

***A theoretical justification for  
the design and refinement of a  
Test of Advanced Language  
Ability (TALA)***

Sanet Steyn



# **A theoretical justification for the design and refinement of a Test of Advanced Language Ability (TALA)**

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## **Declaration**

I, Sanet Steyn, declare that the Master's Degree research dissertation that I herewith submit for the Master's Degree qualification Magister Artium (English) in the Faculty of the Humanities (Department of English) at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.

## **Abstract**

The emphasis on political equality among the official languages of South Africa makes equivalence in the instruction and assessment of these languages at school level an important objective. The results of the National Senior Certificate (NSC) examination signal a possible inequality in the measurement of language abilities between the set of Home Languages (HLs) offered, as well as in the measurement of First Additional Languages (FALs). This necessitates action on the part of applied linguists to find a viable instrument for equivalent assessment. In order to do so, one must first find common ground among the various languages on the basis of which one can then derive a generic set of abilities that form part of an advanced language ability in any of these languages. As components of an overall ability, these will inform an idea of advanced language ability on which the further articulation of a construct for such a test should be based.

This study explores the assumption that there are certain functions of language that all languages have in common, even though these different languages may not necessarily operate equally well in all material lingual spheres of discourse. Using as a theoretical basis the Curriculum and Assessment Policy Statement (CAPS), as well as current thinking about language teaching and assessment, this study not only provides a definition and further explication of advanced language ability but also describes the design of an assessment instrument to test this ability, the Test of Advanced Language Ability (TALA), that operationalizes the components of this construct. This test could potentially be the basis of a new, generic component of the NSC examination for Home Languages that might provide us with an instrument that can be demonstrated to be equivalent in terms of measurement, should it prove possible to develop similar tests across all the Home Languages. The study concludes with an evaluation of this instrument, a critical look at the limitations of the study and an overview of the potential utility of both the instrument and the findings of this investigation beyond its original aims.

**Keywords:** generic ideas of language; differentiated ideas of language; language ability; academic literacy; material lingual spheres; language assessment; responsible test design; test equivalence; high-stakes tests; school exit examinations.

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# Chapter 1

## Introduction

### 1.1. Background

Media reports on the results of the Grade 12 exit level (National Senior Certificate or NSC) examination of 2011 (Rademeyer, 2012: 7), as provided by South Africa's Council for Quality Assurance in General and Further Education and Training (Umalusi), and more recently the results of the 2013 examination (Joubert, 2014: 2), have drawn attention to possible discrepancies among the language papers of the official languages of South Africa, both for Home Language (HL) – known in other contexts as first language or L1 – and First Additional Language (FAL) – second language or L2 – subjects. There are marked differences in the averages presented in the aforementioned reports which in turn might either reflect an inequality in terms of the difficulty levels of these papers or in terms of the competence of the matriculants in their HL and FAL, respectively. Regardless of which of the former or the latter is the case, this raises questions pertaining to the equivalence of examination papers presented as parallel instruments, as well as the general language ability of learners, especially in grade 11 and 12. The following table (1.1) illustrates this issue:

Subject: Home language	Average mark	Subject: First additional language	Average mark
English	55,73 %	English	47,17 %
Afrikaans	59,26 %	Afrikaans	52,62 %
Xhosa	63,67 %	Xhosa	64,95 %
Zulu	67,15%	Zulu	75,17 %
Pedi	59,82 %		
Sotho	60,31 %		

Table 1.1: Results of the Grade 12 NSC examination of 2011 (Rademeyer, 2012: 7)

Since the figures above were first made public, the problem has not gone away. The NSC examination results of 2017, published by the Department of Basic Education (2018) in their annual diagnostic report, seem to suggest that these disparities in the performance on the HL papers persist. Figure 1.1 (below) shows these inconsistencies in a graph that combines the performance distribution curves of the eleven HLs (Department of Basic Education, 2018). Most notable are the performance distribution curves, for the results of the English, Afrikaans, and Tshivenda NSC HL examinations. (See Appendix A.)

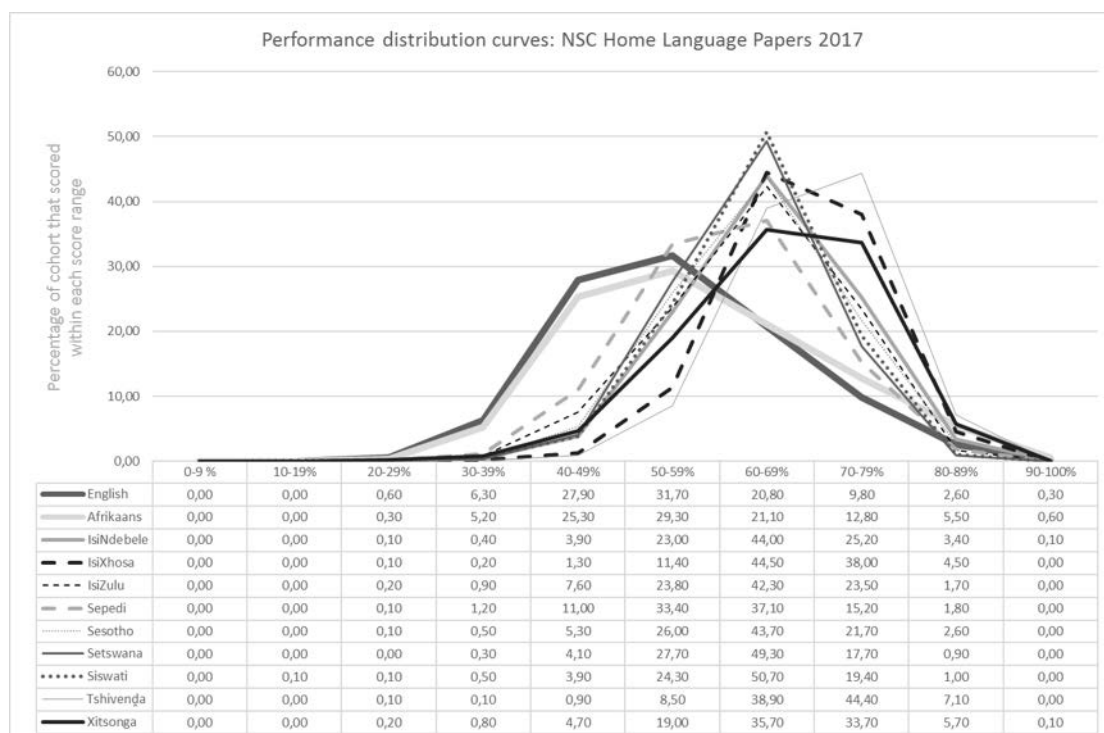


Figure 1.1: Performance distribution curves of the NSC Home Language examinations

A good portion of language ability at school level is, or should be, related to the skills associated with advanced language ability. The Curriculum and Assessment Policy Statements (CAPS) (Department of Basic Education, 2011) for both English and Afrikaans HL Grade 10-12 presents an outline of the specific aims, skills and content that are supposed to be developed and dealt with in the Further Education and Training (FET) phase (Grades 10-12). The CAPS document refers to advanced, differentiated language contexts or language spheres, and the ability to use a variety of texts is mentioned several

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times in this framework. The following material lingual spheres are represented in the CAPS outline: social, educational, aesthetic, economic, ethical and political discourse (Du Plessis, Steyn & Weideman, 2013: 8; Du Plessis, Steyn & Weideman, 2016). In addition to this differentiated variety of discourse types, which seems to suggest that there is a differentiated set of skills and language functions that learners must be able to master, a wide variety of text types is mentioned in the curriculum. On the other hand, one can also identify a set of underlying and generic skills or abilities that are used for a variety of functions and in various forms. A detailed analysis of the CAPS document is presented in a later chapter, as well as a definition of the concept of “advanced language ability” that underlies that curriculum. However, there is no doubt that CAPS has an emphasis both on a differentiated variety of discourse types and texts, and on an advanced, generic ability in language.

The problem for Umalusi, however, is not the high-level, advanced language ability that is envisaged in CAPS, but its assessment across 11 different Home Languages. To make these assessments equivalent and fair has been a challenge that they have not been able to meet (Weideman, Du Plessis and Steyn, 2017), and the current study is part of an attempt to design an assessment that might provide the basis for equivalence and fairness.

One way of ensuring equivalence between the examinations of different languages is therefore to acknowledge that the advanced, “high level” of language ability prescribed by the curriculum is an important component of instruction and to measure it with a specific, standardized test. Such a test would provide comparable data – provided the measurement is equivalent across all eleven languages. Tests of advanced language ability, such as those measuring academic literacy, for example the Test of Academic Literacy Levels (TALL) and the Toets van Akademiese Geletterdheidsvlakke (TAG), are now used at many universities in South Africa to measure the competence of prospective and/or first year students to understand and employ academic

discourse, and might provide examples of how one should proceed (Butler, 2009: 291, 292; Van Dyk, 2011: 492; Keyser, 2017). With the exception of Keyser's (2017) attempt, they are designed, however, for first-time, entry level university students. In order to test the advanced language ability of for instance Grade 11/12 learners, a set of tests must be designed for this specific purpose, and these tests must be related more closely not only to the ability to use language for (higher) education, which is a specific requirement of the curriculum, but also to the other challenging contexts of use envisaged in CAPS.

In attempting to arrive at a responsibly designed solution to this problem, the political equality of languages in South Africa may be a complication. In light of the country's multilingual situation, a possible inequality of measurement, such as the media reports referred to at the beginning seem to signal, is decidedly undesirable. One must start by acknowledging that the advent of a democratic South Africa has also brought about a dramatic change in the language situation of the country. Even before the amendment of the Constitution to provide for eleven official languages was made official, the desirability of a multilingual policy had been under debate. Now, a good number of years after the announcement of this change in November 1993, the latest amendment to the South African Languages Bill – a reworded clause 4(2)b to be called Use of Official Languages Bill – indicates that this issue has still not been resolved (Deprez & Du Plessis, 2000: 103; October, 2012: 4).

A further complication is that there are two opposing views regarding this issue that continue to dominate political language debates. The one group sees language as a problem and supports the idea of a monolingual or pragmatic solution, arguing that a multilingual policy divides citizens into different language groups and thus inhibits efforts to unify them as a nation, while using a single language would bring about this unity (Deprez & Du



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Plessis, 2000: 125). The other group believes that language is a resource and that having a multiplicity of official languages will preserve the country's cultural diversity. Advocates of this view support efforts to develop the people and languages of these different groups (Deprez & Du Plessis, 2000: 126). The new draft language policy for higher education (Department of Higher Education and Training, 2018) appears to echo the latter sentiment.

Official responses to these complications will therefore perhaps remain ambivalent but important, and there is no doubt that language equity will remain an important consideration in language planning efforts (Deprez & Du Plessis, 2000: 125). In other words, language policy makers and planners must ensure that the official languages enjoy equal importance. According to the amended language bill, government departments must provide services in at least three of the official languages, but rather than requiring that two of the languages be of those considered to be previously disadvantaged, the new clause will require two to be indigenous languages (October, 2012: 4). In this single example of the influence of multilingualism on language policy in South Africa one can also see the underlying struggle for equity.

It may well be that the political emphasis on equality will have a positive impact on the notions of equivalence and equality and, at the same time, provide a public, official rationale for other kinds of equivalence, such as for Grade 12 exit level assessments of first language ability, that are the primary focus of this study. It can also be inferred that this emphasis on language equity may affect, among other things, language teaching and assessment and thus lead to a heightened sensitivity regarding equivalence. The pursuit of equivalence in terms of tests such as the tests of language ability this study aims to design is therefore highly relevant to the South African context.

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## **1.2. Rationale and procedure**

This study explores the assumption that there are certain generic abilities that all users of a language should have in common despite differences in the material lingual spheres or discourse types in which they operate. By attempting to limit the assessment instrument to the measurement of such generic abilities, one may be able to design an assessment that can be deemed equivalent among the various languages. In order to articulate a definition for what has been called advanced language ability, the outline given in the Curriculum and Assessment Policy Statements (CAPS) (Department of Basic Education, 2011) will be analysed thoroughly in order to identify the generic abilities as they manifest in this existing curriculum. The starting point for the identification of the theoretical basis of an advanced language ability will thus be the outline of that given in CAPS, but current thinking about language, language teaching and language assessment will also need to be acknowledged and taken into account in its articulation, since, like all curricula, CAPS has no doubt been informed by such perspectives. This will be discussed in more detail in the second chapter.

Furthermore, in order to utilize the notion of advanced language ability that has been identified in the official documentation, this study will include the design of an assessment instrument to test this ability, to illustrate how the construct drawn from it, as well as the definition that may be operationalised from it, can be employed in the design of a Test of Advanced Language Ability (TALA). This test could potentially be the basis of a new, generic component of the NSC examination for HLs that might provide us with an instrument that can be demonstrated to be equivalent in terms of measurement, should it prove possible to develop similar tests across all the HLs. The development of those tests, however, fall outside the scope of this study.

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### **1.3. Research problem and research questions**

The research methodology adopted for this study is both qualitative and quantitative. This study aims to investigate the nature of advanced language ability for English HL target groups. It will investigate how an idea of advanced language ability can be employed as a basis for the design, development and administration of an instrument that measures this ability. In an effort to achieve this, the researcher must not only define this idea (advanced language ability) but also articulate the components of that construct before identifying specifications for such a specific test.

There are three main research questions:

1. What does advanced language ability entail?
2. How does one go about creating a test construct that can be used for multiple languages?
3. Can this potentially form the basis for equivalent assessment across different languages?

The procedures to be used in answering these questions are set out in the following sections of this chapter.

### **1.4. Research aim and objective**

Apart from the political equality accorded to South African languages being a factor necessitating equal measurements across these languages at school, and that was discussed above, there is a further critically important reason why having such measurements are important: the results of the Grade 12 exit examinations for HLs or FALs are used to open (or close) opportunities either for further study or for entry into the world of work. The Admission Point score (AP score), commonly used for admission to South African universities, for example, is calculated according to the results of the four compulsory

subjects and the best of three elective subjects in the National Senior Certificate examination. With a potential total score of 49 admission points – the compulsory subject Life Orientation contributing only a single point if the criteria are met – a candidate’s HL mark makes up almost a sixth (or 16%) of the total AP score (University of the Free State, 2018: 8). This elevates the issue of equivalence among these examination papers to a question of fairness (cf. Rambiritch, 2012; Kunnan, 2000b; Kunnan, 2004), since it directly and substantially affects decisions relating to access and eventual admission to institutions of higher learning.

Ensuring fair measurement in the exit level examinations is therefore a crucial aim of this study. As has been stated, the broader aim of this investigation is to articulate a construct that can be used as a generic component in the examination of all the HLs. A generic section in such exit-level assessments would provide comparable data that can be used to equalise statistically the results of the various HL papers and in so doing potentially level the playing field. The initial phase of this more ambitious project, however, is the current study, whose focus is on illustrating its feasibility by designing a test for English.

## **1.5. Proposed development process, research design, and empirical and administrative considerations**

The test design cycle (Figure 1.2 - below), articulated by Fulcher (2010: 94), provides an overview of the design process used for this project.

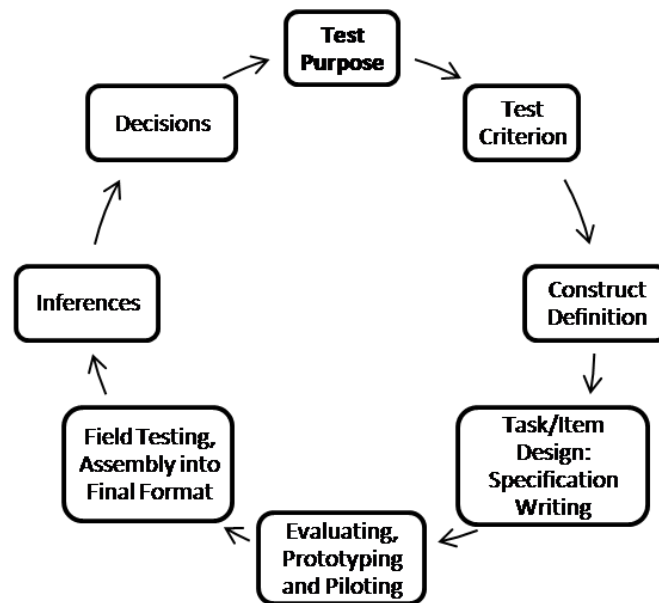


Figure 1.2: The test design cycle (Fulcher, 2010:94)

The first important consideration in the design process is the **purpose** of the instrument one intends to design, as well as what the test **criterion** might be. These aspects inform the **construct** that is ultimately used to design the test. Once the basic construct is identified, one must further elaborate on the different components of the construct, aligning those components with different subtests and thereby providing detailed **specifications** pertaining to the different items, according to which the items can be designed. These items must then be subjected to a process of **evaluation**, perhaps **prototyping** and **piloting** the items, in an effort to refine the test items. The end result is then implemented in order to serve its purpose, whether it is as a final product or a prototype for a new design. The data collected after **administering the test** can subsequently be used to make **inferences** and/or **decisions**, depending on what the purpose of the design is (Fulcher, 2010: 94). There are alternative models of test development processes, that will be referred to in Chapter 3. Since Fulcher's (2010) model does not fully reflect the realities of test making, other perspectives may augment our understanding; it does, however, serve a good purpose here for understanding the essence of the research process for this study.

If we take Fulcher's model and apply it to the case at hand, we see that for the purpose of this study, an English test of advanced language ability will be designed. Before the design of the test can start, the concept "advanced language ability" must be defined. This definition will be used to further articulate a basic construct, which can then be operationalized by articulating its components and the abilities each measures, and on the basis of that formulate the detailed specifications for the various subtests to be employed, as well as their test items.

Once these elements have been identified, appropriate texts and materials must be collected in preparation for the development of the test. The test to be used in this study will be modelled on the basic structure of a number of existing tests of language ability, and will also take a cue from the specifications and deliberation that characterize these. For example, the Flesch Reading Ease and Flesch-Kincaid Grade Level measurement will be employed to ensure that the texts used in the test are suitable for Grade 11/12 learners, and possess the appropriate level of difficulty.

A design team will be used for the development of the test once the specifications mentioned above have been finalized. This first version of the TALA must then go through a piloting phase. This will provide data one can use to determine whether the tests are consistent, accurate, successful, productive (as defined in Van Dyk & Weideman, 2004; Weideman, 2011), and generally conform to principles of responsible test design (Chapter 3). The data collected during the pilot test sessions will then be analysed using both the ITEMAN 3.6, ITEMAN 4.2 (Guyer & Thompson, 2011) and TiaPlus (CITO, 2005) programs for test and item analysis. These programs will compute the item point-biserial correlations, their discrimination values and the facility indices or difficulty levels of items. I return to these measures and their respective parameters in my discussion of item and test productivity in Chapter 4 (see discussion under 4.3.1).

These kinds of measures will all serve to yield comparable data between the tests that might follow if the current design can be used productively as the basis for ones in the other HLs. Other aspects that may be relevant to this comparison are the differences in terms of mean scores. Based on the results of parallel or similar tests, a determination can be made to establish whether the tests are consistent or reliable, and give an initial indication of the fairness with which they measure. There are also newer methods of equating tests (e.g. Steyn & Van der Walt, 2017) that might become useful in this regard.

When the pilot versions of the test under development are administered, the test takers must write under the same conditions and the groups must be similar in their composition. The composition of the population will be required to meet the following criteria:

- The schools involved (and their students) must be comparable. Provisionally, students of the former Model C schools – previously advantaged in background – make out the target population, but other schools may also be involved in order to produce a greater measure of potential heterogeneity in the measurement. To ensure an adequate measure of comparability, the learners involved must at least be in the same (senior) phase of the FET.
- The schools must have the necessary infrastructure to administer the tests.
- The group will be limited to a specified number of candidates, arbitrarily selected from the schools. We envisage a group of 1200 candidates for the pilot of this test.
- The candidates must write the test (or one of the test versions) in the language used as medium of instruction at their school. Parallel medium schools would be ideal for this study, but they are not common in Bloemfontein, which currently is the primary pilot area. Our findings

may potentially be enriched by including schools from other areas, but that will depend on what is possible logistically and administratively.

Following the piloting sessions, the collected and analysed data will be presented to a panel of experts in the fields of language teaching and testing. The panel will use a set of rubrics designed for the evaluation of the individual items and will determine whether the designed items meet the criteria and specifications dictated by the new construct. After the analyses of the individual items have been completed, the test versions can each be evaluated as a whole. These evaluations and comments arising from this process will be used to refine the test. The flow chart (Figure 1.3) illustrates this process of design, development and refinement.

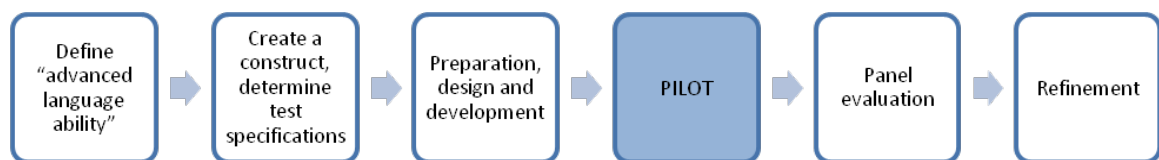


Figure 1.3: The process of design, development and refinement for TALA

The test development process for this study can be divided into three phases: the definition of advanced language ability and the subsequent **design** of a new test according to the elaboration of the elements of the construct, and the development of a set of test specifications. Subsequently, the test will be **developed** according to these criteria and its **refinement** will be based on the results of its administration and evaluation.

## 1.6. Value of the research

Both the constitutional requirement of equality among languages and the use to which the results of the secondary school exit examinations in languages are put necessitate finding a way to measure language proficiency across language groups in an equitable and fair manner. The research done in this study may help to begin to address a fundamental unfairness in the current assessment of



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language ability at Grade 12 level (Du Plessis, Steyn & Weideman, 2016; Weideman, Du Plessis & Steyn, 2017). While it is outside the scope of the current study to justify the design of language ability assessment artefacts across all South African languages offered at secondary school level, it will nonetheless attempt to lay the groundwork, in conjunction with other studies, for such a more ambitious, subsequent undertaking.

Even if those more challenging subsequent instruments never make it past the drawing board as a result of political unwillingness or bureaucratic inertia, the results of the study might well indicate, in addition, that we need to find a way to test the language ability of students/learners at an earlier stage in their school education. Both prospective employers – from the point of view of the trainability of their future employees – and universities, and other providers of higher education, are beset with problems that are often related in good part to language ability. The now well documented underpreparedness of university entrants indicates that low levels of language ability – one of the potential inhibitive factors – is a problem area that needs urgent attention. The remedies suggested in this study, as well as in related others, will serve to prepare learners for the demands not only of their final school examination, but more importantly for what lies beyond their high school education (Myburgh, 2015; Myburgh-Smit & Weideman, 2017; Sebolai, 2016). These issues will again be addressed, with related others, in the final chapter.

## **1.7. Overview**

The first steps in the test design process, as mentioned above, involve identifying the purpose of the test, as well as the potential test criterion, before outlining a construct that can be employed for the design of the test. The first part of this study will present a brief literature review on the existing ideas regarding the differentiated and generic (or general) skills in language teaching and the assessment of language ability. This review, in addition to a thorough

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analysis of the CAPS document and all references to both these types of skills, will inform the definition of advanced language ability proposed by this study. This definition is essential in order to have a theoretically defensible instrument (Weideman, 2012: 10): the construct is articulated in the definition of this specific ability and the further formulation of the components of this ability dictates the design of an instrument that measures this set of skills.

The next part of the study looks in greater detail at the proposed methodology, the design of the test specifications and the design of evaluation rubrics, as well as the data analysis process. Once the basic construct of the test has been identified, detailed specifications are needed for each subtest. The individual items will be based on these specifications to ensure that all the aspects of the definition of advanced language ability are measured. After the newly designed test has gone through a piloting process, the individual items, as well as the test in its entirety, need to be evaluated before the test can be refined. For this evaluation another set of criteria must be designed to inform the evaluation panel's analysis of the productivity and value of the items. This will rely heavily on the outcome of the data analysis and necessitates a discussion of what this will entail.

With the above-mentioned in place, we move on to the refinement of the test. That is based on the results of the panel evaluation of the items and the panel's recommendations for refinement. The last step in the refinement process is the selection of items for the final product, which will be discussed at length. The purpose of all these considerations and analyses is to provide a theoretical justification for the design and potential future employment of the test that will be developed.

The study will be concluded with an overview of the findings and the possible implications that follow from this. Since this study is part of the Umalusi Home Languages project, the final comments will elaborate on its role in this project and the possibilities for further research, and specifically whether

it has been successful in developing a basis test on which future parallel versions in other languages can be developed.

In summary, after the brief introduction and contextualisation of the research problem and proposed research design for this study presented in this chapter, Chapter 2 provides an initial theoretical justification for the design of the instrument by articulating the construct of advanced language ability into measurable components and by suggesting a possible format or formats for measuring them. Chapter 3 takes the articulation of the construct and these proposed specifications further, by presenting a broader justification for the principles underlying the design, as well as for doing the design as a responsible process. The design conditions outlined in the preceding chapter are seen in operation in Chapter 4 with a discussion of the design, development, administration of the pilot, and initial data analysis of TALA. The evaluation and subsequent refinement of the prototype are the focus of Chapter 5. In Chapter 6, we conclude with thoughts on the findings, a critical evaluation of this study and its limitations, and an overview of where it fits into the Umalusi Home Languages Project and related research.

# Chapter 2

## Defining advanced language ability

This chapter discusses in greater detail the issues that led to this study, and that were mentioned in the previous chapter. Specifically, the major motivation for undertaking this investigation is to begin to suggest a designed solution for what is still a vexing problem for South Africa's Council for Quality Assurance in General and Further Education and Training (Umalusi), because it is a problem that might, if not addressed, come to have undesirable political consequences, since it relates to the fair treatment of whole groups of candidates in a state-initiated, high-stakes examination.

The apparent lack of equivalence among the Home Language (HL) examination papers has prompted Umalusi to commission several research studies to investigate this problem. Although the reports on these studies have confirmed their suspicions, no viable solution has been proposed by any of them. The question remains: How do we endeavour to reach equivalence among the various language papers? The latest of the reports commissioned by Umalusi (Du Plessis, Steyn & Weideman, 2013: 1), first presented to their board in March 2013, suggests that the issue of equivalence is perhaps part of a larger problem in the assessment of languages in the National Senior Certificate examination. According to the preliminary research, the examination papers and curriculum are not sufficiently aligned and it would seem that each language paper constitutes a slightly different interpretation of the Home Language curriculum (Du Plessis *et al.*, 2013: 1), the curriculum that all 11 have in common. Since previous examination papers are inordinately influential in South African exit level examinations, an ever narrower and

narrowing interpretation of the syllabus in such papers might well over time create serious misalignments. This necessitates a re-examination of the format and content of the examination papers, as well as the new curriculum outline – the Curriculum and Assessment Policy Statements (CAPS) (Department of Basic Education, 2011) – to identify an underlying construct in the curriculum that could be employed in the assessment of its outcomes. This part of the project was undertaken by Du Plessis (2017) in a doctoral thesis that examines these issues in greater detail and served as the anchor study for the larger project. Since that study already provides a more thoroughgoing analysis, the one given below constitutes only a brief sketch of the aims and content of CAPS.

## **2.1. Differentiated and generic ideas of language**

According to the Department of Basic Education (2011), the purpose of the HL curriculum is to enable learners to use language successfully in a variety of contexts (Du Plessis *et al.*, 2013: 3). From the CAPS document one can draw three initial spheres of proficiency in a home language – social, educational and economic – that each entails the mastery of communicative interaction in a specific field of discourse. The document suggests that the development of a learner’s differentiated language ability is essential in preparing the individual for his/her future career. Learners must be able to use language in a wide range of different contexts and situations, such as the educational and academic, social and informational spheres, as well as in discourse types that are aesthetic, political, economic, and ethical (Du Plessis *et al.*, 2013: 4, 5).

What Weideman (2009a: 39) calls “material lingual spheres” may be used as a substitute for what are distinguished above as discourse types, or even for the layman’s term ‘context’. The term ‘context’ poses a problem, however, because it suggests a factual lingual given that is implicitly claimed to have some degree of normative force. On the other hand, the notion of typicality (as

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in “types of discourse”) allows one to conceive of differences in fact being related to variations in normative requirements. Factual lingual utterances are inextricably linked to the concrete lingual situations in which they are produced and can only be understood in those given settings, which are typically determined by the character of the discourse in the particular situation (Weideman, 2009a: 39). The various lingual spheres are distinguished by material differences (in the sense of differences in content rather than form) and the aspects that distinguish each sphere are far too diverse to be characterised merely with regard to varying degrees of formality, for example of being either formal or informal language, or as belonging to a certain register (Weideman, 2009a: 41, 42), or even to a specific genre.

The aims outlined in the policy statements reflect the intention to develop both the differentiated language ability (the mastery of language use in typically different spheres of discourse) and the skills we can attribute to a generic language ability that is relevant across these different spheres of discourse and that incorporates both functional and formal aspects of language (Du Plessis *et al.*, 2013: 5, 7). Whilst differences in the use and status among the languages that are offered as HL subjects could mean that they are not all equally represented in the various material lingual spheres in the sense of being fully developed languages as regards some discourse types – which may impact the assessment of the differentiated language ability – a generic ability that is intrinsically part of the use of any and all of these languages provides some common ground amongst them (Du Plessis *et al.*, 2013: 8). This generic ability includes functions of language such as *comparing* and *contrasting*; *classifying* and *inferring*; *identifying* purpose; creating coherence, *defining* and *explaining*. Especially Tables 2.3 and 2.4 below detail these functions, as well as the formal language elements that support and give flesh to them.

But where do these notions come from? Du Plessis *et al.* (2013: 6) found the CAPS document to be in keeping with conventional views about language and language teaching. The conceptual framework behind CAPS seems to be

rooted in the idea that language is used in a variety of repertoires, each functionally defined according to specific language acts, and that language teaching should therefore be aimed at developing a differentiated communicative competence – an idea that originated in the early 1970s and was perpetuated by the likes of Hymes (1972) and Halliday (1973) (Du Plessis *et al.*, 2013: 6). Weideman’s (2009a: 39) material lingual spheres, mentioned above, are strongly related to what Halliday refers to as “fields of discourse” (Du Plessis *et al.*, 2013: 6). This finding is supported in so many words in CAPS, that describes the curriculum as one that is both communicative and text-based in approach. The discussion in the next section further confirms this approach, as well as the observation that its theoretical roots lie in sociolinguistic ideas that became prominent in the late 20<sup>th</sup> century, and still have currency.

## **2.2. Curriculum and syllabus for the NSC examination**

Although there is a clear emphasis on a differentiated language ability in CAPS, the general, advanced language skills that one can employ in various lingual spheres are therefore deemed to be just as important. These differentiated and generic skills are inextricably linked, and the assessment of skills attributed to one often involves the employment of skills that are associated with the other (Du Plessis *et al.*, 2013: 11). Du Plessis *et al.* (2013: 10) summarise the various text types (for both reading and writing) that are included in the curriculum, but caution that these prescriptions do not take into account that not all of the languages to be examined are used (yet) in all of these material lingual spheres and that, consequently, some text types may not yet be familiar ones in the use of a specific HL. That presents yet another challenge, and personal discussions of the project team with Umalusi officials

have confirmed that texts often need to be translated for use in the examination papers of some of the HLs.

Type of discourse	Type of factual reading text in each of these spheres
Social	Letters, diaries, invitations, emails, sms's, twitter, notes, reports, telephone directories, television guides, dialogues, blogs, Facebook, social networks, caricatures, graffiti
Aesthetic	Novels, dramas, short stories, poetry, films, radio and television, series/documentaries, radio dramas, essays, biographies, autobiographies, folk tales, myths and legends, songs, jokes, photographs, illustrations, music videos, cartoons, comic strips
Educational	Dictionaries, encyclopaedias, schedules, textbooks, thesauruses, timetables, magazine articles, newspaper articles, editorials, notices, obituaries, reviews, brochures, speeches, charts, maps, graphs, tables, pie charts, mind-maps, diagrams, posters, flyers, pamphlets, signs and symbols, television documentaries, internet sites, data projection, transparencies
Economic/financial	Formal letters, minutes and agendas, advertisements, web pages

**Table 2.1: Fields of discourse illustrating differentiated reading texts in CAPS (Du Plessis *et al.*, 2013)**

Type of discourse	Type of factual text to be written
Social	Formal and informal letters, dialogues, speeches, interviews, obituaries
Aesthetic	Narrative and descriptive essays, reviews of art, films or books
Educational	Literary essays, argumentative, discursive and reflective essays, reports, newspaper articles, magazine articles
Economic/financial	Transactional texts, formal letters, minutes, memoranda and agendas, interviews, curriculum vitae

**Table 2.2: Fields of discourse illustrating differentiated writing texts in CAPS (Du Plessis *et al.*, 2013)**

One example of the integrated use of both the differentiated and generic skills is the reading of a magazine article (mentioned in Table 2.1 above as a text in the educational sphere) and answering questions about the article. On the one hand you are working with an educational text in a specific discourse sphere, but on the other hand, in order to answer the questions, one may need to use generic skills such as inferring, defining and comparing, that may also be associated with other discourse types.

Based on the outline given in CAPS, Du Plessis *et al.* (2013: 12) identify four categories of generic abilities (Table 2.3) related to the reading



and viewing of a wide variety of texts. These categories are: the reading process; the interpretation of visual texts; vocabulary development and language use; sentence structures and the organization of texts.

Category	Generic abilities employed
Reading process and Interpretation of visual texts	<ul style="list-style-type: none"> <li>• skim and scan texts and extracts from texts</li> <li>• visualize; make predictions</li> <li>• evaluate</li> <li>• draw conclusions and express own opinion</li> <li>• distinguish between fact and opinion</li> <li>• understand direct and implied meaning</li> <li>• understand denotation and connotation</li> <li>• make connections</li> <li>• monitor comprehension</li> <li>• infer</li> <li>• read main ideas</li> </ul>
Vocabulary development and language use	<ul style="list-style-type: none"> <li>• work out the meaning of unfamiliar words and images</li> <li>• attend to word choice and language structures</li> </ul>
Sentence structures and the organization of texts	<ul style="list-style-type: none"> <li>• know basic language structures and conventions</li> <li>• analyse chronological/sequential order</li> <li>• explanation</li> <li>• cause and effect</li> <li>• identify classification, description, evaluation, definition paragraph</li> <li>• reproduce genre in own writing (writing task)</li> <li>• summarize main and supporting ideas (writing task); synthesize</li> <li>• use structure and language features to recognize text type</li> <li>• make notes</li> </ul>

**Table 2.3: Generic abilities employed in reading exercises (Du Plessis *et al.*, 2013: 12 – 15, 26)**

Similarly, there are a few general abilities related to the process of writing that are mentioned in the curriculum (Department of Basic Education, 2011: 30 - 33). All of the examples, however, provide evidence of the reliance of those who designed the syllabus on the sociolinguistic ideas referred to above in general, but also, more specifically, of a functional definition of language use, in contrast to a more conventional, structural view. In CAPS, the

focus has shifted from the conventional grammatical approach to the mastery of language-in-use, or language use in interaction with others.

Learners must be able to produce various text types in particular formats, but must also be able to do the following:

- use main and supporting ideas
- take into account purpose, audience, topic and genre
- use appropriate words, phrases and expressions so that the writing is clear, vivid
- display an identifiable voice, style in keeping with the purpose of the text
- demonstrate own point of view supported by values, beliefs and experiences
- use information from other texts to substantiate arguments
- write in such a way that there is no ambiguity, redundancy or inappropriate language
- use punctuation, spelling and grammar correctly
- use appropriate register, voice and style
- construct a variety of sentences of different lengths and complexity using parts of speech appropriately
- show knowledge of cohesive ties
- use active and passive voice
- use direct and indirect speech
- use affirmatives and negatives
- display knowledge of verbs, tenses and moods
- use interrogatives
- write different parts of a paragraph, including introductory, supporting and concluding sentences
- write different kinds of paragraphs (sequential, cause and effect, procedural, comparisons/contrasts, introductory and concluding paragraphs)
- write texts that are coherent using conjunctions and transitional words and phrases

**Table 2.4: Generic abilities employed in writing exercises (Du Plessis *et al.*, 2013: 29)**

## **2.3. Advanced language ability**

All of the above-mentioned skills have informed the definition of advanced language ability for the purpose of this study. Du Plessis, Steyn and Weideman (2013: 19) define the construct underlying the curriculum as “a differentiated language ability in a number of discourse types involving typically different texts, and a generic ability incorporating task-based functional and formal aspects of language”. That means that in one’s own language use, be it in

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writing, or in the reading of texts and extracts by other language users, one must be able to:

1. (in terms of vocabulary comprehension) understand and use a wide range of vocabulary belonging to different discourse spheres and text types; understand metaphor, idiom and vocabulary in use (in a context).
2. 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.
3. understand the communicative function of various ways of expression in language such as defining, providing examples and arguing.
4. interact with texts: discuss, question, agree/disagree, evaluate, research and investigate problems, analyse, link texts, draw logical conclusions from texts, and then produce new texts; 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; synthesize and integrate information from a multiplicity of sources with one's own knowledge in order to build new assertions.
5. understand relations between different parts of a text, be aware of the logical development of a text, via introductions to conclusions, and know how to use language that serves to make the different parts of a text hang together; show knowledge of cohesion and grammar; see sequence and order.
6. interpret different kinds of text type (genre), including information presented in graphic or visual format; have a sensitivity for the meaning they convey, as well as the audience they are aimed at; take purpose, audience, topic and genre into account when engaging with a text.
7. use and produce information presented in graphic or visual format; visualize and make predictions based on graphic or visual information and do simple numerical estimations and computations that are relevant,

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that allow comparisons to be made, and can be applied for the purpose of an argument.

8. make meaning beyond the level of the sentence.

These eight make up the components through which the construct has been further articulated.

To a large extent, these skills are similar to those mentioned in the definition of academic literacy (Patterson & Weideman, 2013) used, with the necessary changes, for the design of tests such as the Test of Academic Literacy Levels (TALL), its Afrikaans counterpart, the Toets van Akademiese Geletterdheidsvlakke (TAG), and the Test of Academic Literacy for Postgraduate Students (TALPS) (Weideman, 2012: 103, 104; Weideman, 2003: 61; Du Plessis, 2012) and the Toets van Akademiese Geletterdheid vir Nagraadse Studente (TAGNaS) (Keyser, 2017). The emphasis, however, is not only on one's ability to use, produce and understand texts in the academic sphere, which is indeed one of the emphases in CAPS, but also on the ability to use and understand a range of text types in a variety of different material lingual spheres. The similarity, therefore, is by no means coincidental. The goals articulated in the CAPS document are to enable learners not only to use language as a means of thinking creatively, but also for critical thinking and communicative interaction with others across a range of discourse types. Furthermore, cognitive academic skills – as they refer to the ability to handle language for academic and educational purposes in the policy statement – are deemed essential for learning across the curriculum (Department of Basic Education, 2011: 8, 9), as well as for further study and the world of work.

In order to assess these skills, the design of a test that operationalises the components of this construct, articulated above, as well as detailed specifications for the design of individual items, is the crucial next step in the design process.

## 2.4.A construct for a test of advanced language ability

The construct is articulated in the components given above and dictates the design of an instrument that measures this set of skills. The proposed test consists of five subtests or sections. Table 2.5 below illustrates how the definition has informed the design of each of these sections.

Generic skills identified in CAPS	Components of definition relevant to this section
<ul style="list-style-type: none"> <li>• Determine word choice by using appropriate words, phrases and expressions, making meaning clear (and/or vivid); attend to language structures</li> <li>• Eliminate ambiguity, verbosity, redundancy, inappropriate word choices in own writing and identify its presence in other texts</li> <li>• Use a wide range of vocabulary appropriately in different text types and discourse spheres; use resource and reference materials to select effective and precise vocabulary and build vocabulary knowledge</li> <li>• Understand denotation, connotation, implied and contextual meaning</li> <li>• Work out the meaning of unfamiliar words and images</li> </ul>	<p>Vocabulary comprehension: understand and use a wide range of vocabulary belonging to different discourse spheres and text types; understand metaphor, idiom and vocabulary in use / context.</p> <p><b>Recommendation:</b> Assess vocabulary knowledge and development with “<b>Vocabulary knowledge</b>” subtest.</p>
<ul style="list-style-type: none"> <li>• Know basic language structures and conventions</li> <li>• Analyse chronological/sequential order</li> <li>• Construct and understand explanations and arguments</li> <li>• Identify cause and effect</li> <li>• Identify classification, description, evaluation, definition paragraph</li> <li>• Reproduce genre in own writing (writing task)</li> <li>• Summarize main and supporting ideas; synthesize</li> <li>• Use structure and language features to recognize text type</li> <li>• Identify key ideas</li> <li>• Write different parts of a paragraph, including introductory, supporting and concluding sentences</li> <li>• Write different kinds of paragraphs (sequential, cause and effect, procedural, comparisons/contrasts, introductory and concluding paragraphs)</li> <li>• Write texts that are coherent using conjunctions and transitional words and phrases</li> <li>• Show knowledge of cohesive ties</li> </ul>	<ul style="list-style-type: none"> <li>• Vocabulary comprehension</li> <li>• Understanding metaphor and idiom and vocabulary in use</li> <li>• 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</li> <li>• Extrapolation and application</li> <li>• Think critically (analyse the use of techniques and arguments) and reason logically and systematically.</li> <li>• Interact with texts: discuss, question, agree/disagree, evaluate, research and investigate problems, analyse, link texts, draw logical conclusions from texts, and then produce new texts.</li> <li>• Synthesize and integrate information from a multiplicity of sources with one’s own knowledge in order to build new assertions.</li> <li>• Communicative function</li> <li>• Making meaning beyond the sentence</li> <li>• Textuality – cohesion and grammar</li> <li>• Understanding text type (genre)</li> </ul> <p><b>Recommendation:</b> Assess sentence structures and text organization with “<b>Scrambled text</b>” subtest. Also see below: “<b>Grammar and text relations</b>”.</p>

**Table 2.5: Generic skills in CAPS divided into subtests and the corresponding components of the definition of advanced language ability**

<ul style="list-style-type: none"> <li>• Visualize; make predictions</li> <li>• Evaluate</li> <li>• Draw conclusions and express own opinion</li> <li>• Understand direct and implied meaning</li> <li>• Make connections</li> <li>• Think critically, infer and extrapolate</li> <li>• Distinguish between fact and opinion, use structures such as cause and effect, compare and contrast, and problem and solution</li> <li>• Group common elements/factors together, state differences and similarities</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding text type (genre)</li> <li>• Understanding graphic and visual information</li> <li>• 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</li> <li>• Numerical computation</li> <li>• Extrapolation and application</li> <li>• Making meaning beyond the sentence</li> </ul> <p><b>Recommendation:</b> Assess interpreting visual texts and information with <b>“Interpreting visual and graphic information” subtest</b></p>
<ul style="list-style-type: none"> <li>• Know basic language structures and conventions</li> <li>• Write different parts of a paragraph, including introductory, supporting and concluding sentences</li> <li>• Write different kinds of paragraphs (sequential, cause and effect, procedural, comparisons/contrasts, introductory and concluding paragraphs)</li> <li>• Write texts that are coherent using conjunctions and transitional words and phrases</li> <li>• Show knowledge of cohesive ties</li> <li>• Use active and passive voice</li> <li>• Use direct and indirect speech</li> <li>• Use affirmatives and negatives</li> <li>• Display knowledge of verbs, tenses and moods</li> <li>• Use interrogatives</li> <li>• Use punctuation, spelling and grammar correctly</li> <li>• Construct a variety of sentences of different lengths and complexity using parts of speech appropriately</li> </ul>	<ul style="list-style-type: none"> <li>• Vocabulary comprehension</li> <li>• Textuality – cohesion and grammar</li> <li>• Understanding text type (genre)</li> <li>• Communicative function</li> </ul> <p><b>Recommendation:</b> Assess cohesion, grammar and text relations with <b>“Grammar and text relations” subtest</b></p>

**Table 2.5: Generic skills in CAPS divided into subtests and the corresponding components of the definition of advanced language ability (continued)**

<ul style="list-style-type: none"> <li>• Identify cause and effect</li> <li>• Identify classification, description, evaluation, definition paragraph</li> <li>• Identify key ideas</li> <li>• Visualize; make predictions</li> <li>• Evaluate</li> <li>• Draw conclusions and express own opinion</li> <li>• Understand direct and implied meaning</li> <li>• Make connections</li> <li>• Think critically, infer and extrapolate</li> <li>• Distinguish between fact and opinion, use structures such as cause and effect, compare and contrast, and problem and solution</li> <li>• Group common elements/factors together, state differences and similarities</li> <li>• Use main and supporting ideas</li> <li>• Take into account purpose, audience, topic and genre</li> <li>• Use appropriate words, phrases and expressions so that the writing is clear, vivid</li> <li>• Display an identifiable voice, style in keeping with the purpose of the text</li> <li>• Demonstrate own point of view supported by values, beliefs and experiences</li> <li>• Use information from other texts to substantiate arguments</li> <li>• Write in such a way that there is no ambiguity, redundancy or inappropriate language</li> <li>• Use punctuation, spelling and grammar correctly</li> <li>• Use appropriate register, voice and style</li> <li>• Construct a variety of sentences of different lengths and complexity using parts of speech appropriately</li> <li>• Show knowledge of cohesive ties</li> <li>• Use active and passive voice</li> <li>• Use direct and indirect speech</li> <li>• Use affirmatives and negatives</li> <li>• Display knowledge of verbs, tenses and moods</li> <li>• Use interrogatives</li> <li>• Write different parts of a paragraph, including introductory, supporting and concluding sentences</li> <li>• Write different kinds of paragraphs (sequential, cause and effect, procedural, comparisons/contrasts, introductory and concluding paragraphs)</li> <li>• Write texts that are coherent using conjunctions and transitional words and phrases</li> </ul>	<ul style="list-style-type: none"> <li>• Vocabulary comprehension</li> <li>• Understanding metaphor and idiom and vocabulary in use</li> <li>• 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</li> <li>• Extrapolation and application</li> <li>• Think critically (analyse the use of techniques and arguments) and reason logically and systematically.</li> <li>• Interact with texts: discuss, question, agree/disagree, evaluate, research and investigate problems, analyse, link texts, draw logical conclusions from texts, and then produce new texts.</li> <li>• Synthesize and integrate information from a multiplicity of sources with one’s own knowledge in order to build new assertions.</li> <li>• Communicative function</li> <li>• Making meaning beyond the sentence</li> <li>• Textuality – cohesion and grammar</li> <li>• Understanding text type (genre)</li> </ul> <p><b>Recommendation:</b> Assess text comprehension and construction with “Text comprehension” subtest</p>
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**Table 2.5: Generic skills in CAPS divided into subtests and the corresponding components of the definition of advanced language ability (continued)**

It is therefore proposed that the construct of a Test of Advanced Language Ability (TALA) should consist of the following subtests based on the model of TALL, TAG and TALPS (see Appendix B for examples of these task types from the TALA prototype):

1. A “Scrambled text” subtest in which the candidate is given an altered sequence of sentences and must determine the correct order in which these sentences must be placed.
2. “Vocabulary knowledge” is tested in the form of multiple-choice questions (based on Coxhead’s [2000] Academic Word List).
3. The “Interpreting graphs and visual information” subtest consists of questions on graphs and doing simple numerical computations that may be relevant to an argument in a variety of discourse types.
4. In the “Text comprehension” section, candidates must answer questions about the given text that demonstrate their ability to handle comparisons and contrasts, to make inferences, to distinguish between cause and effect, etc.
5. In the “Grammar and text relations” section the questions require the candidate to determine where words may have been deleted and which words belong in certain places in a given text that has been more or less systematically mutilated.

In order to produce a test of only 60 items, the subtests were slightly modified when compared to those of similar tests on which they have been modelled. To a significant extent, all the components that were identified in the original articulation of the construct are still present, but they have been incorporated into the five subtests only. The list of specifications (as in Table 2.6 below, that will be further discussed in Chapter 3) indicates the weighting/mark allocation for each section, as well as the components of the definition of academic literacy that are measured or could possibly be measured in each section. Also, this detailed outline makes suggestions regarding the types of primary questions each section must have in order to measure these components adequately.



Subtest	Component measured / potentially measured	Specifications for items (60 marks): guidelines for questions
Scrambled text	<ol style="list-style-type: none"> <li>1. Textuality: cohesion and grammar; 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;</li> <li>2. See sequence and order.</li> <li>3. Understanding text type (genre)</li> <li>4. Communicative function</li> <li>5. Making meaning beyond the sentence</li> </ol>	<p>(5)</p> <ul style="list-style-type: none"> <li>✓ Sequencing</li> </ul> <p>[Candidates use their knowledge of the relations between different parts of the text and the logical development of an academic text to determine the correct order.]</p>
Vocabulary knowledge	<ol style="list-style-type: none"> <li>1. Vocabulary comprehension: understand and use a range of advanced vocabulary as well as content or field-specific vocabulary in context (however, limited to a single sentence).</li> </ol>	<p>(10)</p> <ul style="list-style-type: none"> <li>✓ Vocabulary in context (use)</li> <li>✓ Handling metaphor and idiom</li> </ul>

Table 2.6: Test item specifications

<p><b>Interpreting graphs and visual information</b></p>	<ol style="list-style-type: none"> <li>1. Understanding text type (genre)</li> <li>2. Understanding graphic and visual information</li> <li>3. 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</li> <li>4. Numerical computation</li> <li>5. Extrapolation and application</li> <li>6. Making meaning beyond the sentence</li> </ol>	<p>(8)</p> <ul style="list-style-type: none"> <li>✓ Trends:             <ul style="list-style-type: none"> <li>○ Perceived trends in sequence, proportion and size.</li> <li>○ Predictions and estimations based on trends.</li> <li>○ Averages across categories etc.</li> </ul> </li> <li>✓ Proportions:             <ul style="list-style-type: none"> <li>○ Identify proportions expressed in terms of fractions or percentages.</li> <li>○ Compare proportions expressed in terms of fractions or percentages, e.g. biggest difference or smallest difference etc.</li> </ul> </li> <li>✓ Comparisons between individual readings within a category in terms of fraction, percentage or the reading in the relevant unit (e.g. in grams or millions of tonnes)</li> <li>✓ Comparisons between the combined readings of two or more categories in terms of fractions, percentage or the reading in the relevant unit (e.g. in grams or million tonnes)</li> <li>✓ Differences between categories</li> <li>✓ Comparisons of categories</li> <li>✓ Inferencing / extrapolation based on the given graphic information.</li> </ul>
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**Table 2.6: Test item specifications (continued)**

<b>Text comprehension</b>	<ol style="list-style-type: none"> <li>1. Vocabulary comprehension</li> <li>2. Understanding metaphor and idiom and vocabulary in use</li> <li>3. 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</li> <li>4. Extrapolation and application</li> <li>5. Think critically (analyse the use of techniques and arguments) and reason logically and systematically.</li> <li>6. Interact with texts: discuss, question, agree/disagree, evaluate, research and investigate problems, analyse, link texts, draw logical conclusions from texts, and then produce new texts.</li> <li>7. Synthesize and integrate information from a multiplicity of sources with one's own knowledge in order to build new assertions.</li> <li>8. Communicative function</li> <li>9. Making meaning beyond the sentence</li> <li>10. Textuality – cohesion and grammar</li> <li>11. Understanding text type (genre)</li> </ol>	<p>(25)</p> <p>Essential</p> <ul style="list-style-type: none"> <li>✓ Distinction making: categorisation, comparison; distinguish essential from non-essential – (5)</li> <li>✓ Inferencing / extrapolation: e.g. identify cause and effect (Verbal reasoning = inferencing and distinction making) – (3)</li> <li>✓ Comparing text with text – (2)</li> <li>✓ Vocabulary in context (use) – (5)</li> <li>✓ Handling metaphor, idiom and word play (1)</li> </ul> <p>Another (4) from any of these.</p> <p>Possible</p> <p>(5) of the following:</p> <ul style="list-style-type: none"> <li>✓ Communicative function: e.g. defining/concluding</li> <li>✓ Cohesion / cohesive ties</li> <li>✓ Sequencing / text organization and structure</li> <li>✓ Calculation</li> </ul>
<b>Grammar and text relations</b>	<ol style="list-style-type: none"> <li>1. Vocabulary comprehension</li> <li>2. Textuality – cohesion and grammar</li> <li>3. Understanding text type (genre)</li> <li>4. Communicative function</li> </ol>	<p>(12)</p> <p>Determined by the specific item. The text is systematically mutilated – one cannot predict beforehand which components will be measured, but a good range is possible and indicated.</p>

Table 2.6: Test item specifications (continued)

All the items in the sections outlined above will be written in multiple-choice format. These task types were specifically designed to be used in this format and have been used successfully in other instruments. Their utility and relevance, as well as their strengths and meaningfulness, have been demonstrated in numbers of studies in the South African context (for an overview, see the 'Bibliography' tab on the website of the Network of Expertise in Language Assessment [NExLA, 2018]). Developing a test in this format is desirable because of a) the ease of marking multiple-choice items, b)

the likelihood of achieving reliable scoring using this format, and c) it eliminates the need to ensure inter-rater reliability. These advantages will be revisited in Chapter 3 and Chapter 6.

Having addressed the initial problem for a study such as this, namely to articulate a coherent idea of what it is that should be measured – in this case with reference to the official prescriptions of the authorities that issue and guarantee the assessment – this chapter has also identified the possible format of the test. I turn in Chapter 3 to a consideration of the conditions of test design, and how these specifications may be used further in order to develop a test that conforms to these requirements.

# Chapter 3

## Principles of language test design

The discussion here takes the articulation of the construct into different components (Chapter 2) further. As we have noted in the previous chapter, those components can be further specified in terms of appropriate subtests. Where Chapter 2 has attempted to give a theoretical justification, a rational basis, for the measuring instrument that will be used, the challenge in this chapter is to give a broader, more than merely theoretical, justification both for the principles underlying the design, and for doing the design by way of a responsible process. Through every phase of test design, certain principles guide the process, and it is these that will be discussed below.

### 3.1. Design process and principles

The argument for this study is based on the assumption that language testing is part of the field of applied linguistics and that language tests, such as the one this study aims to design, are therefore applied linguistic instruments (Weideman, 2009b: 237, 245; Weideman, 2006; McNamara & Roever, 2006; McNamara, 2006). In addition to Fulcher's test design cycle (discussed in Chapter 1) that will again be referred to below, Weideman's (2009b: 244, 245; 2017) articulation of the five phases of applied linguistic design, which is a reinterpretation of the three phases identified by Schuurman (1972: 404), is also applicable to the design process followed in this study (see Figure 3.1 below). These five phases consist of the following:

1. the identification of a language problem;

2. the designers combine their technical imagination and theoretical knowledge that may help solve the problem;
3. an initial imaginative solution is formulated;
4. the designers endeavour to find a theoretical justification for the proposed and/or developed solution (among other things, an appropriate and defensible construct must be at the foundation of the design);
5. the preliminary product is piloted and refined, before the blueprint is finalised.

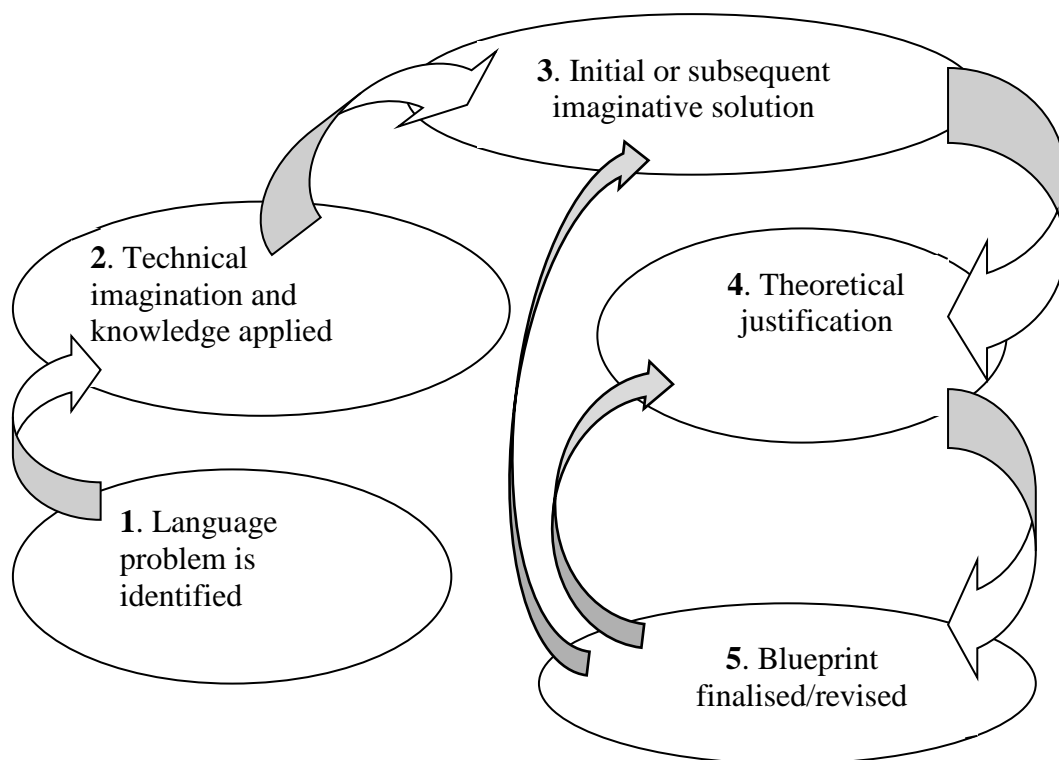


Figure 3.1: Five phases of applied linguistic designs (Weideman, 2009b: 244, 245; 2017)

The last two stages, even perhaps the last three, may be or are recursive. Test designers may need to look afresh at their initial imaginative solution (phase 3), or have to reconsider that solution in light of the theoretical justification (phase 4), before finalising the blueprint for the design.

The requirements for responsible test design, as proposed by Weideman (2012: 8), may provide a framework for both the design and evaluation of the tests.

The framework of principles being referred to here guides both the design and the process of development, implementation, refinement and use of the test. The principles are formulations of conditions for test design to which the test has to conform. In that sense, the theoretical justification for the design (Chapter 2) constitutes an important, but certainly not the only design principle. As is also evident from the title of this study, the rational basis for the design is conventionally thought to be the critical one – at least from an academic, analytical point of view – but it is nonetheless important for us to be reminded that it is not the sole condition for responsible design.

Such a framework as the one being discussed here may incorporate aspects of the conventional theories of validity, while also taking social and a number of other considerations into account. These requirements, adapted from Weideman (2017), are the following:

1. **Systematically integrate multiple sets of evidence** in arguing that the test is a unity in a multiplicity of components, unifying many parts around a single purpose.
2. Specify clearly and to the public the appropriately **limited scope** of the test, and exercise humility in doing so.
3. Ensure that the measurements obtained are adequately **consistent**, also across time, i.e. across different administrations of the assessment.
4. Ensure **effective** measurement by using a defensibly **adequate instrument**.
5. Have an appropriately and adequately **differentiated** test.
6. Make the test **intuitively appealing** and acceptable.
7. Mount a **theoretical defence** of what is tested in the most current terms.

8. Make sure that the test yields **interpretable and meaningful results**.
9. Make not only the test, but information about it, **accessible** to everyone, and use a test that is **suitable**, at the **appropriate** level, and **relevant** to the context.
10. Obtain the results **efficiently** and ensure that they are **useful**.
11. **Align** the test with the instruction that will either follow or precede it, and as closely as possible with the learning.
12. Be prepared to give **account to the public** of how the test has been used.
13. Value the **integrity** of the test; make no compromises of quality that will undermine its status as an instrument that is fair to everyone.
14. Spare no effort to make the test appropriately **trustworthy**.

Given the limited scope of the present study, it may not be possible to attend to all of these criteria. Particularly with regards to the last six 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. It is important, however, to keep these requirements in mind throughout the development and refinement process, as preliminary evaluations and feedback – from panellists, for example, in the case of the current study – may alert us to potential problems and issues that might have negative effects later on.

Whether the test performs consistently can only be determined once it has been administered a number of times, but the results from the first piloting session can at least provide an initial indication of the reliability of the test items, as well as of the test as a whole. In terms of initially validating the construct and the test, the panel evaluation to be undertaken here will subject both to close scrutiny and the expert panel of judges could provide invaluable input regarding the refinement of the test.



## 3.2. A further look at the design process

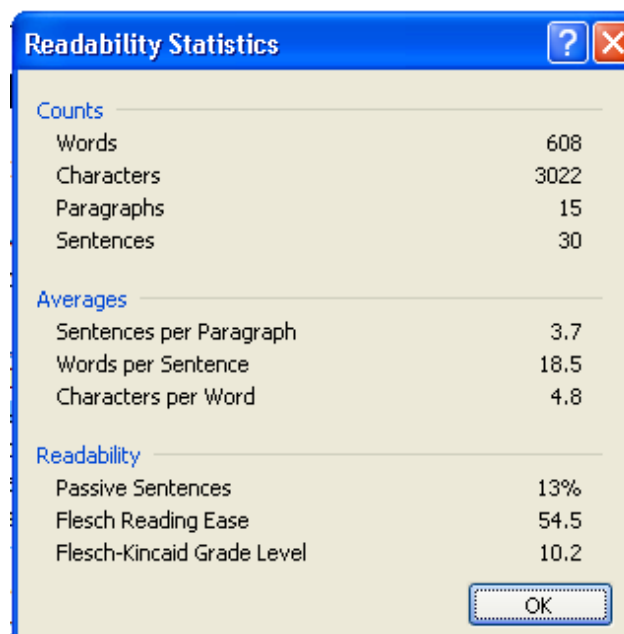
### 3.2.1. Theoretical defensibility

In addition to the five-phase, iterative model referred to in the previous section, one may also consider alternative models, such as Read's (2015: 176f.) distinction of several phases – initial planning, design, operationalization, trialling, and use. As mentioned in the first chapter, this study can also benefit by considering Fulcher's (2010: 94) description of the test design process as a starting point for the design of TALA. This involves an articulation of the test **criterion** based on the **purpose** envisioned for the test. The test criterion – in this case presented in the form of the definition of advanced language ability – dictated the identification of the test **construct** discussed in the second chapter, as well as the articulation of its components. In order to implement the construct, a detailed outline of the test item **specifications**, referred to above and again discussed later in this chapter, was drawn up to explain the subtests and the various task types to be included in the test, as well as all the requirements for each section, and the weighting of the items.

The requirements mentioned above, also referred to as design principles in this study, must be taken into account from the beginning of the design process, and complied with ever more strictly as the test is further developed and refined. Primarily, however, the identification and articulation of the construct and the theoretical justification for that relate to the seventh condition mentioned above: mounting a theoretical defence of what gets tested. In conventional assessment terms, that is what is usually referred to as the construct validity of the instrument. Below, the broader notion of validity is referred to once more, when other conventional requirements for test design and use are considered. Before these are discussed, the next section considers a design condition that is essentially relevant in the initial phases of the design process.

### 3.2.2. Suitability and appropriateness

With reference to the ninth condition above, a primary consideration in language test design is the selection of appropriate texts, as four of the five subtests in the design being proposed here for a Test of Advanced Language Ability (TALA) are based on specific texts, whether it is a paragraph, a graph, a table or the full text of an article. In other words, the suitability of the material used for the design of the test is an important factor. The target group for the TALA is Grade 11/12 learners. For the purpose of this study, Flesch Reading Ease and Flesch-Kincaid Grade Level will be used to determine whether or not a text is appropriate for learners at this level. For example, consider a text that is about 600 words long, has a Flesch Reading Ease score of 54.5, and a Flesch-Kincaid Grade Level of 10.2:



Readability Statistics	
<b>Counts</b>	
Words	608
Characters	3022
Paragraphs	15
Sentences	30
<b>Averages</b>	
Sentences per Paragraph	3.7
Words per Sentence	18.5
Characters per Word	4.8
<b>Readability</b>	
Passive Sentences	13%
Flesch Reading Ease	54.5
Flesch-Kincaid Grade Level	10.2

Figure 3.2: Readability statistics generated by MS Word

Such a text should be suitable for use at Grade 11/12 level, since it is slightly below that level (at just over 10), and the reading ease measure (which should be between 50 and 60) also appears to be justifiable.

Each text used for this new set of tests will therefore be measured in terms of their Flesch Reading Ease and Flesch-Kincaid Grade Level, using MS Word's option to show the readability statistics (Figure 3.2), as well as manual calculations (as in formulae below, Table 3.1) where the machine calculations are not possible. For this study, the Flesch Reading Ease must preferably be 50 or higher and the Flesch-Kincaid Grade Level must be between 10 and 11.5 (12 at most), to be considered appropriate.

<p><b>The Flesch-Kincaid Grade Level Readability Formula</b> (Microsoft, s.a.; Readability Formulas, s.a.)</p> <p><b>Step 1:</b> Calculate the average number of words used per sentence.  <b>Step 2:</b> Calculate the average number of syllables per word.  <b>Step 3:</b> Multiply the average number of words by 0.39 and add it to the average number of syllables per word multiplied by 11.8.  <b>Step 4:</b> Subtract 15.59 from the result.</p> <p>The specific mathematical formula is:  <math display="block">FKRA = (0.39 \times ASL) + (11.8 \times ASW) - 15.59</math> Where,  <b>FKRA</b> = Flesch-Kincaid Reading Age  <b>ASL</b> = Average Sentence Length (i.e., the number of words divided by the number of sentences)  <b>ASW</b> = Average number of syllables per word (i.e., the number of syllables divided by the number of words)</p> <p>Analyzing the results is a simple exercise. For instance, a score of 5.0 indicates a grade-school level; i.e., a score of 9.3 means that a ninth grader would be able to read the document. This score makes it easier for teachers, parents, librarians, and others to judge the readability level of various books and texts for the students. Theoretically, the lowest grade level score could be -3.4, but since there are no real passages that have every sentence consisting of a one-syllable word, it is a highly improbable result in practice.</p>
<p><b>The Flesch Reading Ease Readability Formula</b> (Microsoft, s.a.; Readability Formulas, s.a.);</p> <p>The specific mathematical formula is:  <math display="block">RE = 206.835 - (1.015 \times ASL) - (84.6 \times ASW)</math> <b>RE</b> = Readability Ease  <b>ASL</b> = Average Sentence Length (i.e., the number of words divided by the number of sentences)  <b>ASW</b> = Average number of syllables per word (i.e., the number of syllables divided by the number of words)</p> <p>The output, i.e., RE, is a number ranging from 0 to 100. The higher the number, the easier the text is to read.</p> <ul style="list-style-type: none"> <li>• Scores between 90.0 and 100.0 are considered easily understandable by an average 5th grader.</li> <li>• Scores between 60.0 and 70.0 are considered easily understood by 8th and 9th graders.</li> <li>• Scores between 0.0 and 30.0 are considered easily understood by college graduates.</li> </ul>

**Table 3.1: The Flesch-Kincaid Grade Level Readability and Flesch Reading Ease Readability Formulae**

After piloting, the question of whether or not an item is appropriate for the target group will be addressed again, but then usually on the basis of a statistical analysis of the collected data. Parameters in terms of difficulty levels, for example, were identified to enable the evaluation panel to determine whether a specific item is aligned with the level expected for this target group and therefore appropriate for use in a test for that group.

### **3.3. Further conventional design criteria**

In addition to the two design principles discussed above, there are a number of others that are conventionally applied when gauging the quality of a test. Below, a brief survey of conventional test design principles is given in order to explicate these views, and links with the design principles, enumerated in section 3.1 above, are made.

#### *3.3.1. Traditional and orthodox perspectives on validity*

Another important – and related – aspect that should be taken into account even before item design takes place, is how the validity of the test as an instrument of measurement may be ensured. This is referred to, under principle 4 in section 3.1 (see p. 35), as adequacy and effectiveness. There have been many attempts to conceptualize and interpret the concept of validity. These interpretations can generally be divided into two main perspectives.

According to the first view, often referred to as the 'traditional' perspective, the validity of a test is dependent on whether the instrument measures what it is intended to measure. It is important to note that this perspective regards validity as a characteristic of the instrument (Van der Walt & Steyn, 2007: 139).

Furthermore, three types of validity are identified in the traditional view: criterion-related validity; content-related validity; and construct validity. These three types of validity can be further explicated, as in the table (3.2) below.

*Alternative Descriptors for Aspects of Test Validity*

Validity designation	Descriptive designation
Content validity	Content relevance—domain specifications
	Content coverage—domain representativeness
Criterion validity	Criterion relatedness
Predictive validity	Predictive utility
Concurrent validity	Diagnostic utility
	Substitutability
Construct validity	Interpretive meaningfulness
Convergent validity	Convergent coherence
Discriminant validity	Discriminant distinctiveness
Trait validity	Trait correspondence
Nomological validity	Nomological relatedness
Factorial validity	Factorial composition
Substantive validity	Substantive consistency
Structural validity	Structural fidelity
External validity	External relatedness
Population validity	Population generalizability
Ecological validity	Ecological generalizability
Temporal validity	Temporal continuity—across developmental levels
	Temporal generalizability—across historical periods
Task validity	Task generalizability

**Table 3.2: Messick's alternative descriptors (Messick, 1980: 1015)**

It is the second perspective, which is currently the orthodox view, however, that has proven to be more influential. The three types distinguished by the 'traditional' view are, in the new orthodox perspective, replaced by one integrated view of validity (Van der Walt & Steyn, 2007: 139).

Construct validity – what has been referred to above as the degree to which the test is theoretically defensible (principle 7, p. 35) – is the central component of this conceptualization, while content and criterion validity are regarded as merely aspects of construct validity. This perspective also differs from that of its predecessor because it no longer regards validity as an attribute of the test but as a property of the test score interpretations (Van der Walt & Steyn, 2007: 139), or what is discussed under principle 8 (in section 3.1 above, p. 36) as interpretability and the meaningfulness of the results.

The work of Lee Cronbach and Samuel Messick has prompted this emphasis on construct validity (Read, 2010: 288). Test developers must justify their construct by finding evidence to support their claim of validity. The

designators identified by Messick (1980: 1015) - Table 3.2. – are perhaps far too complex to discuss properly in a study such as this, but they provide an overview of the sub-types proposed in Messick’s theory. Construct validity is generally considered to be the overarching concept in validity theory, but the terminology and subtypes used and identified by different theorists vary (Weideman, 2012).

Read (2010: 288) mentions several types of validity, including face, content, concurrent, predictive and construct validity. Face validity refers to what is called under principle 6 (section 3.1, p. 35) the requirement for a test to be intuitively appealing. As part of systematically bringing together various sets of data in order to provide support for the strength of the measurement instrument (principle 1, above), this study will focus on construct and content validity for the validation of the items included in the test design. Construct validity is concerned with the extent to which the research into a specific construct can adequately capture the ability in question in order to provide a theoretical justification for it. On the other hand, content validity is concerned with the representativeness of the measurement used to analyse the concept in question (Gass, 2010: 13; see principle 9 above, p. 36). In order to ensure test validity based on these two types of validity, the ability under scrutiny – advanced language ability – must be properly defined (construct) and related to a theoretical conception (in this case, communicative competence) before the test items are evaluated in terms of the desired outcomes they should measure (content).

Read (2010: 289) identifies six aspects in Messick’s theory pertaining to construct validation. These six types of evidence (Read, 2010: 289, 290) may provide a basic set of criteria on which to base the evaluation of a test and its individual items. It is the systematic integration of such multiple sets of evidence (principle 1, above on p. 35) that makes up the validation argument.

- Evidence that the test items are relevant to, and representative of, the domain of content to be assessed. This is what has been referred to

before as appropriateness and relevance (as in principle 9, p. 36: that which Bachman & Palmer, 1996, have called target language use or TLU domain).

- Evidence that, when they respond to the test items, the examinees engage in cognitive processes that are predicted by a theory of task performance. Again the relevance of the test (the ninth condition in the list of principles in section 3.1 above, p. 36) is what is at stake.
- Evidence that the scoring criteria for a test are consistent with the way that the test construct is defined. Both this and the next two bullets refer to the third condition (in section 3.1, 35), namely the technical reliability or consistency of the test.
- Evidence that the test results can be generalized, both in the sense that they are reliable and that they apply beyond the specifics of the test.
- Evidence that the test scores are consistent with external measures of the construct.
- Evidence that the test results are being used appropriately and fairly, and not to the detriment of the examinees. This criterion refers to both the ninth condition in the list in section 3.1 (p. 36), and the penultimate one, that addresses test fairness and integrity.

The second view on test validity, according to Van der Walt and Steyn (2007: 140), gained prominence when Lyle Bachman introduced Messick's ideas to language testing research. The concept of a target domain is an important part of Bachman and Palmer's (1996: 21) conceptualisation of construct validity. They refer to the specific language use domain as a "target language use" (TLU) domain (Bachman & Palmer, 1996: 18). Construct validity, according to their definition, refers to the meaningfulness and appropriateness of the inferences or interpretations made based on the test scores, or in other words, "the extent to which we can interpret a given test score as an indicator of the abilities ... we want to measure" (Bachman & Palmer, 1996: 21). Authenticity, a concept akin to validity in terms of the correlation between the test

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specifications and the task types, requires that the individual task types correspond to the TLU domain (Bachman & Palmer, 1996: 21). The inferences made based on the test scores are only applicable to the TLU domain (Bachman & Palmer, 1996: 22). Tests therefore must be relevant (the ninth condition outlined in section 3.1), but they are limited in scope (the second condition) and interpretable as regards their results (the eight condition), which should, in addition, be meaningful.

There is a distinction, however, between validity and validation. According to Weir (2005: 15) ‘validation’ can be seen as a form of evaluation in which a variety of quantitative and qualitative methodologies are used to find evidence to support the accuracy of test scores so as to ensure that inferences made based on the scores have a sound foundation. The following are identified by him as guidelines for establishing content (or context) validity:

1. The behaviour domain to be tested must be systematically analysed to make certain that all major aspects are covered by the test items, and in the correct proportions;
2. The domain under consideration must be fully described in advance, rather than being defined after the test has been prepared;
3. Content validity depends on the relevance of the individual’s test responses to the behaviour area under consideration, rather than on the apparent relevance of item content. (Weir, 2005: 19)

In other words, the items must be appropriate and correctly proportioned to the abilities the instrument must test, and the nature of the items and their outcomes must be analysed before the test is designed. In addition to the relevance or appropriateness of the test items, the test responses must also be relevant in terms of the abilities the instrument must measure. If content validity can be established early on in the design process, it functions as another step in the refinement of the test, but also serves as a part of the validation process, or what can be called meeting responsible test design



conditions, in that the test development process constitutes an attempt to conform to them.

The shift in focus from validity being a property of the test instruments to a quality attributed to the interpretation of the scores has had some criticism. Some theorists claim there is no reason to restrict this characteristic to only the score interpretations and suggest that validity should once again be considered as attribute of tests as well (Borsboom *et al.*, 2004: 1063; Van der Walt & Steyn, 2007: 141). Fulcher and Davidson (2007: 279) seem to echo this concern when they suggest that perhaps validity can be attributed to a test if the scores have been used to make the same decisions over a period of time and there are no reasons to suspect that the wrong decisions have been based on these scores – what has been described above, in the final principle, as the trustworthiness of the test. In other words, if the interpretation and use of the test results prove to be ‘valid’, the test itself should also be regarded as ‘valid’ (Van der Walt & Steyn, 2007: 141; Davies & Elder, 2005).

Fulcher and Davidson (2009: 123-125) also argue that the validity argument behind a test design is inextricably linked to the purpose of the test. They see the detailed specification of the purpose of a test as a necessary condition for the construction of a validity argument for a specific test (Fulcher & Davidson, 2009: 125). Furthermore, the description of the purpose of the test informs the design process and must therefore be defined before the design process can begin (Fulcher & Davidson, 2009: 123). In defining the test purpose, the developers of a test would bring in and relate information such as the target population and the ability range of this population; the target domain of language use; and the specifications or construct that constitutes the blueprint for the test design (Fulcher & Davidson, 2009: 123). The purpose is directly linked to the intended use of the test results and the inferences made based on these results; consequently, the design must align with the decisions that will be based on the results of the test (Fulcher & Davidson, 2009: 124).

Test items that feature in the components that operationalize a construct, such as the one used to define the skills that underpin advanced language ability, are created with a specific outcome in mind: to provide evidence pertaining to certain aspects included in the specifications of the test (Fulcher & Davidson, 2009: 128). Fulcher and Davidson emulate Messick by posing four questions they relate to the validity of a design regarding the relevance (principle 9, p. 36), utility (principle 10, p. 36), potentially unintended consequences (a consideration of fairness; principle 13, p. 36), and sufficiency (principle 4, p. 35) (Fulcher & Davidson, 2009: 140):

1. Is the test content relevant to the domain of inference?
2. Is the test useful for making decisions?
3. Is there bias against certain groups within the test population?
4. Can decisions be based on this test alone or must additional information be taken into account? (Fulcher & Davidson, 2009: 140)

These questions can be incorporated into the evaluation of the tests such as those designed for, and envisaged in this study. As has been noted, the questions above echo, in various ways, the more comprehensive list of design principles at the beginning of this chapter (in section 3.1, p. 35).

Weideman's (2012) reinterpretation of Messick's validity matrix provides four guidelines for the design of a valid instrument, or for what he calls a responsibly designed test:

- Use multiple sources of empirical evidence if you want to make adequate inferences about test scores (principle 1, p. 35).
- The more appropriate the inferences made from the test results, the more likely they are to be beneficial to everyone (principles 8, 9 and 13, p. 36).
- The test design and its relevance will improve if one heeds empirical evidence about actual language use in the domain being tested (principle 9, p.36).

- A good test will use empirical evidence to defend its social appropriateness (again principle 9, p. 36).

These guidelines do not pertain only to validity, therefore, but can be linked to the social appropriateness, impact, benefits of, and even the public accountability (principle 12, p. 36) for tests such as those that this study aims to develop and evaluate (Weideman, 2012).

### *3.3.2. Design of a defensible instrument*

As we have seen above in Chapter 2, TALA consists of 60 items in five separate subtests (see Table 2.6 and Appendix B). All the items are in multiple-choice format, but there is still quite a variety in the task types included in TALA's design. The choice for multiple-choice items was made in order to relieve the impossibly heavy burden that is placed on the education authorities responsible for administering the NSC exit-level examinations for Home Languages (HLs). A multiple-choice format brings not only huge logistical advantages, and is much less labour intensive than the current arrangement, but will also achieve reliable scoring with greater facility. Using this format, in addition to the ease of marking, also eliminates the need to ensure inter-rater reliability (at least for the multiple-choice sections). The sheer number of students who write this examination – a cohort now in excess of 500 000 annually (Department of Basic Education, 2018: 9) – further indicates the need for a more efficient assessment design (principle 10, p. 36).

### *3.3.3. Evaluation criteria*

As a first step in the validation process, the test will be presented to a panel of language and language testing experts to evaluate and make recommendations. At this stage the quality of the test items as well as that of the test overall is the main concern.

The panel will have the items and the statistical analysis reports generated by Iteman 3.6, 4.2 and TiaPlus on the basis of the results of the pilot

administrations of TALA, as well as an outline of the task types, item specifications and the definition of advanced language ability, as discussed in the second chapter.

The following criteria will then be used to evaluate the individual items, as well as the test in its entirety:

- Are the task types used in the test aligned with the specifications of advanced language ability?
- Are the individual items aligned with their respective task types? Do these items measure the components they are supposed to measure?
- Does the construct of the test reflect the assessment of all necessary abilities indicated in the outline?
- Are the scoring criteria for the test consistent with the way that the test construct is defined?
- Are there any obvious flaws in the test items?

The evaluation of the test according to these criteria can be deemed as both an analysis of the construct and the content of the test.

After the analyses of the individual items have been completed, the test will be evaluated in its entirety. The recommendations and comments arising from this process will be used to refine the test and select 60 items for the final version of the test.

The specific evaluation criteria employed in the phase of test design that follows its first implementation therefore take the design process forward: they are specific and tightly specified measures, as we shall note in greater detail in Chapter 5 below, that provide an analytical and empirical basis for the phase of test refinement (see also section 1.5 in Chapter 1).

Based on the results of the data analysis it will be determined whether the tests are consistent in their reliability and fairness. Here, three further criteria for the validation of these tests identified by Read (2010), and already referred to above, come into play:

- Can the test results be generalized, both in the sense that they are reliable and apply beyond the specifics of the test?
- Are the test scores consistent with external measures of the construct?
- Will the test results be used appropriately and fairly, and not to the detriment of the examinees?

To determine whether a test has been responsibly designed – in the case of a test of advanced language ability – one therefore needs to employ a multiplicity of test design conditions. This set must be as comprehensive as possible, though in a study like this, that has a limited scope, one may not necessarily be able to apply all principles in a comprehensive manner. I shall return in Chapter 6 to a consideration of how the limitations of the current study may be addressed and overcome.

# Chapter 4

## Test design, development and administration

Returning to Fulcher's description of the test design cycle (Fulcher, 2010: 94 – see Figure 1.2, Chapter 1), we may now state that this study has thus far identified a **test purpose**, namely to measure the advanced language ability of Grade 12 pupils; articulated the **test criterion** by conceiving of a detailed definition of this ability; and **defined the test's construct** that has been elaborated and articulated into components, that in turn have been operationalized in terms of a set of **test specifications** for the design of the test items (Fulcher, 2010: 94). By articulating the construct and specifications in detail before the individual test items for the Test of Advanced Language Ability (TALA) are designed, one hopes to ensure that the final instrument – in accordance with the test design principles discussed in the preceding chapter (see Chapter 3) – is of an **appropriately limited scope, defensibly adequate, appropriately and adequately differentiated, and theoretically justifiable**, critically important conditions of responsible test design that were examined and discussed in the previous chapter, with special reference to the conditions set out in section 3.1 of that chapter.

Test development is therefore dependent on test design, and the latter, if undertaken with deliberation and diligence, lays the foundations for responsible language assessment design. The greater care one takes in designing an assessment that may potentially affect the lives of hundreds of thousands of school leavers, the larger the chances are that it will benefit them, rather than

place some at an unfair disadvantage, as at present. As an illustration of where this kind of diligence begins, this chapter gives a narrative of the initial development of the test, and how it was piloted, before presenting the results of this pilot.

## 4.1. Initial development of TALA

### 4.1.1. Texts

In the case of the design of the test items for the first version of TALA, a number of appropriate texts were prepared according to the outlined specifications. Table 4.1. (below) is the list of the texts that were prepared for each section of the test. These texts had to conform to the readability parameters outlined in Chapter 3 – Flesch Reading Ease (FRE) of 40 (preferably 45) or higher; Flesch-Kincaid Grade Level (F-K G) between 10 and 12 – and were adapted to be suitable for their respective task types. Setting and following strict specifications for the materials – such as these texts – that will be used in a design will likely make it easier to align with the construct and create similar instruments at an equal, or at least comparable, level later on.

In order to make each text appropriate for the subtest they were used, some texts had to be altered. The texts used for the scrambled text items, for example, were edited to consist of five sentences each with not much variation in length among them. Similarly, a shortened version of the text used for the grammar and text relations section was eventually used. In addition to these changes to the texts, the graphs were altered and in some cases fictitious data were added in order to make certain questions regarding trends and ratios possible. A guiding principle in making such alterations was to do so without undermining or violating the authenticity of the texts. The table below shows the readability statistics for each of the texts provided during the test design sessions after these modifications were made.

Task type	Prepared texts	FRE	F-K G
Scrambled text	<ul style="list-style-type: none"> <li>• <i>For the love of strawberries</i> by B. Safronovitz (Farmlink, Summer 2011: 56)</li> </ul>	43.8	10.7
	<ul style="list-style-type: none"> <li>• <i>MSG – food baddie or misunderstood enhancer?</i> (Farmlink, Summer 2011: 50)</li> </ul>	42.9	10.8
	<ul style="list-style-type: none"> <li>• Alternative text 1: <i>Food hygiene: The human factor.</i> (Farmlink, Summer 2011. p. 39)</li> </ul>	41.5	11.1
	<ul style="list-style-type: none"> <li>• Alternative text 2: <i>An heirloom with a difference.</i> (Farmlink, Summer 2011. p. 54)</li> </ul>	52.7	<b>9.3</b>
Text comprehension	<ul style="list-style-type: none"> <li>• <i>Foods that could save the world.</i> (Adapted from <i>Reader's Digest South Africa</i>, May 2012, pp. 78-84)</li> </ul>	45.3	12
	<ul style="list-style-type: none"> <li>• Alternative text: <i>Ears of plenty: The story of humanity's staple food.</i> (Adapted from <i>The Economist</i>, 24 December 2005, p. 26-30)</li> </ul>	59.3	<b>9.1</b>
Interpreting graphs and visual information	<ul style="list-style-type: none"> <li>• <i>World grain trade and production (2000-2012) in millions of tonnes.</i> (<a href="http://makanaka.files.wordpress.com/2012/03/igc201202-grains-supply-demand-set.png?w=700&amp;h=311">http://makanaka.files.wordpress.com/2012/03/igc201202-grains-supply-demand-set.png?w=700&amp;h=311</a>)</li> </ul>	n/a	n/a
	<ul style="list-style-type: none"> <li>• Alternative graph: <i>McDonald's Nutritional Information (in grams) - McDonald's nutrition calculator.</i> (<a href="http://www.mcdonalds.ca/ca/en/food/nutrition_calculator.html">http://www.mcdonalds.ca/ca/en/food/nutrition_calculator.html</a>)</li> </ul>	n/a	n/a
Grammar and text relations	<ul style="list-style-type: none"> <li>• <i>King of the carbs</i> by C. Redman (Time, March 3, 2008. p. 43.)</li> </ul>	46.5	11.7
	<ul style="list-style-type: none"> <li>• Alternative text: <i>Ears of plenty: The story of humanity's staple food.</i> (Adapted from <i>The Economist</i>, 24 December 2005, p. 26-30)</li> </ul>	59.3	<b>9.1</b>

**Table 4.1. Readability statistics of texts used for TALA (parameter violations in bold)**

The texts used for the development of the prototype for TALA met the parameters agreed on for the Flesch reading ease (FRE) and the Flesch-Kincaid grade level (F-K G) appropriate for Grade 11/12 learners. Although it still conformed to the parameters, the texts used for the “Scrambled text” section were slightly lower in terms of reading ease than the ideal. However, the length of the texts used for this item type – usually single paragraph extracts – and the



level of cohesion that is necessary to create this item type may have contributed to this result. For the other sections, apart from the data used for the graphic and visual information section, the text that was shown to be appropriate for a higher grade (closer to that of the target group) was selected for use, with alternative texts as backups should the designers need a different text at a future stage.

#### *4.1.2. Development sessions*

The prototype was developed over three days by six test designers. The designers were provided with the selected tests and the test item specifications. In hopes that there would be at least twice as many items for each section than the number required for the final test, the designers were encouraged to create as many items for each task type as possible. In pairs, they were each tasked to focus on two or more sections of the test.

At various intervals the entire group would come together and work through a number of the newly created items. This was an invaluable part of the design process: each item was scrutinized by six experienced individuals to determine whether the item worked, the distractors were appropriate and the item was aligned with the proposed construct for TALA. The format of these development sessions made it possible to evaluate and refine items continuously and in a shorter time instead of a more lengthy, asynchronous review process.

## **4.2. Pilot study**

### *4.2.1. Pilot group*

The cohort for the pilot study consisted of 1 244 students – Grade 11 and 12 – from six English medium schools (to remain anonymous) in the Bloemfontein area. (The test was administered at a seventh school, but the results could not be included as the majority of these students only completed one half of the

test.) The schools included both former Model C schools – previously advantaged in background – and schools that may be categorised as previously disadvantaged. This provided a more representative sample of schools to produce a greater measure of potential heterogeneity in the population.

Only the results of students who completed both part 1 and 2 of TALA pilots were used for the data analysis and these two parts were combined in order to evaluate the test as a whole.

#### *4.2.2. Administration and observations*

The various schools were contacted regarding the piloting of TALA in March 2013 and agreed to multiple sessions during May and June of the same year. The tests were administered in two sessions, each approximately 2 hours in length, using the school's own infrastructure. Invigilators were briefed and sent to coordinate each of these sessions. Students were provided with scripts and optical reader sheets, as well as a list of instructions and a consent form.

One of the earliest observations made by the invigilators was that the students seemed to be able to complete the tests in less time than was allocated. Most of the candidates were able to answer all of the sections without assistance, although there were a few cases where the format of the “Grammar and text relations” section had to be explained. (This suggests that the instructions for this section of the test may need to be reviewed, or that the question may have to be scaffolded, as has been experimented with in some contexts.)

The majority of the candidates who participated in this first piloting session for TALA were very cooperative. There were, however, a few incidents where students did not seem to apply themselves to the tasks and in some cases their answers appeared to be the result of guesswork or entering patterns rather than answers on the optical reader sheets. There were also two sessions that were disrupted by other extracurricular activities (five candidates excluded).

### 4.3. Data analysis

Piloting and evaluating the prototype of a new test is an essential step in the design process. This provides important information regarding item productivity and the overall test performance on which the further refinement of the test, as well as the future administration thereof, will be based. This should also determine whether some further important requirements for responsible test design – specifically, that the instrument should be **defensibly adequate**, **appropriately differentiated** and should yield **interpretable and meaningful results** – are being met (Weideman, 2017; Du Plessis, 2012: 68).

#### 4.3.1. Data collection and empirical measures of item and test productivity

The optical reader sheets on which those sitting the tests captured their answers are marked using a computerized system and the results are then entered on a MS Excel spreadsheet to form the raw 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, mentioned in Chapter 1 (section 1.5) and discussed below, are all based on those used in previous studies on the design of academic literacy tests for an inter-university collaborative endeavour, the Inter-Institutional Centre for Language Development and Assessment (ICELDA), such as Du Plessis's (2012) design of a second version of TALPS and Van der Walt and Steyn's (2007) work on test validation.

The Pearson item point-biserial (rpbis) correlation calculated by Iteman 4.2 refers to a measure of differentiating strength of an item that ranges between -1.0 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: 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 eventuality 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: 31, 32). For the present study, a DIF analysis was not included, though for subsequent versions, as well as for tests that attempt to assess advanced language ability across different languages, this will certainly have to be calculated.

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

The total  $r_{pbis}$ -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. These calculations are associated with the reliability of a test item. Cronbach alpha can, in turn, 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: 77). In Iteman 4.2 the alpha is calculated using the Kuder-Richardson 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: 614). It is therefore more appropriate, but generally a less conservative measure of consistency (see also CITO, 2005).

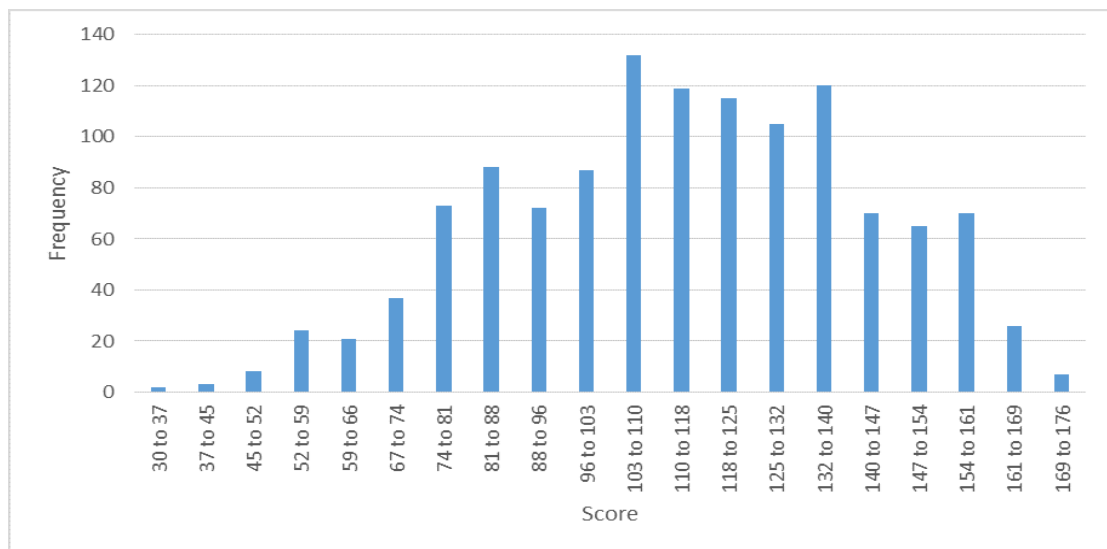
The analysis of the productivity of the test items and the performance of the test as a whole was based on the following four questions and the parameters set for them:

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) (Van der Walt & Steyn, 2007)
4. What is the overall reliability level of the test? (Cronbach alpha, Greatest Lower Bound)

#### *4.3.2. Overview of the results and descriptive statistics*

The outcome of three test item analysis programs, the results of this round of piloting were used to evaluate item productivity according to the above-mentioned questions and parameters. The prototype consisted of 187 items, providing multiple items to choose from for each section of the final 60 item-test.

The reports produced by the Iteman 3.6 and Iteman 4.3 programs were used as the primary sources for the evaluation of the test and the test items, whilst the TiaPlus report provided additional statistics and visually presented information that were used to corroborate the results of the other analyses. Although the item statistics and overall performance of the test are the main focus of this analysis, it is useful to begin by looking at the descriptive statistics. This can tell us something more about the score characteristics of the cohort.



**Figure 4.1: Frequency distribution of TALA results**

The distribution of the scores is slightly flattened, as is often the case where advanced or specific language abilities are assessed (Bachman, 2004: 74, 75; Lord, 1954), and is negatively skewed (as seen in Figure 4.1 above). According to the scale statistics summarised in the Iteman 3.6. report (Table 4.2), the skewness is - 0.197 and the kurtosis is - 0.545. Both are within the - 2 and + 2 range, which suggests that this is a relatively normal distribution (Bachman, 2004: 74, 75).

N of Items	187
N of Examinees	1244
Mean	114.041
Variance	775.568
Std. Dev.	27.849
Skew	-0.197
Kurtosis	-0.545
Minimum	30.000
Maximum	176.000
Median	115.000
Alpha	0.957
SEM	5.779
Mean Pcnt Corr	61
Mean Item-Tot.	0.321
Mean Biserial	0.439
Max Score (Low)	96
N (Low Group)	340
Min Score (High)	134
N (High Group)	341

**Table 4.2: Scale statistics**

Score	Items	Mean	SD	Min Score	Max Score	Mean P	Mean Rpbis
All items	187	114.041	27.860	30	176	0.610	0.317
Scored Items	187	114.041	27.860	30	176	0.610	0.317
Scrambled text 1	5	3.344	1.637	0	5	0.669	0.337
Scrambled text 2	5	3.113	1.656	0	5	0.623	0.320
Text comprehension	73	44.449	12.696	9	69	0.609	0.338
Interpreting graphs...	30	16.106	5.603	2	30	0.537	0.270
Vocabulary	32	24.790	4.804	2	32	0.775	0.299
Grammar & text relations	42	22.240	7.963	0	41	0.530	0.324

**Table 4.3: Summary statistics - TALA**

Table 4.3 (above) presents the summary statistics for the test. Especially heartening here is the relatively high average Rpbis (0.317) for the test as a whole. It means that in general the items discriminated well. The Iteman 4.3 analysis flagged a number of items (Table 4.4). All of these items were flagged “K” which means that their keyed responses did not have the highest positive point-biserial. In other words, for each of these items, one of the distractors had a higher Rpbis than that of the key. These distractors either have to be discarded, or have to be amended in the refinement process to eliminate or avoid this impediment. One item, item 111, was also flagged for its low Rpbis (LR).

Item ID	P / Item Mean	R	Flag(s)
12	0.129	0.004	K
13	0.203	0.034	K
59	0.192	0.062	K
65	0.259	0.035	K
85	0.655	0.063	K
111	0.143	-0.012	K, LR
151	0.186	0.113	K
170	0.143	0.083	K

**Table 4.4: Items flagged in Iteman 4.3 analysis of TALA**

This table is intended as an illustration only; it does not flag all the items that violate (or nearly violate) the full set of parameters adopted for this study.

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In Chapter 5 the full list of 38 items will be discussed as part of the panel evaluation of the prototype.

#### *4.3.2.1. Do the items discriminate well?*

For this criterion, each item must have an item point-biserial (Total Rpbis in the Iteman 4.3 report) above 0.2 or a discrimination index above 0.25. In conjunction with the facility value, discussed in the next section, these values are used to describe the productivity of the test items and form part of the evidence we use to substantiate the usefulness of the test's scores and the actions that follow (Bachman, 2004: 135; Du Plessis, 2012: 68). The 38 items that did not conform with the full set of parameters adopted for this study (discussed in Chapter 5, section 5.1) all had issues with discrimination, violating the requirements for either one or both of these measures.

#### *4.3.2.2. Are the items appropriate in terms of facility value?*

The desirable parameters here are a P of above 0.15, but below 0.84. Items that are either too easy (i.e., have a P of 84% or more), or too difficult (where fewer than 15% of candidates get them correct) should preferably be avoided. The ideal is to have items that tell us as much as possible about the ability of the candidates (Carr, 2011: 170). If an item is too easy or too difficult for the target group, it skews our view of the ability of the test takers. The parameters set for facility value make it possible to flag items that could do this and omit them from the final prototype – or alter them if omission is not an option. Of the list of 38 items that violated the parameters adopted for this study (discussed in Chapter 5, section 5.1), 28 did not conform with the parameters for facility. Table 4.3 above indicates, however, that on the whole, items in the test had a mean P of 0.61, which is comfortably within the parameters.



4.3.2.3. Are the subtest intercorrelations satisfactory?

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: 83).

In the case of this pilot, the factor analysis was not done by the program because some items in subtests 1 and 2 had a standard deviation of 0. Unfortunately, that also made the calculation of the Greatest Lower Bound, a reliability measure that would otherwise have been included in the discussion below in section 4.3.2.4, impossible.

The factor analysis below (Figure 4.2) is for the third, and the largest, subtest of this pilot, with 73 items, “Text comprehension”. It has an entirely satisfactory profile showing only one outlier (item 12), that was shown, when tested against the parameters for discrimination and facility, to be problematic in those respects as well (see discussion in Chapter 5, section 5.2).

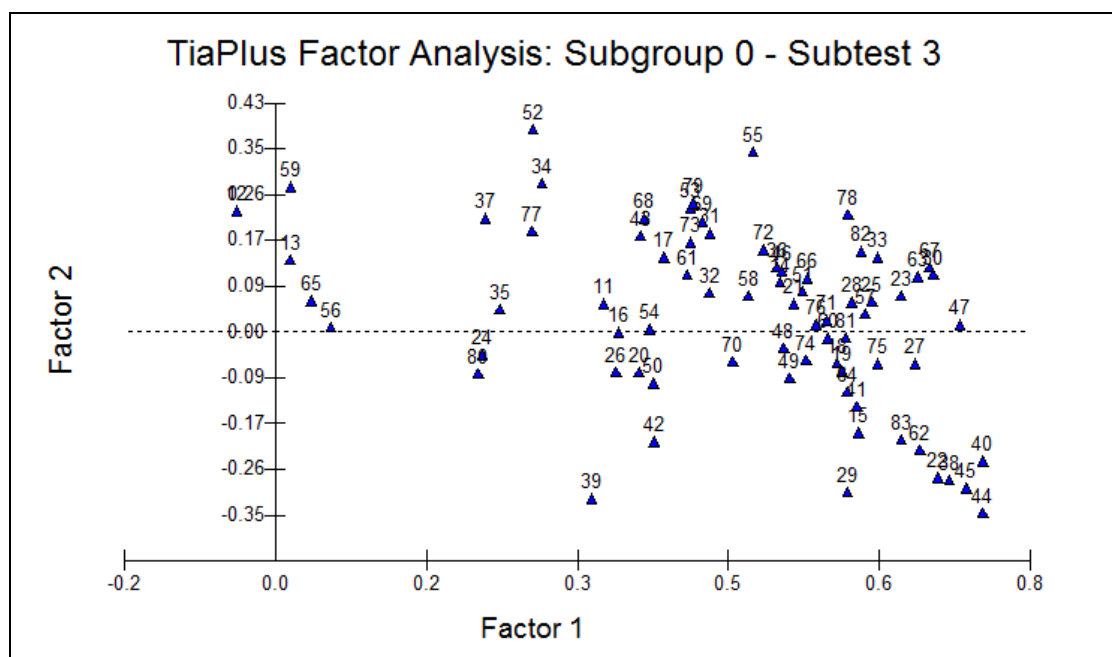


Figure 4.2. Scatterplot of factor analysis for subtest 3 – “Text comprehension”

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The next table (Table 4.5) shows the intercorrelations between the subtests in TALA. With the exception of five intercorrelations (marked in bold) 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. Conventionally, such subtest intercorrelations are considered to be a measure of validity; the data in this table would therefore constitute one set of data that might feed into an argument for the validation of the test. Moreover, the low correlations among the subtests indicate that the test conforms to the principle of being appropriately differentiated (the fifth design condition referred to above in section 3.1).

What is more, Van der Walt and Steyn (2007) also argue for including in the validation argument for a test a measure of the correlation between the subtests and the test as a whole. While subtest intercorrelations are not, with regards to the parameters they suggest, to be above 0.5, which would indicate that what they measure might be similar, the correlation between subtests and the test can be set reasonably high, at say above 0.7, or at least above 0.6. It is therefore a further argument for test validity that in this pilot only two of the subtest-test correlations (for the two “Scrambled text” subtests) fall under 0.6 (see Table 4.5). That might at least in part be the result of these two subtests each having only five items, while the other subtests were all longer.

Domain	Total test	Scrambled text 1	Scrambled text 2	Text comp.	Graphs and visual info.	Vocab. knowledge	Grammar and text relations
Scrambled text 1	0.45	*					
Scrambled text 2	0.48	0.30	*				
Text comprehension	0.93	0.42	0.41	*			
Graphs and visual information	0.72	0.26	0.29	<b>0.55</b>	*		
Vocabulary knowledge	0.78	0.32	0.35	<b>0.69</b>	0.46	*	
Grammar and text relations	0.85	0.32	0.37	<b>0.67</b>	<b>0.56</b>	<b>0.58</b>	*

Table 4.5. Subtest intercorrelations

#### 4.3.2.4. What is the overall reliability level of the test?

The three programs all calculated the Cronbach alpha to be 0.96, which suggests that this is a highly reliable instrument. The table below (Table 4.6.) features all the reliability statistics generated by Iteman 4.3.

Score	Alpha	SEM	Split-Half (Random)	Split-Half (First-Last)	Split-Half (Odd-Even)	S-B Random	S-B First-Last	S-B Odd-Even
Scored items	0.958	5.733	0.919	0.792	0.930	0.958	0.884	0.964
Scrambled text 1	0.802	0.729	0.763	0.342	0.830	0.866	0.509	0.907
Scrambled text 2	0.755	0.819	0.714	0.443	0.713	0.833	0.614	0.832
Text comprehension	0.921	3.563	0.851	0.798	0.851	0.919	0.888	0.920
Interpreting graphs...	0.820	2.376	0.696	0.664	0.690	0.821	0.798	0.816
Vocabulary	0.829	1.986	0.714	0.674	0.747	0.833	0.805	0.855
Grammar & text relations	0.879	2.775	0.774	0.674	0.857	0.873	0.805	0.923

Table 4.6. Reliability analysis

Given the high alpha measurements of the individual subtests (all, despite their length, above 0.75), as well as that of the whole test, the test seems to be very reliable. It is important to note, however, that the selection of only 60 items of the 187 piloted in this session will likely alter the alpha. Longer tests have the potential to score higher on reliability indices, such as the ones used in this analysis.

#### **4.4. Further steps**

The presentation of the data on the first pilot allows one to conclude that this larger, piloted version of TALA has the potential to be whittled down and refined. Its good quality may endure beyond, in a shorter version. This is the discussion that we now turn to in Chapter 5.

# Chapter 5

## Test refinement

As part of the evaluation and refinement process of the assessment instrument employed in this study, the initial data analysis completed by the researcher was discussed in Chapter 4. This analysis was augmented by a panel evaluation of the pilot test results. This chapter will look at the setup of the panel evaluation sessions that took place post-pilot, the way that this process was structured, the findings of and recommendations made by the panel, and the selection and refinement of task types and items that followed.

### 5.1. Panel evaluation and recommendations

A panel of experts, consisting of nine test designers and literacy researchers associated with the Inter-Institutional Centre for Language Development and Assessment (ICELDA), was convened for the evaluation of the results of the piloting of the TALA prototype. The panel was presented with the following to structure their analysis and discussion of the test:

- the three data reports (generated by Iteman 3.6, Iteman 4.3 and TiaPlus, that were summarily presented in the previous chapter);
- copies of the test prototype;
- the test item specifications (Table 2.5, Chapter 2); and
- two evaluation forms, one designed to analyse each item individually (Table 5.1) and the other to make a judgement about the test as a whole (Table 5.2).

Questions / requirements	Comments	
Item:		
Is the item relevant to or representative of the domain of advanced language ability? State which component(s) you think the item measures.		
Is the item aligned with the specifications of the specific task type? In order of importance, which specification(s) are being employed / utilized?		
Are there any obvious flaws in the test item?		
Are there other items (amongst those that were piloted) that, in your view, ask the same question?		
Does this item discriminate well? Refer to the item point-biserial (Rpbis) correlation and the discrimination index. (Point-biserial above 0.2; discrimination index above 0.25)		
Is this item appropriate in terms of its facility value? (P: above 0.15; below 0.84)		
<b>Recommendations:</b>		
<b>Keep</b>	<b>Change</b>	<b>Omit</b>

Table 5.1: Item evaluation form

Test	
Are the task types used in the test aligned with the specifications?	
Does the construct of the test reflect the assessment of all necessary abilities indicated in the specifications?	
Are the scoring criteria for the test consistent with the way that the test construct is defined?	
<b>Recommendations:</b>	

Table 5.2: Test evaluation form

After a brief presentation on the design and development of the prototype, an explanation of the piloting process, how to interpret the available documents, and the procedure for the evaluation, the group was divided into pairs or tasked individually with the analysis of a section of TALA (Table 5.3):

Group	Items
Group 1	Scrambled text (TALA part 1): 1 – 10 Text comprehension (TALA part 1): 11 - 38
Group 2	Text comprehension (TALA part 1): 39 - 76
Group 3	Text comprehension (TALA part 1): 77 – 83 Graphic and visual information (TALA part 2): 1 – 30 [84 - 113]
Group 4	Vocabulary knowledge (TALA part 2): 31 – 62 [114 - 145] Grammar and text relations (TALA part 2): 63 - 68 [146 - 151]
Group 5	Grammar and text relations (TALA part 2): 69 - 104 [152 - 187]

Table 5.3: Items assigned to each group within the panel

Each group evaluated their set of items and divided the items into three groups according to their overall recommendation, namely ‘keep’, ‘change’ or ‘omit’. This was followed by a review of each group’s findings in the form of a

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plenary panel discussion, starting with the items from the “Text comprehension” subtest (as the largest section of the test) and then working through each of the remaining sections per item as well. The panel was asked to discuss any recommendations for changes to items, referring to the prototype, the specifications and the item statistics. Once consensus was reached on each of the 187 items, the panel turned to the evaluation of the test as a whole.

The panel identified 38 items that did not conform with the parameters set out by the test designers. Of these, 6 were identified that could be included if alterations were made to them, and one item was deemed acceptable despite violating one of the parameters. In addition to these items, 4 had to be removed from the item pool because they were paired with items in the Grammar and Text relations section that violated the parameters (see discussion in section 4.3 of Chapter 4, and Table 5.1 above).

Due to the high number of acceptable items (145 items), items that the panel suggested needed alterations were set aside along with those they said should be omitted. Appendix C provides a summary of the panel’s analysis and recommendations regarding these items.

The overall judgement regarding the prototype was that it is a reliable instrument with a number of highly productive items (145 were in the item pool for selection). In the discussion of the panel’s views on the tests, it was recommended that any items that were not included in the final 60-item test would be kept for later use in a test bank of alternatives for the various sections of TALA. One member of the panel remarked that the large number of items that were included in the prototype had not only left the test designers with more than enough items that could be used in a 60-item version of the test without any alternations, but it also gave them enough scope to ensure that selection could be aligned with the test item specifications on a sub-skill-level. Put differently, the selection of the 60 items could now be informed by the



specifications to such an extent that an item could be selected to measure each of the primary sub-skills set out before the development of the test.

Another member of the panel observed that the use of the panel evaluation session as it was conducted that day would not only help with the selection and refinement of the final test, but also served as part of the validation of the test and the curriculum. After consideration, the researcher has concluded that this kind of evaluation process would specifically help to judge the construct validity of the test, as the alignment of the items with the specifications was one of the important considerations in this particular panel evaluation. The analysis of the items would also be crucial in the selection process to come.

## **5.2. Selection and refinement**

### *5.2.1. Selection of items and item bank of alternative items*

The large number of items that were included in the prototype – more than three times as many items as would be selected for the final version of the test – coupled with the relatively small number that the panel recommended be excluded, ensured that the item pool for the selection process was quite large. The test specifications outline the number of items that ought to be in each section of the test, as well as providing details on the various sub-skills each section needs to assess and how many items need to be allocated to each sub-skill. With 145 items left in the item pool and spread across the different sections, these specifications served as a framework of requirements for the selection of the final 60 items. Table 5.4 is an abridged version of the test specifications which includes comments on the nature of the selection of items for each subtest.

<b>Subtest</b>	<b>Specifications for items (60 marks): guidelines for questions</b>
<b>Scrambled text</b>	5 items – interrelated items selected based on their combined performance
<b>Vocabulary knowledge</b>	10 items – individual items selected based on item performance
<b>Interpreting graphs and visual information</b>	8 items – individual items selected based on item performance <ul style="list-style-type: none"> <li>✓ Trends [3]: <ul style="list-style-type: none"> <li>○ Perceived trends (1)</li> <li>○ Predictions / estimations (1)</li> <li>○ Averages / change rates (1)</li> </ul> </li> <li>✓ Proportions [2]: <ul style="list-style-type: none"> <li>○ Identify proportions (1)</li> <li>○ Compare proportions (1)</li> </ul> </li> <li>✓ Comparisons [1]: between individual readings; or comparisons between combined readings; differences between categories</li> <li>✓ Inferencing /extrapolation [2]</li> </ul>
<b>Text comprehension</b>	25 items – individual items selected based on item performance <ul style="list-style-type: none"> <li>✓ Distinction making: categorisation, comparison; distinguish essential from non-essential [8]</li> <li>✓ Inferencing / extrapolation (including basic calculations) [4]</li> <li>✓ Making meaning beyond the level of the sentence / Communicative function / Comparing text with text [4]</li> <li>✓ Vocabulary in context (use) [5]</li> <li>✓ Handling metaphor, idiom and word play [2]</li> <li>✓ Cohesion / cohesive ties (Textuality) [2]</li> </ul>
<b>Grammar and text relations</b>	12 items – paired items that are dependent on each other (in terms of format, not assessing the sub-skills)

**Table 5.4: Abridged version of test item specifications**

Where more than the required number of items for a particular subtest or sub-skill was available, the item(s) were selected based on their overall performance. The tables below show the items that were selected for the final version of TALA (Table 5.5) and bank of items that could be used to replace items in TALA or create an entire alternate version of the test (Table 5.6). Appendix D provides a summary of the item performance statistics of the 60 items included in the final version of the test.

One of the advantages of having a clear and detailed set of specifications is that it can be used as a mechanism to ensure alignment between the construct of the test and the instrument itself. The specifications for TALA specifically

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included sub-skills and the ideal number of items for each in the two sections that had the largest scope for variation, namely “Interpreting graphs and visual information” and “Text comprehension”. Those specifications provided a framework that would enable the test designers to create a test that is not only aligned with the construct, but also covers as many facets of the components of the construct as possible.

Furthermore, a more detailed framework would be easier to use for the design of other versions of TALA or its counterparts in other languages (such as the Afrikaans *Toets van Gevorderde Taalvaardigheid*, TOGTAV, which is also part of the Umalusi Home Languages Project). The combination of sub-skills that are measured in sections such as the two mentioned above is dependent in part on the material or texts the sections are based on, as these materials lend (or may perhaps not lend) themselves to the assessment of certain components of the construct. If a graph, for example, presents data on a single phenomenon or category, there is less room for creating items that require the candidate to compare elements in the data. It is therefore important to keep these test specifications in mind not only during the item development process, but also when selecting and preparing the materials that will be used to create a test.

Here are the items selected in the refinement process for each subtest (Table 5.5):

Section	Component(s) measured	Selected items
Scrambled text	Textuality; Communicative function; Sequence and order	6 - 10
Vocabulary knowledge	Vocabulary comprehension in context	118; 120; 121; 124; 127; 128; 132; 135; 142; 145
Interpreting graphs and visual information	Inferencing	96; 97;
	Identify / compare proportions	101; 102;
	Comparisons within or across categories	106;
	Perceived trends	107
	Averages	109
	Predictions	112
Text comprehension	Inferencing	72; 73; 79
	Making meaning beyond the level of the sentence; Communicative function; Comparing text with text	20; 21; 45; 67
	Cohesion / coherence	27; 46
	Vocabulary comprehension	28; 43; 70; 78; 81
	Distinction making	17; 31; 34; 36; 54; 55; 63; 69
	Extrapolation and basic calculations	53
	Understanding metaphor and idiom	41; 52
Grammar and text relations	Textuality and cohesion; Grammar	146 & 147; 152 & 153; 156 & 157; 164 & 165; 166 & 167; 168 & 169

**Table 5.5: Selected items for TALA (categorised by subtest)**

The following alternative selection of items (Table 5.6 below) can potentially be used to generate another version of the test or, along with the items in Table 5.5, could form part of an item bank for TALA.

Subtest	Alternative items
Scrambled text	1-5
Vocabulary knowledge	114; 115; 123; 130
Interpreting graphs and visual information	84; 86; 87; 88; 90; 92; 93; 94; 95; 99; 100; 103; 104; 105; 108; 110; 113
Text comprehension	11; 14; 15; 16; 18; 19; 23; 25; 26; 29; 30; 32; 33; 35; 37; 38, 40; 42; 47; 48; 49; 50; 51; 57; 58; 60; 61; 62; 64; 66; 68; 71; 74; 75; 76; 77; 82; 83
Grammar and text relations	148 & 149; 150 & 151; 154 & 155; 158 & 159; 160 & 161; 162 & 163; 174 & 175; 180 & 181; 182 & 183; 184 & 185

**Table 5.6: Alternative items for TALA item bank (categorised by subtest)**

### 5.2.2. Data analysis of 60-item test and further administration

The overall reliability of a test, as discussed in Chapter 4, is an important consideration in the evaluation of a test. A change in the number of items in the test from the prototype's 187 to the refined TALA's 60 will influence the internal reliability of the instrument due to the nature of the calculation of the Cronbach alpha of the test. We cannot, therefore, assume that this shorter version of the test would have a comparable alpha when we measure its reliability. As with most assessment instruments that have gone through a refinement process, the test will need to be administered again to ensure that changes to its content, format or administration process have not negatively affected the test's performance.

The present study did not include a full second administration of the 60-item version of TALA on the intended target group, although it has been administered to other groups (see discussion below in 5.2.3). It will form part of a battery of advanced language ability tests that will be administered in a later phase of the Umalusi Home Languages Project (see Chapter 1 and 6). In the interim, the researcher opted for running the same set of statistical analyses with a reconstructed data set using the trial data from the original cohort but restricting it to the results for the 60 selected items. These results showed minor changes to the item performance statistics – specifically the measures of discrimination (i.e. Discrimination Value, Point Biserial, and Total Rpbis) – all of which were expected given the reduction of the items from 187 to 60 and the consequent changes in individual candidates' results – but none of these changes led to items violating the item productivity parameters. Furthermore, the Cronbach alpha of this refined version of TALA was 0.900 and the Greatest Lower Bound (GLB), generated by the TiaPlus analysis, was 0.95. Both these measures suggest that the refined test is still highly reliable (Weideman, Du Plessis & Steyn, 2017) despite the alpha being lower than that of the longer test

(0.96 - see Chapter 4), and despite its being a much shorter test – less than one third the length of the pilot version.

### *5.2.3. Further administrations of TALA*

The 60-item version of TALA has been used and adapted as part of other studies with two other test populations: Grade 10 learners in the South African context (Myburgh, 2015; Myburgh-Smit & Weideman, 2017) and first-year students in an English course at a South African university. The former investigated the utility of various test instruments and assessments – TALA, a TALA-like academic literacy test, and the English Home Language mark – and their correlations with these learners' overall average marks (Myburgh, 2015). Although TALA did not perform as well as expected on this cohort, the overall test produced a Cronbach alpha of 0.818, which still indicates a satisfactory level of consistency (Myburgh, 2015; Weideman, 2011: 105). Bearing in mind that TALA was not designed with this target group in mind and was indeed too difficult for many of the learners in that cohort, issues regarding the discrimination value of individual items are not a cause for concern, but this information has been recorded and will be revisited once the test has again been administered to a cohort from the target group.

In the case of TALA being administered to a group of students taking a first-year level course in English, the results of the analyses done confirm the quality of the test. It is worth noting that this cohort, despite not being Grade 12 learners at exit-level like TALA's intended target group, nonetheless belong to a group of first-year students at a campus that still struggles to find students with high-scoring National Senior Certificate (NSC) results and the APS (Admission Point Score) associated with good or excellent performance. They are in fact therefore closer to Grade 12 exit-level group members than they may at first glance appear to be. For a discussion of the language problems that are characteristic of these students, see Papashane (2013).

When the refined, 60-item version was administered to this group (n=414), for example, it achieved a Cronbach alpha of 0.85, on both the Iteman 4.2 and the TiaPlus analyses, and showed a respectable overall discrimination level with a mean Rpbis of 0.27 (Iteman 4.2) and an average RIT score of 0.35 (a discrimination measure used by TiaPlus). These measurements, coupled with a GLB of 0.94 and an asymptotic GLB coefficient of 0.92 (TiaPlus), show the robustness of the instrument.

Furthermore, in terms of the dimensionality of this refined version of TALA, a factor analysis performed by the TiaPlus program produced the scatterplot below (Figure 5.1) based on the item intercorrelations. This shows a degree of heterogeneity within a cluster of items that are grouped together in two main groups, namely the “Scrambled text” subtest in items 1 to 5 and then the rest of items. As we would expect from an instrument with a construct that endeavours to measure a number of attributes, the overall proximity of the items to each other suggests that items are measuring a single construct, whilst the slight spread and formation of two groups of related items within this fairly tight cluster suggests that the items may be tapping into different skills and subskills (Du Plessis, 2012: 83; Steyn, 2014: 33).

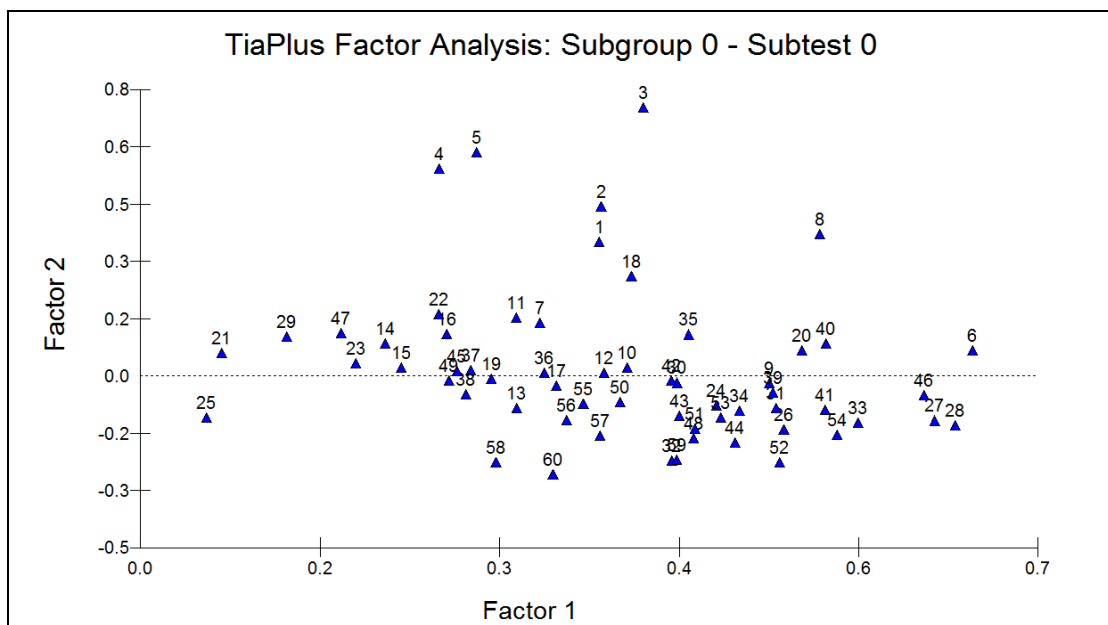


Figure 5.1: Factor analysis of refined TALA

Finally, the results of the TiaPlus-analysis (Table 5.7) show strong subtest intercorrelations, between 0.2 and 0.5 (Van der Walt & Steyn, 2007) apart from that of the “Scrambled text” and the “Grammar and text relations” subtests. This suggests that each subtest is measuring a different aspect of the construct. The analysis also showed strong correlations (above 0.6) between each subtest and the total test (Van der Walt & Steyn, 2007), again with the exception of the “Scrambled text” subtest which fell just outside those parameters. The test-subtest correlations of the “Text comprehension” and the “Grammar and text relations” subtests were particularly strong.

Subtest	Subtest	Total test	Subtest(s)				
			1	2	3	4	5
Scrambled text	1	0.44					
Vocabulary	2	0.64	0.20				
Graphs & visual	3	0.58	0.23	0.30			
Text comprehens	4	0.89	0.26	0.46	0.38		
Grammar & text	5	0.71	0.14	0.26	0.31	0.52	

**Table 5.7: Subtest intercorrelations and test-subtest correlations of refined TALA**

In all, these analyses indicate that the test is remarkably robust, and that its quality, not only on this but on several counts, shows that its potential is equally high. Overall, the refined version of TALA, like the initial 187-item prototype, conforms with the parameters set out for item productivity and test productivity (see discussion in Chapter 4 – 4.3.1. and earlier discussions in this chapter).

This chapter has discussed the refinement of the assessment and its potential utility. Chapter 6 will discuss the findings and implications of this study, provide a critical evaluation, and conclude with observations and thoughts on further research and the role of this study both within the Umalusi Home Languages Project and its potential applications beyond that project.



# Chapter 6

## Conclusion

Considering the extent to which a student's performance on the NSC Home Language examination contributes to their Admission Point score and, as a result, its substantial role in their ability to access higher education, it is fair to say that these examinations can be considered as high-stakes assessments. Even for those school leavers who aim to go directly into the world of work, the contribution of this language examination is substantial enough a part of their overall result that, from the viewpoint of their prospective employers, it may play a critical part in decisions about whether they may be employed. In that sense, too, these examinations are high-stakes assessments of performances by candidates. High-stakes assessments require that fairness in measurement should always be of paramount importance. Any inequalities among these papers would therefore call into question the fairness of these assessments (cf. Kunnan, 2000a, 2000b); Kunnan, 2004; Rambiritch, 2012).

As part of the Umalusi Home Languages Project, this study has explored ways of addressing this issue. It has, with the development of TALA, contributed a concrete artefact that could be employed in this endeavour as an integral part of an applied linguistic solution to a large-scale language problem. This chapter will describe this study within the context of the Umalusi Home Languages Project (section 6.1), with reference to the findings of the anchor study (Du Plessis, 2017), subsequent phases of the project and an outline of its planned activities for the development of counterparts for TALA, as well as a brief review of the recommendations, made in the anchor study, regarding the possible ways in which TALA can be incorporated within the existing NSC curriculum and assessment (as articulated in the CAPS document). This will be followed by a discussion of the findings (section 6.2) of the study in terms its research questions and aims, and a critical evaluation of the study, its

limitations and the extent to which the design principles that it intended to satisfy (Chapter 3) were conformed with (section 6.3). Cognisant of these limitations, in the next section I will consider the way forward in addressing the constraints and reflect on future challenges, outlining possible further avenues of research (section 6.4). Lastly, I will consider further uses of TALA (section 6.5) and will conclude with thoughts on the value of the research beyond the development of TALA (section 6.6).

## 6.1. The Umalusi Home Languages Project

### 6.1.1. Overview of project aims and findings of anchor study

The main objectives of the Umalusi Home Languages Project were to problematise the concept of equivalence for the parallel assessment of the eleven languages examined in the NSC Home Language (HL) papers, as well as to propose a potential solution to the apparent inequalities and dissimilarities between these instruments that is theoretically defensible (Du Plessis, Steyn & Weideman, 2013; 2016; Weideman, Du Plessis & Steyn, 2017). It came, as we have observed above, on the heels of several unsuccessful earlier attempts by Umalusi to deal with this problem. To develop a potential solution of this nature, the researchers needed to have a thoroughgoing understanding of the existing NSC curriculum and its assessment practices. On the basis of the initial anchor study by Du Plessis (2017; cf. Du Plessis *et al.*, 2013, 2017) the underlying construct for the HL subject examination, based on CAPS, would be:

The assessment of a differentiated language ability in a number of discourse types involving typically different texts, and a generic ability incorporating task-based functional and formal aspects of language.

With this in mind, the project was designed with two branches of investigation. The first, tackled in the anchor study (Du Plessis, 2017), was to evaluate the extent to which the current NSC HL papers are aligned to the underlying construct set out in CAPS and their alignment with one another (across

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languages) in terms of both format and content. This informed a set of recommendations, such as possible options for the re-allocation of the content in the examination papers and revising the weighting of certain tasks and sections in the papers in order to facilitate a greater level of similarity across the HL examinations, and reflect the differentiated language ability more adequately (Du Plessis, 2017; Weideman, Du Plessis & Steyn, 2017; Du Plessis, Steyn & Weideman, 2016; 2013).

The present study is located within the second branch of the project, focused on the development of parallel sets of tests across the HLs that measure the generic component of advanced language ability (Weideman, Du Plessis & Steyn, 2017; Du Plessis, Steyn & Weideman, 2016; 2013; Steyn, 2014). (See discussion in section 6.1.3.)

A comparison of the existing NSC examination papers in three of the HLs – English, Afrikaans and Sesotho – identified several disparities between these examinations (Du Plessis, 2017: 236f). There were variations in terms of their length, the number of items that needed to be completed, and the weighting of items in terms of mark allocation to each. There were also marked differences in the content or, in some cases, what students were expected to do with or answer about the content (Du Plessis, 2017: 236).

Du Plessis (2017: 190) argues strongly for the revision of the HL papers and inclusion of a standardised component that could be subjected to statistical analysis and used to equalize the marks in and across these papers. The first reason for this is the need for increased task authenticity. The formats of the current papers would need to change to incorporate more integrative forms of assessment that are grounded in contexts that are in keeping with real-world language use, as indeed required by the curriculum. This would, in turn, ensure greater construct validity (Du Plessis, 2017: 190). Another reason that implementation of these changes should be considered, is that it would be in line with the “constitutional directive to maintain and advance all the HLs and ensure their equitable treatment as languages employed in high status spheres

(such as higher education)” (Du Plessis, 2017: 192). An amendment in the papers in order to incorporate advanced language use would require materials that allow for the assessment of the skills associated with advanced language use and would necessitate the creation of such materials where they are scarce or unavailable. This could lead to the further development of these languages for use in higher education and encourage their use in a greater range of contexts (Du Plessis, 2017: 192). Finally, the inclusion of a common standardised examination component would ensure greater similarity between the papers, increase the reliability of the assessments and provide us with comparable datasets for performance across the languages for at least part of the HL examination (Du Plessis, 2017: 198). If TALA can be incorporated into the NSC HL examination papers as this common component, an added benefit would be that its multiple-choice format, as mentioned in Chapter 2, is easier to mark, facilitates more reliable scoring and eliminates the need for ensuring inter-rater reliability for these sections. To a certain, perhaps even significant extent, this will counter the subjective scoring of other sections in the papers (Du Plessis, 2017: 190). Moreover, it would entail a huge saving on resources, since the marking of more than half a million papers every year consumes a substantial amount of the education budget.

### *6.1.2. Incorporating TALA into the NSC curriculum and assessment*

Adopting TALA and incorporating it into the assessment structure for the NSC HL examinations – a format which has not been changed in the 10 years since the inception of the NSC examinations – may not be straightforward. In the anchor study, Du Plessis (2017: 207f) discusses a number of possible options for accommodating TALA as a common examination component:

- Option 1 – Adding TALA as an additional component to the existing papers.
- Option 2 – Replacing NSC Home Language Paper 4 (Oral) with TALA.

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- Option 3 – Complete revision of examination papers with TALA adopted as one of the papers.
  - Option 4 – Separate language and literature components in the HL curriculum, accommodating TALA in a revision of the rest.

Examining authorities may be reluctant to revise the format of the existing papers, in which case adding TALA as Paper 5 (option 1), would be the most appealing option. The existing examinations could remain unchanged apart from the addition of this instrument, whilst gaining the advantages of having a common component. However, this would happen without the revisions recommended by Du Plessis (2017: 190f) and would not address the shortcomings of the existing examination papers.

At present, Paper 4 of the HL examinations consists of several oral tasks – such as a listening task and prepared and unprepared speeches – that are administered internally throughout the teaching year. In its current format, Paper 4 is highly problematic as it is administered by individual schools, happens without external moderation for the most part, and, along with the school-based assessments (SBA) that happen continuously during the teaching year, makes up 37.5% of a student's final mark for the subject (Du Plessis, 2017: 184). Moreover, as the SBA already includes the same oral tasks, Paper 4 is a duplicate assessment of oral ability (Du Plessis, 2017: 208) in an assessment structure that is already hard pressed to assess all the outcomes outlined in CAPS. Replacing the existing Paper 4 (Oral) with TALA (option 2) would make room for this common component and limit the assessment of oral ability to the SBA (which then still would constitute 25% of the final mark). Like the first option, however, this would only address some of the issues with which the NSC HL examinations are beset.

Du Plessis's (2017: 209) third recommendation would be a thoroughgoing and extensive revision of the current assessment structure (option 3). This would include replacing Paper 1 with an integrated paper that combines elements of the current Papers 1 (Language in context) and 3

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(Writing) and assesses differential language ability (the aspect of advanced language ability that is not assessed in TALA) and the processing of information (which complements those skills assessed in TALA). Paper 2, currently the literature paper, could be altered to include a task that is based on a visual prompt, moving that component out of Papers 1 and 3. Paper 3 would then be replaced with TALA, which would eliminate some of the construct-irrelevant items that Du Plessis (2017) has identified as being part of the current Paper 3. One would then need to refocus this paper on those generic skills that form part of advanced language ability and which TALA has been designed to assess. Paper 1 would include shorter, more authentic writing tasks and Paper 2 would still include a longer writing task in the form of its essay question. For a more detailed view of the existing papers, as well as these revisions, see Du Plessis (2017).

As perhaps the most overt revision of the assessment structure, option 4 would be to separate the language literature components of the HL curriculum and treat them as separate subjects (Du Plessis, 2017: 218). Currently, the results of the three papers, as well as the SBA, are reported as a single score for the HL subject, and the contribution of Paper 2 is hidden within this unified mark. This leaves both prospective employers of school-leavers and tertiary institutions with no clear indication of the kinds of language proficiency that the curriculum intends to promote, as results are neither reported on the basis of detailed descriptors, such as those of the Common European Framework (COE, 2018), nor of those associated with assessments like IELTS and TOEFL, but also include the mark scored on the literature paper (Du Plessis, 2017: 218f). Even if concerns regarding the quality and predictable nature of Paper 2 are ignored – these were not part of the anchor study and need to be investigated separately – reporting the results on the language and literature components separately would perhaps be more useful (Du Plessis, 2017: 219). This would then need to be combined with revisions suggested with the other options -

ideally option 3 – in order to address the other issues highlighted by the anchor study.

Should any of these recommendations be adopted, the development of counterparts for TALA (see section 6.1.3) in each of the other languages will become paramount. Apart from incorporating it into the NSC HL assessment structure, there may be other ways of using TALA which we will explore later in this Chapter (sections 6.5 and 6.6).

### *6.1.3. Project plan: Development of TALA and other HL counterparts*

The present study, as mentioned before, is located within the second branch of the Umalusi Home Languages project. This branch of the project – hereinafter referred to as the TALA project – aims to produce theoretically defensible instruments that can be deemed equivalent and which can provide an empirical measure to compare performance in the HLs (Steyn, 2014; Weideman, Du Plessis & Steyn, 2017; Du Plessis, Steyn & Weideman, 2016; 2013). The contribution of the TALA project to this endeavour is two-fold:

1. To investigate the assessment of the advanced, generic language abilities – which are present, but neither emphasized nor properly assessed – in the existing HL curriculum and produce an instrument that could be used for this purpose (see discussion of uses for TALA in sections 6.1, 6.5 and 6.6). The present study focused on this phase of the TALA project within the larger Umalusi Home Language Project.
2. The second phase of the TALA project will use TALA and the development of counterparts for it in other HLs as the basis for an investigation into the methods that are used, or that should be used, to create parallel instruments that are used across languages and to ensure a measure of equivalence (or equitability) between them to allow for statistical equating and increased fairness. This will be the subject of a forthcoming doctoral study, in which the comparability of these HL assessments will be the particular focus.

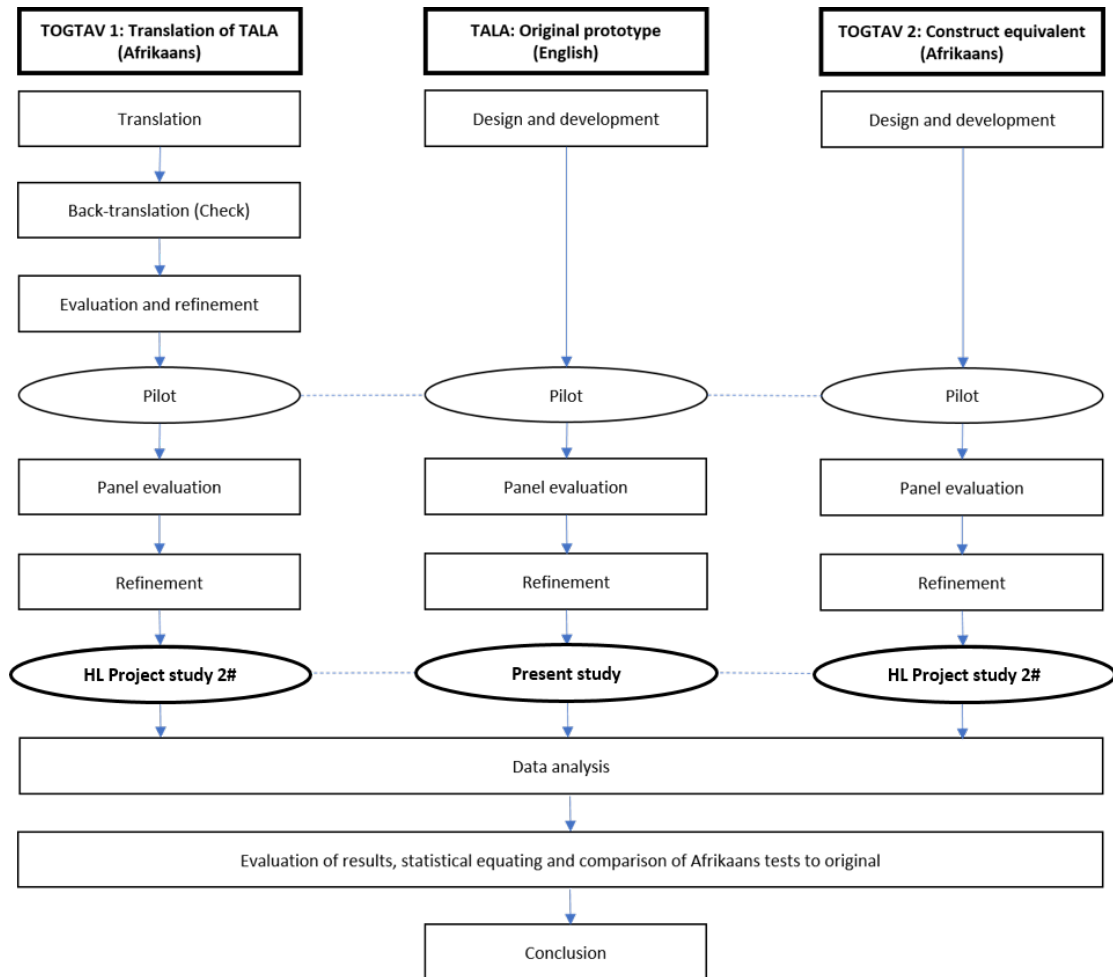


Figure 6.1 Project plan: Development of TALA and counterparts (HL Project study 2# - TOGTAV in Afrikaans)

Figure 6.1 shows the various steps in the first phase of the project (the present study) and next phase (referred to in Figure 6.1 as HL Project study 2#) which will use the development of an Afrikaans counterpart for TALA, called the *Toets van Gevorderde Taalvaardigheid* (TOGTAV), as the basis for an investigation into the development of parallel assessments across languages. This second phase will investigate the following:

- What constitutes equivalence in terms of these types of assessments?  
How does one go about creating tests/assessments with this aim in mind? What is the desirable, and what the minimum level of comparability among assessments that are required to be equivalent?



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- What would the test design methodology look like for the development of parallel assessments of language skills across multiple languages? What are the limitations and how would these issues be mitigated?
  - Which methods of linking or equating scores would be appropriate and viable to use within the context of the NSC HL examinations? How far and to what extent should such statistical equation be employed to ensure not only equivalence among HL assessments, but also perhaps to serve as moderating measures for those parts of the assessment that are notoriously difficult to score reliably?

It is worth mentioning that at the outset of the first phase of the TALA Project, the decision was taken to only use the Classical Test Theory (CTT) based programs for the statistical analyses as there were some concerns about whether we would be able to get a cohort of the size we had envisioned, and this framework would give us more leeway. At that stage, we also did not have access to the necessary software or the expertise to make use of Item Response Theory programs. In the meantime, both have been acquired and can be used in the second phase where apart from the valuable addition of test taker statistics to the analyses, it will be particularly important for the statistical equation process mentioned above.

Separate studies within the TALA project, running concurrently to the second phase described here, will involve the development of TALA counterparts in Sesotho (Mahlasela, forthcoming) and others. The findings of the present study (see section 6.2) will inform the investigations in the second phase and the development of these TALA counterparts. The specific findings and implications that are spelled out in the following section should therefore be interpreted, like the whole of the current dissertation, against the background not only of the investigations into designing TALA, and the possible theoretical and technical justifications for it that have been the focus of this study, but as part of the larger, and more comprehensive, Umalusi Home Languages Project.

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## **6.2. Findings and implications**

This study has aimed to address three main research questions:

- What does advanced language ability entail?
- How does one go about creating a test construct that can be used for multiple languages?
- Can this form the basis for ‘equivalent’ (or at least comparable) assessment across different languages?

The first question has been answered, in part, by articulating a definition of advanced language ability and creating an outline of a test construct that could assess the skills that form part of this ability. In view of the context in which this would need to be implemented, this definition is grounded in the existing school curriculum for all Home Language subjects. Both in the test development session and later in the panel evaluation of the test and its items, the construct was interrogated in terms of its suitability for the context of the NSC examination and its relevance to the Grade 12 curriculum. As the definition was derived from an analysis of the CAPS document for the HLs, it stands to reason that these skills ought to be included and assessed at exit-level, but the question of how this would be incorporated into the NSC examination, if at all, cannot be answered at this stage. It is, therefore, possible that this instrument may not be used as was initially envisioned but nevertheless has been crafted with that original function in mind. Likewise, the construct and its interpretation (in terms of test form and specification) itself may over time evolve with each application in the development of new instruments.

In terms of the second research question, this study provides only part of the answer. The curriculum is generic across the eleven languages that are taught as HLs and the skills that have been included in the definition of advanced language ability are, therefore, presumably part of the instruction of all the Home Language subjects. What is assessed in the exit-level examination of these subjects is addressed in another study within the Umalusi Home

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Languages project (Du Plessis, 2017). To see how this construct could be used across languages, the construct needs to be implemented in the development of counterparts for TALA in other languages. This will form part of further studies in the Umalusi Home Languages project (see discussions in the previous section, as well as later in this Chapter).

The final research question, which brings us back to a crucial part of the rationale for not only this study but also for the overarching project, is what the findings of this study could mean for the development of ‘equivalent’, or parallel, instruments across multiple languages. As Du Plessis’s (2017: 236) study has revealed, the existing NSC HL examinations fall far, almost despairingly short in this regard, but the CAPS documents show that the HL curriculum is the same across all eleven languages. The construct for advanced language ability, with its set of generic components that were used for the development of TALA, was derived from this curriculum, and we can therefore reasonably expect that these skills should have been acquired in the HL subject no matter in which particular language it is. Moreover, the task and item types were selected and specifications designed with transferability across languages in mind, describing what the various subtests or sections should assess in such a way that its applicability would not be limited to a specific language or by linguistic phenomena. That being said, the actionability of the specifications for use in the context of a specific language would need to be assessed for each case, and much work will have to be done before a satisfactory solution will be arrived at for all HLs.

The selection of material, or in many cases the creation of material, for use in TALA and its counterparts may require more effort for some languages than for others (Steyn, forthcoming). In addition, for each language linguistic features such as the use of cohesive ties or prepositions need to be taken into consideration in the adaptation of the development instructions for particular task types. For the “Grammar and text relations” subtest, for example, the systematic omission of words in the text may be something like every 5 to 7

words for texts in one language, but perhaps less frequent for texts in another that typically features longer sentences. Although these variations do not change the overall brief of the subtest's function and its alignment with the construct, they are necessary in order to operationalize the construct successfully through an application of the requirements set by the test specifications. This necessitates a thorough study of how the development of a TALA counterpart for each language takes place, from the development of materials to the development and refinement of test items.

We can therefore conclude that TALA can be used as the basis for the development of a common standardised component of the exit level assessment of each of the NSC HL examinations, as it is based on a construct common to the curriculum for all eleven HLs. However, it is beyond the scope of the present study to determine how viable the development of equivalent assessment instruments such as these would be. It will certainly make out a substantial part of the investigations associated with the next phase of the TALA project.

### **6.3. Critical evaluation of this study**

Throughout the design and development of TALA fourteen conditions for responsible test design (adapted from Weideman, 2017), discussed in Chapter 3, were used as guiding principles for each step in the process described in this study. It is therefore necessary to return to these principles in our evaluation of the study, as well as our reflection on what needs to be addressed in subsequent phases of the Umalusi Home Languages Project or in separate studies. This section will discuss the following requirements and the extent to which they have been addressed:

1. **Systematically integrate multiple sets of evidence** in arguing that the test is a unity in a multiplicity of components, unifying many parts around a single purpose.

2. Specify clearly and to the public the appropriately **limited scope** of the test, and exercise humility in doing so.
3. Ensure that the measurements obtained are adequately **consistent**, also across time.
4. Ensure **effective** measurement by using a defensibly **adequate instrument**.
5. Have an appropriately and adequately **differentiated** test.
6. Make the test **intuitively appealing** and acceptable.
7. Mount a **theoretical defence** of what is tested in the most current terms.
8. Make sure that the test yields **interpretable and meaningful results**.
9. Make not only the test, but information about it, **accessible** to everyone, and use a test that is **suitable**, at the **appropriate** level, and **relevant** to the context.
10. Obtain the results **efficiently** and ensure that they are **useful**.
11. **Align** the test with the instruction that will either follow or precede it, and as closely as possible with the learning.
12. Be prepared to give **account to the public** of how the test has been used.
13. Value the **integrity** of the test; make no compromises of quality that will undermine its status as an instrument that is fair to everyone.
14. Spare no effort to make the test appropriately **trustworthy**.

As mentioned in Chapter 3, there are some criteria that could not be attended to within the limited scope of this study.

The process of mounting a theoretical, as well as empirical, justification for the development of TALA, which has been presented here, has consisted of bringing together sets of evidence that attest to this instrument and its proposed use conforming to the principles for responsible test design. By doing so, we

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have therefore been addressing the first principle, which constitutes articulating an initial validation argument. The current study has shown this instrument to be a unity in a multiplicity of components that is meant to be used for a specific purpose, namely that of assessing the advanced language ability of candidates at a particular level. As we have seen in this part of the discussion, there are elements that need further investigation and may in fact need to be revisited on a regular basis. For the most part these considerations require efforts that go beyond the scope of this study but that must form part of the next phase of investigation. As regards the artefact itself, TALA has been argued, with reference to both the idea of language ability that underlies it, as well as the elements with which we aim to measure that ability, to be a unity within a multiplicity of components, both with regard to what is measured by its various subtests, and with respect to the multiplicity of functional components of the operationalised version of the idea of language ability that forms its unifying construct. That unity carries a technical stamp or qualification: TALA is a technical unity within a multiplicity of components. The factor analyses of a component of the pilot (Chapter 4, Figure 4.2), and of the refined, post-pilot version of TALA (Chapter 5, Figure 5.1), discussed above, further indicate that the test satisfies the requirement of being a technical unity within a multiplicity of component subtests and items.

One of the inherent qualities of an assessment instrument – that is acknowledged in the design and development process but perhaps not always adequately addressed – is that it is limited in what it can do and be used for. Considerations such as the purpose of the instrument, how it will be administered and the subsequent use of the results all factor into our justification regarding the scope of the instrument and it is the responsibility of the test designer to ensure that all stakeholders are informed of this. To that end, documentation regarding TALA, for example, should make it clear to both the test users and the public, that care has been taken to ensure that this instrument assesses a set of abilities that constitute advanced language ability

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in a first language at exit level, or Grade 12. It is aligned with the Grade 12 curriculum set out for the NSC HL subjects and only assesses what can ‘reasonably’ be expected of a candidate at this level (also related to conditions 7 and 9). This assertion is based on the expert opinion of both the panel of designers who participated in the development of the test, and of the panel that reviewed the piloting results of the instrument for refinement. Furthermore, any description of what a particular task type, or even an individual item, assesses should be clear and taken into account when interpreting the test results. An analysis of each instrument’s alignment with the test specifications, such as that presented in Appendix B, is therefore an important part of the evaluation of an instrument.

Whichever way the instrument is adopted in future, there must be clear documentation available to the public and to other researchers that relates to the appropriateness of the instrument, in terms of scope (condition 2), effective measurement (condition 4), and relevance and suitability for use at the target group’s level (condition 9). This study provides us with most of the details necessary to create such a document and to provide the information to be included in a test manual for TALA.

The third principle looks at whether the instrument’s measurements are consistent and reliable. As discussed in Chapter 4, the statistical analyses showed the Cronbach alpha of this prototype of TALA to be 0.96, suggesting that it is highly reliable. The analyses on the reconstructed data set for the 60-item version of TALA, discussed in Chapter 5, also showed high measures in terms of reliability, with a Cronbach alpha of 0.90 and Greatest Lower Bound (GLB) value at 0.95. Of course, these measures are at this stage an initial indication of what the consistency of measurement of TALA will be over time, but we will need to continue to monitor the test’s performance in subsequent administrations, especially given the fact that in its 60-item format the test has yet to go through a full administration.

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The fourth principle is related to the sufficiency of the instrument, i.e. whether decisions can be made based on this instrument alone or whether it will need to be supplemented with information from external sources. This principle, therefore, deals with the question of the (as yet undisclosed) validity of the test instrument to measure a particular ability or domain. In large part this study has endeavoured to address this issue by providing a theoretical justification for TALA, from the articulation of the components of the construct to the design of test specifications that could operationalize the construct, and the implementation of that design in the development and refinement of the test instrument. It has thus brought a broadening or disclosure of the initial notion of validity (as the technical force of the instrument to yield a measurement result) into the discussion, by considering what is conventionally called the construct validity of a language test. The subsequent uses of TALA in other studies appear to confirm that it satisfies the design requirement of being a technically adequate instrument, that yields (potentially useful) results.

Both Chapters 4 and 5 commented on the dimensionality of the test (principle 5), the former by looking at the subtest intercorrelations of the 187-item prototype and the latter, discussing the results of a factor analysis of the reconstructed data set for the 60-item version of TALA, as well as the subtest intercorrelations for that refined version of the test. These measures all show that the fifth condition – that the instrument must be appropriately and adequately differentiated – has been met. They show that the test measures a single construct, as the items are more or less clustered together, but the spread and formation of the items within this cluster show there is some heterogeneity to the assessment and that the items are tapping into different skills and subskills within this single construct (which is also relevant to the first condition, that requires the test to be a technical unity within a multiplicity of components).

The extent to which TALA can be considered to be intuitively appealing, the sixth principle that relates to face validity, was not the focus of



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this study but could be the topic of a subsequent investigation. The exercise of analysing the instrument and classifying each item in terms of which specific components (or subskills within a component) of the construct it measures, as was done to create the document attached as Appendix B, can perhaps be seen as one part of the face validity argument for TALA. Paired with the classification of the items and overall judgements on the instrument made by the panel evaluation session (as discussed in Chapter 5), we can say that TALA seems to be measuring the components of the construct it is intended to measure. As discussed in Chapter 3, construct validity and content validity (seventh and ninth conditions, respectively) were used as the basis for test validity for this study. The former (principle 7) was mainly addressed in Chapter 2 where the concept of advanced language ability was defined and used to articulate the components of a measurable construct. Content validity (principle 9), on the other hand, was addressed at different stages in the development and refinement process: firstly, in the selection of task types and design of test specifications (Chapters 2 and 3); secondly, in the preparation of materials suitable, relevant to the context and at an appropriate level for the test development sessions (Chapter 4); and again in the development of items that are suitable (Chapter 4) and evaluation of their appropriateness during the panel session (Chapter 5). The items that were selected for further use in either the 60-item TALA or the remaining items in the item bank were all deemed by the panel to be suitable for the purpose of the test, appropriate for the target group and relevant to the context of the NSC Home Language Examinations. Furthermore, the selected items all performed within the parameters for facility (see Chapters 4 and 5) which suggests that the level of difficulty was appropriate for the cohort used in the pilot. An IRT-analysis, using a program such as WINSTEPS or Xcalibre, could provide further insight in terms of the appropriateness of the instrument for a particular cohort with the fit-statistics that they will generate. As mentioned before, this did not form part of the methodology of this study, but will be included in the next phase of the

Umalusi Home Languages Project, where larger numbers of test takers are likely to be involved.

Another important condition for responsible test design is that the instrument must produce interpretable and meaningful results (principle 8) – regardless of whether one views this as an aspect of validity or merely the property of interpretation. Cognisance of the scope of the instrument (principle 2), the adequacy of the instrument to measure the relevant trait (principle 4), the theoretical defensibility of the instrument (principle 7) and the suitability of the instrument for use in the specific context or for a specific purpose (principle 9), is essential to interpreting the results the test yields and making meaningful inferences about a candidate’s performance in this domain (Weideman, 2017; Bachman & Palmer, 1996: 21). In turn, results must be presented in a way that acknowledges these aspects and guides the test user’s interpretation of them. For TALA, a detailed report that shows the strengths or weaknesses of a particular candidate’s performance in terms of the individual components of the construct may prove the most useful for diagnostic purposes, but within the NSC context, would most likely be included in an overall mark for the Home Language Subject and not reported individually. Conversely, the knowledge that the components are adequately and fairly represented within the broader assessment structure for the subject would in all likelihood be sufficient. It is important to remember that the NSC examinations for Home Languages are summative and, should TALA be incorporated into this assessment structure as a standardized component, reporting on these results will be aligned with that of the other NSC examination results. This does not preclude a detailed subsequent analysis of the results, but it will then likely form part of the Diagnostic Report on the NSC results that is published by the Department of Basic Education annually. In addition to observations made on performance trends in terms of specific components of the construct of advanced language ability, it would be possible to use the standardized component to statistically equalize the NSC Home Language results and compare performance across the

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eleven languages. TALA, therefore, has the potential to yield interpretable and meaningful results, but how this will be communicated will depend on how it is adopted as an assessment.

Like the eighth condition, the tenth condition will rely, in part, on how the assessment is used and the results are presented. It requires that results be obtained efficiently and that the test developer must ensure that the results are useful. The multiple-choice format of TALA, as mentioned before in section 6.1.1, would have many advantages in terms of scoring; given the right logistical arrangements, it would doubtless ensure that results are obtained efficiently. The question of the usefulness of the results is closely linked to the meaningfulness of the results (principle 8) and would influence the ability of using them to inform interventions or any subsequent instruction (principle 11). It refers specifically to the utility of the instrument in terms of decision-making. Although TALA seems to have the potential to provide useful results, such as being used in a diagnostic way to inform either current language instruction or subsequent interventions, the evaluation of whether these results are useful goes beyond the scope of the present study and could be addressed in a follow-up study.

In terms of principle 11, the conceptualization and the articulation of the definition of advanced language ability presented in Chapter 2 clearly showed the links between the existing NSC Home Language curriculum and the components of the construct. Thus we can safely say that TALA is aligned with what ought to be instructed in the subject. Given the tendency of some teachers to tailor their teaching to the assessments rather than the curriculum (Du Plessis, 2017), the finding that certain aspects of the curriculum are neglected due to underrepresentation in the existing assessment structure shows a misalignment between language instruction and language assessment in the current case. The principle in question is therefore clearly being violated currently. Again, this goes beyond the scope of the present study, but would be

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a valuable avenue of investigation should TALA be adopted into the NSC structure.

Safeguarding the quality and integrity of the instrument (principle 13) is essential and it must be fair to everyone. TALA's multiple-choice format eliminates the need to ensure interrater-reliability: scoring will not vary according to a marker's interpretation (or misinterpretation) of a memorandum, which will contribute to the fairness of the assessment. Every version of the instrument must be subjected to scrutiny in a quality assurance process that will not only look at test and item productivity and reliability, but also at the comparability of different versions of the test in terms of both content and performance. Also, to ensure that the instrument has no signs of bias for or against particular groups of candidates, DIF-analyses must be conducted to ensure fairness in assessment across all groups. The present study did not include a DIF-analysis of the piloting results of TALA, but this will be incorporated into the methodology of the next phase of the Umalusi Home Language Project.

The fourteenth principle relates to the trustworthiness of the instrument. This does not only have to do with ensuring that the tests are administered securely and in similar circumstances across all administrations, but also that parallel versions of the test used in different test sessions can be trusted to be comparable in content and statistically equitable. This condition will need to be addressed over time as TALA and its counterparts are administered. It will not only be a very important part of the next phase of the Umalusi Home Languages Project, but an indication of the quality and usefulness of the designs proposed over a longer period.

As mentioned earlier in this discussion, a test manual will need to be created for TALA to ensure that all stakeholders – students, parents, teachers, institutions of higher learning and external bodies – have access to information regarding the test. For a number of the design principles meeting their

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requirements is contingent on certain information being available to the public.

A test manual can include:

- a description of how the instrument is used (principle 12 – ensure accountability to the public), how results are interpreted (principle 8), and how this can be used for decision-making, if relevant (principle 10);
- details regarding what it measures (construct) and how it is measured in terms of task types and specifications (related to principles 7 and 4 – assure stakeholders that it is a theoretically defensible and adequate instrument), as well as how it is aligned with instruction (principle 11);
- a discussion of how test developers have ensured that the test is suitable for its purpose, appropriate for the level and to the context (principle 9);
- and finally, how the integrity, quality and fairness of the test (principle 13), and the trustworthiness of the test are ensured.

In addition, the test manual may also include exemplar questions or a model paper. Such a document will not only inform test users – candidates, instructors, or invigilators – but also those who will develop future versions of TALA.

In conclusion, it deserves to be noted that the principles to which TALA should conform, discussed above, are only that: principles. Principles are conditions or requirements, normative starting points that (in the present case) language test designers must give flesh to when they design language interventions. Principles are not norms that apply similarly for all cases and in every context; they need to be implemented, variously, and their implementation in each specific case needs to be argued convincingly. Usually that is done, for language assessments, in the form of what is called a validation argument or study. In the discussion above, the idea of adhering to principles as

that of giving shape to responsible language interventions (Weideman, 2017) has been adopted.

The above discussion has already highlighted, too, some of the limitations of the current study. That is again part of the discussion below, together with the considerations of alternative uses for TALA.

## **6.4. Future challenges**

The next phase of the Umalusi Home Languages project has been discussed in section 6.1 above and will aim to address those principles that could not be addressed fully in this phase. Beyond that, however, it may prove useful to embark on a reception study among both students and teachers, much like the study that Du Plessis (2012) conducted for the Test of Academic Literacy for Postgraduate Students (TALPS). This could not only inform any proposal made to Umalusi and the Department of Basic Education regarding the adoption of TALA, but would provide valuable data that may influence instruction prior to its administration – within the NSC context – or even on entering the next phase of training or education.

Du Plessis (2017: 190f) mentions that examining authorities may be reluctant to make any significant changes to the format of the existing NSC Home Language examination papers and this would doubtless extend to the incorporation of TALA into the NSC HL examination, regardless of which one of Du Plessis's (2017: 207f) suggestions – discussed in section 6.1 – are proposed to the Department of Basic Education and Umalusi. At present, the tardiness of Umalusi to take the matter further appears to make it unlikely that TALA will be adopted in its current format into the NSC HL assessment structure anytime soon, but sections 6.5 and 6.6 will reflect on the other uses there may be for it.

## 6.5. Other further uses for TALA

Apart from using TALA in its entirety as a section in the NSC HL examination paper, subtests or other elements of it may be incorporated into the existing assessments. The TALA test form could potentially inform the redesign of the current papers, such as making alterations to existing task types or by adding TALA or TALA-like subtests where relevant. One way to approach this would be to identify the presence of the skills that constitute advanced language ability in the existing NSC examinations papers and consider how best to alter or add to the existing three-paper format. This is a potential avenue for future research that could also extend to the evaluation of other formal assessments that form part of the school-based assessment plan for the Home Language subjects at present.

Should none of these alternative approaches be taken on board and this project never come to full fruition, has this study merely investigated a lost opportunity? Or can TALA serve other purposes as well? Outside of the NSC structure, TALA could be used as an external instrument associated with extra-mural instruction, especially where individual teachers or schools may wish to use it as a diagnostic tool. In that case it may also serve to inform classroom intervention, provided that feedback based on the results is structured appropriately and with enough specificity for this purpose. It could also be adapted for use at other levels (cf. Myburgh, 2015; Myburgh-Smit & Weideman, 2017) or its task types could be used for other purposes in the classroom. The results of this study attest to the quality of this instrument – as a complete test, but also as a set of subtests – and it clearly has the potential to be useful in all of these contexts.

Increasing attention is being paid to the use of language in education, evidenced by the number of studies that have highlighted the heuristic role of language in learning (Uccelli & Snow, 2010; Maton, 2014; Du Plessis, 2017), or that have investigated the tensions in multilingual settings in terms of the interplay between language diversity and the teaching of STEM content

(Padayachee & Steyn, 2018; Blackie, 2014; Setati-Phakeng & Moshkovich, 2013; Planas & Setati-Phakeng, 2014; Hugo & Nieman, 2010), as well as those that focus on the design of assessments of language abilities at various levels – such as Gruhn’s Test of Emergent Literacy (TEL) for children aged 5 or 6 (Gruhn & Weideman, 2017), Steyn’s (2014) Test of Early Academic Literacy (TEAL) designed for learners in Grade 3, Myburgh’s (2015) work on academic literacy tests at Grade 10 level (Myburgh-Smit & Weideman, 2017), not forgetting the voluminous research that has been done on academic literacy assessment in higher education. The present study contributes to this body of research by looking at the development of an assessment for a specific level and purpose, but it has also drawn attention to the presence of skills in the NSC Home Languages curriculum that, despite being critical elements of the curriculum, have not enjoyed much attention in the existing examination structure. Section 6.6 below will reflect on the value of the research beyond the development of TALA.

## **6.6. Beyond TALA**

If we look back at the rationale for the Umalusi Home Languages Project, the overarching aim is to investigate the possibility of developing an instrument that could be used within the NSC HL assessment structure in parallel across the eleven official Home Languages of South Africa. The inequalities that are present in the existing NSC HL assessment structure (Du Plessis, 2017; Du Plessis, Steyn & Weideman, 2016; Weideman, Du Plessis & Steyn, 2017) cannot be left unchecked if we are to ensure that these high stakes, exit-level examinations are fair to all candidates. Moreover, the issues that plague these assessments are likely to extend to other language assessments, such as the NSC First Additional Language examinations, that are assessed similarly, as well as to assessments at other levels of education – both within basic and higher education – and even the instruction of these language subjects.



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The NSC Home Languages curriculum, as outlined in CAPS, is seemingly generic and the definition of advanced language ability that we have drawn from it should presumably be applicable across the eleven Home Languages. Its actionability within the context of those languages, however, needs to be investigated. Our concern, therefore, should not end with the comparability of the assessments across the languages in light of the curriculum statement but should lead to a thorough study of classroom practices and the comparability of the content covered in HL classrooms. This may even necessitate amendments to the existing education policy.

The issue of parity between parallel assessments is also not only relevant to testing in multiple languages (Steyn, forthcoming). For other assessments, such as tests of academic literacy like TALL and the National Benchmark Tests (NBTs) used by tertiary institutions, some test users are calling for discipline- or subject-specific assessments. The merits of this type of approach (cf. Butler, 2013) and practical implications aside, the comparability of an assessment that has been tailored to a specific field of study to other assessments that are used for the same purpose will be an important factor. In the case of an academic literacy test used for a relatively generic purpose by an institution, such as for placement, admission or diagnostic purposes, the decisions that test developers make with regards to adapting the instrument for a specific discipline may impact its relative equivalence to its counterparts for different disciplines. Texts and even task types selected, for example, for a test for prospective law students may be qualitatively different from one selected for students intending to go into the natural sciences, which may in turn affect the facility of the test, as well as the way we interpret the results.

It is clear from these examples that some work needs to be done on the principles that would inform the development of parallel assessments and the specific requirements that would be used to determine their equivalence beyond that of using existing norming, scaling and linking methods. That work will be

left to the studies such as those intended for the next phase of the Umalusi Home Languages Project.

What began for me as a highly technical exercise to assess at scale in less wasteful and more appropriate ways, therefore has become an investigation that has opened many new testing opportunities, with innovative strategies and new avenues for the effective assessment being disclosed as this study progressed. I hope that the basis given here will help me and others further explore and employ them.

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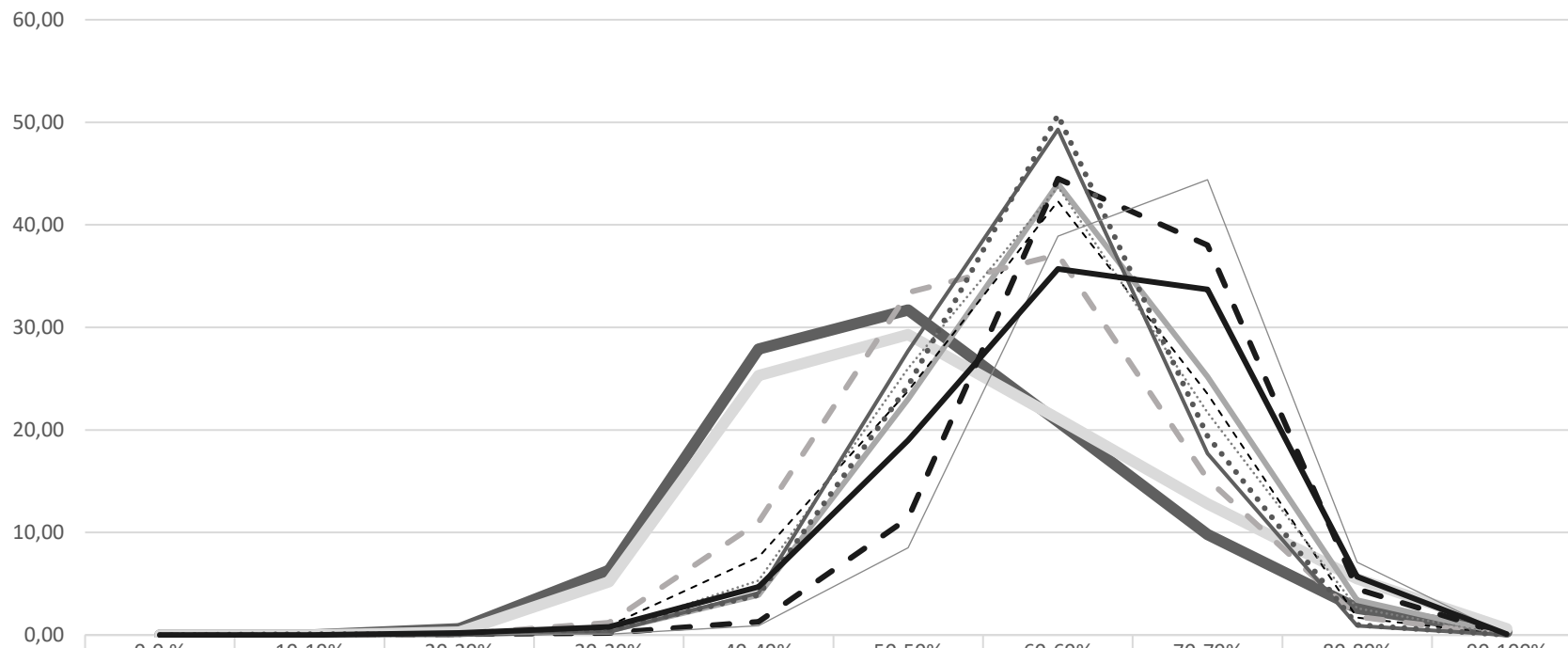
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## **Appendix A**

### **Performance distribution of NSC HL Examinations 2017**

Performance distribution curves: NSC Home Language Papers 2017



	0-9 %	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%
English	0,00	0,00	0,60	6,30	27,90	31,70	20,80	9,80	2,60	0,30
Afrikaans	0,00	0,00	0,30	5,20	25,30	29,30	21,10	12,80	5,50	0,60
IsiNdebele	0,00	0,00	0,10	0,40	3,90	23,00	44,00	25,20	3,40	0,10
IsiXhosa	0,00	0,00	0,10	0,20	1,30	11,40	44,50	38,00	4,50	0,00
IsiZulu	0,00	0,00	0,20	0,90	7,60	23,80	42,30	23,50	1,70	0,00
Sepedi	0,00	0,00	0,10	1,20	11,00	33,40	37,10	15,20	1,80	0,00
Sesotho	0,00	0,00	0,10	0,50	5,30	26,00	43,70	21,70	2,60	0,00
Setswana	0,00	0,00	0,00	0,30	4,10	27,70	49,30	17,70	0,90	0,00
Siswati	0,00	0,10	0,10	0,50	3,90	24,30	50,70	19,40	1,00	0,00
Tshivenda	0,00	0,00	0,10	0,10	0,90	8,50	38,90	44,40	7,10	0,00
Xitsonga	0,00	0,00	0,20	0,80	4,70	19,00	35,70	33,70	5,70	0,10



## **Appendix B**

### **Test specification analysis of TALA prototype**

This document has been removed from the published version of this dissertation to keep the content of the TALA instrument secure. Should you wish to see it, please contact either Sanet Steyn ([sanet.steyn@uct.ac.za](mailto:sanet.steyn@uct.ac.za)) or Albert Weideman ([WeidemanAJ@ufs.ac.za](mailto:WeidemanAJ@ufs.ac.za)).

**Appendix C**  
**Statistical reports**



# TALA 1 & 2 (FIRST PILOT)

ITEMAN (tm) for 32-bit Windows, Version 3.6  
 Copyright (c) 1982 - 1998 by Assessment Systems Corporation

Conventional Item and Test Analysis Program

Item analysis for data from file c:\AlbertDocuments\ICELDA\ice00795.txt  
 Date: 21 Jun 2013 Time: 16:51

\*\*\*\*\* ANALYSIS SUMMARY INFORMATION \*\*\*\*\*

Data (Input) File: c:\AlbertDocuments\ICELDA\ice00795.txt  
 Analysis Output File: c:\AlbertDocuments\ICELDA\ice00795.out  
 Score Output File: NONE  
 Exceptions File: NONE  
 Statistics Output File: NONE

Scale Definition Codes: DICHOT = Dichotomous MPOINT = Multipoint/Survey

Scale: 1

Type of Scale DICHOT  
 N of Items 187  
 N of Examinees 1244

\*\*\*\*\* CONFIGURATION INFORMATION \*\*\*\*\*

Type of Correlations: Point-Biserial  
 Correction for Spuriousness: YES  
 Ability Grouping: YES  
 Subgroup Analysis: NO  
 Express Endorsements As: PERCENTAGES  
 Score Group Interval Width: 1

\*\*\* Correlations have been corrected for spuriousness \*\*

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics				
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low High	Point Biser.	Key

SCRAMBLED TEXT 1

1	1-1	92	.18	.30	A	4	9	1	-.19	
					B	2	6	1	-.20	
					C	92	80	98	.30	*
					D	0	1	0	-.09	
					E	1	2	0	-.11	
					Other	0	0	0	-.08	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low High	Point Biser.	Key	
2	1-2	80	.37	.37	A	80	59	95	.37	*
					B	4	9	1	-.19	
					C	3	7	1	-.17	
					D	4	10	1	-.22	
					E	8	14	2	-.16	
					Other	0	0	0	-.09	
3	1-3	52	.53	.41	A	5	9	1	-.15	
					B	29	35	16	-.18	
					C	3	9	0	-.24	
					D	11	20	5	-.21	
					E	52	25	78	.41	*
					Other	1	0	0	-.09	
4	1-4	53	.41	.32	A	4	11	0	-.21	
					B	53	33	74	.32	*
					C	2	4	0	-.16	
					D	26	27	17	-.11	
					E	14	22	8	-.16	
					Other	1	0	0	-.12	
5	1-5	57	.40	.32	A	6	12	1	-.18	
					B	12	16	9	-.10	
					C	2	4	1	-.10	
					D	57	37	77	.32	*
					E	22	29	12	-.19	
					Other	1	0	0	-.11	
SCRAMBLED TEXT 2										
6	1-6	84	.35	.38	A	1	3	0	-.13	
					B	9	21	1	-.29	
					C	4	8	1	-.17	
					D	84	63	97	.38	*
					E	1	3	0	-.11	
					Other	1	0	0	-.10	
7	1-7	66	.44	.35	A	6	11	2	-.16	
					B	14	25	4	-.24	
					C	66	43	87	.35	*
					D	6	12	1	-.19	
					E	8	7	6	-.02	
					Other	1	0	0	-.11	
8	1-8	52	.51	.38	A	18	21	9	-.13	
					B	52	30	81	.38	*
					C	15	22	6	-.19	
					D	4	9	0	-.18	
					E	11	16	4	-.16	
					Other	1	0	0	-.11	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
9	1-9	54	.37	.27	A	54	39	77	.27	*
					B	11	13	4	-.13	
					C	9	12	5	-.11	
					D	4	9	1	-.22	
					E	21	24	12	-.10	
					Other	1	0	0	-.07	
10	1-10	55	.37	.26	A	20	24	12	-.14	
					B	15	12	9	-.02	
					C	7	14	1	-.21	
					D	3	7	0	-.16	
					E	55	40	77	.26	*
					Other	1	0	0	-.09	
<b>TEXT COMPREHENSION</b>										
11	1-11	62	.30	.25	A	13	25	4	-.28	
					B	17	17	18	-.02	
					C	62	45	75	.25	*
					D	8	12	3	-.13	
					Other	0	0	0	-.06	
					12	1-12	13	.02	.00	A
B	13	11	13	.00						*
C	3	6	2	-.10						
D	47	43	43	.00						
Other	0	0	0	-.04						
13	1-13	20	.05	.03						A
					B	33	30	33	.02	
					C	20	20	25	.03	*
					D	18	13	27	.12	?
					Other	2	0	0	-.00	
					CHECK THE KEY C was specified, D works better					
14	1-14	81	.40	.37	A	81	58	97	.37	*
					B	4	8	1	-.15	
					C	5	12	0	-.20	
					D	10	21	1	-.26	
					Other	0	0	0	-.09	
					15	1-15	88	.28	.35	A
B	1	5	0	-.19						
C	6	14	1	-.23						
D	88	71	99	.35						*
Other	0	0	0	-.06						
16	1-16	65	.35	.26						A
					B	65	45	81	.26	*
					C	8	14	2	-.17	
					D	22	29	15	-.12	
					Other	0	0	0	.03	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
17	1-17	49	.42	.31	A	26	34	21	-.13	
					B	49	26	69	.31	*
					C	11	20	2	-.24	
					D	14	20	8	-.13	
					Other	0	0	0	-.03	
					18	1-18	80	.41	.40	A
B	10	22	2	-.29						
C	80	55	96	.40						*
D	6	13	2	-.18						
Other	1	0	0	-.04						
19	1-19	80	.38	.39						A
					B	10	21	4	-.25	
					C	6	13	1	-.23	
					D	3	8	0	-.19	
					Other	0	0	0	-.02	
					20	1-20	58	.37	.28	A
B	27	31	23	-.08						
C	58	36	73	.28						*
D	7	14	2	-.20						
Other	2	0	0	-.08						
21	1-21	66	.52	.42						A
					B	11	21	2	-.25	
					C	17	30	8	-.25	
					D	6	12	2	-.15	
					Other	1	0	0	-.06	
					22	1-22	91	.23	.36	A
B	3	7	1	-.18						
C	91	76	99	.36						*
D	4	11	0	-.26						
Other	0	0	0	-.06						
23	1-23	71	.57	.48						A
					B	11	24	1	-.32	
					C	10	20	1	-.24	
					D	71	38	95	.48	*
					Other	1	0	0	-.06	
					24	1-24	44	.24	.17	A
B	9	15	5	-.15						
C	29	36	17	-.16						
D	44	31	55	.17						*
Other	1	0	0	-.04						

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics						Key	Seq. No.	Scale -Item	Item Statistics			Alternative Statistics						Key
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Seq. No.				Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	
25	1-25	69	.55	.46	A	6	14	0	-.25			33	1-33	73	.56	.49	A	10	24	1	-.32		
					B	12	27	1	-.31								B	10	19	2	-.23		
					C	69	38	93	.46	*							C	73	41	97	.49	*	
					D	10	16	4	-.17								D	5	12	0	-.22		
					Other	3	0	0	-.10								Other	1	0	0	-.14		
26	1-26	64	.32	.24	A	4	9	0	-.21			34	1-34	30	.28	.24	A	43	41	38	-.04		
					B	64	47	79	.24	*							B	15	26	6	-.23		
					C	6	15	1	-.25								C	30	19	48	.24	*	
					D	26	28	20	-.07								D	11	12	9	-.06		
					Other	1	0	0	-.09								Other	1	0	0	-.10		
27	1-27	73	.51	.47	A	12	29	2	-.34			35	1-35	51	.25	.18	A	51	41	66	.18	*	
					B	73	42	93	.47	*							B	24	23	19	-.05		
					C	10	20	4	-.27								C	13	19	6	-.16		
					D	5	9	1	-.14								D	10	13	9	-.08		
					Other	0	0	0	-.04								Other	2	0	0	-.10		
28	1-28	62	.59	.45	A	11	27	1	-.33			36	1-36	47	.55	.41	A	22	40	9	-.30		
					B	20	27	11	-.16								B	11	20	4	-.22		
					C	6	16	1	-.25								C	19	19	12	-.06		
					D	62	28	87	.45	*							D	47	20	75	.41	*	
					Other	1	0	0	-.08								Other	1	0	0	-.07		
29	1-29	88	.26	.34	A	2	6	0	-.19			37	1-37	37	.27	.19	A	27	38	12	-.23		
					B	7	16	3	-.22								B	32	25	33	.06		
					C	88	71	96	.34	*							C	37	27	54	.19	*	
					D	2	7	1	-.22								D	3	9	0	-.21		
					Other	0	0	0	-.01								Other	0	0	0	-.11		
30	1-30	70	.59	.49	A	17	35	5	-.32			38	1-38	86	.36	.42	A	4	13	1	-.24		
					B	70	36	95	.49	*							B	6	14	1	-.27		
					C	5	11	1	-.22								C	86	62	98	.42	*	
					D	8	18	0	-.26								D	3	8	0	-.20		
					Other	1	0	0	-.06								Other	1	0	0	-.08		
31	1-31	54	.48	.36	A	14	22	3	-.23			39	1-39	65	.22	.19	A	65	50	72	.19	*	
					B	10	21	4	-.25								B	20	22	20	-.03		
					C	54	33	81	.36	*							C	7	14	3	-.21		
					D	22	23	13	-.10								D	8	11	6	-.13		
					Other	0	0	0	-.06								Other	1	0	0	-.13		
32	1-32	69	.39	.34	A	13	19	5	-.18			40	1-40	83	.42	.46	A	83	56	98	.46	*	
					B	69	50	89	.34	*							B	7	17	1	-.25		
					C	10	19	2	-.23								C	4	13	0	-.24		
					D	7	10	4	-.13								D	4	11	0	-.25		
					Other	1	0	0	-.10								Other	1	0	0	-.16		

Seq. No.	Item Statistics				Alternative Statistics						Key	Seq. No.	Item Statistics				Alternative Statistics						Key
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Seq. No.			Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.		
41	1-41	79	.38	.38	A	5	13	0	-.27	*	49	1-49	70	.42	.36	A	14	19	8	-.15	*		
					B	79	56	93	.38							B	70	48	90	.36			
					C	6	16	0	-.26							C	9	19	2	-.26			
					D	9	15	7	-.13							D	5	11	1	-.20			
					Other	0	0	0	-.10							Other	1	0	0	-.10			
42	1-42	63	.32	.27	A	11	14	8	-.07	*	50	1-50	68	.31	.27	A	5	11	1	-.21	*		
					B	16	23	13	-.14							B	23	24	15	-.11			
					C	10	19	3	-.25							C	68	53	84	.27			
					D	63	44	76	.27							D	4	9	0	-.21			
					Other	0	0	0	-.03							Other	1	0	0	-.12			
43	1-43	39	.40	.30	A	39	21	60	.30	*	51	1-51	59	.56	.43	A	8	19	1	-.27	*		
					B	16	21	4	-.19							B	59	30	86	.43			
					C	21	41	3	-.35							C	16	24	6	-.20			
					D	24	16	32	.11							D	16	26	6	-.21			
					Other	1	0	0	-.04							Other	1	0	0	-.11			
44	1-44	88	.32	.40	A	3	8	1	-.19	*	52	1-52	41	.39	.27	A	9	17	2	-.22	*		
					B	88	67	99	.40							B	41	29	68	.27			
					C	5	13	1	-.25							C	18	29	3	-.26			
					D	3	10	0	-.22							D	32	25	26	.03			
					Other	1	0	0	-.11							Other	1	0	0	-.04			
45	1-45	82	.42	.44	A	6	14	1	-.26	*	53	1-53	35	.47	.36	A	39	39	24	-.11	*		
					B	6	16	1	-.25							B	13	19	6	-.17			
					C	5	14	0	-.24							C	12	22	4	-.24			
					D	82	55	98	.44							D	35	17	65	.36			
					Other	1	0	0	-.09							Other	2	0	0	-.07			
46	1-46	52	.52	.39	A	21	27	13	-.15	*	54	1-54	53	.36	.29	A	53	34	70	.29	*		
					B	11	22	4	-.25							B	14	23	4	-.22			
					C	15	22	5	-.19							C	9	19	4	-.23			
					D	52	26	79	.39							D	23	22	22	-.03			
					Other	0	0	0	-.09							Other	1	0	0	-.12			
47	1-47	77	.54	.49	A	7	19	1	-.28	*	55	1-55	43	.54	.40	A	18	29	7	-.23	*		
					B	77	44	98	.49							B	20	24	8	-.16			
					C	11	23	1	-.28							C	18	24	12	-.14			
					D	5	12	0	-.24							D	43	20	73	.40			
					Other	0	0	0	-.10							Other	1	0	0	-.12			
48	1-48	69	.43	.36	A	69	46	89	.36	*	56	1-56	25	.04	.06	A	25	26	30	.06	*		
					B	7	14	2	-.18							B	31	32	37	.01			
					C	14	26	2	-.27							C	8	16	4	-.22			
					D	9	11	7	-.10							D	36	24	30	.01			
					Other	1	0	0	-.14							Other	1	0	0	-.09			

Seq. No.	Item Statistics				Alternative Statistics					Key		Seq. No.	Item Statistics				Alternative Statistics					Key	
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.				Seq. No.	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High		
57	1-57	73	.50	.43	A	9	22	1	-.28		65	1-65	26	.05	.04	A	26	24	29	.04	*		
					B	13	24	4	-.24							B	10	19	3	-.25			
					C	73	44	94	.43	*						C	48	32	62	.23	?		
					D	4	9	1	-.19							D	15	23	6	-.20			
					Other	1	0	0	-.08							Other	1	0	0	-.07			
					CHECK THE KEY											A was specified, C works better							
58	1-58	53	.50	.37	A	53	28	78	.37	*	66	1-66	65	.52	.43	A	65	38	90	.43	*		
					B	18	23	10	-.13							B	13	23	2	-.24			
					C	12	24	3	-.26							C	11	20	3	-.25			
					D	16	23	9	-.17							D	11	17	4	-.17			
					Other	1	0	0	-.11							Other	1	0	0	-.12			
59	1-59	19	.09	.07	A	37	39	27	-.11		67	1-67	61	.65	.52	A	9	17	2	-.20			
					B	35	24	43	.15	?						B	12	24	2	-.30			
					C	19	18	27	.07	*						C	17	30	3	-.29			
					D	8	17	3	-.23							D	61	27	92	.52	*		
					Other	1	0	0	-.09							Other	1	0	0	-.12			
					CHECK THE KEY											C was specified, B works better							
60	1-60	63	.48	.40	A	10	18	5	-.20		68	1-68	43	.48	.35	A	16	21	5	-.18			
					B	63	37	85	.40	*						B	43	25	73	.35	*		
					C	11	17	5	-.18							C	21	30	10	-.20			
					D	15	26	5	-.24							D	17	21	12	-.10			
					Other	1	0	0	-.09							Other	2	0	0	-.07			
61	1-61	59	.44	.34	A	25	33	15	-.17		69	1-69	44	.47	.36	A	12	21	3	-.25			
					B	8	16	1	-.22							B	33	38	20	-.14			
					C	59	36	80	.34	*						C	44	23	70	.36	*		
					D	8	13	4	-.16							D	11	17	6	-.15			
					Other	1	0	0	-.13							Other	1	0	0	-.10			
62	1-62	80	.41	.41	A	80	53	94	.41	*	70	1-70	62	.41	.33	A	20	25	16	-.12			
					B	9	20	5	-.22							B	62	38	79	.33	*		
					C	7	17	0	-.27							C	6	13	1	-.22			
					D	4	9	1	-.19							D	11	22	3	-.24			
					Other	1	0	0	-.11							Other	1	0	0	-.06			
63	1-63	59	.65	.51	A	17	32	4	-.28		71	1-71	79	.43	.41	A	79	53	96	.41	*		
					B	12	23	4	-.25							B	8	16	1	-.22			
					C	11	20	4	-.23							C	4	11	1	-.22			
					D	59	24	89	.51	*						D	8	18	2	-.23			
					Other	1	0	0	-.12							Other	1	0	0	-.12			
64	1-64	73	.47	.40	A	10	19	2	-.22		72	1-72	69	.48	.39	A	11	18	3	-.22			
					B	10	17	3	-.20							B	69	44	92	.39	*		
					C	5	14	1	-.26							C	5	14	0	-.25			
					D	73	48	95	.40	*						D	15	22	5	-.19			
					Other	1	0	0	-.08							Other	1	0	0	-.10			

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
73	1-73	44	.43	.34	A	25	24	15	-.09	*
					B	44	25	68	.34	
					C	16	26	7	-.23	
					D	14	21	10	-.17	
					Other	2	0	0	-.11	
74	1-74	74	.42	.38	A	13	21	4	-.20	*
					B	8	18	1	-.28	
					C	74	52	94	.38	
					D	4	8	1	-.15	
					Other	1	0	0	-.08	
75	1-75	77	.44	.42	A	6	14	1	-.22	*
					B	7	15	1	-.25	
					C	9	20	4	-.23	
					D	77	50	94	.42	
					Other	1	0	0	-.08	
76	1-76	79	.41	.40	A	79	56	97	.40	*
					B	5	14	0	-.25	
					C	3	8	0	-.21	
					D	12	21	2	-.23	
					Other	1	0	0	-.07	
77	1-77	41	.32	.22	A	40	31	38	.06	*
					B	41	28	60	.22	
					C	9	20	1	-.30	
					D	10	20	2	-.23	
					Other	1	0	0	-.10	
78	1-78	60	.62	.46	A	60	28	90	.46	*
					B	28	49	7	-.36	
					C	9	16	3	-.17	
					D	2	6	0	-.20	
					Other	1	0	0	-.02	
79	1-79	40	.47	.35	A	40	21	68	.35	*
					B	38	46	23	-.18	
					C	10	18	4	-.21	
					D	11	12	4	-.10	
					Other	2	0	0	-.10	
80	1-80	53	.19	.15	A	18	14	20	.05	*
					B	20	26	12	-.16	
					C	53	44	63	.15	
					D	8	13	5	-.16	
					Other	2	0	0	-.08	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
81	1-81	63	.52	.43	A	16	26	8	-.22	*
					B	11	22	3	-.26	
					C	9	16	3	-.20	
					D	63	34	87	.43	
					Other	1	0	0	-.06	
82	1-82	70	.57	.46	A	7	12	2	-.16	*
					B	14	31	2	-.32	
					C	70	39	96	.46	
					D	7	16	0	-.26	
					Other	1	0	0	-.06	
83	1-83	85	.35	.41	A	5	14	1	-.28	*
					B	85	63	97	.41	
					C	5	12	0	-.24	
					D	3	9	1	-.19	
					Other	2	0	0	-.05	
<b>INTERPRETING GRAPHS &amp; VISUAL INFORMATION</b>										
84	1-84	85	.24	.29	A	3	7	1	-.19	*
					B	2	4	1	-.13	
					C	85	71	96	.29	
					D	10	17	3	-.20	
					Other	0	0	0	-.07	
85	1-85	66	.08	.06	A	5	8	1	-.14	*
					B	66	61	68	.06	
					C	13	20	8	-.17	
					D	17	12	23	.10	
					Other	1	0	0	-.02	
CHECK THE KEY B was specified, D works better										
86	1-86	77	.32	.27	A	9	18	2	-.20	*
					B	11	15	4	-.15	
					C	3	6	1	-.11	
					D	77	60	92	.27	
					Other	0	0	0	-.09	
87	1-87	55	.37	.27	A	55	41	78	.27	*
					B	11	13	6	-.10	
					C	17	22	7	-.15	
					D	16	24	7	-.19	
					Other	2	0	0	.00	
88	1-88	66	.42	.33	A	22	39	8	-.31	*
					B	5	7	3	-.09	
					C	6	9	4	-.08	
					D	66	43	85	.33	
					Other	1	0	0	-.04	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
89	1-89	27	.04	.06	A	6	10	3	-.13	*
					B	61	51	63	.03	
					C	27	28	32	.06	
					D	5	10	1	-.14	
					Other	1	0	0	-.01	
90	1-90	78	.26	.24	A	12	16	5	-.14	*
					B	78	64	90	.24	
					C	6	14	4	-.18	
					D	4	5	1	-.11	
					Other	0	0	0	-.10	
91	1-91	20	.14	.14	A	8	14	5	-.14	*
					B	32	25	37	.06	
					C	20	17	32	.14	
					D	40	42	26	-.13	
					Other	1	0	0	-.08	
92	1-92	61	.37	.27	A	6	10	1	-.16	*
					B	12	20	8	-.15	
					C	61	42	79	.27	
					D	20	25	10	-.15	
					Other	2	0	0	-.05	
93	1-93	49	.37	.26	A	49	35	72	.26	*
					B	16	18	13	-.06	
					C	5	7	1	-.14	
					D	29	38	13	-.20	
					Other	1	0	0	-.07	
94	1-94	61	.49	.38	A	21	34	6	-.28	*
					B	8	14	4	-.16	
					C	61	37	86	.38	
					D	9	14	3	-.17	
					Other	1	0	0	.01	
95	1-95	63	.34	.25	A	11	21	4	-.21	*
					B	9	16	3	-.20	
					C	63	46	80	.25	
					D	16	16	13	-.03	
					Other	0	0	0	-.02	
96	1-96	44	.36	.26	A	23	27	16	-.11	*
					B	44	30	66	.26	
					C	8	15	4	-.19	
					D	23	26	14	-.12	
					Other	2	0	0	-.04	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
97	1-97	43	.42	.31	A	11	17	3	-.20	*
					B	26	26	21	-.05	
					C	19	30	8	-.22	
					D	43	25	67	.31	
					Other	1	0	0	-.06	
98	1-98	61	.45	.34	A	11	16	5	-.15	*
					B	12	21	5	-.22	
					C	14	24	6	-.19	
					D	61	38	83	.34	
					Other	1	0	0	.02	
99	1-99	33	.44	.37	A	18	31	5	-.28	*
					B	22	23	16	-.09	
					C	33	16	60	.37	
					D	27	29	19	-.11	
					Other	0	0	0	-.04	
100	1-100	39	.47	.37	A	23	31	7	-.20	*
					B	10	21	3	-.25	
					C	28	27	22	-.09	
					D	39	21	68	.37	
					Other	0	0	0	-.07	
101	1-101	48	.49	.35	A	12	21	3	-.21	*
					B	23	29	12	-.16	
					C	16	21	8	-.15	
					D	48	28	77	.35	
					Other	1	0	0	-.06	
102	1-102	43	.31	.23	A	43	32	63	.23	*
					B	38	38	26	-.09	
					C	14	21	9	-.16	
					D	5	8	1	-.17	
					Other	1	0	0	-.00	
103	1-103	74	.25	.24	A	11	15	10	-.07	*
					B	8	12	3	-.16	
					C	74	59	85	.24	
					D	6	12	1	-.20	
					Other	1	0	0	-.03	
104	1-104	55	.30	.24	A	12	22	4	-.24	*
					B	22	22	20	-.04	
					C	55	41	71	.24	
					D	9	14	3	-.16	
					Other	1	0	0	-.01	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
105	1-105	79	.39	.40	A	79	57	96	.40	*
					B	11	21	2	-.27	
					C	6	13	1	-.23	
					D	4	8	1	-.16	
					Other	0	0	0	-.03	
106	1-106	60	.48	.36	A	14	24	3	-.25	
					B	19	30	9	-.21	
					C	60	36	84	.36	*
					D	6	8	4	-.09	
					Other	1	0	0	-.07	
107	1-107	43	.37	.29	A	34	39	20	-.17	
					B	13	15	9	-.11	
					C	43	30	67	.29	*
					D	9	15	4	-.17	
					Other	1	0	0	-.02	
108	1-108	45	.40	.29	A	13	20	6	-.18	
					B	45	31	71	.29	*
					C	20	20	15	-.07	
					D	21	28	7	-.19	
					Other	1	0	0	-.05	
109	1-109	51	.37	.29	A	21	24	13	-.14	
					B	51	38	75	.29	*
					C	12	18	4	-.18	
					D	14	18	7	-.13	
					Other	2	0	0	-.05	
110	1-110	71	.45	.38	A	9	14	2	-.18	
					B	14	23	2	-.24	
					C	71	49	93	.38	*
					D	6	13	2	-.19	
					Other	1	0	0	-.08	
111	1-111	14	.02	-.01	A	25	24	21	-.03	
					B	20	30	9	-.22	
					C	40	31	55	.18	?
					D	14	14	15	-.01	*
					Other	1	0	0	-.08	
CHECK THE KEY D was specified, C works better										
112	1-112	44	.45	.34	A	10	18	2	-.19	
					B	14	21	6	-.20	
					C	31	34	22	-.12	
					D	44	25	70	.34	*
					Other	1	0	0	-.07	

Seq. No.	Scale -Item	Item Statistics			Alternative Statistics					
		Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
113	1-113	56	.37	.27	A	19	22	13	-.09	
					B	7	13	2	-.18	
					C	18	27	11	-.17	
					D	56	37	74	.27	*
					Other	1	0	0	-.07	
<b>VOCABULARY</b>										
114	1-114	82	.36	.35	A	4	11	1	-.21	
					B	82	61	97	.35	*
					C	10	20	2	-.21	
					D	4	8	1	-.18	
					Other	0	0	0	-.10	
115	1-115	81	.40	.39	A	6	12	2	-.16	
					B	7	15	1	-.23	
					C	6	16	0	-.27	
					D	81	56	97	.39	*
					Other	0	0	0	-.06	
116	1-116	94	.06	.15	A	1	2	1	-.10	
					B	4	4	4	-.06	
					C	94	89	95	.15	*
					D	1	3	0	-.15	
					Other	0	0	0	-.06	
117	1-117	97	.10	.26	A	97	90	100	.26	*
					B	2	4	0	-.16	
					C	1	4	0	-.20	
					D	1	2	0	-.10	
					Other	0	0	0		
118	1-118	80	.45	.44	A	2	5	0	-.20	
					B	80	53	98	.44	*
					C	9	21	0	-.30	
					D	9	20	2	-.25	
					Other	0	0	0	-.09	
119	1-119	94	.13	.27	A	3	9	1	-.24	
					B	1	3	1	-.13	
					C	1	1	0	-.07	
					D	94	86	99	.27	*
					Other	0	0	0	-.04	
120	1-120	63	.51	.41	A	63	36	88	.41	*
					B	22	39	6	-.33	
					C	8	14	2	-.19	
					D	6	10	4	-.10	
					Other	0	0	0	-.09	



Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pent Correct	Disc. Index	Point Biser.	Alt.	Pent Total	Endorsing Low	High	Point Biser.	Key
121	1-121	71	.39	.33	A	12	31	2	-.38	
					B	13	14	11	-.03	
					C	4	8	1	-.15	
					D	71	48	87	.33	*
					Other	0	0	0	-.07	
122	1-122	94	.13	.23	A	2	6	0	-.16	
					B	3	6	1	-.16	
					C	94	86	99	.23	*
					D	1	1	0	-.05	
					Other	0	0	0	-.09	
123	1-123	82	.32	.34	A	4	10	1	-.20	
					B	82	63	95	.34	*
					C	11	19	4	-.19	
					D	2	7	0	-.22	
					Other	0	0	0	-.12	
124	1-124	73	.35	.30	A	14	27	3	-.27	
					B	2	4	1	-.12	
					C	73	54	89	.30	*
					D	11	14	6	-.10	
					Other	0	0	0	-.05	
125	1-125	89	.22	.31	A	4	7	1	-.12	
					B	3	9	1	-.21	
					C	3	9	1	-.21	
					D	89	75	97	.31	*
					Other	0	0	0	-.09	
126	1-126	93	.16	.30	A	2	4	1	-.11	
					B	93	84	99	.30	*
					C	3	7	0	-.21	
					D	1	5	0	-.20	
					Other	0	0	0	-.09	
127	1-127	58	.49	.37	A	9	8	8	-.00	
					B	24	42	8	-.31	
					C	58	33	82	.37	*
					D	8	16	2	-.24	
					Other	1	0	0	-.05	
128	1-128	77	.38	.36	A	77	56	94	.36	*
					B	14	22	5	-.19	
					C	3	11	0	-.28	
					D	5	10	1	-.19	
					Other	0	0	0	-.04	

Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pent Correct	Disc. Index	Point Biser.	Alt.	Pent Total	Endorsing Low	High	Point Biser.	Key
129	1-129	88	.12	.16	A	8	12	3	-.15	
					B	88	83	94	.16	*
					C	3	3	3	-.04	
					D	1	2	0	-.11	
					Other	0	0	0	-.07	
130	1-130	82	.39	.42	A	6	15	1	-.28	
					B	5	6	3	-.08	
					C	7	21	1	-.32	
					D	82	57	96	.42	*
					Other	0	0	0	-.12	
131	1-131	95	.09	.24	A	95	88	98	.24	*
					B	2	4	1	-.14	
					C	2	6	2	-.16	
					D	1	2	0	-.12	
					Other	0	0	0	-.07	
132	1-132	48	.54	.41	A	22	18	18	-.01	
					B	7	9	5	-.10	
					C	48	21	75	.41	*
					D	23	51	2	-.45	
					Other	0	0	0	-.08	
133	1-133	85	.26	.29	A	3	7	1	-.18	
					B	9	17	3	-.18	
					C	85	69	95	.29	*
					D	3	7	1	-.15	
					Other	0	0	0	-.06	
134	1-134	93	.16	.30	A	2	6	0	-.22	
					B	93	82	99	.30	*
					C	4	9	1	-.17	
					D	1	2	0	-.14	
					Other	0	0	0	-.10	
135	1-135	46	.57	.42	A	9	23	1	-.32	
					B	46	16	73	.42	*
					C	33	42	23	-.16	
					D	11	18	3	-.18	
					Other	0	0	0	-.11	
136	1-136	33	.17	.13	A	17	24	8	-.18	
					B	23	28	19	-.10	
					C	33	29	46	.13	*
					D	26	18	25	.06	
					Other	1	0	0	-.02	

Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
137	1-137	91	.22	.35	A	5	11	0	-.24	
					B	2	6	0	-.23	
					C	2	5	1	-.16	
					D	91	76	99	.35	*
					Other	1	0	0	-.06	
138	1-138	90	.24	.35	A	5	14	0	-.27	
					B	90	74	98	.35	*
					C	3	6	1	-.14	
					D	1	4	0	-.18	
					Other	1	0	0	-.11	
139	1-139	92	.22	.37	A	2	7	0	-.23	
					B	92	77	100	.37	*
					C	4	11	0	-.23	
					D	2	4	0	-.17	
					Other	0	0	0	-.07	
140	1-140	89	.28	.39	A	3	9	0	-.26	
					B	89	72	100	.39	*
					C	4	8	0	-.21	
					D	4	9	0	-.20	
					Other	0	0	0	-.10	
141	1-141	92	.23	.37	A	2	7	0	-.25	
					B	4	8	0	-.18	
					C	92	77	100	.37	*
					D	2	7	0	-.23	
					Other	0	0	0	-.09	
142	1-142	49	.27	.20	A	25	31	12	-.17	
					B	22	23	16	-.09	
					C	3	4	4	-.04	
					D	49	41	69	.20	*
					Other	0	0	0	-.10	
143	1-143	44	.26	.19	A	10	22	3	-.28	
					B	22	19	16	-.04	
					C	44	34	60	.19	*
					D	22	22	19	-.03	
					Other	1	0	0	-.05	
144	1-144	62	.11	.10	A	31	31	28	-.04	
					B	2	6	0	-.19	
					C	62	57	68	.10	*
					D	4	5	3	-.05	
					Other	0	0	0	-.11	

Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
145	1-145	73	.33	.29	A	73	57	89	.29	*
					B	5	11	2	-.17	
					C	13	19	4	-.19	
					D	8	13	3	-.15	
					Other	1	0	0	-.05	
<b>GRAMMAR AND TEXT RELATIONS</b>										
146	1-146	28	.25	.20	A	49	46	41	-.05	
					B	10	18	1	-.23	
					C	28	21	45	.20	*
					D	12	13	12	-.04	
					Other	1	0	0	-.09	
147	1-147	23	.31	.28	A	15	14	13	-.03	
					B	29	40	13	-.22	
					C	32	31	29	-.05	*
					D	23	14	44	.28	
					Other	0	0	0	-.08	
148	1-148	60	.50	.41	A	60	37	87	.41	*
					B	13	18	6	-.16	
					C	10	17	3	-.19	
					D	15	24	4	-.25	
					Other	1	0	0	-.14	
149	1-149	59	.52	.40	A	13	18	5	-.18	
					B	59	35	87	.40	*
					C	22	33	7	-.24	
					D	5	12	1	-.21	
					Other	1	0	0	-.12	
150	1-150	74	.56	.50	A	10	26	1	-.34	
					B	11	23	3	-.25	
					C	74	40	96	.50	*
					D	4	10	1	-.22	
					Other	1	0	0	-.08	
151	1-151	19	.12	.12	A	9	17	3	-.22	
					B	7	19	1	-.32	
					C	64	46	69	.18	?
					D	19	16	28	.12	*
					Other	1	0	0	-.10	
CHECK THE KEY D was specified, C works better										
152	1-152	64	.44	.36	A	15	26	3	-.26	
					B	64	39	83	.36	*
					C	10	19	4	-.22	
					D	10	13	10	-.07	
					Other	1	0	0	-.06	

Seq. No.	Item Statistics				Alternative Statistics						Key
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.		
153	1-153	73	.46	.40	A	12	23	2	-.27	*	
					B	73	46	93	.40		
					C	10	17	3	-.18		
					D	5	11	1	-.20		
					Other	1	0	0	-.09		
154	1-154	67	.51	.43	A	12	27	1	-.35	*	
					B	10	16	4	-.19		
					C	67	39	90	.43		
					D	10	16	4	-.16		
					Other	1	0	0	-.04		
155	1-155	50	.48	.38	A	50	30	78	.38	*	
					B	25	30	12	-.18		
					C	16	29	6	-.27		
					D	7	10	3	-.12		
					Other	1	0	0	-.02		
156	1-156	71	.54	.46	A	10	23	1	-.30	*	
					B	10	21	2	-.28		
					C	71	41	96	.46		
					D	7	13	2	-.14		
					Other	1	0	0	-.06		
157	1-157	45	.47	.36	A	10	24	1	-.30	*	
					B	30	28	24	-.05		
					C	14	24	4	-.24		
					D	45	24	71	.36		
					Other	1	0	0	-.03		
158	1-158	56	.35	.28	A	14	23	6	-.21	*	
					B	7	14	2	-.21		
					C	56	37	72	.28		
					D	21	23	19	-.05		
					Other	1	0	0	-.08		
159	1-159	48	.41	.31	A	32	34	23	-.11	*	
					B	12	22	5	-.22		
					C	48	29	70	.31		
					D	7	13	1	-.18		
					Other	0	0	0	-.09		
160	1-160	66	.40	.34	A	66	44	84	.34	*	
					B	8	19	2	-.28		
					C	16	23	9	-.16		
					D	9	13	5	-.14		
					Other	1	0	0	-.07		
161	1-161	69	.39	.34	A	69	47	86	.34	*	
					B	14	20	9	-.15		
					C	8	19	0	-.31		
					D	8	13	5	-.11		
					Other	1	0	0	-.09		
162	1-162	72	.52	.45	A	9	19	2	-.25	*	
					B	11	21	2	-.26		
					C	72	43	95	.45		
					D	8	16	1	-.21		
					Other	1	0	0	-.07		
163	1-163	73	.51	.44	A	10	19	1	-.25	*	
					B	73	45	95	.44		
					C	8	16	3	-.21		
					D	8	18	1	-.25		
					Other	1	0	0	-.10		
164	1-164	48	.37	.29	A	15	28	4	-.28	*	
					B	48	31	69	.29		
					C	27	23	21	-.03		
					D	10	17	5	-.18		
					Other	1	0	0	.01		
165	1-165	48	.47	.36	A	48	26	72	.36	*	
					B	13	24	4	-.25		
					C	19	24	13	-.14		
					D	19	24	9	-.15		
					Other	1	0	0	-.05		
166	1-166	52	.34	.25	A	24	27	18	-.10	*	
					B	52	37	71	.25		
					C	15	21	9	-.14		
					D	7	13	1	-.19		
					Other	1	0	0	-.02		
167	1-167	39	.30	.23	A	39	25	54	.23	*	
					B	19	24	18	-.07		
					C	32	34	21	-.13		
					D	8	14	5	-.15		
					Other	2	0	0	-.05		
168	1-168	51	.58	.44	A	51	24	82	.44	*	
					B	17	30	4	-.29		
					C	9	16	2	-.18		
					D	21	27	11	-.17		
					Other	2	0	0	-.09		

Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
169	1-169	51	.56	.42	A	19	28	9	-.21	
					B	12	19	3	-.22	
					C	16	24	4	-.20	
					D	51	27	83	.42	*
					Other	2	0	0	-.08	
170	1-170	14	.08	.08	A	14	13	21	.08	*
					B	12	25	2	-.30	
					C	65	48	75	.23	?
					D	7	13	2	-.19	
					Other	1	0	0	-.08	
CHECK THE KEY A was specified, C works better										
171	1-171	43	.54	.40	A	40	45	24	-.17	
					B	43	18	72	.40	*
					C	8	17	2	-.24	
					D	9	17	2	-.21	
					Other	1	0	0	-.12	
172	1-172	48	.25	.19	A	10	18	6	-.17	
					B	7	17	1	-.28	
					C	48	33	59	.19	*
					D	34	31	35	.03	
					Other	1	0	0	-.08	
173	1-173	33	.13	.09	A	7	12	5	-.16	
					B	37	41	31	-.08	
					C	33	29	41	.09	*
					D	23	16	22	.04	
					Other	1	0	0	-.06	
174	1-174	70	.58	.50	A	18	37	2	-.36	
					B	8	17	2	-.24	
					C	70	37	95	.50	*
					D	3	7	0	-.17	
					Other	1	0	0	-.10	
175	1-175	55	.56	.45	A	12	21	2	-.25	
					B	9	19	1	-.27	
					C	23	30	13	-.18	
					D	55	27	84	.45	*
					Other	1	0	0	-.06	
176	1-176	73	.46	.39	A	6	15	1	-.23	
					B	9	20	2	-.26	
					C	73	47	92	.39	*
					D	11	17	5	-.18	
					Other	1	0	0	-.04	

Seq. No.	Item Statistics				Alternative Statistics					
	Scale -Item	Pcnt Correct	Disc. Index	Point Biser.	Alt.	Pcnt Total	Endorsing Low	High	Point Biser.	Key
177	1-177	29	.22	.17	A	16	26	9	-.17	
					B	46	38	43	.02	
					C	29	21	43	.17	*
					D	8	13	4	-.15	
					Other	1	0	0	-.08	
178	1-178	39	.10	.08	A	39	35	45	.08	*
					B	16	21	13	-.11	
					C	29	23	32	.05	
					D	14	18	11	-.11	
					Other	1	0	0	-.08	
179	1-179	36	.15	.11	A	10	24	1	-.30	
					B	36	30	45	.11	*
					C	40	32	40	.06	
					D	13	12	13	-.01	
					Other	1	0	0	-.08	
180	1-180	61	.54	.43	A	61	35	89	.43	*
					B	9	18	2	-.25	
					C	8	16	2	-.25	
					D	22	29	7	-.20	
					Other	1	0	0	-.12	
181	1-181	66	.47	.40	A	10	16	5	-.15	
					B	66	41	89	.40	*
					C	17	29	4	-.29	
					D	6	12	2	-.17	
					Other	1	0	0	-.12	
182	1-182	66	.48	.41	A	8	18	2	-.26	
					B	66	39	87	.41	*
					C	18	26	10	-.19	
					D	7	15	1	-.24	
					Other	1	0	0	-.08	
183	1-183	74	.45	.41	A	6	16	1	-.30	
					B	15	24	4	-.23	
					C	74	48	93	.41	*
					D	5	9	2	-.17	
					Other	1	0	0	-.09	
184	1-184	78	.41	.42	A	12	26	3	-.30	
					B	78	54	95	.42	*
					C	6	10	1	-.20	
					D	4	9	1	-.20	
					Other	1	0	0	-.06	

Seq. No.	Item Statistics				Alternative Statistics				
	Scale -Item	Pent Correct	Disc. Index	Point Biser.	Alt.	Pent Total	Endorsing Low High	Point Biser. Key	
185	1-185	77	.44	.41	A	9	19 2	-.24	
					B	77	51 94	.41 *	
					C	9	19 2	-.27	
					D	5	10 2	-.15	
					Other	1	0 0	-.07	
186	1-186	39	.27	.20	A	31	32 32	.01	
					B	39	27 54	.20 *	
					C	21	30 7	-.26	
					D	8	8 6	-.05	
					Other	1	0 0	-.08	
187	1-187	16	.18	.18	A	17	25 8	-.22	
					B	35	31 27	-.05	
					C	31	29 33	.04	
					D	16	13 30	.18 *	
					Other	2	0 0	-.06	

Item analysis for data from file c:\AlbertDocuments\ICELDA\ice00795.txt  
Date: 21 Jun 2013 Time: 16:51

There were 1244 examinees in the data file.

Scale Statistics

Scale: 1

N of Items	187
N of Examinees	1244
Mean	114.041
Variance	775.568
Std. Dev.	27.849
Skew	-0.197
Kurtosis	-0.545
Minimum	30.000
Maximum	176.000
Median	115.000
Alpha	0.957
SEM	5.779
Mean Pent Corr	.61
Mean Item-Tot.	0.321
Mean Biserial	0.439
Max Score (Low)	96
N (Low Group)	340
Min Score (High)	134
N (High Group)	341

SCALE # 1

Item	Mean	Std. Dev.	Min	Max	Percentile
185	114.041	27.849	30.000	176.000	100
186	114.041	27.849	30.000	176.000	100
187	114.041	27.849	30.000	176.000	100

Score Distribution Table

Skipped Time: 9.11 seconds Percentage of Examinees

**DATA ANALYSIS: ITEMAN 4.2**  
**TEST OF ADVANCED LANGUAGE ABILITY**

**Scrambled text**

**Item 1**

Item information and statistics and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
1	1	C	Yes	5	Scrambled text 1			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.922	0.428	0.787	0.290	0.533	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	51	0.041	-0.181	-0.409	89.059	31.520	Maroon	
B	23	0.018	-0.188	-0.560	75.391	25.516	Green	
C	1147	0.922	0.290	0.533	116.559	26.284	Blue	**KEY**
D	6	0.005	-0.089	-0.440	78.000	32.656	Olive	
E	13	0.010	-0.101	-0.371	86.077	21.006	Gray	
Omit	4	0.003	-0.038	-0.222	77.750	31.320		
Not Admin	4				77.750	31.320		

**Item 2**

Item information and statistics and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
2	2	A	Yes	5	Scrambled text 1			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.804	0.565	0.811	0.360	0.516	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	1000	0.804	0.360	0.516	119.263	25.935	Maroon	**KEY**
B	52	0.042	-0.183	-0.410	89.269	23.745	Green	
C	39	0.031	-0.158	-0.389	89.256	33.571	Blue	
D	47	0.038	-0.208	-0.482	84.532	22.762	Olive	
E	102	0.082	-0.142	-0.258	100.265	21.236	Gray	
Omit	4	0.003	-0.042	-0.245	70.250	24.514		
Not Admin	4				70.250	24.514		

**Item 3**

Item information and statistics and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
3	3	E	Yes	5	Scrambled text 1			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.518	0.723	0.907	0.410	0.514	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	59	0.047	-0.146	-0.315	95.780	23.106	Maroon	
B	364	0.293	-0.164	-0.217	106.739	24.125	Green	
C	35	0.028	-0.237	-0.608	75.600	17.823	Blue	
D	132	0.106	-0.195	-0.328	98.242	28.317	Olive	
E	645	0.518	0.410	0.514	125.526	24.481	Gray	**KEY**
Omit	9	0.007	-0.048	-0.203	87.222	27.676		
Not Admin	9				87.222	27.676		

**Item 4**

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
4	4	B	Yes	5	Scrambled text 1			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.527	0.684	0.858	0.313	0.392	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	50	0.040	-0.209	-0.474	85.980	19.157	Maroon	
B	656	0.527	0.313	0.392	122.892	26.556	Green	**KEY**
C	20	0.016	-0.156	-0.487	80.650	23.450	Blue	
D	328	0.264	-0.096	-0.129	109.466	23.979	Olive	
E	179	0.144	-0.152	-0.235	103.704	26.795	Gray	
Omit	11	0.009	-0.063	-0.246	79.091	26.090		
Not Admin	11				79.091	26.090		

**Item 5**

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
5	5	D	Yes	5	Scrambled text 1			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.572	0.704	0.887	0.312	0.393	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	80	0.064	-0.168	-0.328	96.225	23.243	Maroon	
B	145	0.117	-0.090	-0.147	107.000	28.274	Green	
C	21	0.017	-0.097	-0.299	93.429	28.252	Blue	
D	712	0.572	0.312	0.393	122.098	26.197	Olive	**KEY**
E	275	0.221	-0.173	-0.242	104.855	25.340	Gray	
Omit	11	0.009	-0.057	-0.225	83.909	26.361		
Not Admin	11				83.909	26.361		

**Item 6**

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
6	6	D	Yes	5	Scrambled text 2			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.844	0.433	0.656	0.369	0.559	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	12	0.010	-0.126	-0.477	78.417	22.516	Maroon	
B	116	0.093	-0.280	-0.488	89.500	21.766	Green	
C	46	0.037	-0.157	-0.367	91.435	26.547	Blue	
D	1050	0.844	0.369	0.559	118.750	26.016	Olive	**KEY**
E	12	0.010	-0.108	-0.409	83.417	24.511	Gray	
Omit	8	0.006	-0.051	-0.227	81.125	28.458		
Not Admin	8				81.125	28.458		

Item 7

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
7	7	C	Yes	5	Scrambled text 2		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.660	0.605	0.782	0.337	0.436	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	78	0.063	-0.153	-0.300	97.551	25.095	Maroon	
B	170	0.137	-0.228	-0.358	98.018	23.437	Green	
C	821	0.660	0.337	0.436	121.253	26.423	Blue	**KEY**
D	71	0.057	-0.187	-0.379	92.915	23.058	Olive	
E	94	0.076	-0.004	-0.007	113.309	24.353	Gray	
Omit	10	0.008	-0.059	-0.240	79.800	30.535		
Not Admin	10				79.800	30.535		

Item 8

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
8	8	B	Yes	5	Scrambled text 2		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.517	0.662	0.831	0.372	0.466	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	223	0.179	-0.109	-0.160	107.377	24.142	Maroon	
B	643	0.517	0.372	0.466	124.577	26.363	Green	**KEY**
C	183	0.147	-0.182	-0.280	101.820	25.243	Blue	
D	46	0.037	-0.178	-0.417	88.891	22.574	Olive	
E	140	0.113	-0.145	-0.239	102.679	23.807	Gray	
Omit	9	0.007	-0.056	-0.236	80.222	27.585		
Not Admin	9				80.222	27.585		

Item 9

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
9	9	A	Yes	5	Scrambled text 2		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.543	0.605	0.759	0.270	0.339	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	676	0.543	0.270	0.339	121.428	27.113	Maroon	**KEY**
B	136	0.109	-0.113	-0.189	104.853	25.882	Green	
C	106	0.085	-0.094	-0.169	105.236	23.720	Blue	
D	46	0.037	-0.213	-0.497	84.000	25.437	Olive	
E	267	0.215	-0.079	-0.111	109.558	25.255	Gray	
Omit	13	0.010	-0.042	-0.154	96.231	33.457		
Not Admin	13				96.231	33.457		

Item 10

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
10	10	E	Yes	5	Scrambled text 2		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.548	0.572	0.719	0.253	0.318	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	250	0.201	-0.121	-0.172	107.136	27.395	Maroon	
B	181	0.145	-0.005	-0.007	113.398	22.762	Green	
C	86	0.069	-0.197	-0.375	93.965	24.162	Blue	
D	34	0.027	-0.159	-0.411	87.853	20.088	Olive	
E	682	0.548	0.253	0.318	120.991	27.173	Gray	**KEY**
Omit	11	0.009	-0.051	-0.200	88.545	30.849		
Not Admin	11				88.545	30.849		

Text comprehension

Item 11

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
11	11	C	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.620	0.277	0.353	0.247	0.314	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	159	0.128	-0.266	-0.425	94.340	26.554	Maroon	
B	209	0.168	0.003	0.004	113.689	28.139	Green	
C	771	0.620	0.247	0.314	119.843	26.132	Blue	**KEY**
D	101	0.081	-0.117	-0.213	102.653	24.015	Olive	
Omit	4	0.003	-0.034	-0.196	84.750	24.309		
Not Admin	4				84.750	24.309		

Item 12

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
12	12	B	Yes	4	Text comprehension	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.129	-0.010	-0.016	0.004	0.006	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	451	0.363	0.012	0.015	114.410	29.508	Maroon	
B	160	0.129	0.004	0.006	115.269	29.023	Green	**KEY**
C	43	0.035	-0.095	-0.226	100.163	32.856	Blue	
D	585	0.470	0.021	0.026	114.585	25.382	Olive	
Omit	5	0.004	-0.025	-0.133	97.200	43.194		
Not Admin	5				97.200	43.194		

Item 13

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
13	13	C	Yes	4	Text comprehension	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.203	0.025	0.035	0.034	0.049	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	333	0.268	-0.193	-0.259	105.123	23.725	Maroon	
B	408	0.328	0.041	0.054	115.429	26.317	Green	
C	253	0.203	0.034	0.049	116.672	30.542	Blue	**KEY**
D	225	0.181	0.136	0.198	121.689	29.909	Olive	
Omit	25	0.020	0.003	0.009	114.720	27.890		
Not Admin	25				114.720	27.890		

Item 14

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
14	14	A	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.807	0.390	0.561	0.364	0.524	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	1004	0.807	0.364	0.524	119.269	26.201	Maroon	**KEY**
B	44	0.035	-0.144	-0.341	92.727	25.797	Green	
C	67	0.054	-0.187	-0.386	91.836	23.944	Blue	
D	124	0.100	-0.249	-0.427	92.790	22.751	Olive	
Omit	5	0.004	-0.044	-0.232	76.400	29.988		
Not Admin	5				76.400	29.988		

Item 15

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
15	15	D	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.883	0.391	0.640	0.339	0.556	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	44	0.035	-0.186	-0.440	86.500	21.246	Maroon	
B	18	0.014	-0.184	-0.598	71.389	18.665	Green	
C	79	0.064	-0.216	-0.423	90.367	27.290	Blue	
D	1099	0.883	0.339	0.556	117.641	26.154	Olive	**KEY**
Omit	4	0.003	-0.031	-0.181	87.500	36.355		
Not Admin	4				87.500	36.355		

Item 16

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
16	16	B	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.652	0.294	0.379	0.265	0.341	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	64	0.051	-0.214	-0.448	87.938	29.694	Maroon	
B	811	0.652	0.265	0.341	119.723	26.349	Green	**KEY**
C	94	0.076	-0.157	-0.292	98.160	24.673	Blue	
D	274	0.220	-0.090	-0.126	108.653	26.286	Olive	
Omit	1	0.001	0.018	0.187	146.000	0.000		
Not Admin	1				146.000	0.000		

Item 17

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
17	17	B	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.487	0.330	0.414	0.305	0.383	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	328	0.264	-0.101	-0.136	108.939	27.225	Maroon	
B	606	0.487	0.305	0.383	123.243	25.586	Green	**KEY**
C	137	0.110	-0.228	-0.379	95.730	26.293	Blue	
D	170	0.137	-0.108	-0.169	106.100	25.952	Olive	
Omit	3	0.002	-0.017	-0.110	99.333	31.533		
Not Admin	3				99.333	31.533		

Item 18

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
18	18	C	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.795	0.433	0.616	0.399	0.566	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	51	0.041	-0.204	-0.460	86.176	25.632	Maroon	
B	119	0.096	-0.274	-0.474	90.185	23.990	Green	
C	989	0.795	0.399	0.566	119.898	25.521	Blue	**KEY**
D	78	0.063	-0.165	-0.325	95.756	25.124	Olive	
Omit	7	0.006	-0.026	-0.122	98.857	25.842		
Not Admin	7				98.857	25.842		



Item 19

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
19	19	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.802	0.436	0.625	0.389	0.558	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	998	0.802	0.389	0.558	119.601	25.610	Maroon	**KEY**
B	130	0.105	-0.232	-0.392	94.469	25.217	Green	
C	74	0.059	-0.217	-0.434	89.392	24.174	Blue	
D	40	0.032	-0.185	-0.453	85.200	26.199	Olive	
Omit	2	0.002	-0.012	-0.096	100.500	34.648		
Not Admin	2				100.500	34.648		

Item 20

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
20	20	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.576	0.298	0.377	0.268	0.339	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	83	0.067	-0.228	-0.440	90.446	26.351	Maroon	
B	334	0.268	-0.058	-0.078	111.111	27.414	Green	
C	717	0.576	0.268	0.339	121.010	25.540	Blue	**KEY**
D	91	0.073	-0.192	-0.360	95.099	25.939	Olive	
Omit	19	0.015	-0.050	-0.161	96.368	21.394		
Not Admin	19				96.368	21.394		

Item 21

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
21	21	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.657	0.428	0.553	0.412	0.532	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	817	0.657	0.412	0.532	122.699	25.519	Maroon	**KEY**
B	132	0.106	-0.239	-0.402	94.470	23.544	Green	
C	209	0.168	-0.237	-0.352	99.048	25.504	Blue	
D	77	0.062	-0.139	-0.275	98.636	24.078	Olive	
Omit	9	0.007	-0.036	-0.154	95.111	15.680		
Not Admin	9				95.111	15.680		

Item 22

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
22	22	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.915	0.417	0.747	0.353	0.632	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	18	0.014	-0.163	-0.529	76.000	18.569	Maroon	
B	37	0.030	-0.174	-0.438	85.649	24.969	Green	
C	1138	0.915	0.353	0.632	117.156	26.335	Blue	**KEY**
D	50	0.040	-0.253	-0.573	79.020	18.903	Olive	
Omit	1	0.001	-0.023	-0.241	56.000	0.000		
Not Admin	1				56.000	0.000		

Item 23

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
23	23	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.711	0.513	0.680	0.482	0.639	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	98	0.079	-0.211	-0.387	93.653	24.854	Maroon	
B	133	0.107	-0.304	-0.509	89.368	22.943	Green	
C	121	0.097	-0.228	-0.393	94.380	23.124	Blue	
D	885	0.711	0.482	0.639	122.859	24.440	Olive	**KEY**
Omit	7	0.006	-0.035	-0.161	93.286	25.217		
Not Admin	7				93.286	25.217		

Item 24

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
24	24	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.436	0.170	0.214	0.171	0.216	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	216	0.174	0.051	0.075	116.731	29.205	Maroon	
B	115	0.092	-0.138	-0.242	101.713	28.506	Green	
C	364	0.293	-0.141	-0.186	107.629	25.413	Blue	
D	542	0.436	0.171	0.216	120.054	27.073	Olive	**KEY**
Omit	7	0.006	-0.022	-0.104	101.429	24.677		
Not Admin	7				101.429	24.677		

Item 25

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
25	25	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.690	0.491	0.644	0.453	0.594	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	79	0.064	-0.246	-0.482	88.468	22.738	Maroon	
B	150	0.121	-0.311	-0.505	91.260	20.669	Green	
C	858	0.690	0.453	0.594	122.887	24.932	Blue	**KEY**
D	124	0.100	-0.161	-0.275	100.823	24.894	Olive	
Omit	33	0.027	-0.060	-0.158	98.485	28.759		
Not Admin	33				98.485	28.759		

Item 26

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
26	26	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.638	0.276	0.353	0.237	0.303	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	46	0.037	-0.204	-0.475	85.043	20.664	Maroon	
B	794	0.638	0.237	0.303	119.479	26.698	Green	**KEY**
C	77	0.062	-0.237	-0.468	88.221	24.372	Blue	
D	320	0.257	-0.041	-0.056	111.650	25.555	Olive	
Omit	7	0.006	-0.048	-0.224	81.143	28.228		
Not Admin	7				81.143	28.228		

Item 27

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
27	27	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.727	0.515	0.689	0.463	0.621	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	151	0.121	-0.320	-0.518	89.682	21.624	Maroon	
B	904	0.727	0.463	0.621	122.201	24.556	Green	**KEY**
C	123	0.099	-0.251	-0.430	92.537	27.709	Blue	
D	61	0.049	-0.125	-0.267	98.180	22.940	Olive	
Omit	5	0.004	-0.025	-0.132	96.800	23.973		
Not Admin	5				96.800	23.973		

Item 28

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
28	28	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.619	0.475	0.605	0.445	0.568	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	137	0.110	-0.323	-0.537	88.460	21.818	Maroon	
B	251	0.202	-0.138	-0.197	106.060	25.816	Green	
C	78	0.063	-0.247	-0.485	87.462	20.808	Blue	
D	770	0.619	0.445	0.568	124.166	24.254	Olive	**KEY**
Omit	8	0.006	-0.045	-0.200	87.125	20.788		
Not Admin	8				87.125	20.788		

Item 29

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
29	29	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.882	0.394	0.642	0.340	0.555	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	25	0.020	-0.187	-0.539	77.120	20.731	Maroon	
B	89	0.072	-0.201	-0.379	93.180	26.860	Green	
C	1097	0.882	0.340	0.555	117.605	25.904	Blue	**KEY**
D	30	0.024	-0.207	-0.560	76.767	28.516	Olive	
Omit	3	0.002	-0.004	-0.026	110.000	48.125		
Not Admin	3				110.000	48.125		

Item 30

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
30	30	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.701	0.545	0.719	0.490	0.646	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	210	0.169	-0.298	-0.443	95.319	23.454	Maroon	
B	872	0.701	0.490	0.646	123.231	24.506	Green	**KEY**
C	58	0.047	-0.214	-0.463	86.897	23.807	Blue	
D	96	0.077	-0.253	-0.467	89.438	20.677	Olive	
Omit	8	0.006	-0.033	-0.146	95.875	23.919		
Not Admin	8				95.875	23.919		

Item 31

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
31	31	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.542	0.373	0.468	0.360	0.453	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	169	0.136	-0.217	-0.342	98.550	22.748	Maroon	
B	125	0.100	-0.240	-0.409	93.928	27.181	Green	
C	674	0.542	0.360	0.453	123.702	26.515	Blue	**KEY**
D	270	0.217	-0.080	-0.112	109.430	23.143	Olive	
Omit	6	0.005	-0.034	-0.169	91.667	37.249		
Not Admin	6				91.667	37.249		

Item 32

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
32	32	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.693	0.352	0.462	0.331	0.435	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	156	0.125	-0.166	-0.266	101.699	25.323	Maroon	
B	862	0.693	0.331	0.435	120.619	26.477	Green	**KEY**
C	126	0.101	-0.222	-0.379	95.595	22.525	Blue	
D	87	0.070	-0.121	-0.230	101.621	26.378	Olive	
Omit	13	0.010	-0.057	-0.208	87.846	33.131		
Not Admin	13				87.846	33.131		

Item 33

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
33	33	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.731	0.481	0.646	0.476	0.639	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	126	0.101	-0.317	-0.540	88.135	21.450	Maroon	
B	129	0.104	-0.224	-0.379	95.845	22.930	Green	
C	909	0.731	0.476	0.639	122.534	24.829	Blue	**KEY**
D	65	0.052	-0.211	-0.440	89.338	19.235	Olive	
Omit	15	0.012	-0.072	-0.250	80.533	24.062		
Not Admin	15				80.533	24.062		

Item 34

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
34	34	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.303	0.221	0.291	0.234	0.308	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	534	0.429	-0.025	-0.032	113.213	25.349	Maroon	
B	188	0.151	-0.221	-0.338	99.729	24.922	Green	
C	377	0.303	0.234	0.308	124.711	28.545	Blue	**KEY**
D	132	0.106	-0.052	-0.088	109.886	27.052	Olive	
Omit	13	0.010	-0.057	-0.211	87.769	30.622		
Not Admin	13				87.769	30.622		

Item 35

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
35	35	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.514	0.191	0.240	0.172	0.215	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	639	0.514	0.172	0.215	119.424	27.756	Maroon	**KEY**
B	295	0.237	-0.031	-0.042	112.386	25.631	Green	
C	160	0.129	-0.151	-0.241	103.169	26.991	Blue	
D	128	0.103	-0.073	-0.123	108.047	27.992	Olive	
Omit	22	0.018	-0.061	-0.185	93.818	25.470		
Not Admin	22				93.818	25.470		

Item 36

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
36	36	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.474	0.413	0.518	0.407	0.511	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	277	0.223	-0.290	-0.405	98.903	24.704	Maroon	
B	138	0.111	-0.206	-0.342	97.768	26.428	Green	
C	231	0.186	-0.046	-0.067	111.082	23.593	Blue	
D	590	0.474	0.407	0.511	126.441	24.921	Olive	**KEY**
Omit	8	0.006	-0.042	-0.186	89.875	37.802		
Not Admin	8				89.875	37.802		

Item 37

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
37	37	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.374	0.183	0.233	0.191	0.243	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	334	0.268	-0.214	-0.287	104.210	24.002	Maroon	
B	398	0.320	0.083	0.108	117.186	24.944	Green	
C	465	0.374	0.191	0.243	121.652	28.891	Blue	**KEY**
D	41	0.033	-0.202	-0.491	83.829	23.820	Olive	
Omit	6	0.005	-0.052	-0.259	69.333	27.782		
Not Admin	6				69.333	27.782		

Item 38

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
38	38	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.855	0.469	0.725	0.411	0.635	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	52	0.042	-0.237	-0.530	82.538	21.315	Maroon	
B	73	0.059	-0.262	-0.527	84.781	24.429	Green	
C	1064	0.855	0.411	0.635	119.010	25.266	Blue	**KEY**
D	42	0.034	-0.197	-0.473	84.762	24.206	Olive	
Omit	13	0.010	-0.049	-0.180	92.231	34.814		
Not Admin	13				92.231	34.814		

Item 39

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
39	39	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.645	0.236	0.303	0.179	0.230	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	803	0.645	0.179	0.230	118.313	25.213	Maroon	**KEY**
B	252	0.203	-0.014	-0.020	112.909	27.832	Green	
C	86	0.069	-0.196	-0.374	93.965	31.000	Blue	
D	95	0.076	-0.114	-0.211	102.811	32.720	Olive	
Omit	8	0.006	-0.060	-0.265	70.125	16.848		
Not Admin	8				70.125	16.848		

Item 40

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
40	40	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.832	0.501	0.746	0.433	0.645	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	1035	0.832	0.433	0.645	119.919	24.957	Maroon	**KEY**
B	91	0.073	-0.246	-0.461	89.945	24.696	Green	
C	54	0.043	-0.241	-0.534	82.963	20.133	Blue	
D	51	0.041	-0.247	-0.556	81.333	20.337	Olive	
Omit	13	0.010	-0.075	-0.276	72.154	23.554		
Not Admin	13				72.154	23.554		

Item 41

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
41	41	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.793	0.442	0.626	0.367	0.521	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	59	0.047	-0.265	-0.569	80.814	18.594	Maroon	
B	986	0.793	0.367	0.521	119.583	25.619	Green	**KEY**
C	80	0.064	-0.245	-0.478	87.700	20.354	Blue	
D	114	0.092	-0.113	-0.198	103.640	28.814	Olive	
Omit	5	0.004	-0.046	-0.246	71.800	11.649		
Not Admin	5				71.800	11.649		

Item 42

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
42	42	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.631	0.303	0.387	0.269	0.344	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	131	0.105	-0.054	-0.091	109.107	27.667	Maroon	
B	203	0.163	-0.120	-0.180	105.966	29.583	Green	
C	120	0.096	-0.232	-0.401	93.883	27.580	Blue	
D	785	0.631	0.269	0.344	120.111	25.142	Olive	**KEY**
Omit	5	0.004	-0.018	-0.095	102.000	45.733		
Not Admin	5				102.000	45.733		

Item 43

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
43	43	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.394	0.301	0.383	0.297	0.377	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	490	0.394	0.297	0.377	124.833	25.608	Maroon	**KEY**
B	194	0.156	-0.179	-0.272	102.263	23.127	Green	
C	260	0.209	-0.335	-0.474	95.796	21.268	Blue	
D	293	0.236	0.133	0.183	120.280	28.239	Olive	
Omit	7	0.006	-0.022	-0.104	101.571	37.349		
Not Admin	7				101.571	37.349		

Item 44

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
44	44	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.877	0.467	0.754	0.380	0.614	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	39	0.031	-0.188	-0.465	84.897	25.843	Maroon	
B	1091	0.877	0.380	0.614	118.310	25.732	Green	**KEY**
C	64	0.051	-0.242	-0.507	85.078	23.804	Blue	
D	40	0.032	-0.219	-0.536	80.625	15.903	Olive	
Omit	10	0.008	-0.058	-0.234	81.000	34.868		
Not Admin	10				81.000	34.868		

Item 45

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
45	45	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.819	0.509	0.745	0.435	0.637	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	71	0.057	-0.248	-0.501	85.986	24.051	Maroon	
B	76	0.061	-0.241	-0.477	87.684	23.672	Green	
C	68	0.055	-0.231	-0.474	87.265	20.881	Blue	
D	1019	0.819	0.435	0.637	120.003	25.082	Olive	**KEY**
Omit	10	0.008	-0.049	-0.199	88.100	38.443		
Not Admin	10				88.100	38.443		

Item 46

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
46	46	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.520	0.418	0.524	0.387	0.486	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	267	0.215	-0.131	-0.184	106.835	26.985	Maroon	
B	142	0.114	-0.240	-0.396	95.324	25.239	Green	
C	182	0.146	-0.180	-0.277	101.791	22.905	Blue	
D	647	0.520	0.387	0.486	124.876	25.142	Olive	**KEY**
Omit	6	0.005	-0.045	-0.222	80.833	31.990		
Not Admin	6				80.833	31.990		

Item 47

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
47	47	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.765	0.540	0.745	0.482	0.665	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	88	0.071	-0.273	-0.517	86.386	19.851	Maroon	
B	952	0.765	0.482	0.665	121.757	24.703	Green	**KEY**
C	140	0.113	-0.269	-0.445	92.764	23.087	Blue	
D	58	0.047	-0.233	-0.504	84.586	20.908	Olive	
Omit	6	0.005	-0.048	-0.237	76.500	34.564		
Not Admin	6				76.500	34.564		

Item 48

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
48	48	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.687	0.406	0.531	0.350	0.459	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	855	0.687	0.350	0.459	121.135	25.657	Maroon	**KEY**
B	89	0.072	-0.172	-0.325	96.820	26.161	Green	
C	178	0.143	-0.261	-0.405	96.298	23.843	Blue	
D	112	0.090	-0.093	-0.163	105.679	27.769	Olive	
Omit	10	0.008	-0.067	-0.272	70.300	22.721		
Not Admin	10				70.300	22.721		

Item 49

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
49	49	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.703	0.413	0.545	0.354	0.467	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	180	0.145	-0.136	-0.210	104.550	25.774	Maroon	
B	875	0.703	0.354	0.467	120.847	25.847	Green	**KEY**
C	115	0.092	-0.245	-0.429	92.617	24.424	Blue	
D	63	0.051	-0.194	-0.409	90.635	22.799	Olive	
Omit	11	0.009	-0.055	-0.214	86.000	31.521		
Not Admin	11				86.000	31.521		

Item 50

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
50	50	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.679	0.303	0.396	0.258	0.336	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	63	0.051	-0.205	-0.431	89.460	24.815	Maroon	
B	281	0.226	-0.090	-0.125	109.117	25.652	Green	
C	845	0.679	0.258	0.336	119.504	26.594	Blue	**KEY**
D	44	0.035	-0.205	-0.486	84.409	20.250	Olive	
Omit	11	0.009	-0.062	-0.244	79.455	26.101		
Not Admin	11				79.455	26.101		

Item 51

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
51	51	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.593	0.442	0.560	0.429	0.543	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	100	0.080	-0.262	-0.477	89.530	22.965	Maroon	
B	738	0.593	0.429	0.543	124.362	25.235	Green	**KEY**
C	203	0.163	-0.183	-0.275	102.345	23.554	Blue	
D	196	0.158	-0.197	-0.298	101.245	24.256	Olive	
Omit	7	0.006	-0.054	-0.252	73.571	34.650		
Not Admin	7				73.571	34.650		

Item 52

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
52	52	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.406	0.243	0.308	0.267	0.338	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	112	0.090	-0.207	-0.365	95.705	23.541	Maroon	
B	505	0.406	0.267	0.338	123.556	29.558	Green	**KEY**
C	223	0.179	-0.248	-0.364	99.161	22.146	Blue	
D	396	0.318	0.051	0.066	115.755	22.812	Olive	
Omit	8	0.006	-0.027	-0.118	100.000	43.968		
Not Admin	8				100.000	43.968		

Item 53

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
53	53	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.346	0.346	0.446	0.362	0.467	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	479	0.385	-0.088	-0.112	110.944	22.988	Maroon	
B	157	0.126	-0.162	-0.259	102.439	26.587	Green	
C	151	0.121	-0.232	-0.375	97.093	24.711	Blue	
D	431	0.346	0.362	0.467	128.369	27.618	Olive	**KEY**
Omit	26	0.021	-0.043	-0.121	102.077	29.301		
Not Admin	26				102.077	29.301		

Item 54

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
54	54	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.529	0.310	0.389	0.282	0.354	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	658	0.529	0.282	0.354	122.076	25.763	Maroon	**KEY**
B	180	0.145	-0.206	-0.318	100.211	23.666	Green	
C	114	0.092	-0.226	-0.395	94.482	28.049	Blue	
D	281	0.226	-0.009	-0.012	113.388	26.474	Olive	
Omit	11	0.009	-0.063	-0.246	79.091	31.488		
Not Admin	11				79.091	31.488		

Item 55

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
55	55	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.429	0.403	0.508	0.401	0.506	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	220	0.177	-0.226	-0.333	100.755	25.495	Maroon	
B	248	0.199	-0.154	-0.220	105.617	22.356	Green	
C	226	0.182	-0.132	-0.192	106.420	24.471	Blue	
D	534	0.429	0.401	0.506	127.517	26.460	Olive	**KEY**
Omit	16	0.013	-0.068	-0.231	85.187	28.024		
Not Admin	16				85.187	28.024		

Item 56

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
56	56	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.251	0.047	0.064	0.057	0.077	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	312	0.251	0.057	0.077	117.679	30.356	Maroon	**KEY**
B	382	0.307	0.033	0.043	115.335	29.525	Green	
C	96	0.077	-0.208	-0.383	94.177	28.755	Blue	
D	447	0.359	0.033	0.042	115.183	21.830	Olive	
Omit	7	0.006	-0.049	-0.227	80.714	26.794		
Not Admin	7				80.714	26.794		

Item 57

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
57	57	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.732	0.481	0.646	0.430	0.578	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	115	0.092	-0.264	-0.462	90.826	21.370	Maroon	
B	159	0.128	-0.229	-0.366	97.094	23.377	Green	
C	910	0.732	0.430	0.578	121.577	25.457	Blue	**KEY**
D	53	0.043	-0.185	-0.412	89.472	24.338	Olive	
Omit	7	0.006	-0.043	-0.199	86.714	42.566		
Not Admin	7				86.714	42.566		

Item 58

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
58	58	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.526	0.394	0.495	0.367	0.461	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	654	0.526	0.367	0.461	124.333	25.753	Maroon	**KEY**
B	224	0.180	-0.115	-0.169	107.129	25.113	Green	
C	153	0.123	-0.249	-0.403	95.673	22.929	Blue	
D	199	0.160	-0.156	-0.236	104.055	26.903	Olive	
Omit	14	0.011	-0.061	-0.219	86.500	22.267		
Not Admin	14				86.500	22.267		

Item 59

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
59	59	C	Yes	4	Text comprehension	K		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.192	0.028	0.041	0.062	0.090	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	461	0.371	-0.094	-0.121	110.655	24.161	Maroon	
B	436	0.350	0.171	0.220	120.443	26.650	Green	
C	239	0.192	0.062	0.090	118.561	30.359	Blue	**KEY**
D	100	0.080	-0.222	-0.405	93.330	29.143	Olive	
Omit	8	0.006	-0.049	-0.216	84.125	29.372		
Not Admin	8				84.125	29.372		

Item 60

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
60	60	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.632	0.451	0.577	0.393	0.503	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	125	0.100	-0.190	-0.324	98.168	27.309	Maroon	
B	786	0.632	0.393	0.503	122.830	25.337	Green	**KEY**
C	132	0.106	-0.167	-0.281	100.455	25.021	Blue	
D	187	0.150	-0.227	-0.347	98.957	24.345	Olive	
Omit	14	0.011	-0.052	-0.186	91.929	29.013		
Not Admin	14				91.929	29.013		

Item 61

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
61	61	C	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.592	0.348	0.441	0.333	0.421	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	305	0.245	-0.152	-0.208	106.423	25.990	Maroon	
B	100	0.080	-0.214	-0.389	93.980	22.748	Green	
C	737	0.592	0.333	0.421	122.242	26.097	Blue	**KEY**
D	95	0.076	-0.150	-0.278	99.421	25.390	Olive	
Omit	7	0.006	-0.058	-0.268	67.571	26.450		
Not Admin	7				67.571	26.450		

Item 62

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
62	62	A	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.796	0.484	0.688	0.400	0.568	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	990	0.796	0.400	0.568	119.992	25.182	Maroon	**KEY**
B	115	0.092	-0.210	-0.367	95.452	29.262	Green	
C	85	0.068	-0.262	-0.502	86.976	21.139	Blue	
D	47	0.038	-0.179	-0.414	88.809	20.613	Olive	
Omit	7	0.006	-0.052	-0.244	75.857	33.603		
Not Admin	7				75.857	33.603		

Item 63

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
63	63	D	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.592	0.532	0.673	0.507	0.642	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	212	0.170	-0.274	-0.406	97.325	21.940	Maroon	
B	152	0.122	-0.238	-0.385	96.421	24.448	Green	
C	132	0.106	-0.222	-0.373	96.242	25.507	Blue	
D	736	0.592	0.507	0.642	126.201	23.680	Olive	**KEY**
Omit	12	0.010	-0.062	-0.234	82.500	25.823		
Not Admin	12				82.500	25.823		

Item 64

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
64	64	D	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.735	0.452	0.609	0.396	0.534	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	127	0.102	-0.206	-0.350	96.748	22.159	Maroon	
B	126	0.101	-0.183	-0.312	98.516	24.544	Green	
C	68	0.055	-0.252	-0.517	84.794	21.772	Blue	
D	914	0.735	0.396	0.534	121.015	25.957	Olive	**KEY**
Omit	9	0.007	-0.047	-0.197	88.111	24.002		
Not Admin	9				88.111	24.002		

Item 65

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
65	65	A	Yes	4	Text comprehension	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.259	0.034	0.046	0.035	0.047	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	322	0.259	0.035	0.047	116.602	28.166	Maroon	**KEY**
B	121	0.097	-0.239	-0.413	94.025	26.366	Green	
C	601	0.483	0.249	0.312	121.040	25.652	Blue	
D	183	0.147	-0.194	-0.299	101.186	23.878	Olive	
Omit	17	0.014	-0.042	-0.140	98.941	29.930		
Not Admin	17				98.941	29.930		

Item 66

Item information and statistics and statistics and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
66	66	A	Yes	4	Text comprehension		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.645	0.441	0.567	0.420	0.540	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	803	0.645	0.420	0.540	123.146	25.784	Maroon	**KEY**
B	160	0.129	-0.234	-0.373	97.150	21.399	Green	
C	137	0.110	-0.237	-0.394	95.416	23.298	Blue	
D	132	0.106	-0.157	-0.263	101.356	24.716	Olive	
Omit	12	0.010	-0.062	-0.236	82.167	33.836		
Not Admin	12				82.167	33.836		



Item 67

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
67	67	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.613	0.542	0.690	0.518	0.659	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	113	0.091	-0.186	-0.327	97.726	23.592	Maroon	
B	150	0.121	-0.294	-0.476	92.160	23.575	Green	
C	209	0.168	-0.276	-0.411	97.000	21.483	Blue	
D	763	0.613	0.518	0.659	125.890	23.869	Olive	**KEY**
Omit	9	0.007	-0.061	-0.256	74.778	28.939		
Not Admin	9				74.778	28.939		

Item 68

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
68	68	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.433	0.317	0.399	0.346	0.436	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	202	0.162	-0.165	-0.248	103.688	24.093	Maroon	
B	539	0.433	0.346	0.436	125.640	27.144	Green	**KEY**
C	262	0.211	-0.187	-0.265	104.034	24.638	Blue	
D	214	0.172	-0.091	-0.134	108.481	26.774	Olive	
Omit	27	0.022	-0.046	-0.129	101.111	19.216		
Not Admin	27				101.111	19.216		

Item 69

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
69	69	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.437	0.358	0.451	0.358	0.451	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	144	0.116	-0.241	-0.395	95.604	24.806	Maroon	
B	405	0.326	-0.122	-0.159	109.015	24.803	Green	
C	544	0.437	0.358	0.451	125.952	25.714	Blue	**KEY**
D	142	0.114	-0.135	-0.223	103.514	27.324	Olive	
Omit	9	0.007	-0.055	-0.231	81.333	18.661		
Not Admin	9				81.333	18.661		

Item 70

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
70	70	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.621	0.371	0.473	0.327	0.417	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	245	0.197	-0.096	-0.138	108.318	27.820	Maroon	
B	772	0.621	0.327	0.417	121.578	25.139	Green	**KEY**
C	69	0.055	-0.216	-0.441	89.362	27.698	Blue	
D	141	0.113	-0.225	-0.370	96.496	24.419	Olive	
Omit	17	0.014	-0.039	-0.129	99.941	28.674		
Not Admin	17				99.941	28.674		

Item 71

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
71	71	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.793	0.416	0.589	0.392	0.556	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	987	0.793	0.392	0.556	119.992	25.464	Maroon	**KEY**
B	95	0.076	-0.214	-0.397	93.158	25.207	Green	
C	53	0.043	-0.214	-0.476	85.849	24.712	Blue	
D	99	0.080	-0.216	-0.395	93.414	24.376	Olive	
Omit	10	0.008	-0.060	-0.243	78.700	20.067		
Not Admin	10				78.700	20.067		

Item 72

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
72	72	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.686	0.403	0.527	0.384	0.503	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	132	0.106	-0.209	-0.351	96.985	24.885	Maroon	
B	853	0.686	0.384	0.503	121.712	26.216	Green	**KEY**
C	66	0.053	-0.241	-0.500	85.712	22.426	Blue	
D	183	0.147	-0.169	-0.261	102.426	21.913	Olive	
Omit	10	0.008	-0.054	-0.219	84.400	20.695		
Not Admin	10				84.400	20.695		

Item 73

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
73	73	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.439	0.346	0.435	0.334	0.421	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	311	0.250	-0.070	-0.096	110.662	22.861	Maroon	
B	546	0.439	0.334	0.421	125.218	26.784	Green	**KEY**
C	194	0.156	-0.218	-0.330	100.253	24.705	Blue	
D	174	0.140	-0.163	-0.254	103.023	28.476	Olive	
Omit	19	0.015	-0.066	-0.209	89.842	27.281		
Not Admin	19				89.842	27.281		

Item 74

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
74	74	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.743	0.415	0.562	0.378	0.513	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	161	0.129	-0.189	-0.300	100.155	23.523	Maroon	
B	97	0.078	-0.274	-0.504	87.835	23.389	Green	
C	924	0.743	0.378	0.513	120.562	25.923	Blue	**KEY**
D	49	0.039	-0.147	-0.335	93.755	24.204	Olive	
Omit	13	0.010	-0.045	-0.165	94.538	34.486		
Not Admin	13				94.538	34.486		

Item 75

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
75	75	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.766	0.463	0.640	0.414	0.572	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	73	0.059	-0.210	-0.422	90.521	23.623	Maroon	
B	88	0.071	-0.240	-0.454	89.818	20.235	Green	
C	118	0.095	-0.220	-0.381	95.000	26.818	Blue	
D	953	0.766	0.414	0.572	120.726	25.318	Olive	**KEY**
Omit	12	0.010	-0.049	-0.186	91.083	32.826		
Not Admin	12				91.083	32.826		

Item 76

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
76	76	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.789	0.417	0.588	0.391	0.552	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	981	0.789	0.391	0.552	119.961	25.975	Maroon	**KEY**
B	63	0.051	-0.241	-0.506	84.937	20.834	Green	
C	43	0.035	-0.200	-0.479	84.465	20.925	Blue	
D	146	0.117	-0.218	-0.357	97.048	23.107	Olive	
Omit	11	0.009	-0.042	-0.165	93.909	31.428		
Not Admin	11				93.909	31.428		

Item 77

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
77	77	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.406	0.217	0.275	0.216	0.273	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	496	0.399	0.087	0.111	116.817	24.432	Maroon	
B	505	0.406	0.216	0.273	122.026	27.868	Green	**KEY**
C	106	0.085	-0.291	-0.522	87.745	23.455	Blue	
D	126	0.101	-0.223	-0.379	95.730	20.633	Olive	
Omit	11	0.009	-0.056	-0.217	85.455	26.227		
Not Admin	11				85.455	26.227		

Item 78

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
78	78	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.596	0.488	0.619	0.463	0.587	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	741	0.596	0.463	0.587	124.912	24.867	Maroon	**KEY**
B	347	0.279	-0.343	-0.458	98.378	23.137	Green	
C	117	0.094	-0.156	-0.272	100.205	25.208	Blue	
D	25	0.020	-0.198	-0.571	75.720	20.053	Olive	
Omit	14	0.011	-0.007	-0.025	110.929	23.915		
Not Admin	14				110.929	23.915		

Item 79

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
79	79	A	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.396	0.346	0.440	0.352	0.447	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	493	0.396	0.352	0.447	126.702	26.657	Maroon	**KEY**
B	469	0.377	-0.167	-0.213	108.215	24.733	Green	
C	127	0.102	-0.206	-0.351	97.496	25.150	Blue	
D	132	0.106	-0.094	-0.157	106.667	25.029	Olive	
Omit	23	0.018	-0.060	-0.178	95.130	31.996		
Not Admin	23				95.130	31.996		

Item 80

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
80	80	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.529	0.166	0.208	0.138	0.173	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	220	0.177	0.071	0.105	117.977	29.026	Maroon	
B	251	0.202	-0.142	-0.202	106.088	25.556	Green	
C	658	0.529	0.138	0.173	118.328	26.262	Blue	**KEY**
D	95	0.076	-0.147	-0.272	99.821	32.538	Olive	
Omit	20	0.016	-0.050	-0.157	97.050	21.358		
Not Admin	20				97.050	21.358		

Item 81

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
81	81	D	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.632	0.473	0.606	0.424	0.542	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	196	0.158	-0.203	-0.307	100.694	26.926	Maroon	
B	133	0.107	-0.243	-0.408	94.301	26.455	Green	
C	117	0.094	-0.189	-0.329	97.496	25.796	Blue	
D	786	0.632	0.424	0.542	123.412	24.192	Olive	**KEY**
Omit	12	0.010	-0.036	-0.135	98.333	20.146		
Not Admin	12				98.333	20.146		

Item 82

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
82	82	C	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.704	0.484	0.639	0.452	0.598	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	92	0.074	-0.147	-0.274	99.315	25.420	Maroon	
B	178	0.143	-0.304	-0.472	93.152	20.716	Green	
C	876	0.704	0.452	0.598	122.507	25.526	Blue	**KEY**
D	82	0.066	-0.248	-0.481	87.939	21.032	Olive	
Omit	16	0.013	-0.034	-0.115	101.375	20.195		
Not Admin	16				101.375	20.195		

Item 83

Item information and statistics and statistics and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
83	83	B	Yes	4	Text comprehension			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.849	0.447	0.683	0.400	0.611	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	64	0.051	-0.270	-0.566	81.734	25.705	Maroon	
B	1056	0.849	0.400	0.611	118.944	25.586	Green	**KEY**
C	58	0.047	-0.236	-0.509	84.310	19.410	Blue	
D	42	0.034	-0.187	-0.450	86.095	24.308	Olive	
Omit	24	0.019	-0.028	-0.083	105.208	20.585		
Not Admin	24				105.208	20.585		

## Interpreting graphs and visual information

Item 84

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
84	84	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.855	0.296	0.457	0.285	0.440	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	37	0.030	-0.182	-0.458	84.568	30.527	Maroon	
B	21	0.017	-0.121	-0.371	87.857	30.754	Green	
C	1063	0.855	0.285	0.440	117.510	26.329	Blue	**KEY**
D	121	0.097	-0.183	-0.315	97.909	25.694	Olive	
Omit	2	0.002	-0.031	-0.237	66.500	51.619		
Not Admin	2				66.500	51.619		

Item 85

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
85	85	B	Yes	4	Interpreting graphs...	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.655	0.092	0.119	0.063	0.081	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	57	0.046	-0.131	-0.284	96.982	22.719	Maroon	
B	815	0.655	0.063	0.081	115.674	26.776	Green	**KEY**
C	158	0.127	-0.147	-0.235	102.816	29.668	Blue	
D	206	0.166	0.125	0.186	121.150	27.688	Olive	
Omit	8	0.006	-0.011	-0.050	107.875	34.585		
Not Admin	8				107.875	34.585		

Item 86

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
86	86	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.775	0.360	0.501	0.262	0.365	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	108	0.087	-0.183	-0.326	97.111	24.651	Maroon	
B	134	0.108	-0.134	-0.225	102.813	26.936	Green	
C	33	0.027	-0.100	-0.263	96.727	25.368	Blue	
D	964	0.775	0.262	0.365	118.297	26.831	Olive	**KEY**
Omit	5	0.004	-0.045	-0.239	74.400	42.875		
Not Admin	5				74.400	42.875		

Item 87

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
87	87	A	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.549	0.412	0.518	0.278	0.349	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	683	0.549	0.278	0.349	121.318	27.765	Maroon	**KEY**
B	138	0.111	-0.084	-0.139	106.993	24.599	Green	
C	208	0.167	-0.131	-0.196	105.476	25.315	Blue	
D	196	0.158	-0.172	-0.261	102.607	25.217	Olive	
Omit	19	0.015	0.006	0.019	115.368	30.047		
Not Admin	19				115.368	30.047		

Item 88

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
88	88	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.658	0.404	0.522	0.325	0.419	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	269	0.216	-0.289	-0.406	98.446	24.571	Maroon	
B	66	0.053	-0.081	-0.169	104.106	27.307	Green	
C	74	0.059	-0.071	-0.141	105.824	28.432	Blue	
D	819	0.658	0.325	0.419	120.895	26.398	Olive	**KEY**
Omit	16	0.013	-0.026	-0.088	104.375	25.086		
Not Admin	16				104.375	25.086		

Item 89

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
89	89	C	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.272	0.113	0.152	0.065	0.087	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	80	0.064	-0.120	-0.233	101.200	27.006	Maroon	
B	757	0.609	0.058	0.074	115.083	26.221	Green	
C	338	0.272	0.065	0.087	117.719	30.580	Blue	**KEY**
D	62	0.050	-0.129	-0.273	98.242	22.155	Olive	
Omit	7	0.006	-0.006	-0.030	110.429	37.673		
Not Admin	7				110.429	37.673		

Item 90

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
90	90	B	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.777	0.308	0.429	0.233	0.326	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	150	0.121	-0.118	-0.191	104.687	24.845	Maroon	
B	967	0.777	0.233	0.326	117.859	27.148	Green	**KEY**
C	78	0.063	-0.166	-0.327	95.718	27.833	Blue	
D	45	0.036	-0.099	-0.233	99.333	24.589	Olive	
Omit	4	0.003	-0.044	-0.258	64.500	29.490		
Not Admin	4				64.500	29.490		

Item 91

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
91	91	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.203	0.230	0.327	0.141	0.200	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	97	0.078	-0.132	-0.242	101.608	27.560	Maroon	
B	393	0.316	0.077	0.100	117.107	26.296	Green	
C	252	0.203	0.141	0.200	122.659	32.258	Blue	**KEY**
D	492	0.395	-0.116	-0.147	110.089	24.507	Olive	
Omit	10	0.008	-0.045	-0.183	91.400	40.561		
Not Admin	10				91.400	40.561		

Item 92

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
92	92	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.605	0.342	0.434	0.272	0.346	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	76	0.061	-0.152	-0.301	97.395	22.974	Maroon	
B	150	0.121	-0.140	-0.227	103.307	27.488	Green	
C	753	0.605	0.272	0.346	120.554	27.348	Blue	**KEY**
D	245	0.197	-0.129	-0.184	106.514	24.526	Olive	
Omit	20	0.016	-0.028	-0.088	104.800	31.032		
Not Admin	20				104.800	31.032		

Item 93

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
93	93	A	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.487	0.443	0.556	0.252	0.316	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	606	0.487	0.252	0.316	121.827	28.455	Maroon	**KEY**
B	203	0.163	-0.042	-0.063	111.143	26.198	Green	
C	58	0.047	-0.131	-0.283	97.586	25.354	Blue	
D	363	0.292	-0.182	-0.242	105.986	23.941	Olive	
Omit	14	0.011	-0.044	-0.157	96.071	28.491		
Not Admin	14				96.071	28.491		

Item 94

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
94	94	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.614	0.440	0.560	0.380	0.483	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	256	0.206	-0.253	-0.360	99.730	23.757	Maroon	
B	101	0.081	-0.141	-0.255	100.406	25.660	Green	
C	764	0.614	0.380	0.483	122.664	26.117	Blue	**KEY**
D	112	0.090	-0.154	-0.271	99.946	26.952	Olive	
Omit	11	0.009	0.008	0.033	116.909	20.988		
Not Admin	11				116.909	20.988		

Item 95

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
95	95	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.627	0.330	0.422	0.246	0.314	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	139	0.112	-0.194	-0.322	98.338	24.091	Maroon	
B	117	0.094	-0.184	-0.320	97.675	25.746	Green	
C	780	0.627	0.246	0.314	119.676	27.430	Blue	**KEY**
D	202	0.162	-0.011	-0.017	112.743	25.267	Olive	
Omit	6	0.005	-0.009	-0.046	108.167	25.396		
Not Admin	6				108.167	25.396		

Item 96

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
96	96	B	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.438	0.301	0.379	0.260	0.327	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	289	0.232	-0.092	-0.128	109.114	25.572	Maroon	
B	545	0.438	0.260	0.327	122.745	28.013	Green	**KEY**
C	102	0.082	-0.176	-0.318	97.647	28.522	Blue	
D	288	0.232	-0.099	-0.137	108.785	24.660	Olive	
Omit	20	0.016	-0.020	-0.064	107.350	21.585		
Not Admin	20				107.350	21.585		

Item 97

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
97	97	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.429	0.348	0.438	0.311	0.392	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	139	0.112	-0.189	-0.313	99.281	25.489	Maroon	
B	318	0.256	-0.029	-0.039	112.440	25.065	Green	
C	239	0.192	-0.208	-0.300	102.176	24.016	Blue	
D	534	0.429	0.311	0.392	124.536	27.218	Olive	**KEY**
Omit	14	0.011	-0.037	-0.133	99.214	36.964		
Not Admin	14				99.214	36.964		

Item 98

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
98	98	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.614	0.360	0.458	0.346	0.441	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	138	0.111	-0.135	-0.225	102.877	24.480	Maroon	
B	153	0.123	-0.206	-0.333	98.301	25.508	Green	
C	172	0.138	-0.169	-0.264	101.808	25.380	Blue	
D	764	0.614	0.346	0.441	121.859	26.554	Olive	**KEY**
Omit	17	0.014	0.016	0.053	118.765	23.048		
Not Admin	17				118.765	23.048		

Item 99

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
99	99	C	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.326	0.483	0.629	0.367	0.478	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	230	0.185	-0.262	-0.382	98.609	23.799	Maroon	
B	271	0.218	-0.074	-0.104	109.900	26.017	Green	
C	405	0.326	0.367	0.478	129.311	26.843	Blue	**KEY**
D	335	0.269	-0.090	-0.120	109.707	24.065	Olive	
Omit	3	0.002	-0.023	-0.147	93.667	58.484		
Not Admin	3				93.667	58.484		

Item 100

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
100	100	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.395	0.542	0.689	0.365	0.464	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	280	0.225	-0.182	-0.254	104.457	22.003	Maroon	
B	126	0.101	-0.240	-0.408	94.135	24.805	Green	
C	343	0.276	-0.067	-0.090	110.776	25.760	Blue	
D	491	0.395	0.365	0.464	127.181	26.844	Olive	**KEY**
Omit	4	0.003	-0.038	-0.220	79.000	37.745		
Not Admin	4				79.000	37.745		

Item 101

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
101	101	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.482	0.540	0.677	0.350	0.439	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	151	0.121	-0.195	-0.317	99.252	24.197	Maroon	
B	291	0.234	-0.144	-0.198	106.543	23.439	Green	
C	194	0.156	-0.138	-0.210	104.851	24.548	Blue	
D	600	0.482	0.350	0.439	124.618	27.678	Olive	**KEY**
Omit	8	0.006	-0.034	-0.150	95.500	32.580		
Not Admin	8				95.500	32.580		

Item 102

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
102	102	A	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.427	0.380	0.479	0.229	0.288	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	531	0.427	0.229	0.288	121.900	28.713	Maroon	**KEY**
B	470	0.378	-0.057	-0.072	111.619	24.093	Green	
C	176	0.141	-0.146	-0.227	103.722	27.310	Blue	
D	60	0.048	-0.162	-0.347	93.767	25.112	Olive	
Omit	7	0.006	0.000	0.001	113.714	39.698		
Not Admin	7				113.714	39.698		

Item 103

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
103	103	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.741	0.254	0.343	0.238	0.322	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	136	0.109	-0.056	-0.094	108.971	30.719	Maroon	
B	98	0.079	-0.150	-0.275	99.357	28.143	Green	
C	922	0.741	0.238	0.322	118.221	26.119	Blue	**KEY**
D	77	0.062	-0.192	-0.379	92.935	23.246	Olive	
Omit	11	0.009	-0.020	-0.078	104.909	40.221		
Not Admin	11				104.909	40.221		

Item 104

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
104	104	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.551	0.342	0.431	0.245	0.308	0.958		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	153	0.123	-0.221	-0.357	97.307	24.344	Maroon	
B	275	0.221	-0.018	-0.025	112.571	26.850	Green	
C	685	0.551	0.245	0.308	120.565	27.115	Blue	**KEY**
D	118	0.095	-0.143	-0.248	101.373	24.883	Olive	
Omit	13	0.010	0.000	-0.002	113.308	30.305		
Not Admin	13				113.308	30.305		

Item 105

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
105	105	A	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.793	0.428	0.606	0.395	0.560	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	986	0.793	0.395	0.560	119.847	25.840	Maroon	**KEY**
B	132	0.106	-0.258	-0.434	92.712	23.508	Green	
C	74	0.059	-0.219	-0.437	89.432	23.065	Blue	
D	46	0.037	-0.153	-0.358	91.804	23.734	Olive	
Omit	6	0.005	-0.017	-0.087	103.167	44.607		
Not Admin	6				103.167	44.607		

Item 106

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
106	106	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.603	0.435	0.552	0.357	0.453	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	174	0.140	-0.231	-0.360	97.920	23.031	Maroon	
B	241	0.194	-0.192	-0.277	102.838	23.756	Green	
C	750	0.603	0.357	0.453	122.500	26.929	Blue	**KEY**
D	71	0.057	-0.080	-0.162	104.662	25.763	Olive	
Omit	8	0.006	-0.038	-0.170	92.375	37.067		
Not Admin	8				92.375	37.067		

Item 107

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
107	107	C	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.428	0.413	0.521	0.294	0.371	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	426	0.342	-0.142	-0.183	108.277	22.936	Maroon	
B	158	0.127	-0.093	-0.148	107.013	27.198	Green	
C	533	0.428	0.294	0.371	123.977	28.274	Blue	**KEY**
D	118	0.095	-0.162	-0.282	99.915	27.675	Olive	
Omit	9	0.007	-0.014	-0.061	107.000	38.958		
Not Admin	9				107.000	38.958		

Item 108

Item information and statistics								
Seq.	ID	Key	Scored	Num Options	Domain	Flags		
108	108	B	Yes	4	Interpreting graphs...			
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o		
1244	0.452	0.462	0.580	0.293	0.368	0.957		
Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	163	0.131	-0.165	-0.261	102.080	25.109	Maroon	
B	562	0.452	0.293	0.368	123.509	28.783	Green	**KEY**
C	244	0.196	-0.049	-0.071	110.947	25.045	Blue	
D	267	0.215	-0.172	-0.241	104.708	22.111	Olive	
Omit	8	0.006	-0.029	-0.129	98.500	45.938		
Not Admin	8				98.500	45.938		

Item 109

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
109	109	B	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.506	0.413	0.517	0.291	0.365	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	267	0.215	-0.118	-0.166	107.547	26.360	Maroon	
B	630	0.506	0.291	0.365	122.514	27.355	Green	**KEY**
C	153	0.123	-0.171	-0.276	101.235	26.250	Blue	
D	174	0.140	-0.118	-0.184	105.741	23.498	Olive	
Omit	20	0.016	-0.031	-0.096	104.000	27.220		
Not Admin	20				104.000	27.220		

Item 110

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
110	110	C	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.707	0.411	0.544	0.371	0.491	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	107	0.086	-0.167	-0.299	98.654	22.833	Maroon	
B	173	0.139	-0.229	-0.357	97.994	23.261	Green	
C	879	0.707	0.371	0.491	121.050	26.369	Blue	**KEY**
D	74	0.059	-0.181	-0.363	93.851	25.023	Olive	
Omit	11	0.009	-0.046	-0.180	91.818	35.349		
Not Admin	11				91.818	35.349		

Item 111

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
111	111	D	Yes	4	Interpreting graphs...	K, LR	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.143	0.018	0.027	-0.012	-0.018	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	310	0.249	-0.018	-0.024	113.229	25.175	Maroon	
B	247	0.199	-0.214	-0.306	102.227	25.037	Green	
C	500	0.402	0.198	0.251	120.728	28.334	Blue	
D	178	0.143	-0.012	-0.018	114.270	28.636	Olive	**KEY**
Omit	9	0.007	-0.044	-0.187	90.222	29.672		
Not Admin	9				90.222	29.672		

Item 112

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
112	112	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.439	0.407	0.512	0.338	0.425	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	127	0.102	-0.183	-0.312	98.890	22.992	Maroon	
B	179	0.144	-0.188	-0.292	101.196	26.085	Green	
C	381	0.306	-0.100	-0.131	109.659	25.159	Blue	
D	546	0.439	0.338	0.425	125.203	26.744	Olive	**KEY**
Omit	11	0.009	-0.040	-0.155	95.727	30.942		
Not Admin	11				95.727	30.942		

Item 113

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
113	113	D	Yes	4	Interpreting graphs...		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.555	0.320	0.403	0.266	0.335	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	239	0.192	-0.074	-0.107	109.439	27.326	Maroon	
B	82	0.066	-0.174	-0.337	95.598	24.824	Green	
C	225	0.181	-0.156	-0.228	104.516	26.257	Blue	
D	691	0.555	0.266	0.335	121.168	26.516	Olive	**KEY**
Omit	7	0.006	-0.039	-0.182	89.857	30.905		
Not Admin	7				89.857	30.905		

Vocabulary knowledge

Item 114

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
114	114	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.818	0.407	0.594	0.342	0.500	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	47	0.038	-0.206	-0.478	84.766	24.870	Maroon	
B	1018	0.818	0.342	0.500	118.817	26.254	Green	**KEY**
C	126	0.101	-0.198	-0.338	97.119	22.784	Blue	
D	49	0.039	-0.169	-0.386	90.449	26.700	Olive	
Omit	4	0.003	-0.044	-0.258	64.500	13.964		
Not Admin	4				64.500	13.964		



Item 115

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
115	115	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.808	0.486	0.700	0.383	0.552	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	80	0.064	-0.148	-0.289	97.700	24.649	Maroon	
B	83	0.067	-0.212	-0.409	91.422	25.920	Green	
C	73	0.059	-0.262	-0.527	84.301	22.274	Blue	
D	1005	0.808	0.383	0.552	119.461	25.749	Olive	**KEY**
Omit	3	0.002	-0.030	-0.194	83.667	17.926		
Not Admin	3				83.667	17.926		

Item 116

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
116	116	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.942	0.266	0.537	0.141	0.284	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	11	0.009	-0.094	-0.366	85.727	42.396	Maroon	
B	44	0.035	-0.053	-0.125	105.568	40.178	Green	
C	1172	0.942	0.141	0.284	115.152	26.673	Blue	**KEY**
D	13	0.010	-0.141	-0.519	75.077	27.406	Olive	
Omit	4	0.003	-0.032	-0.187	86.250	8.732		
Not Admin	4				86.250	8.732		

Item 117

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
117	117	A	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.966	0.388	0.935	0.261	0.629	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	1202	0.966	0.261	0.629	115.433	26.916	Maroon	**KEY**
B	20	0.016	-0.155	-0.484	79.450	29.002	Green	
C	14	0.011	-0.191	-0.684	63.214	12.065	Blue	
D	8	0.006	-0.095	-0.419	80.375	30.566	Olive	
Omit	0							
Not Admin	0							

Item 118

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
118	118	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.797	0.498	0.709	0.434	0.618	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	20	0.016	-0.194	-0.608	71.600	28.640	Maroon	
B	992	0.797	0.434	0.618	120.396	25.517	Green	**KEY**
C	111	0.089	-0.284	-0.502	88.414	18.979	Blue	
D	116	0.093	-0.236	-0.412	93.121	22.367	Olive	
Omit	5	0.004	-0.043	-0.230	77.200	17.768		
Not Admin	5				77.200	17.768		

Item 119

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
119	119	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.939	0.374	0.742	0.263	0.521	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	42	0.034	-0.229	-0.551	79.286	26.423	Maroon	
B	17	0.014	-0.125	-0.414	83.882	37.982	Green	
C	14	0.011	-0.068	-0.242	95.571	27.233	Blue	
D	1168	0.939	0.263	0.521	116.010	26.548	Olive	**KEY**
Omit	3	0.002	-0.024	-0.158	91.000	50.269		
Not Admin	3				91.000	50.269		

Item 120

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
120	120	A	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.634	0.472	0.604	0.410	0.524	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	789	0.634	0.410	0.524	123.096	24.660	Maroon	**KEY**
B	276	0.222	-0.310	-0.433	97.645	24.897	Green	
C	94	0.076	-0.179	-0.333	96.372	26.389	Blue	
D	79	0.064	-0.086	-0.168	104.532	28.821	Olive	
Omit	6	0.005	-0.046	-0.227	79.500	27.761		
Not Admin	6				79.500	27.761		

Item 121

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
121	121	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.710	0.426	0.564	0.332	0.440	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	148	0.119	-0.366	-0.595	85.926	22.303	Maroon	
B	159	0.128	-0.013	-0.021	112.415	27.753	Green	
C	53	0.043	-0.138	-0.307	95.358	27.036	Blue	
D	883	0.710	0.332	0.440	120.245	25.160	Olive	**KEY**
Omit	1	0.001	-0.025	-0.253	46.000	0.000		
Not Admin	1				46.000	0.000		

Item 122

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
122	122	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.937	0.299	0.588	0.219	0.431	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	25	0.020	-0.152	-0.438	83.880	27.691	Maroon	
B	42	0.034	-0.154	-0.371	90.405	31.498	Green	
C	1166	0.937	0.219	0.431	115.769	26.813	Blue	**KEY**
D	9	0.007	-0.048	-0.201	97.778	34.817	Olive	
Omit	2	0.002	-0.034	-0.259	53.000	9.899		
Not Admin	2				53.000	9.899		

Item 123

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
123	123	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.818	0.424	0.620	0.325	0.475	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	53	0.043	-0.191	-0.424	88.642	22.103	Maroon	
B	1018	0.818	0.325	0.475	118.646	26.045	Green	**KEY**
C	138	0.111	-0.173	-0.288	99.978	26.969	Blue	
D	29	0.023	-0.215	-0.590	75.172	19.302	Olive	
Omit	6	0.005	-0.053	-0.261	68.333	14.528		
Not Admin	6				68.333	14.528		

Item 124

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
124	124	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.730	0.391	0.525	0.295	0.396	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	177	0.142	-0.255	-0.396	96.164	24.323	Maroon	
B	24	0.019	-0.117	-0.344	90.375	29.397	Green	
C	908	0.730	0.295	0.396	119.326	26.532	Blue	**KEY**
D	131	0.105	-0.084	-0.142	106.656	26.169	Olive	
Omit	4	0.003	-0.030	-0.174	89.250	55.434		
Not Admin	4				89.250	55.434		

Item 125

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
125	125	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.893	0.434	0.728	0.307	0.515	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	50	0.040	-0.113	-0.256	97.980	29.765	Maroon	
B	39	0.031	-0.204	-0.504	81.897	26.964	Green	
C	43	0.035	-0.203	-0.485	83.558	26.895	Blue	
D	1111	0.893	0.307	0.515	117.148	26.055	Olive	**KEY**
Omit	1	0.001	-0.026	-0.264	30.000	0.000		
Not Admin	1				30.000	0.000		

Item 126

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
126	126	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.933	0.373	0.720	0.284	0.548	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	25	0.020	-0.101	-0.290	93.880	27.447	Maroon	
B	1161	0.933	0.284	0.548	116.338	26.361	Green	**KEY**
C	36	0.029	-0.201	-0.509	81.194	31.203	Blue	
D	18	0.014	-0.193	-0.629	69.222	19.000	Olive	
Omit	4	0.003	-0.042	-0.243	70.750	30.511		
Not Admin	4				70.750	30.511		

Item 127

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
127	127	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.583	0.416	0.526	0.370	0.468	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	117	0.094	0.012	0.020	114.547	23.955	Maroon	
B	295	0.237	-0.290	-0.399	99.349	24.195	Green	
C	725	0.583	0.370	0.468	123.121	25.454	Blue	**KEY**
D	98	0.079	-0.233	-0.427	91.816	26.956	Olive	
Omit	9	0.007	-0.029	-0.122	99.556	41.101		
Not Admin	9				99.556	41.101		

Item 128

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
128	128	A	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.771	0.416	0.577	0.354	0.492	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	959	0.771	0.354	0.492	119.655	25.965	Maroon	**KEY**
B	179	0.144	-0.172	-0.266	101.765	24.139	Green	
C	43	0.035	-0.273	-0.651	73.605	18.705	Blue	
D	59	0.047	-0.183	-0.393	90.729	25.443	Olive	
Omit	4	0.003	-0.023	-0.134	96.000	32.031		
Not Admin	4				96.000	32.031		

Item 129

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
129	129	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.876	0.266	0.429	0.152	0.245	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	103	0.083	-0.132	-0.238	101.049	23.743	Maroon	
B	1090	0.876	0.152	0.245	115.805	27.558	Green	**KEY**
C	41	0.033	-0.026	-0.064	109.244	31.420	Blue	
D	9	0.007	-0.107	-0.451	78.556	22.913	Olive	
Omit	1	0.001	-0.025	-0.252	46.000	0.000		
Not Admin	1				46.000	0.000		

Item 130

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
130	130	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.818	0.479	0.699	0.410	0.599	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	76	0.061	-0.266	-0.527	84.829	22.980	Maroon	
B	58	0.047	-0.070	-0.152	104.690	29.649	Green	
C	89	0.072	-0.310	-0.585	82.787	19.183	Blue	
D	1017	0.818	0.410	0.599	119.727	25.087	Olive	**KEY**
Omit	4	0.003	-0.047	-0.276	54.500	11.030		
Not Admin	4				54.500	11.030		

Item 131

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
131	131	A	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.949	0.390	0.820	0.228	0.481	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	1181	0.949	0.228	0.481	115.607	26.778	Maroon	**KEY**
B	23	0.018	-0.135	-0.401	85.957	31.239	Green	
C	31	0.025	-0.147	-0.394	87.581	34.347	Blue	
D	8	0.006	-0.112	-0.494	74.625	21.360	Olive	
Omit	1	0.001	-0.024	-0.252	46.000	0.000		
Not Admin	1				46.000	0.000		

Item 132

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
132	132	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.479	0.430	0.540	0.409	0.513	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	271	0.218	0.007	0.010	114.044	23.695	Maroon	
B	85	0.068	-0.086	-0.164	104.976	31.410	Green	
C	596	0.479	0.409	0.513	126.393	24.443	Blue	**KEY**
D	289	0.232	-0.440	-0.609	91.664	20.913	Olive	
Omit	3	0.002	-0.036	-0.234	72.333	28.746		
Not Admin	3				72.333	28.746		

Item 133

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
133	133	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.847	0.370	0.564	0.282	0.430	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	38	0.031	-0.175	-0.435	86.053	33.251	Maroon	
B	110	0.088	-0.163	-0.289	98.764	24.811	Green	
C	1054	0.847	0.282	0.430	117.567	26.572	Blue	**KEY**
D	40	0.032	-0.142	-0.348	91.725	23.273	Olive	
Omit	2	0.002	-0.028	-0.219	74.000	39.598		
Not Admin	2				74.000	39.598		

Item 134

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
134	134	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.926	0.422	0.789	0.287	0.537	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	29	0.023	-0.215	-0.588	74.862	25.528	Maroon	
B	1152	0.926	0.287	0.537	116.464	26.391	Green	**KEY**
C	54	0.043	-0.161	-0.356	92.407	27.048	Blue	
D	7	0.006	-0.135	-0.628	63.714	23.521	Olive	
Omit	2	0.002	-0.035	-0.267	46.500	23.335		
Not Admin	2				46.500	23.335		

Item 135

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
135	135	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.461	0.396	0.497	0.422	0.529	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	113	0.091	-0.314	-0.552	86.575	20.883	Maroon	
B	573	0.461	0.422	0.529	127.255	23.596	Green	**KEY**
C	410	0.330	-0.141	-0.183	108.263	26.023	Blue	
D	143	0.115	-0.168	-0.276	101.021	24.238	Olive	
Omit	5	0.004	-0.049	-0.261	66.600	28.343		
Not Admin	5				66.600	28.343		

Item 136

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
136	136	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.332	0.120	0.155	0.130	0.169	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	210	0.169	-0.166	-0.246	103.705	24.142	Maroon	
B	280	0.225	-0.084	-0.117	109.482	28.667	Green	
C	413	0.332	0.130	0.169	119.833	30.009	Blue	**KEY**
D	323	0.260	0.082	0.111	117.567	24.028	Olive	
Omit	18	0.014	-0.013	-0.044	109.389	25.079		
Not Admin	18				109.389	25.079		

Item 137

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
137	137	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.909	0.432	0.759	0.343	0.603	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	56	0.045	-0.226	-0.495	84.571	21.284	Maroon	
B	21	0.017	-0.222	-0.683	66.571	14.165	Green	
C	29	0.023	-0.152	-0.417	86.103	34.538	Blue	
D	1131	0.909	0.343	0.603	117.236	25.992	Olive	**KEY**
Omit	7	0.006	-0.036	-0.169	91.714	33.104		
Not Admin	7				91.714	33.104		

Item 138

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
138	138	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.902	0.445	0.764	0.331	0.569	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	62	0.050	-0.265	-0.560	81.710	21.320	Maroon	
B	1122	0.902	0.331	0.569	117.369	25.996	Green	**KEY**
C	37	0.030	-0.131	-0.329	92.892	29.359	Blue	
D	14	0.011	-0.176	-0.628	68.214	28.633	Olive	
Omit	9	0.007	-0.055	-0.234	80.111	25.949		
Not Admin	9				80.111	25.949		

Item 139

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
139	139	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.916	0.459	0.824	0.358	0.644	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	28	0.023	-0.222	-0.616	72.786	22.980	Maroon	
B	1139	0.916	0.358	0.644	117.227	26.067	Green	**KEY**
C	50	0.040	-0.222	-0.505	83.200	19.498	Blue	
D	24	0.019	-0.167	-0.490	80.292	29.825	Olive	
Omit	3	0.002	-0.035	-0.229	73.333	11.060		
Not Admin	3				73.333	11.060		

Item 140

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
140	140	B	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.894	0.485	0.815	0.377	0.634	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	41	0.033	-0.248	-0.603	76.244	23.681	Maroon	
B	1112	0.894	0.377	0.634	117.852	25.954	Green	**KEY**
C	44	0.035	-0.198	-0.470	84.773	24.150	Blue	
D	44	0.035	-0.191	-0.452	85.864	16.984	Olive	
Omit	3	0.002	-0.039	-0.258	60.667	29.569		
Not Admin	3				60.667	29.569		

Item 141

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
141	141	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.916	0.472	0.847	0.366	0.658	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	28	0.023	-0.238	-0.660	69.857	17.759	Maroon	
B	45	0.036	-0.174	-0.408	88.444	21.934	Green	
C	1139	0.916	0.366	0.658	117.265	26.005	Blue	**KEY**
D	31	0.025	-0.219	-0.586	75.355	23.980	Olive	
Omit	1	0.001	-0.026	-0.264	30.000	0.000		
Not Admin	1				30.000	0.000		

Item 142

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
142	142	D	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.491	0.192	0.241	0.198	0.248	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	313	0.252	-0.151	-0.205	106.492	24.488	Maroon	
B	275	0.221	-0.066	-0.092	110.265	26.536	Green	
C	43	0.035	-0.035	-0.083	108.581	32.198	Blue	
D	611	0.491	0.198	0.248	120.213	28.222	Olive	**KEY**
Omit	2	0.002	-0.035	-0.267	46.500	23.335		
Not Admin	2				46.500	23.335		

Item 143

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
143	143	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.442	0.199	0.250	0.188	0.237	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	130	0.105	-0.275	-0.464	91.862	26.171	Maroon	
B	269	0.216	-0.016	-0.023	112.888	23.924	Green	
C	550	0.442	0.188	0.237	120.471	27.437	Blue	**KEY**
D	279	0.224	-0.007	-0.009	113.391	26.683	Olive	
Omit	16	0.013	-0.028	-0.094	103.937	39.659		
Not Admin	16				103.937	39.659		

Item 144

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
144	144	C	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.622	0.224	0.286	0.090	0.114	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	381	0.306	-0.015	-0.019	113.018	27.565	Maroon	
B	28	0.023	-0.186	-0.515	79.964	30.238	Green	
C	774	0.622	0.090	0.114	116.541	26.785	Blue	**KEY**
D	55	0.044	-0.044	-0.098	107.945	27.761	Olive	
Omit	6	0.005	-0.051	-0.253	71.333	32.340		
Not Admin	6				71.333	32.340		

Item 145

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
145	145	A	Yes	4	Vocabulary		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.730	0.366	0.491	0.290	0.389	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	908	0.730	0.290	0.389	119.258	26.734	Maroon	**KEY**
B	63	0.051	-0.160	-0.336	94.476	30.331	Green	
C	167	0.134	-0.169	-0.266	101.689	25.600	Blue	
D	96	0.077	-0.136	-0.250	100.563	22.349	Olive	
Omit	10	0.008	-0.031	-0.124	99.300	33.784		
Not Admin	10				99.300	33.784		

Grammar and text relations

Item 146

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
146	146	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.277	0.230	0.307	0.198	0.264	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	610	0.490	-0.028	-0.035	113.210	24.708	Maroon	
B	124	0.100	-0.222	-0.379	95.734	23.262	Green	
C	345	0.277	0.198	0.264	123.748	30.634	Blue	**KEY**
D	154	0.124	-0.024	-0.039	112.247	27.451	Olive	
Omit	11	0.009	-0.053	-0.209	87.182	24.049		
Not Admin	11				87.182	24.049		

Item 147

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
147	147	D	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.234	0.312	0.432	0.275	0.379	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	191	0.154	-0.019	-0.028	112.743	26.079	Maroon	
B	365	0.293	-0.205	-0.271	105.203	23.281	Green	
C	392	0.315	-0.035	-0.046	112.533	26.797	Blue	
D	291	0.234	0.275	0.379	128.629	29.722	Olive	**KEY**
Omit	5	0.004	-0.043	-0.229	78.000	29.487		
Not Admin	5				78.000	29.487		

Item 148

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
148	148	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.603	0.401	0.509	0.394	0.500	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	750	0.603	0.394	0.500	123.527	26.101	Maroon	**KEY**
B	163	0.131	-0.151	-0.240	103.344	24.718	Green	
C	122	0.098	-0.185	-0.317	98.730	24.139	Blue	
D	191	0.154	-0.241	-0.368	98.545	22.671	Olive	
Omit	18	0.014	-0.074	-0.241	83.889	25.663		
Not Admin	18				83.889	25.663		

Item 149

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
149	149	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.590	0.410	0.519	0.393	0.498	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	159	0.128	-0.169	-0.269	101.830	25.966	Maroon	
B	734	0.590	0.393	0.498	123.678	26.375	Green	**KEY**
C	277	0.223	-0.224	-0.312	102.433	21.474	Blue	
D	61	0.049	-0.204	-0.434	89.393	22.484	Olive	
Omit	13	0.010	-0.065	-0.238	82.231	31.734		
Not Admin	13				82.231	31.734		

Item 150

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
150	150	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.744	0.533	0.723	0.493	0.668	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	121	0.097	-0.330	-0.568	86.041	20.293	Maroon	
B	139	0.112	-0.240	-0.398	94.971	23.388	Green	
C	925	0.744	0.493	0.668	122.399	24.200	Blue	**KEY**
D	49	0.039	-0.215	-0.491	84.510	26.711	Olive	
Omit	10	0.008	-0.047	-0.192	89.500	27.196		
Not Admin	10				89.500	27.196		

Item 151

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
151	151	D	Yes	4	Grammar & text relations	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.186	0.095	0.138	0.113	0.165	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	118	0.095	-0.211	-0.366	96.195	24.248	Maroon	
B	83	0.067	-0.315	-0.608	81.699	22.117	Green	
C	802	0.645	0.201	0.259	118.173	24.431	Blue	
D	232	0.186	0.113	0.165	121.573	30.146	Olive	**KEY**
Omit	9	0.007	-0.052	-0.220	83.889	32.945		
Not Admin	9				83.889	32.945		

Item 152

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
152	152	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.638	0.397	0.509	0.353	0.453	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	188	0.151	-0.249	-0.381	97.383	23.045	Maroon	
B	794	0.638	0.353	0.453	121.831	25.218	Green	**KEY**
C	125	0.100	-0.208	-0.355	96.544	28.535	Blue	
D	125	0.100	-0.059	-0.101	108.712	29.367	Olive	
Omit	12	0.010	-0.038	-0.143	97.333	27.907		
Not Admin	12				97.333	27.907		

Item 153

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
153	153	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.727	0.450	0.603	0.392	0.525	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	144	0.116	-0.256	-0.420	94.292	22.141	Maroon	
B	905	0.727	0.392	0.525	121.090	25.545	Green	**KEY**
C	119	0.096	-0.170	-0.295	99.311	25.215	Blue	
D	62	0.050	-0.194	-0.411	90.468	28.501	Olive	
Omit	14	0.011	-0.053	-0.190	91.143	30.857		
Not Admin	14				91.143	30.857		

Item 154

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
154	154	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.669	0.505	0.655	0.434	0.563	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	145	0.117	-0.335	-0.548	88.297	22.088	Maroon	
B	128	0.103	-0.175	-0.297	99.344	23.773	Green	
C	832	0.669	0.434	0.563	122.822	25.221	Blue	**KEY**
D	126	0.101	-0.145	-0.247	101.683	24.747	Olive	
Omit	13	0.010	-0.025	-0.092	103.692	28.782		
Not Admin	13				103.692	28.782		

Item 155

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
155	155	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.505	0.415	0.520	0.380	0.476	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	628	0.505	0.380	0.476	124.898	26.246	Maroon	**KEY**
B	313	0.252	-0.162	-0.220	105.936	25.010	Green	
C	205	0.165	-0.251	-0.375	98.137	24.408	Blue	
D	86	0.069	-0.105	-0.201	103.000	24.778	Olive	
Omit	12	0.010	-0.014	-0.052	108.083	25.766		
Not Admin	12				108.083	25.766		

Item 156

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
156	156	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.713	0.500	0.664	0.451	0.599	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	128	0.103	-0.293	-0.497	89.781	21.070	Maroon	
B	130	0.105	-0.265	-0.447	92.223	23.381	Green	
C	887	0.713	0.451	0.599	122.310	25.308	Blue	**KEY**
D	89	0.072	-0.132	-0.249	100.461	23.361	Olive	
Omit	10	0.008	-0.037	-0.152	95.600	24.950		
Not Admin	10				95.600	24.950		

Item 157

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
157	157	D	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.455	0.375	0.471	0.360	0.452	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	128	0.103	-0.293	-0.496	89.945	20.742	Maroon	
B	370	0.297	-0.025	-0.033	112.597	25.346	Green	
C	171	0.137	-0.230	-0.360	97.854	24.763	Blue	
D	566	0.455	0.360	0.452	125.454	25.493	Olive	**KEY**
Omit	9	0.007	-0.017	-0.070	105.889	31.672		
Not Admin	9				105.889	31.672		

Item 158

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
158	158	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.564	0.324	0.408	0.270	0.340	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	171	0.137	-0.200	-0.314	99.982	25.348	Maroon	
B	90	0.072	-0.200	-0.375	94.178	24.599	Green	
C	702	0.564	0.270	0.340	121.175	25.996	Blue	**KEY**
D	267	0.215	-0.032	-0.045	112.034	27.908	Olive	
Omit	14	0.011	-0.048	-0.171	94.000	27.420		
Not Admin	14				94.000	27.420		

Item 159

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
159	159	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.479	0.336	0.421	0.310	0.389	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	404	0.325	-0.090	-0.117	110.158	26.072	Maroon	
B	151	0.121	-0.210	-0.341	98.172	25.798	Green	
C	596	0.479	0.310	0.389	123.601	26.200	Blue	**KEY**
D	88	0.071	-0.172	-0.326	96.557	23.342	Olive	
Omit	5	0.004	-0.045	-0.237	75.200	26.367		
Not Admin	5				75.200	26.367		

Item 160

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
160	160	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.662	0.419	0.543	0.340	0.439	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	823	0.662	0.340	0.439	121.193	25.443	Maroon	**KEY**
B	100	0.080	-0.268	-0.489	88.550	25.172	Green	
C	198	0.159	-0.142	-0.214	104.545	27.411	Blue	
D	116	0.093	-0.124	-0.215	102.914	25.917	Olive	
Omit	7	0.006	-0.038	-0.179	90.286	19.448		
Not Admin	7				90.286	19.448		

Item 161

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
161	161	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.690	0.402	0.526	0.330	0.432	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	858	0.690	0.330	0.432	120.603	25.606	Maroon	**KEY**
B	174	0.140	-0.130	-0.203	104.678	28.181	Green	
C	99	0.080	-0.298	-0.544	85.808	22.857	Blue	
D	104	0.084	-0.097	-0.174	104.779	24.778	Olive	
Omit	9	0.007	-0.048	-0.202	87.111	25.882		
Not Admin	9				87.111	25.882		

Item 162

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
162	162	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.719	0.510	0.680	0.440	0.586	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	106	0.085	-0.238	-0.426	92.170	25.263	Maroon	
B	133	0.107	-0.249	-0.417	93.835	24.407	Green	
C	894	0.719	0.440	0.586	122.020	24.725	Blue	**KEY**
D	101	0.081	-0.200	-0.363	95.119	25.356	Olive	
Omit	10	0.008	-0.043	-0.174	92.400	28.001		
Not Admin	10				92.400	28.001		



Item 163

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
163	163	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.725	0.473	0.633	0.429	0.574	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	121	0.097	-0.236	-0.407	94.074	20.539	Maroon	
B	902	0.725	0.429	0.574	121.779	25.061	Green	**KEY**
C	101	0.081	-0.202	-0.367	95.119	26.884	Blue	
D	105	0.084	-0.239	-0.428	92.257	25.515	Olive	
Omit	15	0.012	-0.058	-0.202	89.667	29.366		
Not Admin	15				89.667	29.366		

Item 164

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
164	164	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.477	0.343	0.430	0.292	0.366	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	181	0.145	-0.267	-0.412	95.790	25.604	Maroon	
B	594	0.477	0.292	0.366	122.916	26.414	Green	**KEY**
C	331	0.266	-0.006	-0.008	113.260	25.089	Blue	
D	127	0.102	-0.162	-0.276	100.323	25.995	Olive	
Omit	11	0.009	0.008	0.033	117.000	30.867		
Not Admin	11				117.000	30.867		

Item 165

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
165	165	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.484	0.417	0.522	0.356	0.447	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	602	0.484	0.356	0.447	124.718	25.706	Maroon	**KEY**
B	158	0.127	-0.242	-0.386	96.462	26.347	Green	
C	236	0.190	-0.118	-0.171	107.038	27.749	Blue	
D	232	0.186	-0.131	-0.191	106.224	22.563	Olive	
Omit	16	0.013	-0.031	-0.106	102.562	32.064		
Not Admin	16				102.562	32.064		

Item 166

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
166	166	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.517	0.309	0.388	0.255	0.320	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	303	0.244	-0.080	-0.110	109.710	25.159	Maroon	
B	643	0.517	0.255	0.320	121.305	27.615	Green	**KEY**
C	192	0.154	-0.126	-0.192	105.479	27.398	Blue	
D	89	0.072	-0.184	-0.348	95.416	22.354	Olive	
Omit	17	0.014	-0.009	-0.028	110.706	28.086		
Not Admin	17				110.706	28.086		

Item 167

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
167	167	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.392	0.288	0.366	0.230	0.292	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	488	0.392	0.230	0.292	122.588	26.660	Maroon	**KEY**
B	237	0.191	-0.055	-0.079	110.772	29.521	Green	
C	395	0.318	-0.112	-0.146	109.385	24.654	Blue	
D	100	0.080	-0.143	-0.261	100.680	29.539	Olive	
Omit	24	0.019	-0.031	-0.092	104.833	30.222		
Not Admin	24				104.833	30.222		

Item 168

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
168	168	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.510	0.459	0.575	0.436	0.547	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	634	0.510	0.436	0.547	126.399	25.877	Maroon	**KEY**
B	206	0.166	-0.281	-0.419	96.811	22.384	Green	
C	116	0.093	-0.176	-0.308	98.974	22.898	Blue	
D	265	0.213	-0.152	-0.215	105.921	24.114	Olive	
Omit	23	0.018	-0.054	-0.160	97.261	27.608		
Not Admin	23				97.261	27.608		

Item 169

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
169	169	D	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.514	0.475	0.596	0.423	0.530	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	234	0.188	-0.194	-0.281	102.885	25.003	Maroon	
B	150	0.121	-0.209	-0.339	98.487	23.276	Green	
C	201	0.162	-0.184	-0.276	102.458	21.761	Blue	
D	639	0.514	0.423	0.530	125.922	26.241	Olive	**KEY**
Omit	20	0.016	-0.048	-0.150	98.050	30.205		
Not Admin	20				98.050	30.205		

Item 170

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
170	170	A	Yes	4	Grammar & text relations	K	
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.143	0.040	0.063	0.083	0.128	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	178	0.143	0.083	0.128	120.652	31.574	Maroon	**KEY**
B	155	0.125	-0.294	-0.473	92.613	21.235	Green	
C	814	0.654	0.245	0.316	118.971	25.311	Blue	
D	89	0.072	-0.187	-0.353	95.506	25.231	Olive	
Omit	8	0.006	-0.046	-0.203	86.750	31.554		
Not Admin	8				86.750	31.554		

Item 171

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
171	171	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.427	0.384	0.485	0.399	0.503	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	492	0.395	-0.152	-0.193	108.768	23.239	Maroon	
B	531	0.427	0.399	0.503	127.476	25.526	Green	**KEY**
C	97	0.078	-0.234	-0.430	91.979	25.205	Blue	
D	116	0.093	-0.208	-0.362	96.250	26.332	Olive	
Omit	8	0.006	-0.059	-0.261	72.000	30.515		
Not Admin	8				72.000	30.515		

Item 172

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
172	172	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.481	0.256	0.321	0.183	0.229	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	130	0.105	-0.160	-0.271	100.854	28.513	Maroon	
B	82	0.066	-0.274	-0.530	85.488	24.002	Green	
C	598	0.481	0.183	0.229	119.935	25.831	Blue	**KEY**
D	427	0.343	0.054	0.069	115.761	25.945	Olive	
Omit	7	0.006	-0.045	-0.208	85.000	43.489		
Not Admin	7				85.000	43.489		

Item 173

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
173	173	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.326	0.120	0.156	0.088	0.114	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	84	0.068	-0.149	-0.287	98.631	32.659	Maroon	
B	463	0.372	-0.062	-0.080	111.618	26.865	Green	
C	406	0.326	0.088	0.114	118.303	27.714	Blue	**KEY**
D	282	0.227	0.063	0.088	117.057	25.547	Olive	
Omit	9	0.007	-0.036	-0.151	95.778	40.583		
Not Admin	9				95.778	40.583		

Item 174

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
174	174	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.704	0.566	0.748	0.496	0.656	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	221	0.178	-0.352	-0.517	93.000	21.957	Maroon	
B	103	0.083	-0.234	-0.422	92.437	23.801	Green	
C	876	0.704	0.496	0.656	123.315	24.164	Blue	**KEY**
D	33	0.027	-0.171	-0.447	85.485	25.021	Olive	
Omit	11	0.009	-0.055	-0.213	86.182	37.661		
Not Admin	11				86.182	37.661		

Item 175

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
175	175	D	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.555	0.517	0.650	0.444	0.558	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	149	0.120	-0.240	-0.391	95.826	21.284	Maroon	
B	110	0.088	-0.262	-0.464	90.655	22.676	Green	
C	285	0.229	-0.162	-0.225	105.505	24.948	Blue	
D	690	0.555	0.444	0.558	125.501	25.043	Olive	**KEY**
Omit	10	0.008	-0.039	-0.156	95.200	31.583		
Not Admin	10				95.200	31.583		

Item 176

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
176	176	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.728	0.467	0.626	0.390	0.523	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	79	0.064	-0.217	-0.424	90.557	21.508	Maroon	
B	118	0.095	-0.245	-0.424	92.653	25.379	Green	
C	906	0.728	0.390	0.523	120.925	25.613	Blue	**KEY**
D	133	0.107	-0.159	-0.267	100.774	25.760	Olive	
Omit	8	0.006	-0.022	-0.096	102.375	33.781		
Not Admin	8				102.375	33.781		

Item 177

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
177	177	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.291	0.191	0.254	0.167	0.221	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	202	0.162	-0.159	-0.239	104.025	25.427	Maroon	
B	570	0.458	0.045	0.057	115.281	24.994	Green	
C	362	0.291	0.167	0.221	122.058	29.995	Blue	**KEY**
D	100	0.080	-0.145	-0.265	100.470	27.718	Olive	
Omit	10	0.008	-0.045	-0.184	91.200	34.746		
Not Admin	10				91.200	34.746		

Item 178

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
178	178	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.385	0.156	0.198	0.079	0.100	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	479	0.385	0.079	0.100	117.603	28.381	Maroon	**KEY**
B	205	0.165	-0.094	-0.140	108.132	28.233	Green	
C	366	0.294	0.068	0.090	116.765	25.974	Blue	
D	176	0.141	-0.099	-0.154	107.227	27.139	Olive	
Omit	18	0.014	-0.046	-0.150	97.778	28.302		
Not Admin	18				97.778	28.302		

Item 179

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
179	179	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.365	0.182	0.233	0.105	0.135	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	126	0.101	-0.297	-0.506	89.611	22.382	Maroon	
B	454	0.365	0.105	0.135	118.667	28.398	Green	**KEY**
C	495	0.398	0.080	0.101	116.549	25.407	Blue	
D	160	0.129	0.000	0.000	113.856	26.495	Olive	
Omit	9	0.007	-0.047	-0.199	88.000	39.790		
Not Admin	9				88.000	39.790		

Item 180

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
180	180	A	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.605	0.438	0.556	0.423	0.536	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	753	0.605	0.423	0.536	124.023	25.890	Maroon	**KEY**
B	108	0.087	-0.238	-0.425	92.648	25.902	Green	
C	98	0.079	-0.240	-0.441	91.316	24.342	Blue	
D	275	0.221	-0.180	-0.251	104.520	20.418	Olive	
Omit	10	0.008	-0.061	-0.247	78.000	23.636		
Not Admin	10				78.000	23.636		

Item 181

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
181	181	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.662	0.472	0.610	0.389	0.504	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	122	0.098	-0.141	-0.242	101.975	25.344	Maroon	
B	824	0.662	0.389	0.504	122.239	25.802	Green	**KEY**
C	209	0.168	-0.272	-0.405	97.120	23.967	Blue	
D	80	0.064	-0.164	-0.321	96.525	24.072	Olive	
Omit	9	0.007	-0.060	-0.252	75.667	22.288		
Not Admin	9				75.667	22.288		

Item 182

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
182	182	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.665	0.476	0.616	0.406	0.526	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	94	0.076	-0.255	-0.473	89.138	24.659	Maroon	
B	827	0.665	0.406	0.526	122.461	24.879	Green	**KEY**
C	228	0.183	-0.174	-0.253	103.522	24.948	Blue	
D	85	0.068	-0.227	-0.434	90.612	26.178	Olive	
Omit	10	0.008	-0.045	-0.184	90.800	22.972		
Not Admin	10				90.800	22.972		

Item 183

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
183	183	C	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.736	0.510	0.688	0.407	0.548	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	76	0.061	-0.288	-0.571	82.553	24.228	Maroon	
B	182	0.146	-0.216	-0.333	99.203	22.849	Green	
C	915	0.736	0.407	0.548	121.189	25.366	Blue	**KEY**
D	62	0.050	-0.156	-0.330	94.855	26.524	Olive	
Omit	9	0.007	-0.050	-0.211	85.444	21.864		
Not Admin	9				85.444	21.864		

Item 184

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
184	184	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.778	0.497	0.693	0.417	0.582	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	150	0.121	-0.282	-0.457	92.440	23.780	Maroon	
B	968	0.778	0.417	0.582	120.489	25.417	Green	**KEY**
C	70	0.056	-0.192	-0.390	91.771	25.352	Blue	
D	49	0.039	-0.191	-0.437	87.408	24.024	Olive	
Omit	7	0.006	-0.033	-0.153	94.429	19.806		
Not Admin	7				94.429	19.806		

Item 185

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
185	185	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.767	0.489	0.675	0.402	0.555	0.957	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	106	0.085	-0.232	-0.416	92.594	22.925	Maroon	
B	954	0.767	0.402	0.555	120.520	25.551	Green	**KEY**
C	109	0.088	-0.259	-0.459	90.587	24.171	Blue	
D	64	0.051	-0.144	-0.302	96.469	27.150	Olive	
Omit	11	0.009	-0.043	-0.168	93.455	23.864		
Not Admin	11				93.455	23.864		

Item 186

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
186	186	B	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.387	0.225	0.286	0.197	0.250	0.958	

Option statistics								
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color	
A	390	0.314	0.029	0.038	115.059	26.832	Maroon	
B	481	0.387	0.197	0.250	121.678	27.965	Green	**KEY**
C	258	0.207	-0.245	-0.347	100.775	25.017	Blue	
D	99	0.080	-0.036	-0.067	110.495	25.019	Olive	
Omit	16	0.013	-0.048	-0.165	95.500	21.673		
Not Admin	16				95.500	21.673		

## Item 187

Item information and statistics							
Seq.	ID	Key	Scored	Num Options	Domain	Flags	
187	187	D	Yes	4	Grammar & text relations		
N	P	Domain Rpbis	Domain Rbis	Total Rpbis	Total Rbis	Alpha w/o	
1244	0.161	0.157	0.237	0.182	0.274	0.958	
Option statistics							
Option	N	Prop.	Rpbis	Rbis	Mean	SD	Color
A	207	0.166	-0.209	-0.313	101.295	26.218	Maroon
B	434	0.349	-0.031	-0.039	112.942	24.087	Green
C	380	0.305	0.056	0.073	116.374	27.280	Blue
D	200	0.161	0.182	0.274	126.435	32.246	Olive
Omit	23	0.018	-0.037	-0.109	103.174	24.813	**KEY**
Not Admin	23				103.174	24.813	

Table 2: Summary statistics

Score	Items	Mean	SD	Min Score	Max Score	Mean P	Mean Rpbis
All items	187	114.041	27.860	30	176	0.610	0.317
Scored Items	187	114.041	27.860	30	176	0.610	0.317
Scrambled text 1	5	3.344	1.637	0	5	0.669	0.337
Scrambled text 2	5	3.113	1.656	0	5	0.623	0.320
Text comprehension	73	44.449	12.696	9	69	0.609	0.338
Interpreting graphs...	30	16.106	5.603	2	30	0.537	0.270
Vocabulary	32	24.790	4.804	2	32	0.775	0.299
Grammar & text relations	42	22.240	7.963	0	41	0.530	0.324

TiaPlus® Test and Item Analysis Version 2.1 Build 205  
Cito, Measurement and Research Department. Arnhem, the Netherlands. (C)2004.

Population : Some Bloemfontein schools  
Test : TALA 1 & 2  
Date : Friday, June 21, 2013  
Time : 15:14  
Data file : c:\albertdocuments\icelda\ice00784.txt  
Missing handling : Missing as Zero

Persons: All persons

Items: All items

Item Label	Item nr.	Weight	Key	P- and A- values					% #		Weighted									
				A	B	C	D	E	F	O/D	Mis- sing	Max	Mean	P	Sd	RSK	Rit	Rir	AR	Eff
1	1	C	3	1	94*	0			1	0	1	0.94	94	0.24	0.24	18	17	95	.002	.004
2	1	A	84*	3	2	2			8	0	1	0.84	84	0.36	0.36	27	26	95	.004	.001
3	1	E	4	30	2	8			56	0	1	0.00	0	0.00	0.00	0	0	95	.000	.005
4	1	B	3	56*	1	26			14	0	1	0.56	56	0.50	0.50	32	30	95	.006	.001
5	1	D	5	8	2	62*			23	0	1	0.62	62	0.49	0.49	28	26	95	.005	.000
6	1	D	0	8	3	88*			1	0	1	0.88	88	0.33	0.33	32	30	95	.004	.001
7	1	C	6	12	68*	6			9	0	1	0.68	68	0.47	0.47	34	32	95	.006	.001
8	1	B	18	53*	15	2			12	0	1	0.53	53	0.50	0.50	38	36	95	.008	.002
9	1	A	57*	10	8	2			22	0	1	0.57	57	0.49	0.49	24	22	95	.005	.001
10	1	E	19	16	6	2			57	0	1	0.00	0	0.00	0.00	0	0	95	.000	.005
11	1	C	13	16	64*	7			0	0	1	0.64	64	0.48	0.48	27	25	95	.005	.000
12	1	B	36	12*	3	49			0	0	1	0.12	12	0.33	0.33	7	6	95	.001	.004
13	1	C	27	34	18*	19			2	0	1	0.18	18	0.39	0.39	9	7	95	.001	.004
14	1	A	83*	3	4	10			0	0	1	0.83	83	0.37	0.37	38	36	95	.006	.000
15	1	D	3	0	5	92*			0	0	1	0.92	92	0.27	0.27	23	22	95	.002	.003
16	1	B	4	67*	7	23			0	0	1	0.67	67	0.47	0.47	29	27	95	.005	.000
17	1	B	26	51*	10	13			0	0	1	0.51	51	0.50	0.50	38	36	95	.007	.002
18	1	C	3	7	83*	6			1	0	1	0.83	83	0.37	0.37	38	37	95	.006	.000
19	1	A	86*	9	4	2			0	0	1	0.86	86	0.35	0.35	33	32	95	.005	.001
20	1	C	5	27	60*	7			2	0	1	0.60	60	0.49	0.49	30	28	95	.006	.000
21	1	A	71*	9	13	6			1	0	1	0.71	71	0.45	0.45	47	45	95	.008	.003
22	1	C	1	1	95*	3			0	0	1	0.95	95	0.22	0.22	29	29	95	.003	.003
23	1	D	7	8	10	75*			1	0	1	0.75	75	0.43	0.43	46	44	95	.008	.003
24	1	D	18	7	28	46*			1	0	1	0.46	46	0.50	0.50	13	11	95	.003	.003
25	1	C	4	8	75*	10			3	0	1	0.75	75	0.43	0.43	47	46	95	.008	.003
26	1	B	2	65*	5	28			1	0	1	0.65	65	0.48	0.48	22	20	95	.004	.001
27	1	B	12	79*	6	4			0	0	1	0.79	79	0.41	0.41	45	44	95	.007	.002
28	1	D	9	18	5	68*			0	0	1	0.68	68	0.47	0.47	42	41	95	.008	.003
29	1	C	0	5	94*	1			0	0	1	0.94	94	0.24	0.24	17	16	95	.002	.004
30	1	B	14	76*	4	6			0	0	1	0.76	76	0.43	0.43	49	48	95	.008	.003
31	1	C	10	9	56*	26			0	0	1	0.56	56	0.50	0.50	35	33	95	.007	.002
32	1	B	11	74*	9	6			0	0	1	0.74	74	0.44	0.44	26	24	95	.004	.001
33	1	C	10	9	76*	4			1	0	1	0.76	76	0.43	0.43	49	48	95	.008	.003
34	1	C	46	14	29*	10			1	0	1	0.29	29	0.45	0.45	27	25	95	.005	.000
35	1	A	51*	25	13	9			2	0	1	0.51	51	0.50	0.50	20	18	95	.004	.001
36	1	D	20	11	20	49*			0	0	1	0.49	49	0.50	0.50	42	40	95	.008	.003
37	1	C	29	31	38*	2			0	0	1	0.38	38	0.48	0.48	21	20	95	.004	.001
38	1	C	3	4	91*	2			1	0	1	0.91	91	0.29	0.29	31	30	95	.004	.002
39	1	A	66*	21	5	7			1	0	1	0.66	66	0.47	0.47	4	2	95	.001	.005
40	1	A	88*	6	3	2			1	0	1	0.88	88	0.33	0.33	40	39	95	.005	.000
41	1	B	2	83*	5	9			0	0	1	0.83	83	0.38	0.38	33	32	95	.005	.000
42	1	D	11	12	9	68*			1	0	1	0.68	68	0.47	0.47	21	19	95	.004	.001
43	1	A	39*	16	21	24			1	0	1	0.39	39	0.49	0.49	38	36	95	.007	.002
44	1	B	1	94*	3	2			1	0	1	0.94	94	0.24	0.24	29	28	95	.003	.003
45	1	D	3	4	3	89*			1	0	1	0.89	89	0.32	0.32	32	30	95	.004	.001
46	1	D	19	8	15	58*			1	0	1	0.58	58	0.49	0.49	37	35	95	.007	.002
47	1	B	6	81*	10	3			0	0	1	0.81	81	0.39	0.39	47	46	95	.007	.002
48	1	A	72*	6	13	8			0	0	1	0.72	72	0.45	0.45	29	27	95	.005	.000
49	1	B	12	79*	6	2			1	0	1	0.79	79	0.41	0.41	25	24	95	.004	.001
50	1	C	3	22	73*	2			1	0	1	0.73	73	0.45	0.45	22	20	95	.004	.001
51	1	B	5	64*	16	14			0	0	1	0.64	64	0.48	0.48	42	40	95	.008	.003
52	1	B	7	40*	16	37			1	0	1	0.40	40	0.49	0.49	34	33	95	.007	.001
53	1	D	41	11	10	35*			3	0	1	0.35	35	0.48	0.48	37	36	95	.007	.002
54	1	A	57*	12	7	23			1	0	1	0.57	57	0.50	0.50	28	26	95	.006	.000
55	1	D	18	21	17	43*			1	0	1	0.43	43	0.50	0.50	46	44	95	.009	.004
56	1	A	26*	30	3	39			1	0	1	0.26	26	0.44	0.44	10	9	95	.002	.004
57	1	C	9	8	79*	3			0	0	1	0.79	79	0.40	0.40	47	45	95	.007	.002
58	1	A	57*	17	11	15			1	0	1	0.57	57	0.50	0.50	36	34	95	.007	.002
59	1	C	36	40	18*	6			0	0	1	0.18	18	0.39	0.39	11	9	95	.002	.004
60	1	B	8	69*	10	12			1	0	1	0.69	69	0.46	0.46	41	40	95	.008	.002
61	1	C	23	6	64*	6			0	0	1	0.64	64	0.48	0.48	34	32	95	.006	.001
62	1	A	87*	6	5	3			0	0	1	0.87	87	0.34	0.34	34	33	95	.005	.001
63	1	D	16	9	8	67*			1	0	1	0.67	67	0.47	0.47	49	48	95	.009	.004
64	1	D	8	8	2	80*			1	0	1	0.80	80	0.40	0.40	34	32	95	.005	.000

65	1	A	22*	8	54	15	1	0	1	0.22	22	0.41	0.41	4	2	95	.001	.005
66	1	A	71*	9	9	10	1	0	1	0.71	71	0.45	0.45	44	42	95	.008	.003
67	1	D	8	9	16	66*	0	0	1	0.66	66	0.47	0.47	55	54	95	.010	.005
68	1	B	17	45*	19	17	2	0	1	0.45	45	0.50	0.50	37	35	95	.007	.002
69	1	C	8	35	46*	10	1	0	1	0.46	46	0.50	0.50	38	36	95	.007	.002
70	1	B	19	66*	3	11	1	0	1	0.66	66	0.47	0.47	29	27	95	.005	.000
71	1	A	84*	5	3	8	1	0	1	0.84	84	0.37	0.37	32	31	95	.005	.001
72	1	B	10	69*	4	16	1	0	1	0.69	69	0.46	0.46	42	41	95	.008	.002
73	1	B	26	47*	13	13	2	0	1	0.47	47	0.50	0.50	33	31	95	.007	.001
74	1	C	11	5	80*	4	1	0	1	0.80	80	0.40	0.40	35	33	95	.005	.000
75	1	D	4	6	7	83*	1	0	1	0.83	83	0.38	0.38	38	37	95	.006	.000
76	1	A	82*	3	2	11	1	0	1	0.82	82	0.38	0.38	37	35	95	.006	.000
77	1	B	42	42*	7	8	1	0	1	0.42	42	0.49	0.49	26	25	95	.005	.000
78	1	A	64*	27	7	0	1	0	1	0.64	64	0.48	0.48	52	50	95	.010	.005
79	1	A	40*	38	9	11	2	0	1	0.40	40	0.49	0.49	35	33	95	.007	.001
80	1	C	19	20	55*	6	2	0	1	0.55	55	0.50	0.50	11	9	95	.002	.003
81	1	D	11	9	9	69*	1	0	1	0.69	69	0.46	0.46	38	37	95	.007	.002
82	1	C	7	14	71*	7	2	0	1	0.71	71	0.45	0.45	53	51	95	.009	.004
83	1	B	3	91*	2	2	2	0	1	0.91	91	0.29	0.29	32	31	95	.004	.002
84	1	C	2	1	86*	10	0	0	1	0.86	86	0.35	0.35	28	27	95	.004	.002
85	1	B	4	67*	12	17	1	0	1	0.67	67	0.47	0.47	1	-1	95	.000	.005
86	1	D	10	12	2	75*	0	0	1	0.75	75	0.43	0.43	35	34	95	.006	.001
87	1	A	52*	13	18	15	2	0	1	0.52	52	0.50	0.50	28	26	95	.005	.000
88	1	D	26	5	6	62*	1	0	1	0.62	62	0.49	0.49	42	40	95	.008	.003
89	1	C	6	60	27*	6	1	0	1	0.27	27	0.44	0.44	-1	-3	95	.000	.006
90	1	B	14	76*	6	4	0	0	1	0.76	76	0.43	0.43	25	23	95	.004	.001
91	1	C	7	31	18*	43	1	0	1	0.18	18	0.39	0.39	15	13	95	.002	.003
92	1	C	6	12	60*	20	2	0	1	0.60	60	0.49	0.49	31	29	95	.006	.001
93	1	A	44*	18	4	34	1	0	1	0.44	44	0.50	0.50	29	27	95	.006	.000
94	1	C	20	8	61*	10	1	0	1	0.61	61	0.49	0.49	40	38	95	.008	.002
95	1	C	12	9	63*	16	0	0	1	0.63	63	0.48	0.48	30	28	95	.006	.000
96	1	B	25	43*	7	24	1	0	1	0.43	43	0.49	0.49	32	30	95	.006	.001
97	1	D	12	27	19	42*	0	0	1	0.42	42	0.49	0.49	36	34	95	.007	.002
98	1	D	11	12	12	63*	2	0	1	0.63	63	0.48	0.48	32	30	95	.006	.001
99	1	C	18	20	32*	29	0	0	1	0.32	32	0.47	0.47	37	35	95	.007	.002
100	1	D	24	11	27	38*	0	0	1	0.38	38	0.48	0.48	40	39	95	.008	.002
101	1	D	12	27	16	44*	0	0	1	0.44	44	0.50	0.50	41	40	95	.008	.003
102	1	A	37*	43	16	4	0	0	1	0.37	37	0.48	0.48	27	25	95	.005	.000
103	1	C	8	7	78*	7	1	0	1	0.78	78	0.41	0.41	24	22	95	.004	.001
104	1	C	10	23	55*	11	1	0	1	0.55	55	0.50	0.50	23	21	95	.005	.001
105	1	A	80*	10	5	4	1	0	1	0.80	80	0.40	0.40	43	42	95	.007	.001
106	1	C	13	21	59*	6	0	0	1	0.59	59	0.49	0.49	38	37	95	.007	.002
107	1	C	39	12	40*	8	0	0	1	0.40	40	0.49	0.49	33	31	95	.006	.001
108	1	B	12	40*	21	26	0	0	1	0.40	40	0.49	0.49	31	29	95	.006	.001
109	1	B	21	50*	11	16	1	0	1	0.50	50	0.50	0.50	28	26	95	.006	.000
110	1	C	10	13	71*	6	0	0	1	0.71	71	0.45	0.45	43	41	95	.008	.002
111	1	D	27	19	41	12*	1	0	1	0.12	12	0.32	0.32	-4	-5	95	.000	.006
112	1	D	11	12	35	43*	1	0	1	0.43	43	0.49	0.49	36	34	95	.007	.002
113	1	D	20	6	19	55*	0	0	1	0.55	55	0.50	0.50	30	28	95	.006	.001
114	1	B	3	84*	9	4	0	0	1	0.84	84	0.37	0.37	35	33	95	.005	.000
115	1	D	9	6	6	79*	0	0	1	0.79	79	0.41	0.41	43	41	95	.007	.002
116	1	C	1	3	95*	1	0	0	1	0.95	95	0.22	0.22	8	8	95	.001	.005
117	1	A	97*	2	1	0	0	0	1	0.97	97	0.18	0.18	27	26	95	.002	.003
118	1	B	1	79*	9	10	0	0	1	0.79	79	0.41	0.41	49	48	95	.008	.003
119	1	D	3	1	1	95*	0	0	1	0.95	95	0.21	0.21	19	18	95	.002	.004
120	1	A	63*	24	7	6	0	0	1	0.63	63	0.48	0.48	45	44	95	.009	.003
121	1	D	10	14	4	71*	0	0	1	0.71	71	0.46	0.46	33	31	95	.006	.001
122	1	C	2	3	94*	1	0	0	1	0.94	94	0.23	0.23	13	13	95	.001	.004
123	1	B	5	82*	10	2	0	0	1	0.82	82	0.39	0.39	40	39	95	.006	.001
124	1	C	13	1	73*	12	0	0	1	0.73	73	0.44	0.44	30	28	95	.005	.000
125	1	D	4	3	2	91*	0	0	1	0.91	91	0.29	0.29	28	27	95	.003	.002
126	1	B	2	94*	2	2	0	0	1	0.94	94	0.24	0.24	27	27	95	.003	.003
127	1	C	12	22	58*	7	1	0	1	0.58	58	0.49	0.49	41	39	95	.008	.003
128	1	A	78*	16	2	4	0	0	1	0.78	78	0.42	0.42	36	34	95	.006	.001
129	1	B	9	87*	4	0	0	0	1	0.87	87	0.34	0.34	18	17	95	.002	.003
130	1	D	5	4	6	84*	0	0	1	0.84	84	0.36	0.36	41	40	95	.006	.001
131	1	A	96*	1	2	1	0	0	1	0.96	96	0.20	0.20	18	17	95	.001	.004
132	1	C	24	7	47*	22	0	0	1	0.47	47	0.50	0.50	41	40	95	.008	.003
133	1	C	3	8	86*	4	0	0	1	0.86	86	0.35	0.35	27	25	95	.004	.002
134	1	B	2	94*	4	0	0	0	1	0.94	94	0.24	0.24	27	26	95	.003	.003
135	1	B	9	46*	37	9	0	0	1	0.46	46	0.50	0.50	41	39	95	.008	.003
136	1	C	18	21	31*	29	1	0	1	0.31	31	0.46	0.46	17	15	95	.003	.002
137	1	D	4	1	2	93*	0	0	1	0.93	93	0.26	0.26	31	30	95	.003	.002
138	1	B	4	92*	2	1	1	0	1	0.92	92	0.27	0.27	29	28	95	.003	.002
139	1	B	2	93*	3	2	0	0	1	0.93	93	0.25	0.25	33	32	95	.003	.002
140	1	B	2	92*	3	2	0	0	1	0.92	92	0.27	0.27	35	34	95	.004	.002
141	1	C	2	2	95*	1	0	0	1	0.95	95	0.21	0.21	30	29	95	.003	.003
142	1	D	25	18	4	53*	0	0	1	0.53	53	0.50	0.50	21	19	95	.004	.001
143	1	C	9	24	46*	21	1	0	1	0.46	46	0.50	0.50	22	20	95	.004	.001
144	1	C	35	1	59*	5	0	0	1	0.59	59	0.49	0.49	5	3	95	.001	.004

145	1	A	74*	4	12	9	0	0	1	0.74	74	0.44	0.44	28	26	95	.005	.000
146	1	C	53	8	26*	12	1	0	1	0.26	26	0.44	0.44	22	21	95	.004	.001
147	1	D	15	30	32	23*	0	0	1	0.23	23	0.42	0.42	28	27	95	.005	.001
148	1	A	64*	14	8	13	1	0	1	0.64	64	0.48	0.48	42	40	95	.008	.003
149	1	B	12	61*	21	5	0	0	1	0.61	61	0.49	0.49	45	43	95	.009	.003
150	1	C	7	10	79*	3	0	0	1	0.79	79	0.40	0.40	48	47	95	.008	.002
151	1	D	8	5	68	19*	0	0	1	0.19	19	0.39	0.39	7	6	95	.001	.004
152	1	B	16	65*	8	10	1	0	1	0.65	65	0.48	0.48	35	34	95	.007	.001
153	1	B	10	77*	8	4	1	0	1	0.77	77	0.42	0.42	39	37	95	.006	.001
154	1	C	9	8	71*	10	1	0	1	0.71	71	0.45	0.45	44	43	95	.008	.003
155	1	A	52*	27	14	6	1	0	1	0.52	52	0.50	0.50	31	29	95	.006	.001
156	1	C	10	9	74*	7	1	0	1	0.74	74	0.44	0.44	48	46	95	.008	.003
157	1	D	9	32	12	47*	0	0	1	0.47	47	0.50	0.50	36	34	95	.007	.002
158	1	C	13	5	58*	24	0	0	1	0.58	58	0.49	0.49	24	22	95	.005	.001
159	1	C	33	10	51*	6	0	0	1	0.51	51	0.50	0.50	27	25	95	.005	.000
160	1	A	70*	6	14	9	0	0	1	0.70	70	0.46	0.46	29	28	95	.005	.000
161	1	A	74*	12	6	8	0	0	1	0.74	74	0.44	0.44	27	26	95	.005	.001
162	1	C	8	8	76*	7	1	0	1	0.76	76	0.43	0.43	42	41	95	.007	.002
163	1	B	6	78*	8	8	1	0	1	0.78	78	0.42	0.42	43	42	95	.007	.002
164	1	B	13	49*	26	11	1	0	1	0.49	49	0.50	0.50	29	27	95	.006	.000
165	1	A	51*	9	18	20	1	0	1	0.51	51	0.50	0.50	35	33	95	.007	.002
166	1	B	25	54*	14	6	1	0	1	0.54	54	0.50	0.50	26	24	95	.005	.000
167	1	A	41*	17	34	7	2	0	1	0.41	41	0.49	0.49	29	27	95	.006	.000
168	1	A	57*	15	7	20	1	0	1	0.57	57	0.50	0.50	46	44	95	.009	.004
169	1	D	15	10	16	57*	1	0	1	0.57	57	0.49	0.49	44	43	95	.009	.003
170	1	A	15*	10	67	7	0	0	1	0.15	15	0.36	0.36	8	6	95	.001	.004
171	1	B	41	45*	6	9	0	0	1	0.45	45	0.50	0.50	43	41	95	.008	.003
172	1	C	10	4	51*	35	0	0	1	0.51	51	0.50	0.50	24	22	95	.005	.001
173	1	C	6	36	33*	25	0	0	1	0.33	33	0.47	0.47	11	9	95	.002	.003
174	1	C	16	5	77*	2	1	0	1	0.77	77	0.42	0.42	48	47	95	.008	.003
175	1	D	11	4	22	62*	1	0	1	0.62	62	0.49	0.49	45	44	95	.009	.003
176	1	C	5	7	79*	9	1	0	1	0.79	79	0.41	0.41	40	39	95	.007	.001
177	1	C	17	49	28*	6	1	0	1	0.28	28	0.45	0.45	20	18	95	.004	.002
178	1	A	41*	14	30	13	1	0	1	0.41	41	0.49	0.49	9	7	95	.002	.004
179	1	B	8	40*	39	13	1	0	1	0.40	40	0.49	0.49	9	7	95	.002	.004
180	1	A	68*	6	4	21	0	0	1	0.68	68	0.47	0.47	44	42	95	.008	.003
181	1	B	8	70*	16	5	0	0	1	0.70	70	0.46	0.46	46	45	95	.008	.003
182	1	B	7	71*	17	5	0	0	1	0.71	71	0.46	0.46	44	42	95	.008	.003
183	1	C	4	12	79*	5	0	0	1	0.79	79	0.41	0.41	43	41	95	.007	.002
184	1	B	10	82*	4	3	0	0	1	0.82	82	0.38	0.38	40	39	95	.006	.001
185	1	B	8	81*	6	4	1	0	1	0.81	81	0.39	0.39	44	43	95	.007	.001
186	1	B	31	42*	18	8	1	0	1	0.42	42	0.49	0.49	20	18	95	.004	.001
187	1	D	14	38	31	15*	2	0	1	0.15	15	0.35	0.35	22	20	95	.003	.002

SubGroup number	: 0	SubTest number	: 0
Number of persons in test	: 690	Number of selected items	: 187
Minimum test score	: 0	Maximum test score	: 187
Average test score	: 116.79	Standard deviation	: 25.19
Average P-value	: 62.45	Std. Error of Measurement	: 5.64
Coefficient Alpha	: 0.95	SE coeff. Alpha	: 0.00
Average Rit	: 0.32		
GLB	: 0.00	Asymptotic GLB coef	: 0.00
Items used in GLB proc	: 0		
Cut-off score	: 61.5	Percentage failing	: 1.45

## Misclassifications:

	Alpha based	GLB based
-Rxx' case	Percentage : 0.9	Percentage : 2.8
	Number : 6	Number : 19
-Rxt case	Percentage : 0.6	Percentage : 2.8
	Number : 4	Number : 19

90% Confidence limits for Coefficient Alpha: (0.95 =< 0.95 =< 0.95)

Estimated Coefficient Alpha if this test had a standard norm length of 40 items: 0.80 (Spearman-Brown)

Cito, Measurement and Research Department. Arnhem, the Netherlands. (C)2004.



## **Appendix D**

**Summary of the panel analysis and recommendations of  
problematic items**

Question	Type	Reason	Recommendation
<b>Subtest: Scrambled Text</b> (Accepted without recommendations for refinement.)			
<b>Subtest: Text Comprehension</b>			
12	Distinction making	Violates all parameters (rpbis, discrimination index and facility)	Omit
13	Distinction making	Violates all parameters (rpbis, discrimination index and facility)	Omit
22	Textuality	Violates all parameters (rpbis, discrimination index and facility)	Omit
24	Extrapolation	Violates all parameters (rpbis, discrimination index and facility)	Omit
39	Textuality	Violates all parameters (rpbis, discrimination index and facility)	Omit
44	Textuality	Violates all parameters (rpbis, discrimination index and facility)	Omit
56	Extrapolation	Violates all parameters (rpbis, discrimination index and facility)	Omit
59	Distinction making	Violates all parameters (rpbis, discrimination index and facility)	Omit
65	Making meaning beyond the sentence	Violates all parameters (rpbis, discrimination index and facility)	Omit
80	Not specified	Violates all parameters (rpbis, discrimination index and facility)	Omit
<b>Subtest: Interpreting graphs and visual information</b>			
85	Comparison between trends	Does not discriminate well (Facility: 0.06; Discrimination index: 0.08)	Omit
89	Perceived trend	Does not discriminate well (rpbis: 0.06; Discrimination index: 0.04)	Omit

91	Perceived trend	Does not discriminate well (rpbis: 0.14; Discrimination index: 0.14)	Omit
111	Predictions/estimations	Does not discriminate well (rpbis: 0.01; Discrimination index: 0.02); Facility value too low (14)	Omit
<b>Subtest: Vocabulary knowledge</b>			
116	Vocabulary comprehension	Does not discriminate well (rpbis: 0.15; Discrimination index: 0.06); Facility value too high (94)	Change distractors
117	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.01); Facility value too high (97)	Fixed phrase, omit
119	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.13); Facility value too high (94)	Fixed phrase, omit
122	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.13); Facility value too high (94)	Change distractors
125	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.22); Facility value too high (89)	Fixed phrase, omit
126	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.16); Facility value too high (93)	Fixed phrase, omit
129	Vocabulary comprehension	Does not discriminate well (rpbis: 0.16; Discrimination index: 0.12); Facility value too high (88)	Omit

131	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.09); Facility value too high (95)	Omit
133	Vocabulary comprehension	Facility value too high (85), but discriminates well (rpbis: 0.29; Discrimination index: 0.26);	Could change
134	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.16); Facility value too high (93)	Change distractors
136	Vocabulary comprehension	Does not discriminate well (rpbis: 0.13; Discrimination index: 0.17)	Omit
137	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.22); Facility value too high (91)	Omit
138	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.24); Facility value too high (90)	Omit
139	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.22); Facility value too high (92)	Change distractors
140	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.28); Facility value too high (89)	Change distractors
141	Vocabulary comprehension	Does not discriminate well (Discrimination index: 0.23); Facility value too high (92)	Omit
143	Vocabulary comprehension	Does not discriminate well (rpbis: 0.19)	Acceptable
144	Vocabulary comprehension	Does not discriminate well (rpbis: 0.1; Discrimination index: 0.11)	Omit

<b>Subtest: Grammar and text relations</b>				
170, 171	Textuality, Cohesive ties	170	Does not discriminate well (rpbis: 0.08; Discrimination index: 0.08); Facility value too low (14)	Omit
		171		With 170
172, 173	Textuality, Cohesive ties	172		With 173
		173	Does not discriminate well (rpbis: 0.09; Discrimination index: 0.13)	Omit
176, 177	Textuality, Cohesive ties	176	Does not discriminate well (Discrimination index: 0.22)	Omit
		177		With 176
178, 179	Textuality, Cohesive ties	178	Does not discriminate well (rpbis: 0.08; Discrimination index: 0.10)	Omit
		179	Does not discriminate well (rpbis: 0.11; Discrimination index: 0.15)	Omit
186, 187	Textuality, Cohesive ties	186		With 187
		187	Does not discriminate well (Discrimination index: 0.18); Facility value too low (16)	Omit

## **Appendix E**

**Summary of the item performance statistics of items selected for inclusion in TALA**

Section	Question		Components measured	Discrimination			Facility
				Disc Index	Point Biserial	Total Rpbis	Pcnt Correct / P Value
Scrambled text	6 (Part 1)	6	Textuality; Sequence and order	0.35	0.38	0.369	84
	7 (Part 1)	7	Textuality; Communicative function; Sequence and order	0.44	0.35	0.436	66
	8 (Part 1)	8	Textuality; Communicative function; Sequence and order	0.51	0.38	0.466	52
	9 (Part 1)	9	Textuality; Communicative function; Sequence and order	0.37	0.27	0.339	54
	10 (Part 1)	10	Textuality; Sequence and order	0.37	0.26	0.319	55
Vocabulary knowledge	35 (Part 2)	118	Vocabulary comprehension	0.45	0.44	0.618	80
	37 (Part 2)	120	Vocabulary comprehension	0.51	0.41	0.410	63
	38 (Part 2)	121	Vocabulary comprehension	0.39	0.33	0.440	71
	41 (Part 2)	124	Vocabulary comprehension	0.35	0.30	0.396	73
	44 (Part 2)	127	Vocabulary comprehension	0.49	0.37	0.468	58
	45 (Part 2)	128	Vocabulary comprehension	0.38	0.36	0.492	77
	49 (Part 2)	132	Vocabulary comprehension	0.54	0.41	0.513	48
	52 (Part 2)	135	Vocabulary comprehension	0.57	0.42	0.529	46
	59 (Part 2)	142	Vocabulary comprehension	0.27	0.20	0.248	49
	62 (Part 2)	145	Vocabulary comprehension	0.33	0.29	0.389	73

Section	Question		Components measured	Discrimination			Facility
				Disc Index	Point Biserial	Total Rpbis	Pcnt Correct / P Value
Interpreting graphs and visual information	13 (Part 2)	96	Inferencing	0.36	0.26	0.327	44
	14 (Part 2)	97	Inferencing	0.42	0.31	0.392	43
	18 (Part 2)	101	Identify proportions	0.49	0.35	0.439	48
	19 (Part 2)	102	Identify proportions	0.31	0.23	0.288	43
	23 (Part 2)	106	Comparisons	0.48	0.36	0.453	60
	24 (Part 2)	107	Perceived trends	0.37	0.29	0.371	43
	26 (Part 2)	109	Averages	0.37	0.29	0.365	51
	29 (Part 2)	112	Predictions	0.45	0.34	0.425	44
Text comprehension	17 (Part 1)	17	Distinction making	0.42	0.31	0.383	49
	20 (Part 1)	20	Making meaning beyond the level of the sentence	0.37	0.28	0.339	58
	21 (Part 1)	21	Making meaning beyond the level of the sentence	0.52	0.42	0.532	66
	27 (Part 1)	27	Textuality	0.51	0.47	0.621	73
	28 (Part 1)	28	Vocabulary comprehension	0.59	0.45	0.568	62
	31 (Part 1)	31	Distinction making	0.48	0.36	0.453	54
	34 (Part 1)	34	Distinction making	0.28	0.24	0.308	30
	36 (Part 1)	36	Distinction making	0.55	0.41	0.511	47
	41 (Part 1)	41	Understanding metaphor and idiom	0.38	0.38	0.521	79



Section	Question		Components measured	Discrimination			Facility
				Disc Index	Point Biserial	Total Rpbis	Pcnt Correct / P Value
Text comprehension (continued)	43 (Part 1)	43	Vocabulary comprehension	0.40	0.30	0.377	39
	45 (Part 1)	45	Making meaning beyond the level of the sentence	0.42	0.44	0.637	82
	46 (Part 1)	46	Textuality	0.52	0.39	0.486	52
	52 (Part 1)	52	Understanding metaphor and idiom	0.39	0.27	0.338	41
	53 (Part 1)	53	Extrapolation and basic calculations	0.47	0.36	0.467	35
	54 (Part 1)	54	Distinction making	0.36	0.29	0.354	53
	55 (Part 1)	55	Distinction making	0.54	0.40	0.506	43
	63 (Part 1)	63	Distinction making	0.65	0.51	0.642	59
	67 (Part 1)	67	Making meaning beyond the level of the sentence	0.65	0.52	0.659	61
	69 (Part 1)	69	Distinction making	0.47	0.36	0.451	44
	70 (Part 1)	70	Vocabulary comprehension	0.41	0.33	0.417	62
	72 (Part 1)	72	Inferencing	0.48	0.39	0.503	69
	73 (Part 1)	73	Inferencing	0.43	0.34	0.421	44
	78 (Part 1)	78	Vocabulary comprehension	0.62	0.46	0.463	60
	79 (Part 1)	79	Inferencing	0.47	0.35	0.447	40
81 (Part 1)	81	Vocabulary comprehension	0.52	0.43	0.542	63	

Section	Question		Components measured	Discrimination			Facility
				Disc Index	Point Biserial	Total Rpbis	Pcnt Correct / P Value
Grammar and text relations	63 (Part 2)	146	Textuality and cohesion	0.25	0.20	0.264	28
	64 (Part 2)	147	Textuality and cohesion	0.31	0.28	0.379	23
	69 (Part 2)	152	Textuality and cohesion	0.44	0.36	0.453	64
	70 (Part 2)	153	Textuality and cohesion	0.46	0.40	0.525	73
	73 (Part 2)	156	Textuality and cohesion	0.54	0.46	0.599	71
	74 (Part 2)	157	Textuality and cohesion	0.47	0.36	0.452	45
	81 (Part 2)	164	Textuality and cohesion	0.37	0.29	0.366	48
	82 (Part 2)	165	Textuality and cohesion	0.47	0.36	0.447	48
	83 (Part 2)	166	Textuality and cohesion	0.34	0.25	0.320	52
	84 (Part 2)	167	Textuality and cohesion	0.30	0.23	0.292	39
	85 (Part 2)	168	Textuality and cohesion	0.58	0.44	0.547	51
	86 (Part 2)	169	Textuality and cohesion	0.56	0.42	0.530	51