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## Diagnosing academic language ability: an analysis of the Test of Academic Literacy for Postgraduate Students

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### Abstract

Following the observation that a large number of postgraduate students may not possess an adequate level of academic language ability to complete their studies successfully, this study investigates postgraduate students' strengths and weaknesses in academic literacy, with a specific focus on academic writing. By performing a diagnostic analysis of the results of the Test of Academic Literacy for Postgraduate Students (TALPS), the study identifies specific areas of academic literacy with which students struggle. A quantitative analysis of the multiple-choice sections, as well as a qualitative analysis of the essay question of the test, marked with a specifically designed rubric, indicates that students primarily struggle with structuring an argument. The essays often include neither an introduction nor conclusion, lack internal consistency and do not make use of the appropriate communicative functions when expressing an academic argument. These findings can inform modifications in the design of TALPS and similar tests.

**Keywords:** academic literacy; academic language ability; diagnostic analysis; TALPS; academic writing; postgraduate students

## Introduction

This study seeks to explore South African postgraduate students' strengths and weaknesses in academic language ability, with a specific focus on academic writing, so as to provide students and test designers with diagnostic information that may subsequently aid course and assessment design. As the majority of the students enrolling in tertiary education in South Africa are non-native users of English, an increasing number of them do not possess the required proficiency level to complete their (under- and postgraduate) studies successfully (Van Dyk and Weideman 2004a; Dowse and Howie 2013; Butler 2009). A survey conducted by Butler (2009, 13-14) on perceived academic literacy among postgraduate students and supervisors concluded that 20% of the participating students have never received any formal education in English, and 33% and 44% respectively did not use English as a language of learning for their first or honours degrees (although it has to be noted that this survey included postgraduate students from all over Africa).

As has been indicated by *i.a.* Weideman (2003), Van Dyk and Weideman (2004a) and Weideman (2013), a low level of academic language proficiency often results in a failure to achieve academic success. Therefore, assessing academic language ability is necessary to raise awareness among those students who are potentially at risk (i.e. who do not possess the required level of academic language proficiency), as well as among those who either have to supervise or teach them, or have to monitor their progress administratively. The results of a test of academic literacy thus provide information not only to university authorities or lecturing staff, but also to the students themselves (note that the terms 'academic language ability', 'language proficiency', and 'academic literacy' are used interchangeably throughout the text. Space limitations preclude a discussion here of the definitional differences between these terms). Nonetheless, test scores do not always overtly indicate with which elements of academic literacy a student particularly struggles. The premise of this study is that it would be beneficial, not only for students but also for curriculum designers, teachers, and test developers, to gain insight into the particular areas with which students encounter difficulties. This has the potential to inform and direct students, lecturers, and course and test designers in their subsequent learning, teaching, and designing of academic literacy courses and tests.

This article will consider the outcomes of a diagnostic analysis of the results of a test of academic literacy for postgraduate students. This analysis aimed to identify students' weaknesses in their handling of academic discourse, paying particular attention to academic writing abilities. In addition, such an analysis may inform a subsequent refinement of the test's design. Before being able to perform such an analysis, however, it is vital, first, to gain an understanding of what academic discourse entails and how it differs from other types of discourse. Secondly, it is necessary to consider how this notion of academic discourse is employed in the design of the Test of Academic Literacy for Postgraduate Students (TALPS), the test that forms the basis for the subsequent diagnostic analysis. The following section will deal with that, after which we will briefly touch upon the assessment of writing before outlining the design details of the investigation.

## Key concepts in the assessment of academic literacy

### *The critical feature of academic discourse*

We cannot do justice to an idea of academic discourse by merely employing traditional classifications such as informal/formal and slang/jargon to describe this concept. These distinctions are first of all too broad (i.e. an academic article and a job application are both formal) and with this distinction one may, secondly, create a hierarchy that values one type of discourse above another (Patterson and Weideman 2013, 10). Which unique feature(s), then, set(s) academic discourse apart from other types of discourse? In an attempt to answer this question, Patterson and Weideman (2013) provide an alternative to the literature on definitions of academic discourse, which regarding assessment rely mainly on formal lingual notions (e.g. Snow 2010, 452). Patterson and Weideman (2013) investigate the concept of academic literacy through the notion of material lingual spheres. As a starting point, the theory of material lingual spheres assumes that ‘pure language’ – language without a context – does not exist (Weideman 2009, 39). Instead, the context defines the typical language use. This entails that one cannot rely on formal lingual notions alone, but that one also has to take both the conditions for language and the functional, concrete use of language in specific environments (such as the academic world) into account. This communicative command of language allows for typically distinct lingual discourses or language types, defined by the requirements of the specific context (Weideman 2011, 65).

Therefore, after examining different definitions of academic discourse in which Patterson and Weideman (2013) sought for the defining feature of this ‘sphere’, one may arrive at a preliminary definition of academic discourse, to articulate what sets it apart from other types of discourse:

Academic discourse, which is historically grounded, includes all lingual activities associated with academia, the output of research being perhaps the most important. The typicality of academic discourse is derived from the (unique) **distinction-making** activity which is associated with the analytical or logical mode of experience (2013, 13).

In the argument offered by Patterson and Weideman (2013), this definition constitutes a provisional attempt to understand the typicality of academic discourse. Although distinction-making is not uniquely associated with academic discourse, the definition can exclude other types of discourse that also employ or even rely on distinction-making, since in these types distinction-making is not a characterising feature, whereas in academic discourse it is. This view is echoed by Weideman and Van Dyk (2013, 4) who argue that ‘analysis is the core of academic argumentation and discourse’ and that academic discourse is thus defined by its ability to make distinctions. Similarly, Butler (2007, 29) highlights critical thinking as the ‘most rewarded’ component of academic literacy, exemplified through and always supported by the ability to make distinctions.

### *Language ability as a skill*

For the sake of the argument of this paper, it is worth mentioning that the notion of academic discourse does not assume that language ability is composed of and can be measured through several distinct skills. Rather, we should view language as being communicative, ‘intended to mediate and negotiate human interaction’ (Weideman 2003, 4). In this connection, Bachman and

Palmer (1996, 75f) argue that language use needs to be thought of in terms of ‘specific activities or tasks in which language is used purposefully’. Therefore, dividing language learning into distinct measurable skills may to some extent be misleading, since in the real world language serves as a tool for communicating, in which all these skills are intertwined. Even at an instrumental level, in which the skills are merely used to identify the means with which language is transferred, reading, speaking, listening and writing cannot be separated conceptually. Although courses and course books may rely on these skills as organising principles, one should be aware that, in essence, these skills neither in actual fact exist as separate entities, nor are they easily distinguishable at a conceptual level. For example, in writing one must also be reading or have read, and in speaking one must also be listening for the lingual interaction to be successful, but none of these ways of looking at it does justice, for example, to the cognitive processing that must also take place before ‘writing’ or ‘speaking’ academically happens. We return to a discussion of the consequences of this in the next section. Once we view language also as communication, we have to acknowledge that it is embedded in interaction. Therefore, we cannot speak of skills as such, and especially not when we base our assessments on such an approach. One application of this may be observed in the TALPS test, to which we will turn next.

### ***The TALPS***

Before taking an in-depth look at the construct of academic literacy that was reconceptualised by the test designers associated with ICELDA (the Inter-institutional Centre for Language Development and Assessment) to provide a theoretically justifiable ground for the design of tests and test items, we first consider the origins and workings of the academic literacy test around which this study has revolved.

The Test of Academic Literacy for Postgraduate Students (TALPS) was developed at ICELDA and based on the test construct of the Test of Academic Literacy Levels (TALL), the latter aimed at first-year students entering university. According to the ICELDA website both tests are primarily used to place students who are identified as being at risk on the appropriate academic literacy support courses (ICELDA 2013; Hay 2010). In this sense, TALPS may be classified as what Read terms a ‘post-entry language assessment’ (PELA) (Read, 2013, 1).

TALPS consists of eight sections, which each measures one or more components of the construct of academic literacy. The first seven sections of the test are in multiple-choice format because of the test population sizes and the pressure of efficiently providing the results subsequent to the administration of the test (Van Dyk and Weideman 2004b, 15). However, the eighth section tests postgraduate students’ productive ability in academic writing, since this is a crucial component of postgraduate study (Patterson 2012, 8). This section requires students to produce an academic argument of approximately 300 words, by referring to the texts in TALPS as sources, according to the Harvard method of referencing. Table 2.1 lists the various sections together with each subtest.

Section 1: Items 1-5	Scrambled text
Section 2: Items 6-15	Interpreting graphs and visual information
Section 3: Items 16-25	Academic vocabulary
Section 4: Items 26-30	Text types
Section 5: Items 31-51	Understanding texts
Section 6: Items 52-66	Grammar and text relations
Section 7: Items 67-76	Text editing
Section 8:	Academic writing

**Table 2.1: TALPS sections and subtests (adapted from Patterson 2012).**

Rambiritch (2012) provides a comprehensive overview of the concept of validity and validation in test design, and has investigated the validity and reliability of TALPS. She concluded that TALPS is indeed a valid and reliable test, and in addition satisfies a number of other regulative criteria, such as transparency of design and administration, accessibility, accountability, and the like.

### ***The construct of academic literacy***

As has been mentioned above, distinction-making has been proposed as the critical defining feature of academic discourse. The following construct of academic literacy (adapted from the construct for the undergraduate Test of Academic Literacy Levels, TALL) that was developed for the design of test items for TALPS can be examined in the light of this defining feature by considering the various subtests of TALPS as outlined above, that may articulate one or more components of the construct.

	<b>Component</b>	<b>Subtest</b>
1	Understand a range of academic vocabulary in context;	Vocabulary knowledge; Text comprehension; Grammar & text relations
2	Interpret and use metaphor and idiom, and perceive connotation, word play and ambiguity;	Text comprehension; (and sometimes) Grammar & text relations
3	Understand relations between different parts of a text, be aware of the logical development of (an academic) text, via introductions to conclusions, and know how to use language that serves to make the different parts of a text hang together;	Scrambled text; (sometimes) Text comprehension and Grammar & text relations, Register & text type

4	Interpret different kinds of text type (genre), and show sensitivity for the meaning that they convey, and the audience that they are aimed at;	Register & text type; Interpreting graphs & visual information; Scrambled text; Text comprehension; Grammar & text relations
5	Interpret, use and produce information presented in graphic or visual format;	Interpreting graphs & visual information; (sometimes) Text comprehension
6	Make distinctions between essential and non-essential information, fact and opinion, propositions and arguments; distinguish between cause and effect, classify, categorise and handle data that make comparisons;	Text comprehension; Interpreting graphs & visual information
7	See sequence and order, do simple numerical estimations and computations that are relevant to academic information, that allow comparisons to be made, and can be applied for the purposes of an argument;	Interpreting graphs & visual information; Text comprehension
8	Know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information or its implications to other cases than the one at hand;	Text comprehension; Verbal reasoning; Interpreting graphs & visual information
9	Understand the communicative function of various ways of expression in academic language (such as defining, providing examples, arguing);	Text comprehension; (sometimes) Grammar & text relations
10	Make meaning (e.g. of an academic text) beyond the level of the sentence.	Text comprehension; Register & text type; Scrambled text; Interpreting graphs & visual information

**Table 2.2: Subtests associated with components of construct of academic literacy (adapted from Patterson 2012; Van Dyk and Weideman 2004a, 10).**

In line with Bachman and Palmer's (1996, 75f) observation in this regard, the construct is skills-neutral. It is apparent, furthermore, that in the above formulation distinction-making indeed proves to be an important characteristic of academic literacy: the sixth and seventh components in Table 2.2 both highlight the ability to distinguish between essential and non-essential information and the ability to order and sequence information. In addition, the eighth component highlights the ability to analyse: make inferences, extrapolate and find evidence. Moreover, the eighth component, as well as the sixth and the fourth component, stresses the importance of critical thinking and arguing. Therefore, underlying the current construct there is already the

premise that academic discourse is characterised by the ability to make distinctions, which in turn facilitates critical thinking, yet another criterial feature.

### ***Academic writing***

Since this study takes a specific interest in academic writing, it is worthwhile to explore how the above definition of academic literacy manifests itself in the assessment of a written argument. This particular interest in writing stems from the fact that in an academic environment, and in postgraduate studies especially, writing is usually the form in which students have to prove their ability to handle academic discourse. It is also the only subsection and component of the TALPS which requires a productive response in essay form, and which may therefore yield a substantial amount of diagnostic information.

Writing is a complex task which combines several components of academic literacy, all centered around the unique feature of academic discourse: distinction-making. Articulating an academic argument, beginning usually through other media, but finally always in writing, functionally embeds this kind of distinction-making, through incorporating different kinds of distinctions, ranging from observations, comparisons and contrasts, inferences and extrapolations, to conclusions. In other words, one should not only consider the written end-product, but the entire process of gathering, processing, and producing (new) information (Van Dyk & Weideman, 2013, 6). The writing process therefore potentially involves many activities related to the ability to handle academic discourse. As Van Dyk and Weideman (2013, 6) note, gathering information is done either through reading or listening, making/reviewing notes or discussions with others; processing information is done through analysis, in which distinction-making (especially comparing, contrasting, and categorising) plays an important part; and only then do we produce new information (finally, in writing) in which we state our opinion, that has been formed in the previous processes, and is the articulation of the result of our distinction-making or analytical activity. Throughout this process, we should acknowledge that what we call “academic writing” is a social practice, allowing students to develop their own voice and academic identity (Curry and Lillis 2003).

It is no doubt likely, therefore, that those students who struggle in writing may have individual difficulties regarding certain aspects of the process that are much more than just the formal writing part of that process. The proposition of this paper is that an analysis of students’ test results in combination with an in-depth account of the essays required by the last subtest in TALPS may provide insights into those underlying aspects with which students encounter difficulties.

### ***An earlier analysis of TALPS***

Although TALPS measures the writing abilities of postgraduate students, it does not automatically give insight into those components of academic literacy students struggle with, an aspect which may be of high relevance to ‘at risk’ students to guide their subsequent process of improving their academic literacy abilities.

An earlier diagnostic analysis of the subtests of TALPS was conducted by Patterson (2012). This analysis revealed that the following components of the construct of academic literacy outlined above proved to be difficult for postgraduate students: understanding metaphor, idiom, connotation, word play, and ambiguity; understanding text types (genre sensitivity);

communicative function (defining, arguing, etc.); and making meaning beyond the level of the sentence (Patterson 2012, 25).

Since this analysis did not include the writing section, this study aims to diagnostically investigate whether the *writing section* of TALPS indicates similar difficulties as those observed by Patterson for the other subtests. Moreover, by determining which components of the construct apply specifically to writing, this study can identify specific aspects of academic language ability with which students struggle. The central question is how much information the completion of the writing section of TALPS may yield in order to diagnose shortcomings in academic literacy of those who completed it. The following section will outline the technical details of the study.

## **The study**

### ***Outline***

The following four hypotheses are relevant:

- H1: The relationship of each section to the total result of the test is high, as this ensures a homogeneous test construct.
- H2: There is a relationship between the multiple-choice scores and the essay score, which indicates that both assess the same construct of academic literacy.
- H3: The sections that measure those components that have been listed by Patterson (2012) as difficult for students will demonstrate a weak relationship with the essay result.
- H4: Students will demonstrate difficulties regarding their handling of textual relations, communicative function, and understanding text type.

The first three elicit the need for a quantitative type of analysis, whereby the scores of each section of the test are correlated, whereas the fourth hypothesis was drawn up with the intention to describe students' difficulties with academic writing specifically, which requires a qualitative analysis. The validation of these hypotheses will ultimately provide an answer to the research question.

### ***Subjects***

The results of TALPS, written at the University of the Free State in 2012 and 2013, form the basis for the analysis of this study. The results of 405 students writing the test in 2012 will form the basis for the quantitative analysis. Although  $n=40$  students did not write the essay, their scores will be included in the correlation analysis. In addition, a sample of  $n=80$  essays was drawn from the TALPS 2013 essays for an in-depth survey of academic literacy abilities (the 2012 essays were not included due to time constraints). These essays were chosen according to their length, as those assignments consisting of only a few sentences were excluded from the analysis. Because the test is administered to postgraduate students regardless of their discipline of study, the data obtained in this study derive from a varied group of subjects and is therefore representative of a larger population of postgraduate students.

## **Materials and procedures**

The essay at the end of the test needed to be an argumentative piece of writing of approximately 300 words on a topic related to a global issue, such as climate change. More precisely, students had to present a structured argument to the question of what can be done on one of the continents to counter the detrimental effects of this. The writing instructions further list the necessity to give due recognition to the sources students use in their text (based on the texts in the test) and provide a general reminder to adhere to the generally accepted writing conventions (formality of register, logical structure and acknowledging sources were used as examples). Clearly the assumption is that students applying to study at postgraduate level already need to be familiar with the writing of argumentative texts.

Whereas for the quantitative analysis various correlations were performed with the subtest scores and overall scores of TALPS, the qualitative analysis needed to provide an in-depth account of students' academic language ability, or lack of ability. Therefore, the essays were first marked with a marking rubric to obtain an overall score which could be used to perform calculations with (rubric 1 – see appendix A), and then the essays were assessed with another, specially devised marking rubric assessing language and organisation, that was based on the construct of academic literacy as outlined above (rubric 2 – see appendix B). This marking rubric lists those features of the construct which all relate to the central feature of academic discourse, distinction-making, and which apply specifically to writing. Table 3 below provides an outline of the components of this rubric, as well as how these may be identified in the students' essays:

<b>Component</b>	<b>Indicator(s)</b>
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;	<ul style="list-style-type: none"> <li>• The argument flows</li> <li>• Transitional words and phrases are used (for a list see Kirszner and Mandell 2008)</li> <li>• Each paragraph has a clear topic sentence</li> </ul>
Make distinctions between essential and non-essential information, fact and opinion, propositions and arguments; distinguish between cause and effect, classify, categorise and handle data that make comparisons	<ul style="list-style-type: none"> <li>• Academic references are used</li> <li>• Transitional words/phrases are used</li> <li>• A context is provided</li> <li>• The text shows the ability to connect evidence with explanations</li> </ul>
Understand the communicative function of various ways of expression in academic language (such as defining, providing examples, arguing)	<ul style="list-style-type: none"> <li>• Transitional words/phrases are used (Kirszner and Mandell 2008)</li> </ul>

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	<ul style="list-style-type: none"> <li>The references are relevant in the specific context</li> </ul>
Understand a range of academic vocabulary in context	<ul style="list-style-type: none"> <li>Appropriate use of words from the Coxhead academic word list (Coxhead 2000)</li> </ul>

**Table 3: The various components of the marking rubric with their indicator(s)**

The rationale for devising a second marking rubric for the same set of data derives from the focus of this study: an attempt to find what diagnostic information is yielded by TALPS. Even though the original marking rubric of TALPS adequately measures students' writing abilities in terms of content, it does not patently indicate areas of academic literacy students particularly struggle with. With the second rubric, therefore, the essays may also be specifically assessed according to the construct of academic literacy that informs the rest of the test.

Even though both the marking rubrics used in this study provide a clear outline of the different aspects on which the mark will be based, the interpretation may still differ per individual rater, which might influence the reliability of the results and, when not handled with care, the outcome may result in an invalid interpretation of the data (Lombard, Snyder-Duch, & Campanella Bracken 2005). Therefore it is important to ensure that even though the marking may be subjective, there is consistency throughout the marking procedure, both on intra- and inter-individual rater level. This consistency was obtained by providing enough details about each level to assess the texts deliberately. Also, marking all essays in a short period of time, with as few time lapses as possible between marking sessions minimized interruptions to the 'flow' of marking. Nonetheless, the subjectivity in marking might pose limitations on the study, which will subsequently be elaborated upon below.

### ***Description of the analysis***

The subsequent results of the multiple-choice items and the essay item were correlated using the Statistical Package for the Social Sciences. The descriptive statistics for the qualitative analysis were performed by Microsoft Office Excel. SPSS was used to calculate the different correlations of the test results with either a two-tailed *Pearson r* or *Spearman rho* analysis, depending on whether equal intervals between scores could be assumed. This correlation analysis can, among other things, reveal whether the writing section is in line with the other test items since, when the writing section highly correlates with other sections, it is likely that these sections are influenced by the same factors, whereas a low correlation indicates influences from different factors (DeCoster 1998). Nonetheless, these correlations should be fairly low, since each test section is intended to measure a different component or set of components of academic language ability. Together, the sections complement each other in creating a test that measures the complete construct of academic literacy (Van der Walt & Steyn 2007, 147).

Secondly, a descriptive analysis will be performed with Excel for the 2013 essay results, based on marking rubric 2. This analysis will shed light on the potentially added value of the writing

section. It informs us on those areas of academic literacy with which students struggle the most, based on the weighted scores of the second marking rubric. The alpha (significance) level is set in both cases at  $p < 0.01$ .

In essence, each section of the test will be correlated with the other sections and with the total result of the test, which will determine the inter-relationship of each section and the overall relationship of each section with the total value of the test. Secondly, each section will be correlated with the essay result of the first marking rubric to indicate the degree to which either section measures the same components of the test. Thirdly, the essay result is correlated with the total result of sections 1-7 to display what kind of relationship exists between the multiple-choice and essay scores. Finally, the results of the different marking rubrics will be correlated, to investigate the reliance of the original marking rubric on the construct of academic literacy articulated in marking rubric 2.

## Research findings

### *Quantitative analysis*

This section will briefly state the results of the various analyses, after which these findings will be discussed. First of all, the high alpha-value of .927 (Cronbach's alpha) confirms the homogeneous test construct of TALPS. The correlation matrix in table 4 below lists the various values for which correlations were performed.

Section	1	2	3	4	5	6	7	8	Score sections 1-7
1									
2	.297								
3	.233	.444							
4	.201	.329	.302						
5	.214	.576	.476	.303					
6	.281	.573	.481	.292	.583				
7	.310	.491	.409	.273	.469	.632			
8	.192	.454	.402	.271	.433	.540	.507		.592
<b>Total test score</b>	.428	.763	.646	.465	.791	.841	.756	.720	

**Table 4: Correlation matrix for the quantitative analysis**

These results demonstrate first of all that indeed, as suggested by hypothesis one, each subsection displays a moderate (ranging between  $r = .4$  for subtest 1 and  $r = .5$  for subtest 4) or

strong (all the other 6 correlations) relationship with the total test result, which, in combination with the high alpha-level of .93, ensures a homogeneous test construct. These moderate correlations of sections 1 and 4 could be due to the fact that these two sections have relatively fewer questions in comparison to the other sections of the test. However, when considering which aspects of academic literacy these two sections measure, it can be noted that both sections measure text relations, understanding text type, distinguishing, communicative function, and making meaning beyond sentence level. As noted previously, Patterson (2012) observed that students generally struggle with understanding text types, communicative function, and making meaning beyond the level of the sentence. Therefore, it could also be argued that these two sections do not correlate well with the rest of the test items since students underperform on them, a possibility which will be further explored below, as we consider the role of academic writing on students' test performance.

A *Pearson r* correlation of the multiple-choice results and the essay results, exemplified in the last column of table 4, revealed a moderately strong but significant relationship between the two of  $r=.6$ ,  $p<0.01$ , thereby confirming that both assess the same construct of academic literacy as proposed in hypothesis two. In addition, each section was correlated separately with the essay results, as summarized in the penultimate row of table 4.

Interestingly, the  $r$ -values in this row seem to mimic more or less the values of the overall correlations in the last row. Also between the essay result and sections 1 and 4 the significant relationship is relatively weak. The strongest relationship is found with section 6 (Grammar and text relations).

The internal correlations among the various subtests should ideally fall in a range of 0.3 to 0.5 to ensure that the sections test different attributes and make a meaningful contribution to the test (Van der Walt and Steyn 2007, 148). The strong relationship of section 6 with the essay section is an indicator that the essay section measures those components that are also assessed in this section. This value of  $r=.540$  nearly exceeds the 0.5 desired boundary. The question can therefore be asked whether section 6 (grammar and text relations), as well as sections 2 (interpreting graphs and visual information) and 7 (text editing) which also approach the upper, 'too high' parameter of 0.5 and so demonstrate a strong inter-relationship, are not testing the same components as the essay section. Such an observation may in turn inform modifications in the design of TALPS, upon which we shall elaborate later.

### ***Qualitative analysis***

A close scrutiny of the essays displays that they suffer from a general lack of structure at inter- and intra-textual level. There is no distinction between introduction, body and conclusion and the various paragraphs or parts of the argument are not clearly linked with transitional words or phrases. Because of the limited space we do not list examples of ill-structured arguments found in the essays, but table 5 below summarises the weighted scores of each component of the second marking rubric for the total of 80 essay results.

#	Component	Maximum possible score	Total score
1	Text relations	960	411 (43%)
2	Distinguishing	960	426 (44%)
3	Communicative function	960	375 (39%)
4	Extrapolating	640	258 (40%)
5	Vocabulary	320	163 (51%)

**Table 5: Weighted total scores per component of marking rubric 2**

Overall, the scores on each component represent only half of the total score or less, indicating a general inability to write academically. Table 5 confirms the earlier observation made above and by Patterson (2012) that students struggle with communicative function, which is the lowest scoring component in marking rubric 2. When considering the correlation results in table 4 together with the observation from table 5, hypothesis three seems to be valid. The essay results, both of marking rubrics 1 and 2, demonstrate a weak relationship with sections 1 and 4 which focus on text comprehension and text types, as well as with the ability to understand and use the appropriate communicative function.

To indicate how closely marking rubric 1 resembles the construct of academic literacy, on which marking rubric 2 was based, the results of both marking rubrics were correlated. A *Spearman rho* correlation revealed a significantly strong relationship at  $r=.7$ ,  $p<0.01$ . This outcome ascertains that marking rubric 1 is a valid instrument in measuring the writing section, as it adequately reflects the components of the construct of academic literacy. This does not mean that marking rubric 1 cannot be improved, however, and a third marking rubric has been devised combining salient elements from both marking rubrics employed in this study.

### ***Answering the research question***

In the course of this analysis, it has been demonstrated that hypotheses one, two, and three are valid. The fourth hypothesis requires a closer look at the results from the qualitative analysis. The quantitative correlations reveal that students struggle with understanding text type and textual relations, which conforms to hypothesis four, which was that students will demonstrate difficulties regarding textual relations, communicative function, and understanding text type. The qualitative analysis demonstrates students' difficulties with textual relations as well, both on inter- and intra-textual level. Consequently, students are unable to use the appropriate academic words and phrases to signal linkages between the different parts of their argument, to introduce examples, or to express their opinion in an academic manner.

The initial question asked in this study was to find out what the writing section contributes to the test result regarding its potential to diagnose students' struggles with specific components of their academic literacy. From the above analysis of the findings it becomes clear that the writing section aligns with the other seven sections of the test and can thus serve as another predictor of

those aspects of academic literacy with which students struggle. It has been found that students who perform well on those sections that measure textual relations and text type, also score high on the essay, and vice versa. These findings have implications for the design of TALPS, to which we turn next.

## Design suggestions

The analysis of the findings above demonstrates that the greatest challenge for students is to present a coherent, well-structured academic argument, and to do so by making use of the appropriate communicative functions used in academic discourse. In essence, students fail to grasp the main concept of presenting an academic argument in written form. One has to bear in mind, though, that many students fail to complete their essays within the designated time. Lapses in concentration and tiredness might also have contributed to the poorly crafted essays they present. The question can subsequently be asked whether the essay section of the test truly reflects students' academic writing abilities in the form it is currently presented. For that reason, it might be worthwhile to explore the idea of modifying the design of TALPS by creating a two-, or even three-tiered testing model.

In this fashion, splitting the test into two or three smaller parts can be justified. The first test can act as what Read (2013, 6) terms a 'screening' assessment, to separate the potential 'at risk' students from the 'little to no risk' ones. This first test might be composed of multiple-choice items drawn from mainly sections 6 and 7, as we have demonstrated that the components measured in the essay section of TALPS closely align with what is measured in the other sections of the test, and specifically with sections 6 and 7 (the highest correlating sections). The analyses supporting the argument of this paper indicate that such a design will be a good predictor of academic writing ability. The second test might then consist of multiple-choice questions from all the seven sections currently employed in TALPS. For those students who score below the current cut-off point of 60%, the third test, an essay assignment, might then be administered. This test can be diagnostic in nature and reveal with which elements a student struggles in order to place him/her on an appropriate academic literacy course.

There is no doubt that such a design will be more efficient in its issuing and administration. It can, furthermore, enhance the diagnostic value of TALPS. Since TALPS is in the first place not designed as a diagnostic test, it may lack the ability to provide meaningful diagnostic information. Alderson (2005, 11) has listed 9 hypothetical features that may constitute a diagnostic test, and when considering TALPS in light of these features it can be noted that, being a norm-referenced test, TALPS could not be used without further qualification as a diagnostic test. However, as was demonstrated by this analysis, TALPS may potentially serve some diagnostic purposes, as diagnostic information can be extracted from its results. The two/three-tiered design proposed above could enhance the diagnostic value of TALPS, and by providing purposeful feedback on the second or third test-component, students will be able to gain insight into the goals of their subsequent learning process (Jang 2012, 124).

Another benefit of the modification proposed is that the time pressure on the administration of the test is reduced. That might allow students to concentrate better on the tasks set, and in the case of the essay assignment, they will be better able to plan their essay and structure their argument. Finally, a separate writing test can serve as a second chance for those students who may have been negatively affected by the first (or second) test, in the sense that they may have been misclassified as being at risk. Misclassifications may occur in each test because tests are

never entirely reliable measuring instruments, according to Van der Slik and Weideman (2005, 28). With a TiaPlus test and item analysis of the results the number of misclassifications can be identified and by offering this number of students a second chance, misclassifications can be set right.

Nonetheless, because each section of the test is based on a component of the underlying theoretical construct, one cannot simply take out or modify sections based on empirical grounds alone (Rambiritch 2012, 114). Therefore, it is necessary to consider such changes carefully and to be transparent to all stakeholders of TALPS.

### ***Limitations***

Because this study has examined only a limited number of test scores and essays, the various correlation values may indicate peaks that, when a larger dataset is employed, would have been flattened out. Nonetheless, when this data is compared to other studies drawing on the TALPS test results (e.g. Rambiritch 2012), it can be noted that Cronbach's alpha-level is consistent, as well as the several subtest internal correlation values which, apart from three outliers (cf. table 4), fall within the ideal range of 0.3 and 0.5. If this range would be extended to a value of 0.6 the earlier three outliers are incorporated as well.

Secondly, the marking of the essays could ideally have been more time-restricted. The marker started marking in the first week of May 2013 and finished only near the end of the month, as several students wrote the test during these weeks, which resulted in a constant flow of new essays. As the rating was therefore spread out over several weeks the rating consistency over time may have been influenced, even though marking was limited to one person.

### ***Final word***

Recalling the introduction, we may observe that poor academic language abilities affect academic success. Although TALPS can distinguish different proficiency levels and assign levels of risk to postgraduate students, the actual problem should already be dealt with earlier on in a student's education. The results arising from this study may aid curriculum and test designers in developing or adjusting their courses and assessments. This diagnostic analysis has again highlighted the consequences of insufficient educational preparation for the meaningful participation by students in postgraduate studies. Without such preparation, language may well prove to be a barrier that prevents them from benefitting fully from the high-level analytical processes they will be exposed to at this level. Using the diagnostic information that might be yielded by an enhanced design for TALPS might be a productive and profitable avenue to take for its developers.

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## Appendix A

### Rubric 1

Content and organisation		Poor 0-1	Average 2	Good 3-4
Introduction (20)	Statement of issue – angle to be argued	No clear statement of issue; no point of view to be argued; abrupt or no introduction	States issue and point of view weakly; not clear what relevance is	Clearly states issue and point of view, explains relevance and importance
	Framing of reader expectations	No or little interest in explaining clearly what will follow, or in guiding reader	Attempts unsuccessfully to frame reader's expectations of what will follow	Clearly sets out what is to follow, providing a frame for what reader can expect
		<b>0-2</b>	<b>3-4</b>	<b>5-7</b>
Body (argument) (50)	Nature of problem/issue	No or little discussion of the nature of problem/issue, or why it is necessary to deal with it	Unsuccessfully attempts to discuss nature of problem/issue and its importance	Clear discussion of nature of problem/issue, and necessity of addressing it
	Discussion of pros and cons	Gives no or little indication that there is more than one side to an argument	Attempts to provide both pros and cons, but does so unconvincingly	Provides a comprehensive discussion of possible pros and cons
	Argue convincingly for specific point of view	Argumentation is weak, one-sided, unconvincing	Argument deals with some of the important issues, but not in any convincing way	Strong, balanced argumentation that leaves the reader convinced of point of view
		<b>0-1</b>	<b>2</b>	<b>3-4</b>
Conclusion (20)	Emphasising again the point of view advanced – link with introduction	No connection between the issue/thesis introduced in the introduction and what is said in conclusion	Attempts to restate the issue/thesis, but does so unconvincingly	Clearly emphasises the thesis again without making it a word by word repetition of the introduction
	Clearly states again the most important issues	No attempt to highlight again the most important issues in the text	Attempts to again include the most important issues, but does so in an unconvincing and incomplete manner	Clearly emphasises the main issues again in a structured and non-repetitive manner (exact repetition of the sentences used in body)
<b>Language and style</b>				
Technical aspects and language (10)	Bibliography	<b>0-1</b>	<b>2-3</b>	<b>4-5</b>
	Academic style and referencing	No or little acknowledgement of authorities, weak structure, interrupted flow of argument	Argument patchy in its logic and structure; some acknowledgement of authority, but inadequate	Authorities used appropriately acknowledged, well-structured argument, logical flow
	Grammar and spelling	The number of grammatical and spelling errors seriously interferes with the meaning	Contains some typical errors that could easily have been eliminated	Primarily error-free and fluent

## Appendix B

### Rubric 2

CONTENT		Poor	Average	Good	Points
Introduction	Statement of issue – angle to be argued	No clear statement of issue; no point of view to be argued; abrupt or no introduction. <b>(0-1)</b>	States issue and point of view very weakly; not clear what relevance is. <b>(2)</b>	Clearly states issue and point of view, explains relevance and importance. <b>(3)</b>	<b>0-3</b>
Body	Nature of problem/ issue	No or little discussion of the nature of problem/issue, or why it is necessary to deal with it. <b>(0-1)</b>	Unsuccessfully attempts to discuss nature of problem/issue and its importance. <b>(2-3)</b>	Clear discussion of nature of problem/issue, and necessity of addressing it. <b>(4)</b>	<b>0-4</b>
	Discussion of pro's and con's; distinction between fact and opinion, cause and effect; critical thinking	Gives no or little indication that there is more than one side to an argument. No critical argument established.	Attempts to provide both pros and cons, but does so unconvincingly. Unbalanced attention to both fact and opinion and cause and effect.	Provides a comprehensive discussion of possible pro's and con's thereby combining fact and opinion.	
	Argue convincingly for specific point of view	Argumentation is weak, one-sided, unconvincing.	Argument deals with some of the important issues, but not in a convincing way.	Strong, balanced argumentation that leaves the reader convinced of point of view.	
Conclusion	Clearly states again the most important issues	No attempt to highlight again the most important issues in the text. <b>(0-1)</b>	Attempts to again include the most important issues, but does so in an unconvincing and incomplete manner. <b>(2)</b>	Clearly emphasises the main issues again in a structured and non-repetitive manner. <b>(3)</b>	<b>0-3</b>

<b>LANGUAGE AND ORGANISATION</b>		<b>Poor</b>	<b>Average</b>	<b>Good</b>	
<b>Coherence</b>	Introduction	No or little interest in explaining clearly what will follow, or in guiding reader. No transitional words to link to body. <b>(0-1)</b>	Attempts unsuccessfully to frame reader's expectations of what will follow. Weak link to body. <b>(2-3)</b>	Clearly sets out what is to follow, providing a frame for what readers can expect. Clear transition to body. <b>(4)</b>	<b>0-4</b>
	Body	Paragraphs are not linked. No coherence within the argument. Argument does not flow.	Argument patchy in its logic and structure. Paragraphs are weakly linked with transitional words.	Argument is well-structured, paragraphs are linked effectively with transitional words, argument flows.	
	Conclusion	No connection between the issue/thesis introduced in the introduction and what is said in conclusion.	Attempts to restate the issue/thesis, but does so unconvincingly.	Clearly emphasises the thesis again without making it a word by word repetition of the introduction.	
Referencing		No acknowledgement of authorities. No source material is used. No bibliography is present. <b>(0)</b>	Some source material used, but inadequately acknowledged. A bibliography is present. <b>(1)</b>	Appropriate acknowledgement of sources. An accurate bibliography is present. <b>(2)</b>	<b>0-2</b>
Academic language		No awareness of the communicative functions in academic language. Several lapses in vocabulary. <b>(0)</b>	Some awareness of the various ways of expression in academic language. Contains some lapses in vocabulary. <b>(1)</b>	Aware of the communicative functions and various ways of expression in academic language. Clear use of academic vocabulary. <b>(2)</b>	<b>0-2</b>
Grammar and spelling		The number of grammatical and spelling errors seriously interferes with the meaning. <b>(0)</b>	Contains some typical errors that could easily have been eliminated. <b>(1)</b>	Primarily error-free and fluent. <b>(2)</b>	<b>0-2</b>