The refinement of a construct for tests of academic literacy

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Abstract

In a previous study (Patterson & Weideman, 2013), we discussed the importance of acknowledging the typicality of academic discourse as a starting point for critically engaging with constructs of academic literacy. In this article, various attempts at identifying the typical features of academic discourse are surveyed and critiqued. The preliminary conclusion is that the uniqueness of academic discourse lies in the analytical or logical language that characterises it (see Patterson & Weideman, 2013 for an extended explanation). Using this characteristic feature as a criterion allows us to sift through the various opinions on what constitutes both academic discourse and academic literacy in a way that is potentially productive. It suggests on a number of points ways in which one might add components to the current definition of academic literacy that forms the test construct of academic literacy tests such as TALL, TAG, and TALPS. The article concludes by suggesting some modifications and additions to the design of current test task types in tests of academic literacy. These tentative suggestions may allow theoretically defensible modifications to be made to the construct of a number of tests of academic literacy. TALL, TAG, the relevant part of the NBTs, and TALPS are generally high stakes tests that are widely used in South Africa. Since no critical examination of their construct, which is now more than a decade old, has so far been undertaken, we hope that these proposals do not only come at an appropriate moment, but may also be useful to those responsible for developing further versions of these tests.

Keywords: academic discourse; academic literacy; language testing; test constructs; task types

A starting point

In order to engage critically with definitions of academic literacy that have been operationalised so that the ability to handle academic discourse can be assessed, there is probably no better starting point than to firstly determine whether academic discourse is a distinct type of discourse and secondly, what it is that makes it different from other lingual spheres. By a lingual sphere, we mean a distinctly different kind of language that is used within a particular social institution, so that the language of business, for example, will differ from that of an intimate relationship, or the language of worship will differ from the language of the court, or the language of literature will differ from the language of education. In a previous paper (Patterson & Weideman, 2013), we argued that the typicality of academic discourse, in being qualified by the analytical dimension of experience, constitutes just such a starting point for definitions of an ability to handle academic discourse, or what has become known as academic literacy. In this paper, we would like to set out how such an idea of the typicality of academic discourse might be practically employed to modify, in a theoretically responsible manner, the construct of tests of academic literacy. Such tests measure the ability or competence to handle academic discourse, and they crucially depend on theoretically defensible definitions of what it is that they are measuring.

In this paper we shall therefore first survey two sets of current opinions in the literature that hold the promise of improving our understanding of academic literacy by presenting operationalisable characterisations of it. Our argument will engage critically with these views before concluding what could be useful in this regard. We then critically examine a current construct that underlies several South African tests of academic literacy. For the earlier articulation of this construct, and what constitutes groundbreaking work done in South Africa in this regard, readers are referred to Cliff and Hanslo (2005), Cliff, Yeld and Hanslo (2006), and Yeld *et al.* (2000). Such tests include the academic and quantitative component of the National Benchmark Test (NBT), as well as a growing set of others, such as the Test of Academic Literacy for Prospective Students of Nursing, the Test of Academic Listening (Marais, 2009; Marais & Van Dyk, 2010), the undergraduate Test of Academic Literacy Levels (TALL/TAG), and the Test of Academic Literacy for Postgraduate Students (TALPS) that were designed by ICELDA (ICELDA, 2013). Finally, in view of the above discussion, we propose several new task types that could be added to the existing task types of some of the above-mentioned tests.

Academic discourse/language

While there is wide debate (cf. Patterson & Weideman, 2013) about an accepted definition of what constitutes academic discourse, Flower (1990:224) notes two practices that seem to be critical features of academic language:

> 1) integrating information from sources with one's own knowledge and

> 2) interpreting one's reading/adapting one's writing for a purpose.

She observes (1990:251), furthermore, that what distinguishes academic writing from a more limited comprehension and response are the "goals of self-directed critical inquiry, of using writing to think through genuine problems and issues, and of writing to an imagined community of peers with a personal rhetorical purpose". Flower's views have an emphasis similar to those of Suomela-Salmi and Dervin (2009:6), who, in understanding academic discourse as "acts of communication and/or interaction, written or spoken, mediated or not, which take place within Academia and around it," proceed to observe that

> [Academic discourse] does not exist without the presence of an *I* (writer, speaker, discussant…) and an Other (his/her imagined, real or ideal interlocutor, i.e. a community). [Academic discourse] is thus often based on the co-construction of theory, argumentation, interpretation, synthesis, but also dissemination and popularization. Its audiences can be composed of the following groups: Specialists < > specialists; Specialists < > novices, young researchers; Specialists > general public; Specialists > the media (Suomela-Salmi & Dervin, 2009:6).

This dialogic aspect of academic discourse has also been the subject of a study by Livnat (2012:1), who notes that the "texts that scientists [and academics] write contain many dialogic features: They address other people in the past, present and future, relate to them and correspond with them in different ways". However, this cannot be a defining feature of academic discourse, as no discourse exists without more than one lingual subject.

In fact, several further problems arise when one critically examines the definitions cited above. The features of academic discourse that Flower (1990) highlights could be applied to many other kinds of discourse – the language used in a business plan or newspaper, for example, is not academic and yet it also requires an integration of fact and opinion, is concerned with genuine problems and issues, and is written for a specific purpose to an imagined audience. Similarly, Suomela-Salmi and Dervin's (2009) definition, while more specific than Flower's (1990), still leaves something to be desired: a criterial feature that sets

academic discourse apart from other kinds of discourse. In addition, this definition is circular because it defines academic discourse by referring to the academy. Both definitions imply that analytical and logical thinking is required, but this is neither overtly stated nor articulated, except when terms suggestive of analysis are used, for example in Flower's (1990:251) use of the word 'critical'.

To be fair, there is more to Suomela-Salmi and Dervin's (2009:5) argument. They draw an interesting parallel, for example, between academic discourse, which they define as "discourse used for a specific purpose, that of transferring knowledge, be it of linguistic, pedagogic or disciplinary nature", and what Gunnarsson (2009) calls professional discourse. Professional discourse in the latter's definition includes "written texts produced by professionals and intended for other professionals with the same or different expertise, for semi-professionals, i.e. learners, or for non-professionals, i.e. lay people. It also […] includes talk involving at least one professional" (Gunnarsson, 2009:5). Six prominent features of professional discourse include:

1) Expert discourse related to different domains,
2) Goal-oriented, situated discourse,
3) Conventionalized form of discourse,
4) Discourse in a socially ordered group,
5) Discourse dependent on various societal framework systems, and
6) Dynamically changing discourse.
   (Gunnarsson, 2009:5).

The notion of professional discourse is, however, less useful to the current study, as it simply subsumes academic, scientific, medical, economic, technological, legal, business, and workplace discourse under the heading of "professional discourse". It once again lacks a typical feature setting all of these apart.

When one looks at further characterisations of academic discourse, such as those offered by Ken Hyland (2011), in the context of pronouncements on his specific field of expertise (academic writing, discourse, and academic language variation) (see Hyland & Bondi, 2006, and Dai Hounsell, 1988), we find the following overviews of academic language:

Academic discourse refers to the ways of thinking and using language that exist in the academy. Its significance, in large part, lies in the fact that complex social activities, like educating students, demonstrating learning, disseminating ideas and constructing knowledge,

rely on language to accomplish. Textbooks, essays, conference presentations, dissertations, lectures and research articles are central to the academic enterprise and are the very stuff of education and knowledge creation (Hyland, 2011:171).

Academic discourse is […] a particular kind of written world, with a tacit set of conventions, or 'code', of its own (Hounsell, 1988:162).

As is the case with Suomela-Salmi and Dervin's (2009:6) definition, Hyland (2011:172) and Hounsell's (1988:162) views are circular in that they define academic discourse by referring to the academy itself, which results in a somewhat limited and certainly unenlightening definition. Furthermore, by exemplifying academic discourse with reference to factual texts that occur in it, Hyland (2011) misses an opportunity to identify or emphasise the hallmark feature of these texts, namely their text-defining analytical stamp. He observes that our whole worldview has been influenced by academic language, which has become the "dominant mode for interpreting reality and our own existence". Perhaps the reason why it is such a complex matter to discern the typicality of academic discourse is because of its supposed pervasiveness: Hyland (2011:172) observes the presence of academic discourse in texts that range from popular science periodicals to news broadcasts, from the TV documentary to the language of the pharmaceutical bottle, and from the toothpaste advertisement to the psychotherapist and the recycling leaflet.

In his research on academic discourse, Hyland (2011:177) has found, furthermore,
1) that academic genres are persuasive and systematically structured to secure readers' agreement;
2) that these ways of producing agreement represent disciplinary specific rhetorical preferences;
3) that language groups have different ways of expressing ideas and structuring arguments;
4) that academic persuasion involves interpersonal negotiations as much as convincing ideas.

It is not entirely clear what is meant by "language groups", as Hyland (2011:177) could be referring to different styles of academic discourse across the disciplines or to different national language groups (for example, Chinese, Indian, or English). Another finding is that "successful academic writing depends on the individual writer's control of the epistemic conventions of a discipline, what counts as appropriate evidence and argument, and that this differs across fields" (Hyland, 2011:178). Hyland (2011:179) believes that academic

discourse is what gives identity to a discipline and that "analyses of texts help reveal the distinctive ways disciplines have of asking questions, addressing a literature, criticising ideas and presenting arguments". What we should note, however, is that while disciplines may have distinctive *styles* of "addressing a literature, criticising ideas and presenting arguments" (Hyland, 2011:179), they do have the following in common: seeking evidence, dealing with prior views, criticising, arguing, and questioning. The style of how that is accomplished may be different, but the lingual intention is the same. Hyland (2011:177) furthermore views *persuasiveness* as the main rhetorical mode chosen by producers of academic discourse, which for him accounts for the prevalence of argumentation in such texts. In a previous discussion of Halliday's (2002:57) notion of rhetorical modes and concepts, we pointed out the shortcomings of such a view (Patterson & Weideman, 2013).

If we take persuasiveness as the characterising feature of academic discourse, however, it is evident that we have not isolated its uniquely different nature. As soon as one closely scrutinises Hyland's (2011:177) holding up of the persuasive mode of academic discourse as its defining feature, its shortcomings become evident. Thus, we soon have to admit that this so-called primary quality does not set it apart from other types of discourse when we consider, for example, the persuasiveness of legal papers, marketing material, sermons, political speeches, opinion pieces in newspapers and other news media, and so forth. So we are left, once again, with a definition that may imply, but that does not emphasise the importance of the analytical or logical mode of experience that gives academic discourse its unique character. Hyland's (2011; also Hyland & Bondi, 2006) important contribution is to emphasise the variation of academic discourse across fields and disciplines; the focus of this particular study, however, is to seek what is common across these, which is implied in Hyland's distinctions (as we have noted above), but is not further articulated.

As the above discussion shows, it is no surprise that Snow and Uccelli (2009:112) aptly observe that "[d]espite the frequent invocations of 'academic language' and the widespread concern about its inadequate development, there is no simple definition of what academic language is". The following table is a summary based on the literature that Snow and Uccelli (2009) examined (which include Hallidayan concepts such as nominalisation – see Patterson & Weideman, 2013 for a discussion of this notion) in order to reach a better understanding of academic language in comparison to colloquial language:

More colloquial		*More academic*	

1. Interpersonal stance

Expressive/involved → Detached/distanced (Schleppegrell, 2001)

Situationally driven personal stances → Authoritative stance (Schleppegrell, 2001)

2. Information load

Redundancy (Ong, 2002)/ wordiness → Conciseness

Sparsity → Density (*proportion of content words per total words*) (Schleppegrell, 2001)

3. Organisation of information

Dependency (Halliday & Martin, 1993)/ addition (Ong, 2002) (*one element is bound or linked to another but is not part of it*) → Constituency (Halliday, 2004)/subordination (Ong, 2002) (*embedding, one element is a structural part of another*)

Minimal awareness of unfolding text as discourse (*marginal role of metadiscourse markers*) → Explicit awareness of organised discourse (*central role of textual metadiscourse markers*) (Hyland & Tse, 2004)

Situational support (*exophoric reference*) → Autonomous text (*endophoric reference*)

Loosely connected/dialogic structure → Stepwise logical argumentation/unfolding, tightly constructed

4. Lexical choices

Low lexical diversity → High lexical diversity (Chafe & Danielewicz, 1987)

Colloquial expressions → Formal/prestigious expressions (e.g. *say/like* vs. *for instance*)

Fuzziness (e.g. *sort of, something, like*) → Precision (*lexical choices and connectives*)

Concrete/common-sense concepts → Abstract/technical concepts

5. Representational congruence

Simple/congruent grammar (simple sentences, e.g. *You heat water and it evaporates faster.*) → Complex/congruent grammar (complex sentences, e.g. *If the water gets hotter, it evaporates faster.*)

→ Compact/Incongruent grammar (*clause embedding and nominalization,* e.g. *The increasing evaporation of water due to rising temperatures*) (Halliday & Martin, 1993)

Animated entities as agents (e.g. *Gutenberg invented printing with movable type.*) → Abstract concepts as agents (e.g. *Printing technology revolutionised European book-making.*) (Halliday & Martin, 1993)

[6] Genre mastery

Generic values (Bhatia, 2002) (narration, description, → School-based genres (e.g. lab reports, persuasive essay) → Discipline-specific specialised genres

explanation…)

[7] Reasoning strategies

Basic ways of argumentation and → Specific reasoning moves → Discipline-specific
persuasion   valued at school   reasoning moves
                                    (Reznitskaya *et al.*, 2001)

[8] Disciplinary knowledge

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Taxonomies

Commonsense understanding → Abstract groupings and → Disciplinary
                              relations   taxonomies and
                                                         salient relations

-
Epistemological assumptions

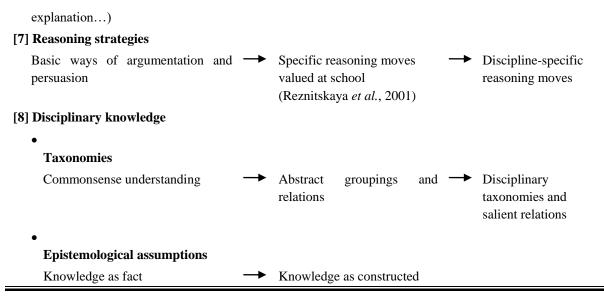Knowledge as fact → Knowledge as constructed

Table 1: Linguistic features and core domains of cognitive accomplishments involved in academic language performance (Snow & Uccelli, 2009:119-120).

This lengthy list of the characteristics of academic language demonstrates a particular problem with the current conception of academic discourse: "dozens of traits have been identified that contrast with primary or colloquial language and that might function as markers of academic language, but it is unclear that any of them actually defines the phenomenon" (Snow & Uccelli, 2009:121). They are, to make a distinction referred to in our earlier study (Patterson & Weideman, 2013), *formally* defined rather than typical features. Snow and Uccelli (2009:121) observe that

> Any of these traits might be present in casual spoken language: Is it their co-occurrence that defines some language as academic? Is it their frequency? How, if at all, do these various traits relate to one another? Are some particularly crucial and others merely epiphenomena? Are some causes and others consequences?

Snow and Uccelli (2009), however, do not propose any feasible solutions to the questions above, which accounts for our current investigation further pursuing and developing this line of inquiry.

It is clear that the above definitions therefore do not adequately identify a defining feature of academic discourse that distinguishes it from other kinds of discourse. As we have noted before, some do refer to the fact that academic discourse is historically grounded, by linking its typicality to the disciplinary culture or style that varies over time, as we find, for example, in Becher and Trowler's (2001) term 'tribes'. Those definitions that do suggest the significance of analytical and logical thinking do not emphasise it as a defining feature. In light of the above discussion, our preliminary conclusion is that what makes academic

discourse distinct from other types of discourse is that it is grounded in 'culture', style, or formative conduct and events, thus including all subjective lingual activities within academia that lead to the production of objective lingual texts. Furthermore, it has another feature as its characteristic stamp or guiding mode:

> The typicality of academic discourse is derived from the (unique) **distinction-making** activity which is associated with the analytical or logical mode of experience. (Patterson & Weideman, 2013; cf. also Strauss, 2009: 12-14)

This typical analytical watermark or fingerprint is what sets factual academic texts such as lectures, essays, research articles, theses and dissertations, monographs, conference presentations, and scholarly books apart from other texts created and produced in different kinds of discourse. While the tentative definition given above will no doubt need improvement and substantiation, as will be indicated in the recommendations for further research, it is our argument that it at least constitutes a step towards an understanding of the typicality of academic discourse, without which it would be difficult to proceed responsibly.

Academic literacy

This section turns to a second set of authorities referred to in the introduction. We first discuss two definitions of academic literacy that were brought to the fore by Spack (1997) and Johns (1997). Ruth Spack (1997:3) defines academic literacy simply as "the ability to read and write the various texts assigned in [university]". In comparison, Ann Johns (1997:2) describes literacy in general as including

> ways of knowing particular content, languages, and practices. It refers to strategies for understanding, discussing, organizing, and producing texts. In addition, it relates to the social context in which a discourse is produced and the roles and communities of text readers and writers.

In addition, Johns (1997:34) states that principles that are central to academic literacy include "good writing, effective reading, careful listening and note taking, and sound critical thinking".

Blue (2003:2) offers a third description of academic literacy, observing that it involves sophisticated language skills which include an "understanding of and ability to use appropriate disciplinary discourse". Furthermore, a degree of autonomy (which can be likened to authorial 'voice' – cf. Blanton, 1994) is expected in academic work, along with "an understanding of academic integrity and the dangers of plagiarism" (Blue, 2003:2). Finally,

academically literate students should be able to criticise, question, and evaluate their own views and research as well as that of others (Blue, 2003:2).

Both Johns (1997) and Blue (2003) assert that critical (or analytical) thinking is a necessary and crucial aspect of academic literacy, but this is not emphasised as a defining point. Johns's (1997:34) reference to "careful listening and note taking" as a central part of academic literacy is significant, since this is an aspect that is often overlooked, as is demonstrated in the definitions provided both in this study and the previous one (Patterson & Weideman, 2013).

A fourth authority is Blanton's (1994) notion of academic literacy, which was used as a starting point by the developers of the construct of TALL, TAG, and TALPS (see Weideman, 2011), and it is thus important to the discussion at hand. Blanton (1994:226) states that "interactions with texts" lie at the heart of academic literacy and that those who read and write academically

1. Interpret texts in light of their own experience and their own experience in light of texts;

2. Agree or disagree with texts in light of that experience;

3. Link texts to each other;

4. Synthesize texts, and use their synthesis to build new assertions;

5. Extrapolate from texts;

6. Create their own texts, doing any or all of the above;

7. Talk and write about doing any or all of the above;

8. Do Numbers 6 and 7 in such a way as to meet the expectations of their audience.

Blanton's (1994:226) definition provides a confirmation of the premise supporting this investigation, viz. that definitions of academic literacy depend on ideas of what constitutes academic discourse. The emphasis that Blanton (1994:226) places on "interactions with texts" corresponds with Halliday's (1978:122) definition of 'text' as the "linguistic form of social interaction", as was mentioned in the discussion in our previous study (Patterson & Weideman, 2013) of Halliday's notion of "field of discourse". Like Blue (2003:2), Blanton (1994:230) concludes that academically proficient individuals speak and write with *authority*, which she believes might be a major characteristic of academic literacy. As Weideman and van Dyk (2013) note, the spoken and written formats of academic discourse must present a distinct authorial 'voice', even though it has been "produced in collaboration with many other voices".

A fifth current opinion can be found in Bailey's (cf. Bailey, 2007:10-11) definition of proficiency in academic language as "knowing and being able to use general and content-specific vocabulary, specialised or complex grammatical structures, and multifarious language functions and discourse structures – all for the purpose of acquiring new knowledge and skills, interacting about a topic, or imparting information to others". This characterization of academic literacy is technically appropriate, yet again appears to ignore and underplay the important analytical and logical processes that are needed in order to become academically literate.

We subsequently turn to a field that has been growing in significance over the past 20 years and thus warrants a brief examination as to its significance to the current study. Academic literacies research (which draws on a number of fields - New Literacy Studies (NLS), in particular) is based upon the notion that literacy is not a "unitary skill that can be transferred with ease from context to context" (Lea, 2008:227; Lillis & Scott, 2007). Students are thus required to "switch between many different types of written text, as they encounter new modules or courses and the writing demands of different disciplinary genres, departments and academic staff" (Lea, 2008:227). Academic literacies research also draws from the work of Street (1984), an early and significant contributor to NLS, who makes an important distinction between autonomous and ideological models of literacy: the autonomous model implies that literacy is a "decontextualised skill" that is transferable from context to context, while the ideological model "highlights the contextual and social nature of literacy practices, and the relationships of power and authority which are implicit in any literacy event" (Lea, 2008:230). It follows that academic literacies research is "concerned with issues of meaning making, identity, power and authority in student writing" (Lea, 2008:231). Academic literacies research has thus shifted the focus from the text (i.e. student writing) towards practices that are associated with the academy that may hinder the development of literacy (Lillis & Scott, 2007). While raising important questions as to the nature of academic writing and what is actually required from students, it would seem that proponents of the field of academic literacies have not articulated a workable definition of what academic literacy actually entails (Lillis & Scott, 2007:9).

Finally, Beekman, Dube and Underhill (2011:1) observe that academic assignments require students to combine reading, writing, thinking and communication skills, which is in

accordance with the position that NLS takes. They need to think critically, identify problems and issues, analyse those issues, follow and be aware of the different points of an argument, evaluate the strengths and weaknesses of each point, draw logical conclusions, and write a critical paper in response (Beekman *et al*., 2011:1). The intellectual, or cognitive, skills that are necessary for one to become academically literate include the following:

1. Creative thinking (the generation of imaginative and original ideas and methods)

- Problem-solving (brainstorming)
- Study skills (brainstorming, mind mapping, visualisation and association)
- Creative writing (imagination, inspiration, originality, and inventiveness)

2. Critical thinking (analysing techniques and arguments)
- Problem-solving (systematic analysis of problem)
- Academic reading and writing (academic vocabulary, analysing arguments, distinguishing between facts and opinion, making judgements about evidence and coming to a conclusion)

3. Logical thinking (systematic thinking, logical reasoning)
- Problem-solving (identification of the problem, analysing the problem, brainstorming solutions, deciding on a solution, drawing up an action plan, implementing the plan, evaluating the outcomes of the solution)
- Study skills (use of formulae to do mathematical calculations when appropriate)
- Research (investigation of an issue or problem)

    (Beekman *et al*., 2011:7-8).

This definition, while seemingly comprehensive, still does not quite cover all the aspects of academic discourse and literacy that have been identified by the various scholars mentioned above. Moreover, it lists *actions* that are important, while implying that the characteristic features of such actions are either known or can be learned. Its strong point, in our opinion, is that it stresses the significance of distinguishing, analysis, and critical and logical thinking.

It would seem that most of the definitions discussed above either patently or by implication depend on an idea of academic discourse and the *typicality* thereof. Spack's (1997) definition is the only one that does not correspond with this assumption, since it does not make any reference to what academic discourse entails. Having considered a number of current views on academic discourse, we therefore turn in the following section to an investigation of the test construct of TALL, TAG, and TALPS.

Examination of the constructs of TALL/TAG/TALPS

The construct of TALL, TAG, and TALPS derives from a notion not only of what academic language *demands*, but also what it *is*. For example, one of the requirements of academic literacy listed below is to be aware of the logical development of a factual academic text. Put differently: in academic discourse, there is an inescapable interplay between lingual norms or conditions for creating texts, and the factual production of these texts in conformance with the typical logical or analytical requirements that condition the sphere of academic discourse. It can thus be inferred that this specific notion stems from the idea that academic texts should be logically organised with reference to a set of analytical premises and actions.

The test construct of TALL, TAG, and TALPS is based on the following definition of academic literacy, which is described as the ability to:

- understand a range of academic vocabulary in context;
- interpret the use of metaphor and idiom in academic usage, and perceive connotation, word play and ambiguity
- 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;
- interpret different kinds of text type (genre), and have a sensitivity for the meaning they convey, as well as the audience they are aimed at;
- interpret, use and produce information presented in graphic or visual format;
- 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;
- see sequence and order, and do simple numerical estimations and computations that are relevant to academic information, that allow comparisons to be made, and can be applied for the purposes of an argument;
- 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;
- understand the communicative function of various ways of expression in academic language (such as defining, providing examples, arguing); and
- make meaning (e.g. of an academic text) beyond the level of the sentence. (Weideman, 2007:xi-xii).

If the typicality of academic discourse is derived from the (unique) distinction-making activity associated with the analytical or logical mode of experience, then that aspect needs to take precedence. In this definition, distinction-making and analytical or logical thinking are indeed a component, yet it is not foregrounded as the most important aspect of academic literacy. If constructs depend on ideas, then this foregrounding is crucial. In addition, we may note that two of its components ("interpret the use of metaphor and idiom in academic usage, and perceive connotation, word play and ambiguity" and "interpret, use and produce information presented in graphic or visual format") are not mentioned in any of the definitions discussed previously. The question of whether these aspects are particularly relevant to *academic* literacy thus arises and would need further examination.

The following constitutes a summary, according to the definitions discussed in the previous section, of what is required in terms of the demands of academic language. Academic discourse (both spoken and written) places an emphasis on

- the flow between careful listening and note-taking, speaking and discussion, forming opinions, effective reading, sound critical thinking, and good writing;
- critical thinking (the analysis of techniques and arguments) and logical reasoning (systematic thinking) directed at one's own research as well as that of others;
- the synthesis or integration of information from multiple sources with one's own knowledge in order to build new assertions;
- interpreting/adapting one's reading/writing for an analytical/argumentative purpose and/or in light of one's own experience;
- an awareness of the stepwise, systematically and logically structured organisation of an academic text and the ability to apply this to one's own work;
- interaction (written and spoken) with texts: discussing, questioning, agreeing/disagreeing, extrapolating, evaluating, problem solving, analysing, linking, drawing logical conclusions, and producing new texts;
- knowing what counts as academic evidence and argument and distinguishing between facts and opinion;
- employing a systematic persuasiveness to the development of academic texts;
- imparting information to others by speaking or writing with authority/in an authoritative manner: the presence of an "I" addressing a real or an imagined audience of specialists/novices (young researchers)/general public/media in order either to disseminate or to popularise new knowledge;

- taking a detached and distanced stance in writing or in expressing academic opinion in other media;

- understanding and using general academic vocabulary as well as content/discipline-specific vocabulary;

- thinking creatively by devising imaginative and original solutions/methods/ideas which involves brainstorming, mind-mapping, visualisation, and association;

- the ability to use formulae to do mathematical calculations when appropriate;

- an understanding of academic integrity and the risks of plagiarism;

- using specialised/complex grammatical structures, high lexical diversity, and abstract/technical concepts which can also function as agents;

- precision, conciseness, density, constituency/subordination, and formal expressions;

- autonomy/independence (autonomous text); and

- research (investigation of a problem).

We may therefore suggest a modification of a test construct for tests of academic literacy. In what follows, we have added components in italics that are not yet articulated in any of the current versions of the construct that is under discussion. As one of the reviewers has pointed out, some of the italicised parts below may be implied by the current construct, but as far as we are aware, they have never been specifically articulated, unless there are versions of it that are inaccessible in the scholarly literature. The earlier articulations of the current construct, and the several bases on which they have been expounded, have been adequately dealt with elsewhere, particularly in this journal (Van Dyk & Weideman, 2004a). The exposition by van Dyk and Weideman (2004a) traced the conceptual lineage of the construct in question, from the early work of Yeld *et al.* (2000), Bachman and Palmer (1996), and Blanton (1994), and is therefore not repeated here. Even a cursory examination of those early formulations, read together with the current discussion, should make it clear, however, that at least three kinds of modifications are appropriate: first, an emphasis on the analytical nature of academic language, which is missing from the initial formulation; second, an augmentation of the construct by articulating components that may have been implied, but that are certainly not overt; third, a more patent grasp of the nature of academic interaction through language, which might include analytical information gathering, processing and production, or what is conventionally conceived of as listening, writing, reading, and speaking (though these are always intertwined; see Weideman, 2013), or what another reviewer has called cognitive processing. The augmented articulation is: academic literacy,

which has much to do with the flow between speaking, careful listening and note-taking, effective reading, sound critical thinking, forming and discussing opinions, and good processing of arguments (usually and eventually in writing), can be described as the ability to:

- *think critically (analyse the use of techniques and arguments) and reason logically and systematically in terms of one's own research and that of others;*
- 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;
- *interact (both in speech and writing) with texts: discuss, question, agree/disagree, evaluate, research and investigate problems, analyse, link texts, draw logical conclusions from texts, and then produce new texts;*
- *synthesize and integrate information from a multiplicity of sources with one's own knowledge in order to build new assertions, with an understanding of academic integrity and the risks of plagiarism;*
- understand relations between different parts of a text, be aware of the logical development *and organisation* 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;
- 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;
- *think creatively: imaginative and original solutions, methods or ideas which involve brainstorming, mind-mapping, visualisation, and association;*
- interpret, use and produce information presented in graphic or visual format;
- understand and use a range of academic vocabulary *as well as content or discipline-specific vocabulary* in context;
- interpret the use of metaphor and idiom in academic usage, and perceive connotation, word play and ambiguity;
- interpret different kinds of text type (genre), and have a sensitivity for the meaning they convey, as well as the audience they are aimed at;
- *use specialised or complex grammatical structures, high lexical diversity, formal prestigious expressions, and abstract/technical concepts which can also function as agents;*
- make meaning (e.g. of an academic text) beyond the level of the sentence;

- see sequence and order, and do simple numerical estimations and computations that are relevant to academic information, that allow comparisons to be made, and can be applied for the purposes of an argument;
- *interpret and adapt one's reading/writing for an analytical/argumentative purpose and/or in light of one's own experience;*
- understand the communicative function of various ways of expression in academic language (such as defining, providing examples, inferring, extrapolating, arguing); and
- *write in an authoritative manner, which involves the presence of an "I" addressing an imagined audience of specialists/novices (young researchers)/general public/media.*

In our opinion, this adaptation and modification, though it may not constitute a major departure from the existing definition of academic literacy that forms the test construct of tests like TALL, TAG, and TALPS, provides a more adequate overview of the requirements of academic literacy. At the very least, since this definition is derived from an idea of what academic discourse typically demands, analytical or logical thinking and distinction-making have been foregrounded in a way that was not done before.

Some proposals for new task types

The current task types in the tests of academic literacy under consideration here assess the ability to handle academic discourse mainly through a set of six or sometimes seven subtests, though some of the earlier tests referred to above use a much smaller range of item and task types than others. The first of these subtests tests the ability to sequence and order different sentences, and is clearly a measure of an important component: the ability to distinguish not only different and successive analytical points (evidence) made in a text, but also their systematic progression. The second component, testing the understanding of graphic and visual information, shares with the fifth component an emphasis on distinction-making, including inferencing (e.g. in identifying trends and proportions) and finding evidence. The fifth, and usually longest subtest, is the one through which text comprehension is assessed. The third subtest, that assesses academic vocabulary, remains important, but might be more productively related to distinction-making. The fourth subtest, the testing of sensitivity to genre, already acknowledges the point of academic discourse being different in content from other discourse types. The questions in this component are limited, however, and might well have to be augmented by including questions on the identification and employment of genres that occur widely in the material lingual sphere of academic discourse. The sixth component or subtest (grammar and text relations) deals with assessing syntactic connections, and

potentially communicative function, vocabulary, and cohesion as well. Finally, the seventh subtest, in the case of tests of advanced literacy, requires the actual production of a logical argument, based on the academic or intellectually stimulating texts in the preceding parts of the test.

In addition to the subtests in which these task types occur, the preceding analysis suggests that we should consider augmenting them in several ways. The first italicised component in the above list, dealing with logical and systematic reasoning, suggests that the inclusion of a verbal reasoning component (see the sample test: ICELDA, 2013) in such a test might be useful, despite indications (see below) that many such items have not performed well in pilot tests. A subtest of verbal reasoning would test the cognitive processes that we accomplish through language, for example by drawing a conclusion (or making an inference, or even sometimes extrapolating) that is in line with the evidence at our disposal. Here is an example of such an item:

> There is a saying that wind power may be free, but it is far from cheap.
>
> This means that
>
> A. there is disagreement on whether one has to pay for wind power.
> B. there is agreement that wind power is still much too expensive.
> C. though wind costs nothing, generating power from it is expensive.
> D. one had better read the small print before investing in wind power.

In a pilot of a test on the theme of Rubber, for example, this was the best performing item in this subtest, but though it had an acceptable facility value of 67% when tested on a group of 197 first year students in Danang, Vietnam, its discrimination index, calculated through Iteman 3.6, was only 0.2, well below what is desired. It is generally agreed that the facility value should be roughly 50% (or between 20% and 80%), and the discrimination index above 0.3 (Van der Walt & Steyn, 2007). The facility value of an item indicates the proportion of test-takers that have the item correct, while the discrimination index is a measure of how well the item discriminates, usually between the top quartile and the bottom quartile of the test population. If an item is too easy or too difficult, it cannot function productively, and if it does not discriminate well, it undermines the value of the assessment instrument (Weideman, 2011). The same item being referred to here, when tested on a group of 1819 first year students at a South African university, would therefore have been rejected in subsequent versions of the test, since it had a facility value (87%) that indicates it is too easy, and the

same (0.2) unacceptably low discrimination value. The other four items in that subtest all fell outside the normal parameters, and would have been rejected for use in future versions of the test. While one explanation for this item not performing well may be that it was either not written well, or written by an inexperienced test developer (which was not the case), this analysis of the results of two trials of this particular subtest on two different continents suggests that if test designers wish to add a section on verbal reasoning, it appears that they will have to prepare for a very high attrition rate among the items they trial.

A second suggestion, in alignment with the component identified above as "interact … with texts: … analyse, link texts…" is already present in most of the tests being referred to here. This is an example of a possible question that assesses this ability:

> The further explanation of just what the author means by using the term "fruition" in the first paragraph we find most clearly in paragraphs
>
> A. 2 & 3.
> B. 3 & 4.
> C. 5 & 7.
> C. 6 & 8.

Having a range of texts that can be compared and contrasted, as in some versions of TALL and TALPS, is therefore again indicated as desirable. The higher the level at which the test is pitched, or the more sophisticated the screening done through a series of tests (see below), the more such comparison of texts should be brought in. Phrased differently, this kind of analytical processing, indicated by the stronger emphasis on the logical nature of academic language, is underrepresented in most of the current tests. This is indicated also by the fourth italicised component above: the ability to "synthesise and integrate information from a multiplicity of sources…" The further desirability to include tasks on the production of new information, based on the interaction of the test taker with the texts in the test, is again evident. Such tasks are already part of TALPS and might again become part of other tests as well, or may be used, in line with suggestions by Pot (2013), as a second tier of assessment after an initial screening. It should be noted, however, that such tasks are not necessarily writing tasks. There might, where this is logistically possible, also be ways of examining this ability by a combination of oral and written presentation and discussion, though the latter may be supported by prior written analysis.

With regard to the above suggestion to consider placing more emphasis on the *organisation* of academic text, the test designers of the tests being discussed here already in some questions assess a sensitivity to this, as is evident from the following example:

> The relationship between the first five sentences of paragraph three and the final one is that of
>
> A. introduction – body – conclusion.
> B. problem – argument –conclusion.
> C. definition – comparison – ending.
> D. explanation – narrative – ending.

There may and will of course be various other possibilities to assess this more thoroughly in the creation of academic texts (cf. Pot, 2013). One reviewer has asked whether having more than a 'reading' test is really necessary, and whether one should even bother to investigate 'listening', 'writing', and other task types, since one does not know whether they will "function as adequately" as what are considered 'reading' tasks in the current tests. From a cognitive processing perspective, however, it has been argued that, building on Bachman and Palmer's (1996: 75f.) critique of a skills-based approach, we should rather start from a skills-neutral base (Weideman, 2013). Viewing academic language as intertwined with gathering, processing, and producing information (in whatever medium, or through whatever skill) is a much more appealing and appropriate approach, since that resonates strongly with what happens in real analytical work, or what has been called, by these same commentators, "Target Language Use" domains. Moreover, perhaps not everyone is aware of what has already gone into the design of tests of 'listening', and how well they function (Marais, 2009; Marais & Van Dyk, 2010).
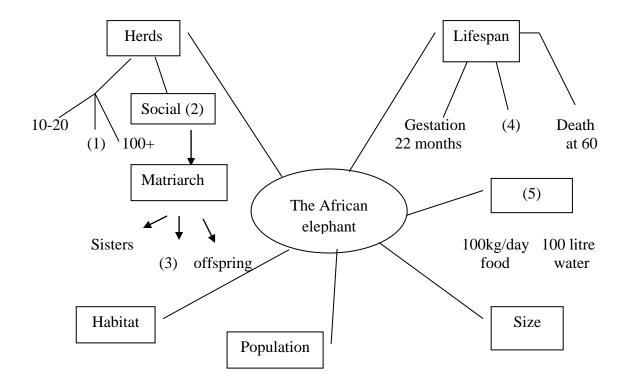
The proposal above to include visualisation of logical distinctions has already been considered, but has not yet been piloted or implemented. In Weideman (2006), there were several suggestions to this effect that were not followed up in actual test designs. The following possibility of how this might be assessed is adapted from Weideman (2007:16-22). The text may be presented to test takers either in spoken format (as in a lecture) or in written format:

> Listen to/read the following text, look at the diagram, and then answer the questions below:
>
> ***The African elephant***

Elephants essentially live in herds and may be found in groups of anything between 10 and 20 or up to 50 and more, and, in rare cases, in excess of 100. Their highly developed social structure, however, remains consistent throughout. Family units are led by a cow elephant, or matriarch, and a typical family herd consists of cow elephants of various ages: the leader, and her sisters, their daughters, and their offspring.

The lifespan of an elephant is long and often eventful. For one thing, elephants…

(1) The most appropriate choice here is
 (a) between 30 and 40
 (b) more than 40
 (c) more than 50
 (d) about 70 or 80

(2) The term that is used here is
 (a) development
 (b) structure
 (c) herd
 (d) family

(3) The word that fits here is
 (a) elephants
 (b) age groups
 (c) children
 (d) daughters

This is only a sample of what might be a longer item. Again, we should note that the actual production of such a visual analysis is also possible. The demands that items such as these suggested here place on those taking the test do indeed in some respects tap into components of the initial construct as well, but they are new in the sense that they also assess the capacities that have been identified in our analysis as either unarticulated or underrepresented.

The currently fashionable call for content and discipline specific tests is one that should be heeded (Weideman, 2013). Amongst the ICELDA tests, for example, there are already tests for prospective students of nursing, for disaster management students, and for financial planners in training. Such a differentiated set of tests makes the assessment more credible, both in the eyes of those who use their results and to those taking the tests. This is linked to the proposal to test the use of complex grammatical structures, prestigious expressions specific to a field, as well as abstract concepts and ideas. The current testing of grammar and test relations in one subtest provides a stimulus for what such questions might look like. Also related to these points are the adaptations that are suggested, in the final italicised bullet above, to the current writing tasks, or to their scoring, so that writing authoritatively is both clearly required and assessed. The modifications being suggested to the scoring rubric for such tasks in a recent dissertation (Pot, 2013) at the Rijksuniversiteit Groningen would be worth consideration. The same applies to the call to adapt one's presentation of an academic argument to a different audience, though this signals a high-level ability that may be more appropriate at senior postgraduate level.

Finally, modifications to existing task types or the creation of and experimentation with new ones are not the only adjustments possible to current tests. There remains the possibility of increasing the weighting both of the tasks and of the subtests that measure the heart of the construct, namely the expression of distinction-making activity that is characteristic of academic discourse. As one reviewer has correctly pointed out, we still have not sufficiently experimented with that potential, and that is one of the limitations of the current discussion: we simply need to try out the various possibilities outlined above, and find some empirical justification for such proposals in addition to the current conceptual and design arguments. We therefore acknowledge that these proposals have not been empirically tested, but wish to flag them for future attention.

Conclusion and recommendations for further research

This study and its predecessor (Patterson & Weideman, 2013) have attempted to shed more light on the question of what makes academic discourse unique and different from other types of discourse. It has shown how our cognitive (and, as one reviewer has pointed out, our meta-cognitive abilities) are mediated through (academic) language, since academic language is the vehicle for verbalising the logically qualified process, in articulating the analyses and thoughts we organise in order to interact analytically with others. These two studies have illustrated how an idea of academic discourse firstly underlies the construct or definition of academic literacy that forms the basis of tests of academic literacy, and secondly, how it may enrich our refinement of such definitions. Of course, the above modification of the test construct, as well as the preliminary definition of academic discourse, needs to be substantiated or contradicted, for example, by an examination of academic corpora, or by trialling new task types and items. This analysis could be used as a framework or starting point for such a study. In addition, appropriate task types have been identified above for use in academic literacy tests such as TALL, TAG, TALPS, and similar ones. This could also mean that current task types (Van Dyk & Weideman, 2004b) can be refined, modified, or augmented. If the typicality of academic discourse is derived from the unique distinction-making activity associated with the analytical or logical mode of experience, then task types that test this ability should take precedence. One technique of ensuring this is to weight them more heavily in the assessment.

A question that has not been answered yet is how affordable, sustainable, and feasible the implementation of such a definition will be in practice. Yet the suggestions made here allow theoretically defensible modifications to be made to the construct of a number of tests of academic literacy. These are generally high stakes tests and they are widely used in South Africa. Since no critical examination of this construct, which is now more than a decade old, has so far been undertaken, we hope that these proposals do not only come at an appropriate moment, but may also be useful to those responsible for developing further versions of these tests.

References

Bachman, L.F. & Palmer, A.S. 1996. *Language testing in practice: Designing and developing useful language tests*. Oxford: Oxford University Press.

Bailey, A.L. (Ed.). 2007. *The language demands of school: Putting academic English to the test.* New Haven: Yale University Press.

Becher, T. & Trowler, P.R. 2001. *Academic tribes and territories: Intellectual enquiry and the culture of disciplines.* Second edition. Buckingham: SRHE and Open University Press.

Beekman, L., Dube, C. & Underhill, J. 2011. *Academic literacy.* Cape Town: Juta.

Bhatia, V.J. 2002. Applied genre analysis: Analytical advances and pedagogical procedures. In Johns, A.M. (Ed.) *Genre in the classroom: Multiple perspectives*. Mahwah: Lawrence Erlbaum Associates. pp. 279-284.

Blanton, L.L. 1994. Discourse, artifacts, and the Ozarks: Understanding academic literacy. *Journal of Second Language Writing* 3(1):1-16. Reprinted in Zamel, V. & Spack, R. (Eds.) 1998. *Negotiating academic literacies: Teaching and learning across languages and cultures.* New Jersey: Lawrence Erlbaum Associates. pp. 219-235.

Blue, G. (Ed.) 2003. *Developing academic literacy.* Bern: Peter Lang.

Chafe, W. & Danielewicz, J. M. 1987. Properties of spoken and written language. In Horowitz, R & Samuels, S.J. (Eds.) *Comprehending oral and written language*. San Diego: Academic Press. pp. 83–113.

Cliff, A.F. & Hanslo, M. 2005. The use of 'alternate' assessments as contributors to processes for selecting applicants to health sciences' faculties. Paper read at the Europe Conference for Medical Education, Amsterdam.

Cliff, A.F., Yeld, N. & Hanslo, M. 2006. Assessing the academic literacy skills of entry-level students, using the Placement Test in English for Educational Purposes (PTEEP). Mimeographed MS.

Flower, L. 1990. Negotiating academic discourse. In Flower, L., Stein, V., Ackerman, J., Kantz, M., McCormick, K., & Peck, W.C. (Eds.) *Reading-to-write: Exploring a cognitive and social process.* Oxford: Oxford University Press. pp. 221-252.

Gunnarsson, B. 2009. *Professional discourse*. London: Continuum.

Halliday, M.A.K. 1978. *Language as social semiotic: The social interpretation of language and meaning.* London: Edward Arnold.

Halliday, M.A.K. 2002. *Linguistic studies of text and discourse.* Webster, J.J. (Ed.) London: Continuum.

Halliday, M.A.K. 2004. *An introduction to functional grammar*. Third edition. Revised by C.M.I.M. Matthiessen. London: Edward Arnold.

Halliday, M.A.K. & Martin, J.R. 1993. *Writing science: Literacy and discursive power*. London: Falmer.

Hounsell, D. 1988. Towards an anatomy of academic discourse: Meaning and context in the undergraduate essay. In Saljo, R (Ed.) *The written world: Studies in literate thought and action*. Springer-Verlag: Berlin. pp. 161-177.

Hyland, K. 2011. Academic discourse. In Hyland, K. & Paltridge, B. (Eds.) *The continuum companion to discourse analysis*. London: Continuum. pp. 171-184.

Hyland, K. & Bondi, M. (Eds.) 2006. *Academic discourse across disciplines*. Bern: Peter Lang.

Hyland, K. & Tse, P. 2004. Metadiscourse in academic writing: A reappraisal. *Applied Linguistics* 25(2):156–177.

ICELDA (Inter-Institutional Centre for Language Development and Assessment). 2013. [Online]. Available http://icelda.sun.ac.za/. Accessed 16 March 2013.

Johns, A.M. 1997. *Text, role, and context: Developing academic literacies*. Cambridge: Cambridge University Press.

Lea, M.R. 2008. Academic literacies in theory and practice. In Street, B.V. & Hornberger, N.H. (Eds.), *Encyclopedia of language and education*. Second edition. Volume 2. New York: Springer Science + Business Media, LLC. pp. 227-238.

Lillis, T. & Scott, M. 2007. Defining academic literacies research: Issues of epistemology, ideology and strategy. *Journal of Applied Linguistics* 4(1):5-32.

Livnat, Z. 2012. *Dialogue, science and academic writing*. Amsterdam: John Benjamins Publishing Company.

Marais, F. 2009. An investigation into the significance of listening proficiency in the assessment of academic literacy levels at Stellenbosch University. Unpublished M.Phil thesis. Stellenbosch University.

Marais, F. & Van Dyk, T. 2010. Put listening to the test: An aid to decision making in language placement. *Per Linguam* 26(2):1-19.

Ong, W. J. 2002. *Orality and literacy: The technologizing of the word*. New York: Routledge.

Patterson, R. & Weideman, A. 2013. The typicality of academic discourse and its relevance for constructs of academic literacy. Forthcoming in *SAALT Journal for Language Teaching*.

Pot, A. 2013. Diagnosing academic language ability: An analysis of TALPS. Unpublished MA dissertation. Rijksuniversiteit Groningen.

Reznitskaya,A., Anderson, R.C., McNurlen, B., Nguyen-Jahiel, K., Archodidou, A., & Kim, S. 2001. Influence of oral discussion on written argument. *Discourse Processes* 32(2&3):155–175.

Schleppegrell, M. J. 2001. Linguistic features of the language of schooling. *Linguistics and Education* 12(4):431–459.

Snow, C.E. & Uccelli, P. 2009. The challenge of academic language. In Olson, D.R. & Torrance, N. (Eds.) *The Cambridge handbook of literacy*. Cambridge: Cambridge University Press. pp. 112-133.

Spack, R. 1997. The acquisition of academic literacy in a second language: A longitudinal study. *Written Communication* 14(1):3-62.

Strauss. D.F.M. 2009. *Philosophy: Discipline of the disciplines*. Grand Rapids, MI: Paideia Press.

Street, B. 1984. *Literacy in theory and practice*. Cambridge: University Press.

Suomela-Salmi, E. & Dervin, F. (Eds.) 2009. *Cross-linguistic and cross-cultural perspectives on academic discourse.* Amsterdam: John Benjamins Publishing Company.

Van der Walt, J.L. & Steyn, H.S. jnr. 2007. Pragmatic validation of a test of academic literacy at tertiary level. *Ensovoort* 11(2):138-153.

Van Dyk, T. & Weideman, A. 2004a. Switching constructs: On the selection of an appropriate blueprint for academic literacy assessment. *SAALT Journal for Language Teaching* 38(1):1-13.

Van Dyk, T. & Weideman, A. 2004b. Finding the right measure: From blueprint to specification to item type. *SAALT Journal for Language Teaching* 38(1):15-24.

Weideman, A. 2006. Assessing academic literacy in a task-based approach. *Language Matters* 37(1):81-101.

Weideman, A. 2007. *Academic literacy: Prepare to learn.* Second edition. Pretoria: Van Schaik Publishers.

Weideman, A. 2011. Academic literacy tests: Design, development, piloting and refinement. *SAALT Journal for Language Teaching* 45(2):100-113.

Weideman, A. 2013. Academic literacy interventions: What are we not yet doing, or not yet doing right? Forthcoming in *SAALT Journal for Language Teaching*.

Weideman, A. & Van Dyk, T. (Eds.). 2013. *Academic literacy: Test your competence*. MS.

Yeld, N. *et al*. 2000. The construct of the academic literacy test (PTEEP). Mimeograph. Cape Town: Alternative Admissions Research Project, University of Cape Town.