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Academic literacy and the development of inference skills at secondary school level

Abstract

Learners are required to cope with increasingly complex texts at school, as they need to be able to cope effectively with the demands of progressively more advanced academic discourse types. This article reports on a small-scale case study that was conducted to establish the academic literacy levels of five Grade 10 learner cohorts. We stress the importance of the development of academic literacy at school level, and then discuss the results of an academic literacy test. The test results provided useful diagnostic information and pointed out that learners were severely lacking in their inference-making skills. We discuss inference types and suggest a number of practical strategies that can be followed to develop learners' inference skills at secondary school level.

Keywords: academic literacy, academic language, inference skills, diagnostic assessment, inference types, inference-making strategies

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1.   Introduction

Secondary schools make increasing demands on a learner's abilities to construct the meaning of a text. As schooling progresses, content becomes more complex, new concepts and text types are introduced, and increased meaning-making abilities are required. Literacy practices become progressively more specialised in the different subject areas. This implies that learners' language uses and practices must be expanded as language demands grow increasingly more complex. Learners thus require improved abilities in what is commonly known as academic literacy which can broadly be defined as the language-specific and non-linguistic skills that are required to function successfully in an academic environment. Academic literacy entails using "language in more sophisticated ways: arguing, evaluating evidence, analysing complex texts, and engaging in academic discussions" (Zwiers, 2014: 15). Menken (2013: 444) points out that failure "to ensure that secondary students acquire advanced literacy is tantamount to denying them opportunities for full participation in school and later in life."

There is increasing recognition that the teaching of academic literacy across content areas must form an integral part of school curricula, as there is general consensus that academic literacy is essential for achievement at secondary level (Menken, 2013: 444).

It is therefore essential to test academic literacy at school level in order to establish learners' academic skills (Myburgh-Smit & Weideman, 2017: 1) and then devise and implement the necessary interventions to improve these skills. The aim of this article is to stress the importance of the deliberate development of academic literacy at school level. We report on the results of an academic literacy test that was administered to a group of Grade 10 learners. We extracted diagnostic information from the test, and then focused on one academic skill, viz. inference-making. This skill appeared to be the one that was most underdeveloped in learners. We conclude by making a number of practical and detailed suggestions for the development of inference skills in schools. Although limited and provisional, our results are highly suggestive of the level of academic literacy levels in many South African schools.

2.   Academic language at secondary school

Academic language operates within a social as well as a linguistic context (Colombi & Schleppegrell, 2002: 6–12). These two contexts are fundamentally inseparable as any linguistic realisation always takes place in a social context (Colombi & Schleppegrell, 2002: 6).

As a social activity, academic language firstly serves to socialise the learner into an academic discourse community, and secondly into the various discourse communities of subject areas. The existing literature on social and cultural contexts relies heavily on Vygotsky's (1978) argument that literacy is a social activity. Colombi and Schleppegrell (2002: 7) point out the importance of "collaborative inquiry in the construction of meaning"

in teaching practices that regard learners as situated in specific social contexts. The development of literacy should continue in secondary schools. This process requires scaffolding, with the teacher acting as mentor in a process of collaboration, thus further initiating the learner in the social contexts in which literacy tasks occur.

As a linguistic activity, academic language serves as the primary resource for meaning-making in any literacy context (Colombi & Schleppegrell, 2002: 8). Language and context are mutually constitutive, as pointed out by Halliday's (1994) functional grammar theory, which links the linguistic and the social by describing language form in relation to semantics, and describing semantic categories in relation to social contexts. Functional grammar employs the notion of *register* to illustrate the relationship between language and context. Register is the constellation of lexical and grammatical features that realises a particular social context (cf. Halliday & Hasan, 1989). In addition, academic language also involves the notion of *genres*, which are realised through register variables. Coping at school essentially means being able to "do science", using appropriate registers and genres. This cannot be done by using "ordinary" language, and requires that learners be able to use the grammar and vocabulary of a language in new ways.

Advanced literacy refers to the kind of meaning-making that is typical of secondary and post-secondary schooling. It is also required for participation in many professional and technical fields. Various frameworks for the analysis of academic language have been proposed (e.g. Cummins, 1979, 2000; Scarcella, 2003; Van Dyk & Weideman, 2004; Krashen & Brown, 2007; Patterson & Weideman, 2013). It is generally accepted that academic language involves more than the ability to communicate in everyday situations. The beginning of the Further Education and Training (FET) phase of the secondary school seems to be the ideal stage at which to test learners' academic literacy abilities.

3. Testing academic literacy abilities in the FET Phase

Despite the importance of acquiring academic literacy abilities at school, testing these in the FET phase seems to be lacking in the South African education system. Secondary school learners in Grades 10 to 12 with tertiary ambitions especially need to be prepared for the demands of academic literacy discourse in higher education. Failures to do so have been well-noted in articles on academic literacy placement tests, course design and interventions (Cliff, 2015: 4; Meihuizen, 2013: 143; McCabe, 2013: 160, Myburgh-Smit & Weideman, 2017). Testing Grade 10 learners' academic literacy levels to diagnose weaknesses is crucial in order to develop and implement timely and focused teaching and learning strategies.

As far as the testing of academic literacy is concerned, two sub-components can be distinguished – academic language in general, and specific academic language used in different content areas. A number of generic academic tasks required from all students can be identified, such as the macro-categories of writing assignments, conducting

research, reading and comprehending textbooks, taking part in seminars, but it might be extremely cumbersome to test all these typical tasks directly (Van der Walt & Steyn, 2014: 112). It would also be very difficult to test the specific skills related to each content area, as this would entail a number of separate tests. Skills underlying academic literacy can be abstracted from these tasks. These include micro-level tasks such as making inferences, ordering information, interpreting a text, understanding academic vocabulary, and so on. These are generic skills that are required in virtually all academic discourse communities (cf. Van Dyk & Weideman, 2004: 10). We therefore conducted a small-scale study to test and diagnose the micro-level generic academic literacy skills of five Grade 10 learner cohorts.

4. Method of research

4.1 The study population

An accessible sample of learners (n=209) at five schools with different teaching and learning contexts was used as a case study. Four schools were situated in the Free State and one in the Northern Cape. Four of the five schools were situated in urban areas and one was in a rural town. Three of the urban schools (one of which was a technical school) and the rural school were public secondary schools, while the remaining urban school was an independent school.

As stated, the learners were in Grade 10. Their predominant home language in each of the three urban schools was either Setswana, Sesotho or Afrikaans respectively. Most Grade 10 learners in the rural school indicated that they spoke Afrikaans at home. There was no predominant home language in the urban independent school. Only 7% of the study population spoke English as their home language. The language of learning and teaching in all the schools was English. Forty per cent of the learners were male and 60% female. Most of the learners (76%) were 16 to 17 years old; 15% were 18 to 19, while 7% were 15 years and 2% were 20 years and older. The necessary permission to conduct the study was obtained from the relevant departments of education and schools. The learners signed consent to participate in the study after they had been informed about the purpose of the study and that their anonymity would be guaranteed, as the results would only be used in aggregate form.

4.2 The academic literacy test

The test design modelled a task-based approach (Weideman, 2006: 84-85) to assessment. This design resonated well with the communicative and interactive view of language expressed in the South African English first additional language (FAL) curriculum for Grades 10 to 12 (RSA DBE, 2 011: 16). The test contained two authentic expository

texts about the global trends in paper production and the paper-making process, as well as one narrative text about the advent of a paperless office. The format was a multiple-choice test for 100 marks, written in two hours.

The test consisted of the following sections (cf. Weideman, 2006: 85):

Section 1:   *Scrambled text (Items 1 -5)*: Learners were required to put scrambled sentences of a paragraph in the correct order.

Section 2:   *Vocabulary knowledge (items 6 – 20)*: This section tested learners' knowledge of a range of vocabulary items.

Section 3:   *Interpreting graphs and visual information (Items 21 – 30)*: Learners had to interpret a graph as well as make inferences.

Section 4:   *Register and text type (31 – 35)*: This task required learners to match sentences from a variety of text types with a list of sentences from the same text types.

Section 5:   *Text Comprehension (36 – 77)*: This was an extended reading passage with questions that tested almost the entire spectrum of academic literacy abilities.

Section 6:   *Grammar and text relations (78 – 97)*: This task used cloze procedure to test learners' abilities to make meaning of sentences by understanding grammar, text relations, cohesion and vocabulary.

The reliability of this test was 0.87, as measured by Cronbach's alpha. It thus satisfied the criterion of 0.80 set by Weir (2005: 29) as the minimum acceptable level for a language test.

4.3   Results and interpretation

The average test score was 42%, with a standard deviation of 12.86. Learners did especially poorly in Sections 3, 5 and 6, averaging 38.6% in interpreting graphs and visual information (Section 3), 37.6% in text comprehension (Section 5) and 38.1% in grammar and text relations (Section 6). In order to increase the diagnostic usefulness of this assessment, we focused only on test items in which learners scored 30% or less. Twenty-four of the 97 test items (25%) matched this criterion. Of these, 22 items (91.6%) tested learners' inference-making skills. Three items tested learners' analytical ability to interpret graphs (Section 3); 15 items tested their ability to draw inferences from a narrative text (Section 5), and 4 items tested their ability to interpret text relations and cohesion in an expository text (Section 6).

The results of the test pointed out that the study population's inference-making skills were the weakest of the skills assessed. We now turn to a brief discussion and analysis of inference as an academic skill and suggest a number of ways in which this skill can be developed in classrooms.

5.   Inference-making and academic literacy

What does the process of making inferences entail and how does this link with learners' academic literacy abilities? Making inferences is commonly referred to as "thinking needed to read between the lines and interpret deeper meanings in a text" (Zwiers, 2014: 147); "making educated guesses from supporting evidence and reasoning" (Kurland, 2000) or reaching an "assumption or conclusion that is rationally and logically made, based on the given facts or circumstances" (Online Business Dictionary, 2016). When learners read texts they use textual information and their own background or prior knowledge to arrive at a conclusion and to make new meaning from the implied information in the text.

According to the principle of *search-after-meaning*, which is informed by constructionist theory, the reader generates a variety of inferences in order to build a referential mental world, or situation model, of what the text is about (Graesser et al., 1994: 371; Kispal, 2008: 11-12). The search-after-meaning principle has three critical assumptions; the reader goal, the coherence assumption and the explanation assumption (Graesser et al., 1994: 371-2). The texts in our academic literacy test required the reader to seek coherence and find explanations in order to construct the meaning of the expository texts.

The process of making inferences involves higher order thinking skills that include reasoning, logic, analysis, evaluation, synthesis and creative thinking. These cognitive skills are important components of academic literacy. The importance of these skills is acknowledged in the South African Curriculum and Assessment Policy Statement (CAPS) for English First Additional Language (FAL) in Grades 10 to 12 (RSA DBE, 2011). For example, learners' inference skills carry 40% weight in the assessment of their reading comprehension (RSA DBE, 2011: 79).

Kispal (2008: 2) points out that "the ability to draw inferences predetermines reading skills: that is, poor inferencing causes poor comprehension and not vice versa". Good inference skills thus promote learners' abilities to comprehend different registers and genres in general, and in subject-specific academic texts. A closer analysis of the test items identified the types of inference skills the study population required to develop their inference-making abilities.

6. Analysis of the academic literacy test items according to inference type

Our analysis was based on Kispal's (2008) classification of inference types in narrative text and expository text. In addition, it included Patterson and Weideman's (2013: 137-139) emphasis on analytical and logical thinking to infer meaning from numerical data in graphic text.

6.1 Main categories of inference types

Kispal (2008: 2-3, 22) identifies six main categories of inference types: coherence, elaborative, local, global, on-line and off-line inferences. She categorises them according to their meaning-making focus; for example, global inferences focus on making sense of the theme of a text by considering evidence from local pieces of information in paragraphs. A summary of the name, example and explanation of Kispal's categorisation appears in Table 1.

Table 1:   Summary of main categories of inference types (Kispal, 2008: 22)

NAME	EXAMPLE	EXPLANATION
Coherence *or* intersentence *or* text-connecting	*Peter begged his mother to let him go to the party.*	Maintains textual integrity. The reader would have to realise that the pronouns 'his' and 'him' refer to Peter to fully understand this sentence.
Elaborative *or* gap-filling *or* knowledge-based	*Katy dropped the vase. She ran for the dustpan and brush to sweep up the pieces.*	Enriches the mental representation of the text. Drawing upon life experience and general knowledge, the reader would have to realise that the vase broke to supply the connection between these sentences.
Local Includes:		Creates a coherent representation at the local level of sentences and paragraphs.
1. **Coherence inferences**	As above	As above
2. **Case structure role assignments**	*Dan stood his bike against the tree.*	The reader would realise that the tree is assigned to a location role.
3. **Antecedent causal inferences**	*He rushed off, leaving his bike unchained.*	The reader would infer that Dan was in a hurry and left his bicycle vulnerable to theft.

NAME	EXAMPLE	EXPLANATION
Global	Inferences about the *theme*, *main point or moral* of a text.	To create a coherent representation of the whole text, the reader would infer overarching ideas by drawing on local pieces of information.
On-line	*Superordinate goals* of characters or *causal antecedents* that explain why something is mentioned in the text.	These inferences are necessary to understanding and are drawn automatically during reading.
Off-line	Forecasting future episodes in a text.	Inferences drawn strategically after reading, usually during a later retrieval task. Not essential to understanding.

The process of making inferences does not only require a continuous dialogue between the reader and the text, but also among the various main categories of inference types presented in Table 1. In the elaborative category example, the reader would have to use his or her background knowledge to infer that the reason why Katy had to sweep up the pieces of the vase was because she had broken it. The reader then uses his or her background knowledge to reflect on the implied meaning of the phrase. This meaning-making process happens while the reader is reading sentences that form part of a paragraph.

The following analysis of the test items illustrates this interaction among inference types in order to make meaning. It also shows the important role of analytical thinking in interpreting graphs.

6.2 Analysis of 22 items according to categories of inference types

As mentioned above, 22 items in which learners scored 30% or less tested their ability to make inferences. In the extended reading passage in Question 3, 9 items tested learners' inferential abilities at the local level of sentences and paragraphs (local, on-line inferences); 4 items expected them to make sense of the whole text during reading (global, on-line inferences), and 7 items required them to draw inferences using their life experience and background knowledge (off-line inferences). In the graphic text, 2 items tested learners' ability to interpret two sets of data accurately to arrive at a third set of data. These two items required learners to draw on their skills to analyse and compare data in order to interpret numerical data (Patterson & Weideman, 2013: 137-139).

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At the local level, items tested learners' ability to seek coherence by interpreting inter-sentence or text-connecting inferences. These items included an antecedent causal inference, two inter-sentence inferences and six text-connecting inferences. At a global level, learners' ability to construct a coherent mental representation of the whole text was assessed. One test item required the reader to draw on local pieces of information to infer the theme of the text. Two items expected learners to reach conclusions about the way in which local pieces of information cohere to convey the overarching idea of the text. A superordinate goal inference expected learners to establish an explanation about why the firm wanted a paperless office.

Although elaborative inferences are not required when learners read for textual coherence and explanations, they enrich the mental representation of the text by connecting information to their background knowledge (Graesser et al., 1994: 376; Kispal, 2008: 22). For example, one item required learners to make an inference using their background knowledge about the younger and older generation's state of internet readiness. Four items tested learners' ability to infer causes and effects from information about an office going paperless. Two items expected learners to use their background knowledge and experience to infer the relevance and quality of objects that belong in a paperless office.

This analysis confirms that the test items required learners to construct a meaning representation of texts through seeking local and global coherence and explanations while reading; they tested learners' ability to use their background knowledge in making elaborative inferences; and tested drawing inferences from numerical data in a graph.

It is clear that learners in this case study require instruction in strategies to develop their inference-making skills. Although the test results of this small-scale pilot study could only yield indicative results, we suspect that the need for inference support strategies may be the case in many of our schools. We now turn to a brief discussion of factors that promote the development of inference skills and then suggest a number of relevant inference teaching-learning strategies.

7. Factors promoting inferences

Kispal (2008: 16-21) identifies the following factors that promote inference-making: being an active reader; zero tolerance of inconsistency; background knowledge; word-level knowledge and being on the same wavelength.

7.1. Being an active reader

According to Kispal (2008: 16), many "authors share the view that the reader wants to and is actively engaged in the search for meaning and will invest effort in the search".

This view is in line with the search-after-meaning principle of constructionist theory (Graesser et al., 1994: 371).

7.2. Zero tolerance of inconsistency

Kispal (2008: 16-7) emphasises the fact that active readers monitor their comprehension, check inconsistencies and are constantly aware of the need to fill gaps in their understanding by generating inferences. Good readers take more time when they read. They monitor their understanding of a text and sort out inconsistencies as they continue reading. The fact that many Grade 10 learners took half of the allocated time to write the test seems to confirm that less able readers do not allow time to check whether they fully understand what they are reading.

7.3. Background knowledge

Kispal (2008: 17) underlines the importance of background knowledge in promoting the generation of inferences. Monzo and Calvo (2002: 357) also emphasise the facilitative role of background or prior knowledge about the language and the world in making inferences: "[It] facilitates not only comprehension of the explicit information in the text, but also the generation of inferences about implicit information".

The development of learners' background knowledge includes their general knowledge; prior experience of life; knowledge of the topic; the text type, and earlier parts of the text being read. It is important for this discussion to emphasise that background knowledge includes vocabulary and language knowledge (McNeil, 2012: 65). Kispal (2008: 17) points out that the mere availability of background knowledge does not necessarily facilitate the generation of inferences when information is not accessible to the reader. In addition, readers may not believe or be aware that they should draw on extra-textual information to make inferences.

The learning and teaching context has an impact on learners' general background knowledge, their language and word-level knowledge and their ability to share background knowledge about the text with the writer (Kispal, 2008: 20). The average scores (Figure 1) of the five Grade 10 learner cohorts indicate the impact these learners' contexts may have had on their background knowledge.
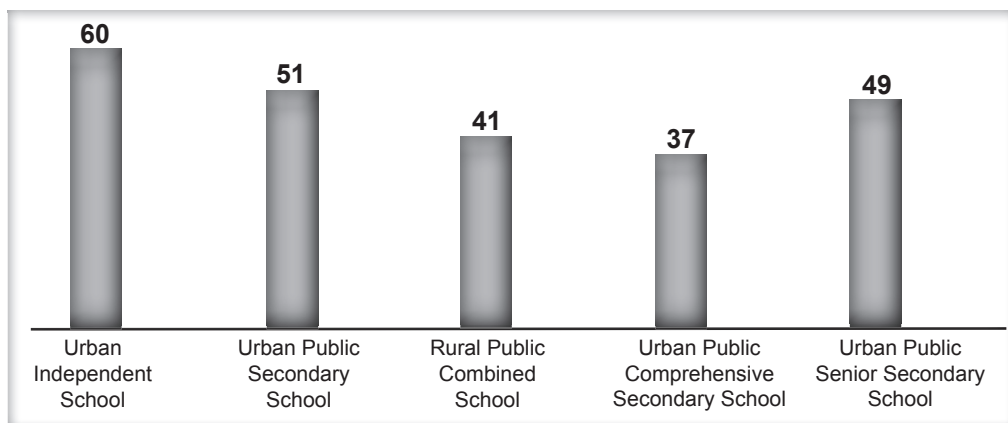
Figure 1: Average performance in percentages of learners per location and school type

Learners in the urban independent school did best in the test. In this school, English First Additional Language learners interacted daily with English Home Language learners, who constituted 31% of their class. Teachers at this school provided learners with a rich variety of English texts, genres and registers to develop their general background and language knowledge. These conditions and practices could have contributed to the results. Learners in the urban public comprehensive school scored the lowest (37% average) of the five schools in the academic literacy test. Many of these learners followed a technical curriculum. The rural public combined school was situated in an area where Afrikaans is the predominant language. Learners did not have many opportunities to communicate in English outside their classrooms. Limited exposure to English may have impacted negatively on these learners' language and word-level knowledge.

What would English First Additional Language learners who are adept at inference-making and who experience favourable teaching and learning contexts be able to do? They would access and use information from their wide background knowledge; share the same background knowledge as that assumed by the text; be adept at monitoring their comprehension and misunderstandings, have a rich vocabulary and a competent working memory (Kispal, 2008: 2). They would be able to engage actively in the text; and want to generate inferences because they seek coherence and explanations in order to make sense of the text as a whole. They would work toward two reader goals: "those of understanding a particular text and enhancing the command of a second language and reading competence" (Chodkiewicz, 2013: 85).

What, then, do teachers need to do to develop their learners' inference skills? We now offer teachers some practical suggestions in order to scaffold learners' inference-making skills.

8. Inferences teaching-learning strategies

In practice, strategies to develop their inference skills form part of developing their' higher order reading comprehension skills (Kispal, 2008: 24). The South African Curriculum and Assessment Policy Statement for English First Additional Language (RSA DBE, 2011) stresses that Grade 10 to 12 learners' inference skills should be developed in pre-, during-, and post-reading phases.

The inference teaching-learning strategies suggested below are informed by the search-after-meaning principle of constructionist theory (Graesser et al, 1994: 371; Kispal, 2008: 11). They address the reader goal, coherence and explanation assumptions of inference-making in a practical way by linking these to curriculum requirements and to classroom practice.

8.1. Enable learners to want to set reader goals

A major challenge for language teachers is to mentor their learners in discovering the value of reading a text with specific goals in mind. One of the most important goals is to make meaning of the text; to read the text with understanding. Learners must want to comprehend the text; they must want to engage actively in the search for meaning and be willing to "invest effort in the search" (Kispal, 2008: 16). Consequently, the reader would also have to invest effort in making inferences to arrive at a clearer understanding of the text. In addition, an important reader goal of an English first additional language learner could be to have an improved command and reading competence in English (Chodkiewicz, 2013: 85). Learners could furthermore want to read for the purposes of studying, enjoyment, obtaining information from graphs, the appreciation of literary texts and so forth. The enabling role of the teacher lies in his or her ability to model a positive attitude toward setting clear reader goals and to guide learners in discovering the empowering effect of reading purposefully.

8.2. Pre-reading strategies to encourage inference-making

Pre-reading strategies focus on preparing learners to have appropriate background knowledge so that they want to make meaning of the text.

8.2.1 Activate learners' background knowledge

Learners' background knowledge of the topic, the text and the relevant vocabulary need to be activated. Teachers could use visual stimuli such as video clips, photos, cartoons, wordless picture books, objects, etc. to generate learner interest and their initial associations with the topic (Binks, 2009). The number, type and complexity of visual stimuli depend on teachers' assessment of learners' prior knowledge of the subject and their English language proficiency level.

8.2.2 Enable learners to draw global inferences

Teachers could assist their learners in drawing global inferences from the structures and conventions of narrative and expository texts. For example, a teacher can model how the table of contents of a Business Studies textbook may be used to make sense of how budgeting fits into the bigger picture of managing a micro-business environment. Making inferences about the gist of reports in a newspaper as a pre-reading strategy encourages readers to look at the headlines, photographs and opening or "lead" paragraphs to infer the main message of a text.

8.2.3 Use questions to prompt predictions

Asking the right question at the right time is an art. Kispal (2008: 29-33) highlights the role of asking and generating questions in developing learners' inference-making skills. Zwiers (2014: 129) stresses the importance of wondering to enrich these skills during class discussions. He suggests that the following question could be asked to prompt an inference: "What do you wonder about?" A teacher could model how to predict the main message and the purpose of a text by asking the following questions: "I wonder what this article says about budgeting for a holiday? Why would the newspaper want to publish it?" The challenge lies in asking questions that prompt predictions without giving too much or too little information.

8.2.4 Use graphic organisers for global inferences

Learners could draw a mind-map and write the predicted main message of the text in the centre box. They could then enter their prediction about the purpose of the message in one of the branch boxes. Evidence that support or contradict these predictions will emerge when they start reading the text.

8.3.   Strategies during reading

The teacher's role in modelling inference-making and keeping learners' reading goals focused is of vital importance during the reading phase.

8.3.1 Enable learners to infer meaning while they are reading

Learners should be encouraged to keep specific reader goals in mind while they read. Binks (2009) suggests that they use sticky notes to remind them of their goals and to keep track of their thoughts while they are reading. For example, questions about the main message of a newspaper article could be used to focus learners' reader goal on searching for the overall meaning of the text. They could also find and underline key words and facts that support the main idea of the article. While reading, learners could

infer the meaning of unknown words by using contextual cues. The teacher could model this technique while reading with the class.

8.3.2 Enable learners to ask comprehension monitoring questions while reading

The teacher could model think-aloud questions to monitor and clarify learners' understanding of the text. Kispal (2008: 38) encourages teachers to train their learners in asking *Why*-questions during reading because "these are most supportive of understanding". However, she cautions against interrupting learners by asking questions while they are reading or too soon afterwards because learners need time to consolidate what they have read into a mental representation.

8.4. Post-reading strategies to encourage inference-making

During this phase, teachers and learners create opportunities to monitor, clarify, consolidate and practise making inferences.

8.4.1 Enable learners to monitor their inferences

Learners should be allowed to verify and clarify their predictions about the overall meaning of a message. For example, they could use the mind-map which they drafted before reading to draw conclusions about the main message of a newspaper article. They can thus confirm the purpose of the article by completing the mind-map with supporting detail. The completed map enables them to make sense of the text as a whole.

8.4.2 Enable learners to make global and local coherence inferences

Learners could practise making text-connecting inferences by recognising grammatical relations within sentences as well as antecedents for pronouns at the local level of sentences and paragraphs. The teacher could draw learners' attention to the important function of conjunctions in linking words, phrases, sentences and paragraphs into a coherent whole. Learners could practise identifying the logical relationships between words, phrases and sentences by using appropriate conjunctions in cloze tests. In addition, they could use graphic organisers to illustrate how pieces of information in paragraphs cohere to make sense of the overall meaning of the text. They could furthermore practise using conjunctions in summaries to indicate logical sequencing.

8.4.3 Model and practise making inferences

Misiak (2014: 3) provides an example of a graphic organiser that helps learners visualise the steps in making an inference. The chart has a question in the top box that requires

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learners to infer a speaker's character from explicit information provided in a poem. In the two middle boxes, learners quote relevant texts from the poem (What the reading says) next to their own reading of the text (What I think). Their thoughts should lead to one inference about the speaker's character (My answer to the question – what I infer). This answer is entered into the last box of the chart.

Binks (2009) uses the strategy of *keywords*, *infer*, and *support* (KIS) to help students remember how to make and support inferences. Learners follow three steps. They underline key words and facts from the text; make inferences using the key words or facts to answer the question and list their background knowledge used to answer the question.

Although the suggested inference teaching-learning strategies focus on reading comprehension, they can be adapted for listening, speaking and writing activities (cf. Kispal, 2008). Inference-making forms an integral part of the higher order thinking skills required to develop learners' academic literacy abilities. The analysis of the test items according to Kispal's (2008: 22) classification of inference types has shown the importance of searching for coherence and explanations to make meaning of narrative and expository texts. The suggested inference teaching-learning strategies focus on enabling learners to analyse, evaluate, synthesise and create information in order to construct meaning.

9.   Conclusion

This small-scale study has explored the use of diagnostic information in order to identify the academic literacy needs of a group of Grade 10 learners. We explored the nature of academic literacy and stressed the importance of its deliberate development at secondary school level so that learners could cope with increasingly complex learning material and be prepared for the academic rigours of tertiary study. We administered an academic literacy test which was based on a clearly articulated blueprint for such a test. The test results provided useful diagnostic information, and revealed in particular that the ability of learners to make inferences was poor. Inference-making is a generic and essential skill in academic study, and requires specific attention. We analysed test items assessing inferential skills according to Kispal's (2008: 22) categorisation of inference types, and then suggested a number of teaching-learning strategies that could be used to develop these skills at secondary school level.

Follow-up studies on the development of learners' academic literacy abilities, especially inference skills, are essential as our case study was highly suggestive that these skills were not being given the attention they warranted.

References

Binks, R. 2009. November 7th. *Teaching inference*. [PowerPoint slides.] Presented at the Secondary Reading League's 33rd Day of Reading Conference. Available: http://www.dayofreading.org/DOR09HO/TeachingInference.pdf [Accessed: 5 December 2016].

Chodkiewicz, H. 2013. Reading as a purpose-driven process: taking an L2 reader perspective. In: Gabryś-Barker, D., Piechurska-Kuciel, E. & Zybert, J. (Eds.). 2013. *Investigations in Teaching and Learning Languages: Studies in honour of Hanna Komorowska*. Available: https://link.springer.com/chapter/10.1007 %2F978-3-319-00044-2_7. pp. 79-96. DOI 10.1007/978-3-319-00044-2. [Accessed: 11 November 2016].

Cliff, A. 2015. The national benchmark test in academic literacy: How might it be used to support teaching in higher education? *Language Matters* 46 (1):3-21. DOI: 10.1080/10228195.201.1027505

Colombi, M.C. & Schleppegrell, M.J. 2002. Theory and practice in the development of advanced literacy. In: Colombi, M.C. & Schleppegrell, M.J. (Eds.). *Developing advanced literacy in first and second languages: Meaning with power*. Mahwah, N.J.: Lawrence Erlbaum.

Cummins, J. 1979. Cognitive/academic language proficiency, linguistic interdependence, the optimal age question and some other matters. Working Papers on Bilingualism 19: 197-205.

Cummins, J. 2000. *Language, power and pedagogy*. Clevedon: Multilingual Matters.

Graesser, A.C.; Singer, M. & Trabasso, T. 1994. *Constructing inferences during narrative text comprehension*. Available: https://www.researchgate.net/profile/Murray_Singer/publication/15261574_Constructing_inferences_during_narrative_text_comprehension/links/00b4952a88481c3cba000000.pdf [Accessed: 11 November 2016].

Halliday, M.A.K. 1994. *An introduction to functional grammar*. London: Edward Arnold.

Halliday, M.A.K. & Hasan, R. 1989. *Language, context, and text: Aspects of language in a semiotic perspective*. Oxford: Oxford University Press.

Kispal, A. 2008. Effective teaching of inference skills for reading. Literature review. *National Foundation for Educational Research. Research Report No DCSF -*

RR031. Available: https://www.nfer.ac.uk/publications/EDR01/EDR01.pdf [Accessed: 14 April 2016].

Krashen, S. & Brown, C.L. 2007. *What is academic language proficiency?* Singapore Tertiary Teachers' Society. Available: http://www.sdkrashen.com/content/articvles/krashen_brown_alp.pdf [Accessed 11 November 2016].

Kurland, D. 2000. *Inference: the process. How the language really works: the fundamentals of critical reading and effective writing*. Available: http://www.criticalreading.com/inference_process.htm [Accessed:
10 March 2016].

McCabe, R. 2013. Scaffolded code-switching: A resource for achieving academic literacy? *Journal for Language Teaching* 47(2): 159-194.

McNeil, L. 2012. Extending the compensatory model of second language reading. *System* 40(1): 64-76.

Meihuizen, E. 2013. Nuwe geletterdhede vir 'n ontluikende nuwe wêreld. *Journal for Language Teaching* 47(2): 141-158.

Menken, K. 2013. Emergent bilingual students in secondary schools: Along the academic language and literacy continuum. *Language Teaching* 46(4): 438-476.

Misiak, S. 2014. *Making inferences*. Available: http://ohiorc.org/adlit/strategy/strategy_each.aspx?id=4 [Accessed: 10 March 2016].

Monzo, A.E. & Calvo, M.G. 2002. Context constraints, prior knowledge and on-line inferences reading. *Psicothema* 14(2): 357-362.

Myburgh-Smit, J & Weideman, A. 2017. The refinement and uses of a test of academic literacy for Grade 10 students. *Journal for Language Teaching* 51(1): 271-295. Available: http://dx.doi.org/10.4314/jlt.v50i2.11 [Accessed 28 November 2017].

Online Business Dictionary. 2016. "inference". Available: http://www.businessdictionary.com/definition/inference.html [Accessed: 11 November 2016].

Patterson, R. & Weideman, A. 2013. The refinement of a construct for tests of academic literacy. *Journal for Language Teaching* 47(1): 125-151.

RSA DBE. 2011. See Republic of South Africa.

Republic of South Africa. 2011. Department of Basic Education. *Curriculum and Assessment Policy Statement: English First Additional Language. Further Education and Training Phase Grades 10-12.* Pretoria: Government Printing Works.

Scarcella, R, 2003. *Academic English: A conceptual framework*. Linguistic Minorities Research Institute: University of California. Available: http://escholarship.org/uc/item/6pd082d4 [Accessed: 5 December 2015].

Van der Walt, J.L. & Steyn, H.S. 2014. Towards standardisation: A comparison of two versions of an academic literacy test. *Journal for Language Teaching* 48(1): 105-125.

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

Vygotsky, L. 1978. *Mind in society: The development of higher psychological processes*. London: Harvard University Press.

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

Weir, C.J. 2005. *Language testing and validation: An evidence-based approach.* Houndmills: Palgrave Macmillan.

Zwiers, J. 2014. *Building academic language: Meeting common core standards across disciplines, Grades 5 – 12.* 2nd ed. San Francisco: Jossey-Bass.

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