uses children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words.</td>
</tr>
<tr>
<td>Reads aloud with fluency and comprehension any text that is appropriately designed for grade level.</td>
</tr>
<tr>
<td>Reads and comprehends both fiction and nonfiction that is appropriately designed for grade level.</td>
</tr>
<tr>
<td>Can point to or clearly identify specific words or wordings that are causing comprehension difficulties.</td>
</tr>
<tr>
<td>Summarizes major points from fiction and nonfiction texts.</td>
</tr>
<tr>
<td>In interpreting fiction, discusses underlying theme or message.</td>
</tr>
<tr>
<td>Asks how, why, and what-if questions in interpreting nonfiction texts.</td>
</tr>
<tr>
<td>In interpreting nonfiction, distinguishes cause and effect, fact and opinion, main idea and supporting details.</td>
</tr>
<tr>
<td>Uses information and reasoning to examine bases of hypotheses and opinions.</td>
</tr>
<tr>
<td>Infers word meanings from taught roots, prefixes, and suffixes.</td>
</tr>
</tbody>
</table>
### APPENDIX B

| See sequence and order, and do simple numerical estimations and computations that are relevant to academic information, that allow comparisons to be made, and can be applied for the purpose of an argument. | Predicts what will happen next in a story or personal recount  
Gives a simple oral recount (recalls experiences in the right sequence)  
With the teacher’s help, gives a simple summary of the non-fiction text  
Understands and responds to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?’)  
Retells a story or recount, identifying the sequence of events  
Summarises a non-fiction text (e.g. information report)  
Uses the reading strategies taught in the HL to make sense of text and monitor self when reading (phonics, context clues, structural analysis, sight words)  
Develops understanding and ability to use language structures in the context of meaningful spoken and written language.  
Summarizes major points from fiction and nonfiction texts.  
Asks how, why, and what-if questions in interpreting nonfiction texts.  
Uses information and reasoning to examine bases of hypotheses and opinions.  
Combines information from multiple sources in writing reports.  
Independently reviews work for spelling, mechanics, and presentation.  
Extrapolation, making inferences, and application: know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand. | Listens to stories and personal recounts and answers comprehension questions  
Predicts what will happen next in a story or personal recount  
Listens to a non-fiction text (factual recount, procedure or information report) and answers comprehension questions  
Understands and responds to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?’)  
Answers literal and very simple inferential questions that support comprehension of the text  
Summarises a non-fiction text (e.g. information report)  
Uses the reading strategies taught in the HL to make sense of text and monitor self when reading (phonics, context clues, structural analysis, sight words)  
Uses diagrams and illustrations in text to increase understanding / Organises information in a chart, table or bar graph  
Uses children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words  
Reads aloud with fluency and comprehension any text that is appropriately designed for grade level.  
Reads and comprehends both fiction and nonfiction that is appropriately designed for grade level.  
Can point to or clearly identify specific words or wordings that are causing comprehension difficulties.  
Summarizes major points from fiction and nonfiction texts.  
In interpreting fiction, discusses underlying theme or message.  
Asks how, why, and what-if questions in interpreting nonfiction texts.  
In interpreting nonfiction, distinguishes cause and effect, fact and opinion, main idea and supporting details.  
Uses information and reasoning to examine bases of hypotheses and opinions.  
Infers word meanings from taught roots, prefixes, and suffixes. |

50
APPENDIX B

| Communicative function (defining, arguing, etc): understand the communicative function of various ways of expression in academic language (such as defining, providing examples, arguing). | Listens to stories and personal recounts and answers comprehension questions | Builds some conceptual vocabulary (e.g. comparing, describing, like, unlike) | Listens to a non-fiction text (factual recount, procedure or information report) and answers comprehension questions | Understands and responds to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?') | Answers literal and very simple inferential questions that support comprehension of the text | Uses the reading strategies taught in the HL to make sense of text and monitor self when reading (phonics, context clues, structural analysis, sight words) | In interpreting fiction, discusses underlying theme or message. | Asks how, why, and what-if questions in interpreting nonfiction texts. | In interpreting nonfiction, distinguishes cause and effect, fact and opinion, main idea and supporting details. | Uses information and reasoning to examine bases of hypotheses and opinions. | Combines information from multiple sources in writing reports. |
| Making meaning beyond the level of the sentence | Listens to stories and personal recounts and answers comprehension questions | Predicts what will happen next in a story or personal recount | Listens to a non-fiction text (factual recount, procedure or information report) and answers comprehension questions | Understands and responds to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?') | Answers literal and very simple inferential questions that support comprehension of the text | Summarises a non-fiction text (e.g. information report) | Uses diagrams and illustrations in text to increase understanding / Organises information in a chart, table or bar graph | Uses children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words | Reads aloud with fluency and comprehension any text that is appropriately designed for grade level. | Reads and comprehends both fiction and nonfiction that is appropriately designed for grade level. | Combines information from multiple sources in writing reports. | Summarizes major points from fiction and nonfiction texts. | In interpreting fiction, discusses underlying theme or message. | Asks how, why, and what-if questions in interpreting nonfiction texts. | In interpreting nonfiction, distinguishes cause and effect, fact and opinion, main idea and supporting details. | Uses information and reasoning to examine bases of hypotheses and opinions. |
### Scrambled story (10):
The teacher or invigilator reads a text aloud, twice. The first exercise involves a number of pictures that depict what was said in the text. They are scrambled and each pupil must place them in the correct order. For the second half of this subtest, the pupil must match a number of sentences to a selection of illustrations based on the text.  

<table>
<thead>
<tr>
<th>Component of the definition of academic literacy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>d) interpret, use and produce information presented in graphic or visual format – illustrations, graphs, charts and tables – at the appropriate level;</td>
</tr>
<tr>
<td>f) see sequence and order, recount events, instructions etc., retell a story and predict what will happen next;</td>
</tr>
</tbody>
</table>

1. give a simple oral recount;  
2. retell a story or recount, identifying the sequence of events; and  
3. ask how, why, and what-if questions in interpreting texts.

### Which word works? (8):
Incomplete sentences are given, with a number of options for the missing word. In order to complete this section, the pupil must be able to:

<table>
<thead>
<tr>
<th>Component of the definition of academic literacy:</th>
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</thead>
<tbody>
<tr>
<td>a) understand and use a wide range of vocabulary, in context, which includes conceptual vocabulary (used for various communicative functions such as comparing, describing and expressing like or unlike), language patterns and slightly more complex words, and word families</td>
</tr>
<tr>
<td>i) understand basic grammar and spelling rules, can use degrees of comparison, can use basic verbs (in different tenses), prepositions, nouns and pronouns accurately.</td>
</tr>
</tbody>
</table>

1. handle the complex words and language patterns, like figurative wording, in used in texts;  
2. infer word meanings from taught roots, prefixes, and suffixes, and can identify the appropriate word to use in a given context or sentence;  
3. correctly spell previously studied words and spelling patterns;  
4. spell common words correctly and attempts to spell unfamiliar words using phonic knowledge, independently reviews work for spelling, mechanics, and presentation;  
5. understand and use comparative adjectives (e.g. short, shorter, shortest), articles, pronouns, and can use and understand the present and past tenses (simple, perfect and continuous) and the future constructions ‘will + infinitive’ and ‘going + infinitive’;
### APPENDIX C

<table>
<thead>
<tr>
<th>Picture story (12): Pupils are presented with a rebus story. A rebus story contains graphics and illustrations that replace or accompany certain words in a text (Machado, 2007: 524). The questions involve the identification of the missing words, as well as a few comprehension questions. In order to complete this section, the pupil must be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>d) interpret, use and produce information presented in graphic or visual format – illustrations, graphs, charts and tables – at the appropriate level;</td>
</tr>
<tr>
<td>e) distinguish between essential and non-essential information, fact and opinion, propositions and arguments, cause and effect, and classify, categorise and handle data that make comparisons in texts of the appropriate level;</td>
</tr>
<tr>
<td>g) know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand – in texts of the appropriate level;</td>
</tr>
<tr>
<td>h) understand the communicative function of various ways of expression, in texts of the appropriate level, such as explaining or defining, providing examples, arguing;</td>
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<tr>
<td>6. understands between 1,500–2,500 words in context – word selection based on the Children’s Printed Word Database; recognise and use some suffixes (e.g. ‘-es’, ‘-ies’, ‘-ly’, ‘-ing’, ‘-ed’); and</td>
</tr>
<tr>
<td>7. use prepositions, nouns, verbs and pronouns with increasing accuracy and can distinguish between the uses of different parts of speech.</td>
</tr>
<tr>
<td>1. talk about a picture or photograph, or in this case, can associate a picture with a word;</td>
</tr>
<tr>
<td>2. use diagrams and illustrations in text to increase understanding;</td>
</tr>
<tr>
<td>3. use children’s picture dictionaries (monolingual and bilingual) to find out the meaning of unknown words;</td>
</tr>
<tr>
<td>4. spell common words correctly and attempts to spell unfamiliar words using phonic knowledge, independently reviews work for spelling, mechanics, and presentation;</td>
</tr>
<tr>
<td>5. read simple posters or headings of posters in the environment;</td>
</tr>
<tr>
<td>6. discuss underlying theme or message, recurring ideas and characters;</td>
</tr>
<tr>
<td>7. predict what will happen next in a story or personal recount;</td>
</tr>
<tr>
<td>8. understand and respond to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?’);</td>
</tr>
<tr>
<td>9. retell a story or recount, identifying the sequence of events; and</td>
</tr>
<tr>
<td>10. use information and reasoning to examine bases of hypotheses and opinions.</td>
</tr>
</tbody>
</table>
**APPENDIX C**

<table>
<thead>
<tr>
<th>Verses and Rhymes (5): A poem is given and questions are asked about the structure of the poem and the meaning of its contents. In order to complete this section, the pupil must be able to:</th>
<th>1. recognise known rhyming words, (e.g. fly, sky); 2. distinguish between onset and rime [sic.] in more complex syllables (e.g. ‘dr-eam’, ‘scr-eam’); 3. recognise more complex word families (e.g. ‘catch’, ‘match’); 4. answer literal and very simple inferential questions that support comprehension of the text; 5. discuss underlying theme or message, recurring ideas and characters; 6. understand and respond to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?’); 7. give a simple oral recount; and 8. use information and reasoning to examine bases of hypotheses and opinions. (The skill referred to in (a), (b), (c) and (e) can be associated with an understanding of text relations such as rhyming words and word families and cohesive ties (such as reference)).</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) understand basic idioms and figures of speech, can identify connected words and text relations, and understand the basic structure of texts (particularly introductions and conclusions, beginnings and endings); e) distinguish between essential and non-essential information, fact and opinion, propositions and arguments, cause and effect, and classify, categorise and handle data that make comparisons in texts of the appropriate level; g) know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand – in texts of the appropriate level;</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX C

### Grammar (10):
The given text is modified to contain options regarding the use of certain verbs (concord), tenses and also adverbs and adjectives that convey degrees of comparison etc.

<table>
<thead>
<tr>
<th>i) understand basic grammar and spelling rules, can use degrees of comparison, can use basic verbs (in different tenses), prepositions, nouns and pronouns accurately. Also: b) understand basic idioms and figures of speech, can identify connected words and text relations, and understand the basic structure of texts (particularly introductions and conclusions, beginnings and endings);</th>
<th>1. correctly spell previously studied words and spelling patterns; 2. spell common words correctly and attempts to spell unfamiliar words using phonic knowledge, independently reviews work for spelling, mechanics, and presentation; 3. understand and use comparative adjectives (e.g. short, shorter, shortest), articles and pronouns; and 4. can use and understand the present and past tenses (simple, perfect and continuous) and the future tense constructions ‘will + infinitive’ and ‘going + infinitive’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizing information (15): A situation is described. Based on the given information, the pupil must complete a table or a graph or both in order to make inferences about the information in the given text. This task requires verbal reasoning skills, as well as graphic and visual literacy. In order to complete this section, the pupil must be able to: d) interpret, use and produce information presented in graphic or visual format – illustrations, graphs, charts and tables – at the appropriate level; e) distinguish between essential and non-essential information, fact and opinion, propositions and arguments, cause and effect, and classify, categorise and handle data that make comparisons in texts of the appropriate level; g) know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand – in texts of the appropriate level;</td>
<td>1. use diagrams and illustrations in text to increase understanding; 2. organise information in a chart, table or graph; 3. talk about a picture, photograph or chart; 4. listen to stories and personal recounts and answer comprehension questions about it; 5. understand and respond to questions such as ‘When …?’ and ‘Why …?’ (e.g. ‘Why did the house fall down?); 6. answer literal and very simple inferential questions that support comprehension of the text; 7. read and comprehend text that is appropriately designed for grade level; 8. distinguish cause and effect, fact and opinion, main idea and supporting details; 9. uses information and reasoning to examine bases of hypotheses and opinions; 10. summarize or identify major points from fiction and nonfiction texts; and 11. combine information from multiple sources in writing reports.</td>
</tr>
</tbody>
</table>

*The Children’s Printed Word Database compiled by researchers from the Department of Psychology at the University of Essex. [http://www.essex.ac.uk/psychology/cpwd].
For security reasons an electronic copy of the full test cannot be made available as an appendix here. ICELDA retains the copyright of this test and have the sole right to distribute its contents. If you wish to see the TEAL prototype, you may contact ICELDA for further details.

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Declaration of Originality Form

This form **must** be completed and signed and submitted with the final version of the MA Thesis.

Please complete the information below (using BLOCK CAPITALS).

Name: SANET STEYN
Student Number: s2567547

**I confirm that this assignment is my own work and that I have:**

- Read and understood the MA Thesis Guidelines, including the paragraph on plagiarism
- Clearly referenced, in both the text and the bibliography or references, **all sources** used in the work
- Fully referenced (including page numbers) and used inverted commas for **all text quoted** from books, journals, web etc. (Please check with the Department which referencing style is to be used)
- Provided the sources for all tables, figures, data etc. that are not my own work
- Not made use of the work of any other student(s) past or present without acknowledgement. This includes any of my own work, that has been previously, or concurrently, submitted for assessment, either at this or any other educational institution, including school
- Not sought or used the services of any professional agencies to produce this work
- In addition, I understand that any false claim in respect of this work will result in disciplinary action in accordance with University regulations

**DECLARATION:**

I am aware of and understand the University’s policy on plagiarism and I certify that this assignment is my own work, except where indicated by referencing, and that I have followed the good academic practices noted above.

Signed  

Sanet Steyn