Per Linguam 2017 33(1):25-53
http://dx.doi.org/10.5785/33-1-698

Journal Home Page:
http://perlinguam.journals.ac.za

Per Linguam

A Journal for Language Learning
Tydskrif vir Taalaanleer

THE INITIAL VALIDATION OF A TEST OF EMERGENT LITERACY

Sophie Gruhn, University of the Free State, and Radboud University, The Netherlands
Albert Weideman, University of the Free State, South Africa

In addition to a large body of evidence supporting the relevance of the home environment for literacy development, tests of cognitive-based skills are commonly employed to predict literacy acquisition. The Test of Emergent Literacy (TEL) has been designed to account for the early interaction of children with their literate environment as predictor of prospective literacy achievement at school, for which there is a scarcity of appropriate language assessments. In contrast to most conventional literacy tests, the TEL bases its construct on a communicative perspective on language. The development of the first English draft of the TEL involved the production of an assessment of emergent literacy at preschool level. The principles of responsible test design as articulated by Weideman (2014) served as a primary framework for the design and initial validation of the TEL. The evaluation of eight experts and the results of the pilot of several subtasks with 54 South African, English-medium preschool learners (aged five to six years) whose home language is not English, support the theoretical justification of the design, its high level of reliability, and the effectiveness of the instrument, besides the social requirements for tests (fairness, utility, efficiency) to which the TEL also conforms. Potential test refinements may further increase the reliability, effectiveness, and efficiency of the test.

BACKGROUND AND CONTEXT

Language and communicative skills are essential for children's educational success. Emergent literacy skills especially build the foundation for subsequent academic achievement (e.g. Catts, Fey, Zhang & Tomblin, 2001; Duncan et al., 2007). That is one reason why developmental problems should be diagnosed as early as possible: to introduce appropriate support, even at preschool level (Jordaan, 2011; Shanahan, 2008; Washington, 2001). Moreover, multilingual societies in particular have a strong need for the assessment of emergent literacy abilities at preschool level. Children who speak a non-standard variety of, or have limited abilities in, the language used in education, are at higher risk of literacy underachievement (Snow, Burns & Griffin, 1998: 15-40).

Even if the 11 official languages in South Africa are acknowledged as possible languages of instruction in foundational education, many children receive education in a language other than their first or home language (Bloch, 2009; Fleisch, 2008; Jordaan, 2011; South Africa, 2012). That additional language is often English, the default language of learning especially in urban classrooms with speakers of many different home languages. Furthermore, parents' perception is that placing their children in English schools increases their future academic chances, since higher education in South Africa is now conducted mostly in English. In a study conducted by Jordaan (2011), vocabulary knowledge of English additional language learners was lower than that of English first language learners in Grade 1. This indicates a higher risk of academic failure for English additional language learners in English-medium

education, owing to the high relevance of vocabulary for literacy acquisition (Jordaan, 2011). In addition, 48% of African-American children and 45% of children with a Hispanic migrant background in the United States failed in 2015 to achieve basic reading levels in Standard American English in Grade 4, compared to 21% of their white peers (The Nation's Report Card, 2015). Similarly in 2011, 12.5% of children without a migration background in Germany reached the highest reading proficiency level in the *Progress in International Reading Literacy Study*, whereas only 4.0% of children with a migration background achieved the same level (Schwippert, Wendt & Tarelli, 2012: 200). There is therefore no doubt that the early identification of emergent literacy abilities has wide relevance globally.

Recent approaches to emergent literacy consider literacy acquisition as a 'process by which children naturally acquire literacy through a sequence of oral language and literacy experiences that normally occur in a literate society' (Foorman, Anthony, Seals & Mouzaki, 2002: 175). Thus, it is assumed that children start to acquire literacy directly after birth due to environmental experiences and that 'their early language, their scribbles, their exploration of books, their interest in environmental print, their interactions with technology' are part of the literacy learning process (Makin & Whitehead, 2004: 10). Furthermore, literacy acquisition happens in the form of social practice and communication within the environment and communities in which children find themselves (Makin & Whitehead, 2004: 10).

According to Snow et al., 'many experiences contribute to reading development without being prerequisite to it' (1998: vii) and it 'is critical to distinguish predictors from causes or explanations of reading difficulties' (1998: 100). Thus, as suggested by Snow et al. (1998: 103-134), the risk factors of literacy underachievement which are intrinsic to children and factors which originate from their environment are distinguished in this study. Factors which could explain or directly cause literacy underachievement are skills which are foundational for literacy acquisition, such as phonological awareness, phonetic decoding, and working memory capacities (Brandenburger & Klemenz, 2009: 7-37; Snow et al., 1998: 103-134). A meta-analysis based on 234 studies identifying emergent literacy skills of children up to the age of six years discovered moderate to strong correlations between the literacy pre-conditions of print knowledge (e.g. alphabet knowledge, print concepts), phonological processing (phonological awareness, phonological working memory, phonological decoding speed), as well as oral language (vocabulary size, syntax, grammar, word knowledge) and the literacy abilities of word decoding, spelling and reading comprehension (Lonigan, Schatschneider & Westberg, 2008). That is why print knowledge, phonological processing, and oral language are considered as key pre-conditional skills for prospective literacy achievement (e.g. Lonigan, 2006; Storch & Whitehurst, 2002).

However, other risk factors might be strongly correlated with literacy underachievement without leading inevitably to literacy problems (Snow et al., 1998: 100-134). For example, several studies indicate that the literacy environment of children in terms of literacy practices and activities at home (storytelling, library visits, exposure to books), parental engagement in literacy teaching (shared book reading strategies, support in literacy acquisition), and parental literacy habits can influence the literacy development of children, which is often related to their socioeconomic background (Burgess, Hecht & Lonigan, 2002; Sénéchal & LeFevre, 2002; Weigel, Martin & Bennett, 2006). Moreover, literacy experiences are culturally sensitive because the role of literacy can vary between different cultural and ethnic groups (Baker, 2011: 329). In multilingual and multicultural societies the purpose of reading, demand for academic achievement, literacy material available at home, or parental support in

the literacy acquisition which children experience at home may differ from literacy instruction at school and can therefore cause an educational disadvantage for children from certain groups (Baker, 2011: 329; Hancock, 2006; Li, 2006; Washington, 2001). The differences in the home literacy environment of African American children in the United States, in particular the shared book reading strategies and literacy teaching practices applied by their mothers, were related to the language and literacy skills which the children developed (Britto, Brooks-Gunn & Griffin, 2006; Roberts, Jurgens & Burchinal, 2005). Furthermore, the alignment of the home literacy practice of Hispanic immigrants in the United States with their host community expectations affected literacy achievement (Gillanders & Jiménez, 2004; Reese & Gallimore, 2000). Especially for children from varied backgrounds, the consideration of their literacy experiences at home can be relevant to identify the risk of literacy underachievement. That is why this study focuses on the identification of these risk factors.

In these respects emergent literacy is the ability to begin to notice, understand, interpret, and employ signs in order make meaning and express oneself in interaction with others, with a view to using that ability eventually in an educational or instructional context, or for learning purposes. In that sense it is more than 'language' as conventionally defined and, though related to listening, speaking, reading, and writing ability, much more than mastering merely those traditionally defined 'skills' (Kramsch, 2008; Van Lier, 2008).

An officially sanctioned multilingual setting for education leads to a need for language assessment that is equivalent in terms of the measurement across several languages (Hoff, 2013; Scharff Rethfeldt, 2013: 133-134). This study tackles a possible solution to the need for fair emergent literacy assessment across languages by focusing first on the articulation of a construct for emergent literacy as set out in preliminary fashion in the preceding paragraph, as well as its operationalisation for the purposes of test design. To make progress with the solution, a big initial challenge has been to align the alternative perspective on language assessment it entails with the design of such a test. The size of the challenge comes into focus when we note that perspectives on literacy acquisition traditionally refer only to conventional reading or writing processes, and consider the development of the pre-conditional skills of literacy acquisition as emergent literacy. Such a view may be characterised as a 'readiness' or 'skills' approach (Baker, 2011: 313; Makin & Whitehead, 2004: 9-10). Both Suchodoletz (2005: 218) and Lonigan, Allan and Lerner (2011) in fact observe that emergent literacy tests focus mostly on the assessment of pre-conditional skills for literacy acquisition. Moreover, it seems that many existing diagnostic instruments assess only a limited range of emergent literacy components, neglecting the influence of the environment on literacy development, considering these abilities independently from each other, and locating them in non-communicative settings (Van Dyk & Weideman, 2004; Weideman, 2009a: 39 ff., 2011b: 60-65). A restrictive perspective on language, which equates language ability with knowledge of sound, vocabulary, form, and meaning, is no longer current, and has been replaced by a more open perspective on language, which describes language as a tool of communication instead of simply as the expression and mastery of structures. According to this view, language is a social instrument to mediate and negotiate human interaction in a specific social context (Van Dyk & Weideman, 2004; Weideman, 2009a: 39 ff., 2011b: 60-65). Therefore, there is a need for a new definition of the construct for an emergent literacy test, which takes as its starting point an open and communicative perspective on what constitutes language, and considers the experiences of children in their literate environment in line with more recent approaches to emergent literacy.

AIMS

This study took as its point of departure the need for equivalent tests of emergent literacy in several languages in a multilingual setting. In societies with several officially recognised languages of education, such as South Africa, the question of educational fairness is, in addition to a number of other factors, dependent on the equivalence of language assessments (Kunnan, 2000; South Africa, 2012). *Equivalence* refers here to language assessments with equal levels of measurement in various languages or tests that provide comparable results if administered to speakers of different languages; in other words, a test that is unbiased against different groups of examinees (Koch, 2009; Kunnan, 2000). In order to take an initial step towards an equivalent set of emergent literacy tests in the 11 official South African languages offered as home languages at school (South Africa, 2012), a first English draft was designed. Ideally, this test will be the framework for its prospective equivalents in several languages and will later on also be relevant for other multilingual education contexts.

This study deals with the design of a Test of Emergent Literacy (TEL) that aims to identify, at preschool level, the risk of literacy underachievement at school. First, a construct of emergent literacy was defined, several tasks measuring the construct components were formulated, and the first English draft of the TEL was initially validated. This included the piloting of five subtasks of the TEL and several evaluations by a panel of experts. In contrast to many existing tests of emergent literacy, the TEL bases its construct on an open and communicative perspective on language, which includes insights from more recent approaches to emergent literacy into the experiences of children in their literate environment. The test was administered to South African five- to six-year-old learners in English-medium preschools. The early identification of risk for literacy underachievement enables early intervention and is therefore foundational for the future educational success of children everywhere (Jordaan, 2011; Shanahan, 2008; Washington, 2001).

The principles of responsible test design articulated by Weideman (2012, 2014) served as a primary framework for the design and initial validation of the TEL. The alignment of the TEL with this framework of responsible design was evaluated. From this framework the foundational, constitutive concepts of a test design could be derived, such as validity and reliability, which are conventional, technically stamped design criteria for tests (Weideman, 2009b). The leading technical function is also linked to the social and other dimensions of the designed instrument, which yields regulative ideas for test design, relating to their ease of implementation, utility, public defensibility, fairness, and the alignment, for example, between testing and teaching. Since validation is a long-term process of evidence collection (Fulcher & Davidson, 2007: 159-160), this study initially evaluated the alignment of the TEL only with some constitutive principles of responsible test design, specifically principles such as reliability and validity, and with a selection of regulative conditions, such as the utility and fairness of the test (Weideman, 2009b). Additional design principles require evaluation over a longer term in the process of a more comprehensive test validation, and were thus not considered in this exploratory study. We need to emphasise this point, since there should be no misunderstanding about the preliminary and tentative undertaking that this paper reports on. There is no question, therefore, of the TEL being (or aiming to be) a high-stakes test; if the literature we have considered above is correct – and we found no sound reason to doubt the conclusions we referred to – then we are breaking new ground and exploring territory that is largely uncharted. What is more, we are not yet at the end of the process of developing and

refining the TEL. So, after presenting the results of this initial validation, the refinements that might be made to the first draft of the test are also discussed.

The aim of this study was therefore to formulate and employ a construct of emergent literacy at preschool level (age five to six years) based on a communicative perspective on language. Furthermore, a language test that takes a communicative perspective on language to measure emergent literacy was proposed. Finally, the language test design was initially validated by evaluating the alignment of the test with the following constitutive and regulative principles of responsible test design, all of which are further discussed below:

- Systematically integrate multiple sets of evidence in arguing for the validity of a test.
- Ensure that the measurements obtained are adequately consistent (also across time).
- Ensure effective measurement by using a defensibly adequate instrument.
- Have an appropriately and adequately differentiated test.
- Mount a theoretical defence of what is tested in the most current terms.
- Make sure that the test yields interpretable and meaningful results.
- Obtain the test results efficiently and ensure that they are useful.
- Value the integrity of the test; make no compromises of quality that will undermine its status as an instrument that is fair to everyone.

THE DESIGN PROCESS OF THE TEST OF EMERGENT LITERACY

The design process of the TEL conformed broadly to the test design cycle proposed by Fulcher (2010: 94), and the design phases and principles of responsible test design formulated by Weideman (2012, 2014) that have been referred to above. The methodology followed the steps conducted in a previous study on the design of the Test of Early Academic Literacy (TEAL) for eight- to nine-year old learners undertaken by Steyn (2014), and that has, for all intents and purposes, been successful both in its administration and in responses received from peers in the sphere of language teaching and assessment when its design and empirical properties were described and discussed.

The construct of emergent literacy

The reason and purpose of a test should be clearly articulated from the start, because it leads to decisions about how the test will have to be designed (Fulcher, 2010: 94-102). The TEL aims at the early identification of the risk of literacy underachievement at school, and targets pre-school learners in an age range from five to six years. The definition of the construct of emergent literacy describes all the abilities that the proposed test is going to measure (Fulcher, 2010: 94-102). The construct of emergent literacy articulated here focuses on factors that put learners at risk of impaired literacy development at school. In these respects, the test focuses on factors which indicate a higher risk of prospective literacy underachievement that originates mainly in the literate environment of children (Snow et al., 1998: 100-135). The skills listed in the Curriculum and Assessment Policy Statement (CAPS, Department of Basic Education, 2011: 23-30) and the list of accomplishments for successful pre-school learners defined by Snow et al. (1998: 80) are relevant in identifying the components of emergent literacy. Further relevant components of emergent literacy, as previously described by e.g. Foorman et al. (2002: 177-178) and Makin and Whitehead (2004), are also brought into play. Based on these lists, the definition of *early academic literacy*, as articulated by Steyn (2014: 23-24) for eight- to nine-year-old learners, was

adjusted in order to align with the proficiency level of the five- to six-year-old target group of the TEL, because academic literacy is considered as the prospective aim of the acquisition process at school.

We have already noted above that the construct of emergent literacy comprises the ability to begin to notice, understand, interpret, and employ signs in order make meaning and express oneself in interaction with others, with a view to eventually using that ability in an educational or instructional context, or for learning purposes, and that it goes beyond conventional definitions of language ability. The next step is determining how to operationalise such a definition. The following description of the components of emergent literacy has been derived from this process and from the further refinement proposed by a panel of experts that helped to review its content. Preschool learners in the age range of five to six years are able at an appropriate level to:

a) understand and use a range of vocabulary in context for various communicative functions, such as retelling, comparing, describing, and expressing like or dislike;
b) understand the information provided in a text, based on the meaning of words and relation and order among words, and understand the basic structure of a text;
c) distinguish between different text types, such as instructions, reports, and stories in pretended reading and writing;
d) interpret, use, link, and produce information presented in graphic or visual format, as in pictures and illustrations;
e) distinguish between essential and non-essential information, cause and effect, and make predictions based on this information and prior experience;
f) see sequence and order, recount events or instructions, retell a story, and predict what will happen next;
g) know what counts as evidence for an argument, extrapolate from information by making inferences and conclusions, apply the information or its implications to other cases than the one at hand, and apply the information to express an opinion;
h) understand the communicative function of written and printed language, and understand the difference between pretended reading and writing and conventional reading and writing; understand how to use literacy material and how to proceed in reading and writing;
i) understand and use morphological and syntactic features, function words, nouns, verbs, and adjectives to express temporal, local, causal, and modal relations;
j) mimic writing in different text types, invent own script to convey meaning, and copy and write letters, words and names;
k) pretend to read different types of text, speak with a ‘reading voice’ and produce ‘book language’ with the use of a typical register of written language, and recognise the written form of frequently seen words and names; and
l) be inherently interested in literacy in various forms (playing with literacy in mimicking reading and writing with different text types, asking questions to extend own knowledge of literacy).

It should be clear from the above that the use of the word ‘text’ as a unit of language includes not merely its conventional written or printed form, but also spoken language forms and other interactional events.

The task and item specifications of the Test of Emergent Literacy

The further operationalisation of the construct into tasks and items that measure the proposed components of emergent literacy was the next step in the design of the TEL (Fulcher, 2010: 94). To be consistent with the earlier TEAL, some of the tasks specified by Steyn (2014: 24-25) that were relevant were adapted for an earlier stage in literacy development, that of five- to six-year-old learners. Additionally, further subtests were specifically designed for the TEL to test the abilities of emergent reading, emergent writing, literacy interest, and understanding of the function and concept of print. The TEL consists of eight subtests, as presented in Table 1, in order to test all components of the construct of emergent literacy as set out above. For further information, the alignment of the task types of the TEL with the components of the construct of emergent literacy, the CAPS (Department of Basic Education, 2011: 23-30), and learners' intended accomplishments at preschool level (as articulated by Snow et al., 1998: 80) is attached as an Addendum. Where possible, the scoring of some tasks was adjusted to multiple-choice format, because it makes the administration and data analysis easier, and the scoring more objective (Hughes, 2003: 76-77). Answer keys were randomly distributed to reduce effects of memory capacity and guessing behaviour. The initial test draft contained approximately 50% more items than the final test, because the refinement stage led to the exclusion of certain tasks and items. The initial draft test therefore had a longer administration time than the envisaged final format of the test. The test was separated into two parts, one suitable for group assessments, and the other conductible individually.

1. Scrambled picture story
The learners have to listen to a story, sort a sequence of pictures in the correct order, and answer comprehension questions.

2. Organising information
The learners have to solve picture puzzles. They need to identify the picture which fits or does not fit in the presented puzzle.

3. Visual vocabulary
The learners have to recognise signs and logos of different brands and products which are frequently encountered in their environment. From a collection of four pictures per item, they have to find the odd one.

4. Text type and function of script
The learners are introduced to different text types (e.g. a note, a menu, an advertisement). They have to determine which text type is suitable to the communicative needs of certain situations in daily life.

5. Emergent writing
The learners have to pretend to write words which are considered important to them (e.g. their name, a friend's name, their parents' telephone number).

6. Acting out
The learners have to listen to tasks given by the teacher and have to act them out. Additionally, they should conduct the tasks only if they hear a certain phrase.

7. Where does it belong?
The learners have to identify in which room in a house certain items belong. They have to name the object and attempt to write down the word.

8. Emergent reading
The learners have to pretend to read from different text types (a recipe, a weather report, and a menu).

Table 1: Sections of the Test of Emergent Literacy

Section	**Assessment**	**Format**	**Items**	**Component of the construct measured**
Scrambled picture story	Group	Multiple choice	1-15	a, b, d, e, f, g
Organising information	Group	Multiple choice	16-21	d, e, g
Visual vocabulary	Group	Multiple choice	22-31	k
Text type and function of script	Group	Multiple choice	32-38	c, h, l
Emergent writing	Group	Scaled scoring	39-51	c, j, h, l
Acting out	Individual	Multiple choice, scaled scoring	52-57	a, b, e, i
Where does it belong?	Individual	Scaled scoring	58-68	a, b, e, g, j
Emergent reading	Individual	Scaled scoring	69-73	c, k, h, l

A choice of framework for the initial validation

The principles of responsible test design formulated by Weideman (2012, 2014) provided the framework for the initial validation of the TEL. This framework enabled the designers to evaluate the test in terms of its correspondence with selected principles of responsible test design (Weideman, 2012, 2014). Similar to other studies, the validation process was based on a set of panel discussions and the results of a test pilot (e.g. Rambiritch, 2013; Steyn, 2012; 2014; Van der Walt & Steyn, 2007).

Panel discussion

The construct, the whole test, and single tasks and items were reviewed by experts in the field of language test design and early childhood education, with the help of an online questionnaire designed with surveymonkey.com, and in two personal discussions, one prior to and one after the pilot stage. Responses to the online survey were collected from 10 experts (9 female, 1 male), mainly from South Africa (N = 8) and with others from Germany and the Netherlands. Further details about the participants are summarised in Table 2. Two responses were incomplete and were excluded from the analysis. A panel of five experts reviewed the responses to the questionnaire in order to agree on refinements.

Table 2: Participant information (N = 8) for the online evaluation of the Test of Emergent Literacy

Criterion	**Range**	**Mean (SD)**
Age	23 to 67 years	34.6 years (17.4 years)
Education	Postgraduate degree or higher (N = 6) Bachelor's degree (N = 2)	
Profession	Language test design (N = 7) Teaching (N = 4)	
Practical work experience	0 to 47 years	10.6 years (16.8 years)

Pilot stage

With the approval of the Free State provincial education department and, through the school, the consent of the parents, the refined test version was piloted on 57 learners at three schools in Bloemfontein, South Africa. Three participants were excluded from the data analysis because they could not complete the test session. Due to the long duration of administering the whole first draft of the TEL in this early design stage, only the tasks which were conductible in a group (tasks 1 to 5) were assessed in order to reach a sufficient sample size. The test session took 1.5 hours and was conducted by one or two administrators on groups of four to six learners. Due to the young age of the target group, the test administration followed certain regulations. The administrators supported each learner individually in answering the multiple choice questions, and repetition of tasks and items was not limited. The answer options were presented in auditory form by the administrator, as well as visually as a choice of a large picture or a letter. On the answer sheet, the answer options were represented as a small picture or letter and could be marked by the learner accordingly. An empty sheet with a window frame was used to cover the questions that were not of current concern in the test session to help orientate students. After 45 minutes the learners took a 10-minute break. Though it is possible that they did not fully understand the option, the learners were nonetheless informed that they had the chance to stop the test session at any time that they felt uncomfortable, and that participation was their own decision.

The participants, with an age range from five to six years, were attending an English preschool. Further details are summarised in Table 3. Mainly non-English first language speakers were included in the sample, which is frequently the case at English-medium pre-schools in urban environments, owing to a trend of parents with African home languages to send their children to schools with English as language of instruction (Bloch, 2009; Fleisch, 2008; Jordaan, 2011). It should be noted, however, that more than one home or first language is often present in these households. In the present case, that was the case for a substantial 20% of the learners. What is more, it is likely that the commitment to English is so high that in some cases where English is given as the home language, it is (or was) not always the first language of the parents, but merely the language to which the parents and the household had shifted.

Table 3: Participant information from the first pilot of the Test of Emergent Literacy

Criterion	**Value**	
Participants	N = 54	
Gender	Male N = 31 Female N = 23	
Mean age (SD)	5.7 years (4.2 months)	
Spoken home languages	Sesotho English Setswana Afrikaans Xhosa	N = 35 N = 13 N = 9 N = 5 N = 3
Number of home languages per participant	One home language Two home languages	N = 43 N = 11

EVALUATION OF THE TEST IN TERMS OF THE PRINCIPLES OF RESPONSIBLE TEST DESIGN

The initial validation argument presented here is based on various statistical analyses of the pilot results, a qualitative intro- and retrospection on the process of test administration, and the evaluation of the test by a panel of experts. Central to this discussion is the correspondence of the TEL with selected principles of responsible test design (Weideman, 2012, 2014), as outlined above in the 'Aims' section. Since expert opinions might not be compatible with each other (Alderson, Clapham & Wall, 1995: 175), the argumentation focuses on their major points of consent and the alignment of these with the empirical evidence. Tasks in multiple-choice format were analysed with Iteman 4.2 and TiaPlus (task 1-4) (CITO, 2005; Guyer & Thompson, 2011). Tasks with scaled scoring (task 5) were investigated separately with SPSS 21.0. The analysis was based on Classical Test Theory, which is usually applied to small sample sizes, as in the present study, and is therefore limited in the generalisability or estimation of the test taker's performance (Green, 2013: xii-xiii). Furthermore, the limited sample size in this study allows only a first insight into the test properties (CITO, 2005; Green, 2013: xii-xiii).

The first design principle, *Systematically integrate multiple sets of evidence in arguing for the validity of a test*, is confirmed because the validation process, as has been done in several other studies (e.g. Rambiritch, 2013; Van der Walt & Steyn, 2007), was based on qualitative and quantitative evidence, which were reasonably combined to evaluate the TEL. Since this study concerns only the initial validation of the TEL, further data are necessary in order to evaluate its alignment with some of the remaining principles of responsible test design (Weideman, 2012, 2014).

Adherence to the next principle of responsible test design, *Ensure that the measurements obtained are adequately consistent, also across time*, is also confirmed. As investigated with SPSS 21.0 and TiaPlus, a Cronbach's alpha (alpha) of 0.83 for the overall test and a greatest lower bound (GLB) of around 0.7 for the subtasks indicate a high reliability of the TEL (CITO, 2005: 18; Pallant, 2001: 87), as presented in Table 4. Despite a low alpha for tasks 1, 2 and 4, the GLB indicates a high reliability for subtasks (Lowie & Seton, 2013: 58, 78; Pallant, 2001: 87). Since the GLB is a better measure for tests of multidimensional abilities, such as in this study, we consider it as the better measure (e.g. CITO, 2005: 18; Sijtsma,

2009; Van der Slik & Weideman, 2005). This is a remarkable number to reach with a small sample and relatively few test items (CITO, 2005: 18; Green, 2013: 39). However, the test-retest analysis to evaluate the consistency over time is outstanding (Fulcher & Davidson, 2007: 105). Refinements of the test could consider the deletion of items which reduce the overall reliability of the test.

Table 4: Reliability statistics of the Test of Emergent Literacy

Score	**Alpha**	**GLB**	**SEM**
Tasks 1 to 5	0.83		
Tasks 1 to 4	0.77	0.98	2.87
Task 1 Scrambled picture story	0.22	0.71	1.87
Task 2 Organising information	0.38	0.60	1.31
Task 3 Visual vocabulary	0.79	0.89	1.32
Task 4 Text type and function of script	0.50	0.72	1.17
Task 5 Emergent writing	0.81		

Legend: Alpha = Cronbach's alpha; GLB = greatest lower bound; SEM = standardised error of measurement

In order to *Ensure effective measurement by using a defensibly adequate instrument*, the measures of item discrimination and item difficulty need to be within appropriate ranges, as set out in Table 5. The same values were used in other studies on test validation (e.g. Rambiritch, 2013; Van der Walt & Steyn, 2007). The results of the item performance for the multiple-choice tasks 1 to 4 were examined with TiaPlus and Iteman 4.2. Since scaled scoring was used for task 5, it was analysed separately with SPSS 21.0. The results for task 5 require cautious interpretation because the scoring of this task appeared to be subjective, which could have influenced the results; thus, refinements to the scoring directives may be required.

Table 5: Desired ranges for the test item statistics per subtask of the Test of Emergent Literacy

Value	**Tasks**	**Desired range**
Item discrimination (Pearson item point-biserial correlation or corrected item-total correlation)	All tasks	Above 0.2
Item difficulty (facility values or percent correct per item)		
Multiple-choice questions with three answer options	Tasks 1, 2, 4	0.15-0.62
Multiple-choice questions with four answer options	Task 3	0.15-0.70
Questions with scaled scoring	Task 5	0.15-0.84

The statistical analysis of the pilot results supports an appropriate mean item differentiation (Pearson item point-biserial correlation, corrected item-total correlation) and mean difficulty level (facility value *P*, percentage correct answers per item), as presented in Table 6 for tasks 1 to 4 and Table 7 for task 5. The identified values lie within the ranges, as indicated in Table 5. Thus, the effectiveness of the TEL is deemed to be fulfilled at least in respect of these empirical measures. Overall, the single items of the TEL also show an appropriate difficulty level. However, the TEL has the potential to reach an even higher level of effectiveness if items which show rather weak item discrimination are deleted or refined.

Table 6: Descriptive statistics for the tasks 1 to 4 of the Test of Emergent Literacy

Score	**Marks**	**Mean**	**SD**	**Min score**	**Max score**	**Mean *P***	**Mean *rpbis***
Task 1 to 4	38	17.96	5.95	8	29	0.46	0.24
Task 1 Scrambled picture story	15	7.87	2.13	4	14	0.43	0.13
Task 2 Organising information	6	2.46	1.44	0	6	0.41	0.19
Task 3 Visual vocabulary	10	4.56	2.86	0	10	0.46	0.44
Task 4 Text type and function of script	7	4.07	1.66	1	7	0.58	0.26

Legend: *P* = item difficulty; *rpbis* = Pearson item point-biserial correlation

Table 7: Descriptive statistics for task 5 of the Test of Emergent Literacy: Emergent writing

Score	**Value**
Marks	19 (1 or 2 marks per item)
Mean total score	16.85
SD	2.8
Min score	5
Max score	19
Mean of the corrected item-total correlation	0.53
Mean of the percent correct marks for items	0.74

In the first of the two panel discussions, the expert reviewers confirmed that the TEL fulfils the principle to *Have an appropriately and adequately differentiated test*. That criterion relates to the adequate range of subtests or subtasks that the test contains, as well as their appropriateness. An empirical warrant for the differentiation observed was that the intercorrelations between the subtasks lie in the desired range of between 0.2 and 0.5 (Table 8), as the TiaPlus and SPSS 21.0 analyses indicate. That range indicates that all tasks seem to measure a different component of the construct (Alderson et al., 1995: 184). That task 2 has more limited subtask intercorrelations may be an indication that it assesses a slightly different component of emergent literacy than the others. Though the correlation between each task and the overall test did not always meet the requirements of 0.7, that could be related either to the multidimensionality of the construct of emergent literacy (Alderson et al., 1995: 184; Van der Slik & Weideman, 2005: 30-31) or to the relatively small sample. Moreover, the factor analysis conducted with TiaPlus, as presented in Figure 1, supports the presence of an *appropriate and adequate test differentiation*. The dimensionality of items of task 1 to 4 in the TEL focused on the upper and lower quadrant on the right-hand side of the scatterplot, with only a few outliers, especially from task 1 (items 3, 10, 12, 34), all of which indicates an acceptable homogeneity for a test measuring a multidimensional ability, such as the TEL does (CITO, 2005: 19; Van der Slik & Weideman, 2005: 30-31).

Table 8: Subtask intercorrelations for the Test of Emergent Literacy

Domain	Total test	Task 1	Task 2	Task 3	Task 4
Task 1 Scrambled picture story	0.76	-	-	-	-
Task 2 Organising information	0.53	0.25	-	-	-
Task 3 Visual vocabulary	0.87	0.54	0.26	-	-
Task 4 Text type and function of script	0.66	0.28	0.25	0.47	-
Task 5 Emergent writing	0.45	0.37	0.19	0.39	0.36

Note: Analysis excluded item 16 of task 1 due to its scaled scoring

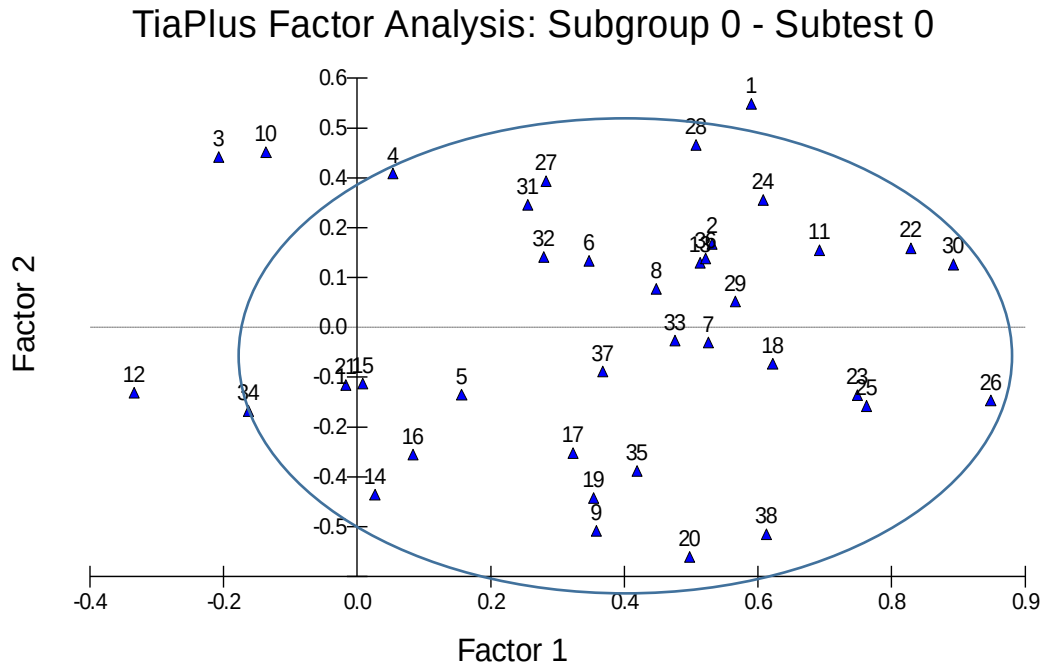

Figure 1: Scatterplot of inter-item correlations for the *Test of Emergent Literacy* tasks 1 to 4 with outliers beyond the ellipse

The principle *Mount a theoretical defence of what is tested in the most current terms* can be supported in several ways. Firstly, the way the construct was defined and operationalised into task and item specifications can be retraced and is based on reasonable sources. Secondly, the experts consulted in the online questionnaire confirmed that most components of the construct are *highly relevant* to *relevant* (evaluation scale: *highly relevant, relevant, somewhat relevant, slightly relevant* or *not relevant*), although some components were evaluated as being *slightly too difficult* (evaluation scale: *too difficult, slightly too difficult, just right, slightly too easy* or *too easy*). According to the experts, the tasks and items are aligned with the construct and measure the intended components. Furthermore, the task and item specifications seem to be in accord with a communicative perspective on language and the nature of preschool discourse. Besides this qualitative argumentation, empirical evidence also supports the theoretical justification of the design. As presented above, the subtask intercorrelations (Table 8) and the factor analysis (Figure 1) reveal an appropriate internal consistency for a test which adequately measures the multidimensional construct of emergent literacy (Alderson et al., 1995: 184; Van der Slik & Weideman, 2005: 30-31). However, as

stated previously, task 2 might need to be reconsidered because it seems to measure slightly different abilities than those defined in the construct of emergent literacy.

The aim *Make sure that the test yields interpretable and meaningful results* has been achieved because the experts consulted in the online survey and panel discussion declared that the scoring is consistent with the construct of emergent literacy and equally or rationally weights the components. The scoring also appeared useful and adequate during the pilot, except for task 5, which needs adjustment. The panel evaluated the interpretation of the test outcome as useful because a profile of emergent literacy abilities can easily be derived from the scores obtained.

As revealed by the panel discussion and the pilot, the effort of administering the TEL needs improvement in order to be aligned with the principle *Obtain the test results efficiently and ensure that they are useful.* Overall, the test administration needs simplification, because the online survey revealed that was experienced on average to be only *manageable* (N = 6), and by some as either *difficult* or *easy* (N = 2) (evaluation scale: *very difficult, difficult, manageable, easy* or *very easy*). Furthermore, the survey indicated that the instructions and the test manual were perceived as *understandable* (N = 6), but also as *slightly confusing but manageable* by a few (N = 2) (evaluation scale: *very confusing, slightly confusing but manageable, understandable* or *very clear*).

Besides the need for simplification, the test duration was inappropriate for the young target group of the TEL (Hughes, 2003: 201). The piloting of tasks 1 to 5 took 1.5 hours and the overall test duration (tasks 1-8) was estimated by the experts responding to the online questionnaire to be on average 109 minutes (SD = 67.7). That is probably why the experts assumed in the survey that the learners will need a great deal of motivation and support to participate in the test. By excluding inappropriate items at the refinement stage in the design process, which is outlined below, it will, however, be able to achieve the desired test duration of 45 minutes for tasks 1-5 (Fulcher, 2010: 159 ff.). Because the administration of task 6-8 has not yet been included in this estimate of the duration of administering the test, a solution will be proposed when making the refinements. Moreover, the test duration has to be evaluated in conjunction with the effectiveness of the measurement. Since the conversion of assessments into playful sessions and social interaction contributes to the motivation and attention of young learners (Hughes, 2003: 201-202), the test duration might yet be lengthened. Nevertheless, the assessment in familiar and communicative situations in the preschool context enables one to draw useful inferences from the test results about their emergent literacy abilities (Bachman & Palmer, 1996: 78).

One dimension of the fairness of the TEL has been analysed in terms of item biases against gender to fulfil the principle *Value the integrity of the test; make no compromises of quality that will undermine its status as an instrument that is fair to everyone.* The values for the differential item functioning (DIF) of tasks 1 to 4 are very low, for example for item 7 of task 1 and item 26 of task 3 (Figure 2). No item displays a significant bias in terms of gender ($p < 0.05$), which indicates an unbiased test (McNamara & Roever, 2006: 81-82). Advantages or disadvantages as regards gender are also not expected for task 5, because the female (N = 23, M = 17.39; SD = 2.87) and male participants (N = 31, M = 16.45, SD = 2.64) did not show a significant difference in their scores ($t(52) = 1.25$; $p = 0.22$). Due to the subjective scoring of task 5 and a significant deviation of the scores for male ($W = 0.73$; $p < 0.001$) and female participants ($W = 0.50$; $p < 0.001$) from the normal distributions, this result

has to be considered with caution. Overall, the requirement of test fairness can be supported with regard to gender, but similar DIF analyses would be desirable for bias against other participant variables (Kunnan, 2000). Due to the language diversity in South Africa the investigation of bias against language background is very difficult and could not be investigated in this study. Furthermore, literacy and language assessments should also be assessed as regards socio-economic background, because lower socio-economic background is often related to lower literacy achievement and performance in language (e.g. Hemmerechts, Agirdag & Kavadias, 2015; OECD, 2013).

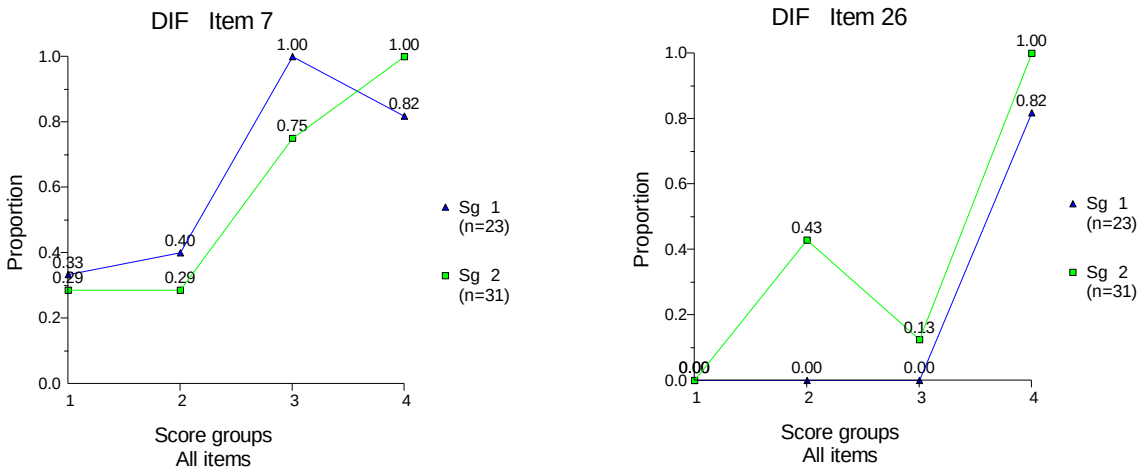

Figure 2: Differential item functioning between female (Sg 1) and male (Sg 2) participants for their responses to item 7 (task 1) and item 26 (task 3) of the Test of Emergent Literacy.

The key principles of responsible test design, which are the theoretical justification of the design, as well as the consistency and effectiveness of the instrument (Weideman, 2009b, 2011a), can be confirmed with multiple sets of evidence. Furthermore, the test is appropriately and adequately differentiated, and fulfils the regulative conditions of being fair as regards gender, as well as delivering meaningful and interpretable results. However, a need to refine the test draft to increase the usefulness and efficiency of the measurement has been recognised, especially with regard to the long duration of the test in the initial design stage, and some lack of clarity regarding how the test should be conducted. Furthermore, the item and subtask analysis reveal that it will be possible to increase the effectiveness of the instrument by deletion of or refinements to unproductive items.

REFINEMENTS

As suggested by the initial validation process, the refinements to the TEL aim at a reduced duration and improved facility in the test administration. The refinements cannot be outlined in detail within the scope of this paper. However, the procedure of adaptation and the focus of the proposed alteration are explained. The recommended refinements have the potential to improve the further performance of the test, which has been analysed with a statistical simulation.

To achieve the potential of a higher effectiveness of the measurement, items with low productivity will be deleted or refined, and administration of tasks will be altered. The refinements for each task rely on empirical evidence, such as the reliability of the test if a certain item is deleted (Cronbach's alpha if item deleted), the item difficulty and item

discrimination, as well as a distractor analysis. This was evaluated according to the desired ranges of item discrimination and facility values, as presented above in Table 5. Furthermore, reasonable argumentation based on the comments of the experts on each task was considered, as well as peculiar requirements for the assessment of young learners (e.g. Hughes, 2003: 199-214). Further, scoring of task 5 has been altered for the sake of greater accuracy. However, due to its scaled scoring and the nature of the task (evaluation of emergent writing), the scoring remains rater-dependent and subjective. To take the learners' motivation into account (Hughes, 2003: 202), the items in each task will be ordered in terms of their facility values, with easier items at the beginning and more difficult items at the end. The intercorrelation of task 2 with other subtasks (Table 8) and the factor analysis (Figure 1) reveals that task 2 might measure slightly different abilities than defined in a homogeneous construct of emergent literacy. Solving the picture puzzles for this task is cognitively demanding and requires logical thinking, which could affect the results. However, from a communicative perspective on language, cognition might not be separated from language (Bachman & Palmer, 1996: 61 ff.). Furthermore, Locke (1997: 273-274) assumes that language development depends on an analytical mechanism which aids recognition of regularities in language. Since these abilities are relevant to develop early academic literacy (Steyn, 2014: 23-24), for which the TEL measures early and emergent skills, task 2 appears important to the TEL and will be retained, with altered items. A two-tiered test solution is considered for the TEL, as suggested by Pot and Weideman (2015), in order to reduce the duration and to increase the efficiency of the assessment. Since tasks 1 to 5 are conductible in a group, this proposed tier of the assessment may be employed to provide the first step towards identifying learners who are at risk of literacy underachievement at school. In order to confirm an initially identified risk, learners may then be screened again with the individually administered tasks 6 to 8 that would constitute a second level of assessment.

The refinement procedure for tasks 1 to 5, as described in terms of the set parameters in Table 5, has led to the deletion of 17 items, the refinement of 12 items and the assignment of some items to the individual tier. This has resulted in a test of 28 items, conductible approximately within 45 minutes on a small group of participants. This indicates an efficient assessment, because other emergent literacy tests for the target group of five- to six-year-old learners have a similar duration, but are mostly individual assessments.

The simulated statistical analysis of the refined subtasks 1 to 4 with TiaPlus and SPSS 21.0, as presented in Table 9, indicates a high reliability and an even higher Cronbach's alpha (Lowie & Seton, 2013: 58, 78; Pallant, 2001: 87). As depicted in Figure 3, the distribution of the TEL scores still seems normal and is flatter, which indicates a better discrimination between the participants in respect of the abilities measured (Lowie & Seton, 2013: 34-38). This is confirmed by a higher mean item discrimination.

Thus, the adequacy of the refinements outlined above can be supported. They may potentially contribute to the higher effectiveness and reliability of the test, as well as improve the efficiency of the test by reducing its duration. However, only the effect of item exclusions has been acknowledged in this simulation, without the changes to instructions or the task outline, for which another pilot would be necessary.

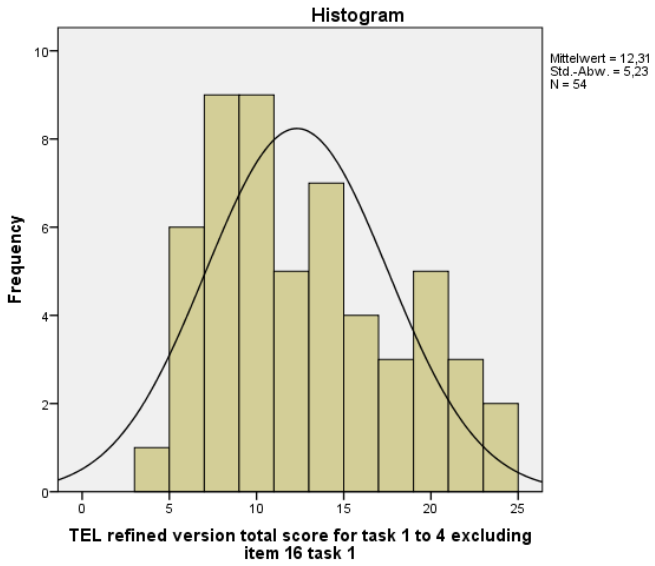

Figure 3: Histogram showing the distribution of the Test of Emergent Literacy scores for the refined tasks 1 to 4, with inserted normal distribution curve

Table 9: Descriptive statistics of the refined tasks 1 to 4 of the Test of Emergent Literacy

Score	**Value**
Alpha	0.82
GLB	0.95
SEM	2.24
Total marks	25
Mean total scores	12.3
SD total scores	5.2
Mean percent correct total scores	49.2
Median	11.5
Mode	10, 8
Skewness	0.48
Kurtosis	-0.87
Minimum total score	4
Maximum total score	23
Mean *Rit*	0.44
Mean *P*	0.49

Legend: Alpha = Cronbach's alpha; GLB = greatest lower bound; SEM = standardised error of measurement; *Rit* = item rest correlation; *P* = item difficulty

A FINAL AND CAUTIONARY WORD

The TEL presented here might have the potential to screen learners for their risk of literacy underachievement at quite an early stage. However, since this is a preliminary undertaking, it is advisable that the TEL should be used in combination with further diagnostic assessments

of literacy abilities to confirm this risk. The initial steps of the design process here led to an instrument that conforms at least to some constitutive test design conditions in the framework of responsible test design that was utilised, as well as to a number of regulative conditions for responsible assessment design (Weideman, 2009b).

The refined test version has to be piloted again, preferably on a much larger sample, to see whether the changes to the instructions and task outline, as explained above, indeed lead to improved test performance. Moreover, the larger sample could back up the statistical measures of the test performance presented in this study. In order to proceed with the design process, empirical evidence for the individual part (tasks 6 to 8) should be gathered to support the proposal for a two-tiered solution proposed for the administration of the test, and to make refinements to these tasks. Moreover, further development of the TEL should aim for the correspondence of the instrument to all principles of responsible test design as formulated by Weideman (2012, 2014) as requirements for a high quality test. The consultation of a larger number of experts with different professional and international experience would support offering the TEL as a prospective foundation for a set of equivalent tests in several languages, which are comparable in terms of their difficulty levels, discriminating power, and underlying construct. This can contribute to educational equality and fairness not only in the South African education system (Weideman, Du Plessis & Steyn, 2015), but also in other multilingual societies. Thus, future studies could focus on the sensitivity of the TEL to identify the risk of literacy underachievement for children from various backgrounds and with different home literacy experiences.

REFERENCES

ALDERSON, JC, C CLAPHAM & D WALL. 1995. *Language test construction and evaluation.* Cambridge: Cambridge University Press.

BACHMAN, LF & AS PALMER. 1996. *Language testing in practice: Designing and developing useful language tests*. Oxford: Oxford University Press.

BAKER, C. 2011. *Foundations of bilingual education and bilingualism* (5th ed.). Clevedon: Multilingual Matters.

BLOCH, G. 2009. *The toxic mix: What's wrong with South Africa's schools and how to fix it.* Cape Town: Tafelberg.

BRANDENBURGER, N & A KLEMENZ. 2009. *Lese-Techtschreibstörungen: Eine Modellorientierte Diagnostik mit Therapieansatz* [Dyslexia: A model-oriented diagnostic with conclusions for therapy]. München: Elsevier.

BRITTO, PR, J BROOKS-GUNN, & TM GRIFFIN. 2006. Maternal reading and teaching patterns: Associations with school readiness in low-income African American families. *Reading Research Quarterly*, 41(1):68-89.

BURGESS, SR, SA HECHT & CJ LONIGAN. 2002. Relations of the home literacy environment (HLE) to the development of reading-related abilities: A one-year longitudinal study. *Reading Research Quarterly*, 37(4):408-426.

CATTS, HW, ME FEY, X ZHANG & JB TOMBLIN. 2001. Estimating the risk of future reading difficulties in kindergarten children: A research-based model and its clinical implementation. *Language, Speech, and Hearing Services in Schools*, 32(1):38-50.

CITO. 2005. *TiaPlus®: User's manual*. Arnhem: CITO M & R Department.

DEPARTMENT OF BASIC EDUCATION. 2011. *Curriculum and assessment policy statement: Grades R-3: English home language.* Available from http://www.education.gov.za/LinkClick.aspx?fileticket=D86%2bonzL9kg%3d&tabid=571&mid=1560 [Accessed: 12 October 2016].

DUNCAN, GJ, CJ DOWSETT, A CLAESSENS, K MAGNUSON, AC HUSTON, P KLEBANOV, LS PAGANI, L FEINSTEIN, M ENGEL, J BROOKS-GUNN, H SEXTON, K DUCKWORTH & C JAPEL. 2007. School readiness and later achievement. *Developmental Psychology*, 43(6):1428–1446. DOI: https://doi.org/10.1037/0012-1649.43.6.1428

FLEISCH, B. 2008. *Primary education in crisis: Why South African schoolchildren underachieve in reading and mathematics*. Cape Town: Juta.

FOORMAN, BR, J ANTHONY, L SEALS & A MOUZAKI. 2002. Language development and emergent literacy in preschool. *Seminars in Pediatric Neurology*, 9(3):173-184.

FULCHER, G & F DAVIDSON. 2007. *Language testing and assessment: An advanced resource book.* Abingdon: Routledge.

FULCHER, G. 2010. *Practical language testing*. London: Hodder Education.

GILLANDERS, C & RT JIMÉNEZ. 2004. Reaching for success: A close-up of Mexican immigrant parents in the USA who foster literacy success for their kindergarten children. *Journal of Early Childhood Literacy*, 4(3):243-269.

GREEN, R. 2013. *Statistical analyses for language testers*. Basingstoke: Palgrave Macmillan.

GUYER, R & NA THOMPSON. 2011. *User's manual for Iteman 4.2.* St Paul, MN: Assessment Systems Corporation.

HANCOCK, A. 2006. Attitudes and approaches to literacy in Scottish Chinese families. *Language and Education*, 20(5):355-373. DOI: https://doi.org/10.2167/le641.0

HEMMERECHTS, K, O AGIRDAG & D KAVADIAS. 2016. The relationship between parental literacy involvement, socio-economic status and reading literacy. *Educational Review*, 4(21):1-17. DOI: https://doi.org/10.1080/00131911.2016.1164667

HOFF, E. 2013. Commentary on issues in the assessment of bilinguals and solutions for the assessment of bilinguals. In Mueller Gathercole, VC (Ed.), *Solutions for the assessment of bilinguals.* Bristol: Multilingual Matters. 213-226.

HUGHES, A. 2003. *Testing for language teachers* (2nd ed.). Cambridge: Cambridge University Press.

JORDAAN, H. 2011. Semantic processing skills of Grade 1 English language learners in two educational contexts. *South African Journal of Education*, 31:518-534.

KOCH, E. 2009. The case for bilingual language tests: A study of test adaptation and analysis. *Southern African Linguistics and Applied Language Studies*, 27(3):301-317.

KRAMSCH, C. 2008. Ecological perspectives on foreign language education. *Language Teaching*, 41(3):389-408.

KUNNAN, AJ. 2000. Fairness and justice for all. In Kunnan, AJ (Ed.), *Fairness and validation in language assessment.* Cambridge: Cambridge University Press. 1-14.

LI, G. 2006. Biliteracy and trilingual practices in the home context: Case studies of Chinese-Canadian children. *Journal of Early Childhood Literacy*, 6(3):355-381. DOI: https://doi.org/10.1177/1468798406069797

LOCKE, JL. (1997). A theory of neurolinguistic development. *Brain and Language*, 58:265-326.

LONIGAN, CJ, C SCHATSCHNEIDER & L WESTBERG. 2008. Identification of children's skills and abilities linked to later outcomes in reading, writing, and spelling. In National Early Literacy Panel (Ed.), *Developing early literacy: Report of the National Early Literacy Panel*. Washington, DC: National Institute for Literacy. 55-106.

LONIGAN, CJ, NP ALLAN & MD LERNER. 2011. Assessment of preschool early literacy skills: Linking children's educational needs with empirically supported instructional activities. *Psychology in the Schools*, 48(5):488-501. DOI: https://doi.org/10.1002/pits.20569

LONIGAN, CJ. (2006). Conceptualizing phonological processing skills in prereaders. In Dickinsen, DK & SB Neuman (Eds), *Handbook of early literacy research* (Vol. 2). New York, NY: Guilford. 77-89.

LOWIE, W & B SETON. 2013. *Essential statistics for applied linguistics.* Basingstoke: Palgrave Macmillan.

MAKIN, L & M WHITEHEAD. 2004. *How to develop children's early literacy: A guide for professional carers and educators.* London: Paul Chapman.

MCNAMARA, T & C ROEVER. 2006. Psychometric approaches to fairness: Bias and DIF. In McNamara, T & C Roever (Eds), *Language testing: The social dimension.* Malden, MA: Blackwell. 81-128.

OECD. 2013. *PISA 2012 results: Excellence through equity: giving every student the chance to succeed* (2nd ed.). Pisa: OECD. DOI: https://doi.org/10.1787/9789264201132-en

PALLANT, J. 2001. Checking the reliability of a scale. In Pallant, J (Ed.), *SPSS survival manual.* Buckingham: Open University Press. Ch. 9, 85-87.

POT, A & A WEIDEMAN. 2015. Diagnosing academic language ability: An analysis of the Test of Academic Literacy for Postgraduate Students. *Language Matters*, 46(1):22-43. DOI: https://doi.org/10.1080/10228195.2014.986665

RAMBIRITCH, A. 2013. Validating the Test of Academic Literacy for Postgraduate Students (TALPS). *Journal for Language Teaching*, 47(1):175-193. DOI: https://doi.org/10.4314/jlt.v47i1.8

REESE, L & R GALLIMORE. 2000. Immigrant Latinos cultural model of literacy development: An evolving perspective on home-school discontinuities. *American Journal of Education*, 108(2):103-134.

ROBERTS, J, J JURGENS, & M BURCHINAL. 2005. The role of home literacy practices in preschool children's language and emergent literacy skills. *Journal of Speech, Language, and Hearing Research*, 48(2):345-359.

SCHARFF RETHFELDT, W. 2013. *Kindliche Mehrsprachigkeit: Grundlagen und Praxis der sprachtherapeutischen Intervention* [Early bilingualism: Foundations and practice for speech and language intervention]. Stuttgart: Thieme.

SCHWIPPERT, K, H WENDT & I TARELLI. 2012. Lesekompetenzen von Schülerinnen und Schülern mit Migrationshintergrund [Reading competences of students with migration background]. In Bos, W, I Tarelli, A Bremerich-Vos, & K Schwippert (Eds), *IGLU 2011*: *Lesekompetenzen von Grundschulkindern in Deutschland im internationalen Vergleich* [Reading competences of German primary school students compared internationally]. Münster: Waxmann. 191-208. Available from https://www.waxmann.com/fileadmin/media/zusatztexte/2828Volltext.pdf [Accessed: 6 June 2017].

SÉNÉCHAL, M & JA LEFEVRE. 2002. Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73(2):445-460.

SHANAHAN, T. 2008. Introduction to the report of the National Early Literacy Panel. In National Early Literacy Panel (Ed.), *Developing early literacy: Report of the National Early Literacy Panel* Washington, DC: National Institute for Literacy. xiii-xvii. Available from http://lincs.ed.gov/publications/pdf/NELPReport09.pdf [Accessed: 6 June 2017].

SNOW, CE, MS BURNS & P GRIFFIN. 1998. *Preventing reading difficulties in young children.* Washington, DC: National Academy Press. DOI: https://doi.org/10.17226/6023

SOUTH AFRICA. 2012. Use of Official Languages Act, No. 12 of 2012. *Government Gazette*, No. 35742. Available from http://www.gov.za/documents/use-official-languages-act [Accessed: 1 October 2016].

STEYN, S. 2012. *Investigating issues of equivalence in the design of parallel English and Afrikaans tests of academic literacy for learners at FET level*. Unpublished honours long assignment. University of the Free State, Bloemfontein, South Africa.

STEYN, S. 2014. *The design and refinement of a test of early academic literacy*. Unpublished master's thesis. Rijksuniversiteit Groningen, Groningen, Netherlands. Available from http://arts.studenttheses.ub.rug.nl/15198/ [Accessed: 6 June 2017].

STORCH, SA & GJ WHITEHURST. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, 38:934-947.

SUCHODOLETZ, WV. 2005. Früherkennung einer Lese-Rechtschreibstörung [Early identification of dyslexia]. In Suchodoletz WV (Ed), *Früherkennung von Entwicklungsstörungen* [Early identification of developmental disorders]. Göttingen: Hogrefe. 191-222.

THE NATION´S REPORT CARD. 2015. *Mathematics & reading assessment: Percentage of fourth-grade students at or above* Proficient *not significantly different compared to 2013*. Available from http://www.nationsreportcard.gov/reading_math_2015/#reading/acl?grade=4 [Accessed: 9 October 2016].

VAN DER SLIK, F & A WEIDEMAN. 2005. The refinement of a test of academic literacy. *Per Linguam*, 21(1):23-35. DOI: https://doi.org/10.5785/21-1-70

VAN DER WALT, JL & HS STEYN JR. 2007. Pragmatic validation of a test of academic literacy at tertiary level. *Ensovoort*, 11(2):138-153.

VAN DYK, T & A WEIDEMAN. 2004. Switching constructs: On the selection of an appropriate blueprint for academic literacy assessment. *Journal for Language Teaching*, 38(1):1-13. DOI: https://doi.org/10.4314/jlt.v38i1.6024

VAN LIER, L. 2008. Ecological-semiotic perspectives on educational linguistics. In Spolsky, B & FM Hult (Eds), *The handbook of educational linguistic*s. Malden, MA: Blackwell. 596-605.

WASHINGTON, JA. 2001. Early literacy skills in African-American children: Research considerations. *Learning Disabilities Research and Practice*, 16(4):213-221. DOI: https://doi.org/10.1111/0938-8982.00021

WEIDEMAN, A. 2009a. *Beyond expression: A systematic study of the foundations of linguistics.* Grand Rapids, MI: Paideia. DOI: https://doi.org/10.2989/16073614.2010.488456

WEIDEMAN, A. 2009b. Constitutive and regulative conditions for the assessment of academic literacy. *Southern African Linguistics and Applied Language Studies*, 27(3):235-251. DOI: https://doi.org/10.2989/SALALS.2009.27.3.3.937

WEIDEMAN, A. 2011a. Academic literacy tests: Design, development, piloting and refinement. *Journal for Language Teaching*, 45(2):100-113. DOI: https://doi.org/10.4314/jlt.v45i2.6

WEIDEMAN, A. 2011b. *A framework for the study of linguistics.* Grand Rapids, MI: Paideia.

WEIDEMAN, A. 2012. Validation and validity beyond Messick. *Per Linguam*, 28(2):1-14. DOI: https://doi.org/10.5785/28-2-526

WEIDEMAN, A. 2014. Innovation and reciprocity in applied linguistics. *Literator*, 35(1):1-10. DOI: https://doi.org/10.4102/lit.v35i1.1074

WEIDEMAN, A, C DU PLESSIS & S STEYN. 2015. *Diversity, variation and fairness: Equivalence in national level language assessments*. Paper presented at the 4th International Conference on Language, Education and Diversity, 23-26 November 2015, Auckland, New Zealand. Forthcoming in *Literator*.

WEIGEL, DJ, S MARTIN & KK BENNETT (2006). Contributions of the home literacy environment to preschool-aged children's emerging literacy and language skills. *Early Child Development and Care*, 176(3-4):357-378.

BIOGRAPHICAL NOTES

Albert Weideman is a professor of applied language studies and senior research fellow at the University of the Free State. He is an expert language tester and is widely consulted on the development of responsible measuring instruments. His research relates language testing to developing a theory of applied linguistics.
Email: albert.weideman@ufs.ac.za

Sophie Gruhn is a doctoral student at the Behavioural Science Institute of the Radboud University, Nijmegen. After qualifying as a speech pathologist at the University of Potsdam, she completed the MA in multilingualism at the Rijksuniversiteit Groningen. She is currently working on the development of a dynamic reading assessment.
Email: c.gruhn@pwo.ru.nl

Per Linguam 2017 33(1):25-53
http://dx.doi.org/10.5785/33-1-698

ADDENDUM

Subtests	**Components of the definition of emergent literacy**	**Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)**
1. Scrambled picture story The learners have to listen to a story, sort a sequence of pictures in the correct order, and answer comprehension questions.	a) understand and use a range of vocabulary in context for various communicative functions, such as retelling, comparing, describing, and expressing like or dislike (vocabulary comprehension) b) understand the information provided in a text based on the meaning of words and relation and order among words, and understand the basic structure of a text (understand information) d) interpret, use, link, and produce information presented in graphic or visual format, as in pictures or illustrations (understand graphic and visual information) e) distinguish between essential and non-essential information and cause and effect, and make predictions based on this information and prior experience (interpret information) f) see sequence and order, recount events or instructions, retell a story, and predict what will happen next (see sequence and order) g) know what counts as evidence for an argument, extrapolate from information by making inferences and conclusions, and apply the information or its implications to other cases than the one at hand – and apply the information to express an opinion (extrapolation, making inferences, and application)	• listen and respond to simple questions • arrange a set of pictures in such a way that they form a story • interpret pictures, e.g. make up own story and 'read' the pictures • predict what will happen in a story through the pictures • answer questions based on the story read • connect information and events in texts to life and life to text experiences • listen attentively to books teacher reads to class • correctly answer questions about stories read aloud • make predictions based on illustrations or portions of stories

APPENDIX (continued)

Subtests	Components of the definition of emergent literacy	Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)
2. Organising information The learners have to solve picture puzzles. They need to identify the picture which fits or does not fit in the presented puzzle.	d) interpret, use, link, and produce information presented in graphic or visual format, as in pictures or illustrations (understand graphic and visual information) e) distinguish between essential and non-essential information and cause and effect, and make predictions based on this information and prior experience (interpret information) g) know what counts as evidence for an argument, extrapolate from information by making inferences and conclusions, and apply the information or its implications to other cases than the one at hand – and apply the information to express an opinion (extrapolation, making inferences, and application)	• make predictions based on illustrations or portions of stories • interpret pictures, e.g. make up own story and 'read' the pictures
3. Visual vocabulary The learners have to recognise signs and logos of different brands and products which are frequently encountered in their environment. From a collection of four pictures per item, they have to find the odd one.	k) pretend to read different types of text, speak with a 'reading voice' and produce 'book language' with the use of a typical register of written language; recognise the written form of frequently seen words and names (emergent reading)	• interpret pictures, e.g. make up own story and 'read' the pictures • begin to 'read' high frequency words seen in the classroom and at school, e.g. door, cupboard) • recognise some words by sight, including a few very common ones (a, the, I, my, you, is, are) • demonstrate familiarity with a number of types or genres of text (e.g. storybooks,

APPENDIX (continued)

Subtests	Components of the definition of emergent literacy	Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)
		expository texts, poems, newspapers, and everyday print such as signs, notices, labels)
4. Text type and function of script The learners are introduced to different text types (e.g. a note, a menu, or an advertisement). They have to determine which text type is suitable to the communicative needs of certain situations in daily life.	c) distinguish between different text types, such as instructions, reports and stories in pretended reading and writing (distinguish text types) h) understand the communicative function of written and printed language and understand the difference between pretended reading and writing and conventional reading and writing; understand how to use literacy material and how to proceed in reading and writing (communicative function of print) l) be inherently interested in literacy in various forms (playing with literacy in mimicking reading and writing with different text types, asking questions to extend own knowledge of literacy) (interest in literacy)	• listen and respond to simple questions • connect information and events in texts to life and life to text experiences • demonstrate familiarity with a number of types or genres of text (e.g. storybooks, expository texts, poems, newspapers, and everyday print such as signs, notices, labels)
5. Emergent writing The learners have to pretend to write words which are considered important to them (e.g. their name, a friend's name, the telephone number of their parents).	c) distinguish between different text types, such as instructions, reports, and stories in pretended reading and writing (distinguish text types) j) mimic writing in different text types, invent own script to convey meaning, copy and write letters, words and names (emergent writing) h) understand the communicative function of written and printed language and understand the difference between	• copy patterns, words and letters (using the correct starting point and direction when forming letters) • draw or paint pictures to convey a message • copy known letters in own name to represent writing • 'write' from left to right and top to bottom • attempt to write letters using squiggles,

APPENDIX (continued)

Subtests	**Components of the definition of emergent literacy**	**Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)**
	pretended reading and writing and conventional reading and writing; understand how to use literacy material and how to proceed in reading and writing (communicative function of print) l) be inherently interested in literacy in various forms (playing with literacy in mimicking reading and writing with different text types, asking questions to extend own knowledge of literacy) (interest in literacy)	scribbles etc. • write (unconventionally) to express own meaning • show awareness of distinction between 'kid writing' and conventional orthography • write own name (first and last) and the first names of some friends or classmates • demonstrate familiarity with a number of types or genres of text (e.g. storybooks, expository texts, poems, newspapers, and everyday print such as signs, notices, labels)

APPENDIX (continued)

Subtests	Components of the definition of emergent literacy	Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)
6. Acting out The learners have to listen to tasks given by the teacher and have to act them out. Additionally, they should conduct the tasks only if they hear a certain phrase.	a) understand and use a range of vocabulary in context for various communicative functions, such as retelling, comparing, describing, and expressing like or dislike (vocabulary comprehension) b) understand the information provided in a text, based on the meaning of words and relation and order among words, and understand the basic structure of a text (understand information) e) distinguish between essential and non-essential information and cause and effect, and make predictions based on this information and prior experience (interpret information) i) understand and use morphological and syntactic features, function words, nouns, verbs, and adjectives to express temporal, local, causal, and modal relations (control of grammar)	• act out parts of a story, song or rhyme • listen to stories and act these out • use new vocabulary and grammatical constructions in own speech
7. Where does it belong? The learners have to identify in which room in a house certain items belong. They have to name the object and attempt to write down the word.	a) understand and use a range of vocabulary in context for various communicative functions, such as retelling, comparing, describing, and expressing like or dislike (vocabulary comprehension) b) understand the information provided in a text, based on the meaning of words and relation and order among words, and understand the basic structure of a text	• recognise and point out common objects in pictures • interpret pictures, e.g. make up own story and 'read' the pictures • use new vocabulary and grammatical constructions in own speech o connect information and events in texts to

APPENDIX (continued)

Subtests	**Components of the definition of emergent literacy**	**Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)**
	(understand information) e) distinguish between essential and non-essential information and cause and effect, and make predictions based on this information and prior experience (interpret information) g) know what counts as evidence for an argument, extrapolate from information by making inferences and conclusions, and apply the information or its implications to other cases than the one at hand – and apply the information to express an opinion (extrapolation, making inferences, and application) j) mimic writing in different text types, invent own script to convey meaning, copy and write letters, words and names (emergent writing)	life and life to text experiences • copy patterns, words and letters (using the correct starting point and direction when forming letters) • draw or paint pictures to convey a message • copy known letters in own name to represent writing • 'write' from left to right and top to bottom • attempt to write letters using squiggles, scribbles etc. • write (unconventionally) to express own meaning • show awareness of distinction between 'kid writing' and conventional orthography

APPENDIX (continued)

Subtests	Components of the definition of emergent literacy	Required abilities from the CAPS (Department of Basic Education, 2011: 23-30) and learners' accomplishments at preschool level (Snow, Burns & Griffin, 1998: 80)
8. Emergent reading The learners have to pretend to read from different text types (a recipe, a weather report, and a menu).	c) distinguish between different text types, such as instructions, reports, and stories in pretended reading and writing (distinguish text types) k) pretend to read different types of text, speak with a 'reading voice', and produce 'book language' with the use of a typical register of written language; recognise the written form of frequently seen words and names (emergent reading) h) understand the communicative function of written and printed language and understand the difference between pretended reading and writing and conventional reading and writing; understand how to use literacy material and how to proceed in reading and writing (communicative function of print) l) be inherently interested in literacy in various forms (playing with literacy in mimicking reading and writing with different text types, asking questions to extend own knowledge of literacy)	• interpret pictures, e.g. make up own story and 'read' the pictures • pretend to read and adopt a 'reading voice' • 'read' enlarged texts such as poems, big books, posters • 'read' familiar texts emergently, i.e. not necessarily verbatim from the print alone • use new vocabulary and grammatical constructions in own speech