

# "What they can't read will hurt them": reading and academic achievement

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*This article looks at the relationship between reading ability and scholastic or academic performance in the learning context. On the basis of findings from local research, it is argued that academic underperformance in South Africa stems mainly from poor reading skills, and some of the causes and consequences of poor reading skills are identified and discussed. In conclusion, the article considers some implications of this view for libraries in South Africa.*

well-informed decisions about normalisation, remediation and preventative measures. A characteristic feature of academic underperformance in South Africa is poor reading ability. This article briefly discusses the relationship between reading ability and academic performance and identifies some of the causes and consequences of poor reading skills in the learning context. In conclusion, it considers some of the implications that this holds for libraries in South Africa.

## What does reading entail?

A distinction is commonly made in reading research between the two main components of reading, namely decoding and comprehension. **Decoding** involves the oculomotor, perceptual and parsing aspects of reading activity whereby written symbols are translated into language (Carpenter and Just 1986). When children start learning to read, emphasis is placed on the acquisition of decoding skills. The short and simple reading books that children use in the early grades are designed to provide maximum practice in decoding skills, such as letter-sound relationships, word recognition and lexical access, and the syntactical parsing of simple sentences. Skill in decoding is usually reflected in relatively fluent oral reading (that is, reading aloud). **Comprehension**, on the other hand, refers to the overall understanding process whereby meaning is constructed within sentence units, between adjacent sentences, and across larger units of text contributing to the meaning of the text as a whole. The interaction between decoding and comprehending processes in skilled readers happens simultaneously and rapidly.

It is commonly acknowledged that comprehension cannot occur effectively unless decoding skills have been mastered (Just and Carpenter 1987; Perfetti 1988). However, skill in decoding does not necessarily imply skill in comprehension. Many readers may decode texts

## Introduction

On 16 July 2000, the headlines of the *Sunday Times* proclaimed South African children to be the "dunces of Africa". The feature article reported the findings of a comparative study of literacy and numeracy rates among primary school children from twelve countries in Africa, with South African children in general faring poorly in comparison to their African peers. Such results are not confined to the primary school. At the beginning of January each year, there is usually a media outcry about the low matriculation marks and poor pass rates of our secondary school students countrywide, particularly those who have to study through the medium of a second language. There is also a high failure rate among students in higher education.

Numerous historical, socio-political and cultural factors have contributed to this national crisis, the main causes of which are rooted in the deleterious policies and practices of apartheid education. Although it is important to understand the causes of such widespread low academic performance at primary, secondary and tertiary levels, it is equally important to gain a better understanding of the nature of academic underperformance in general in order to make

quite readily but still have difficulty understanding what it is that they have decoded (Daneman 1991; Yuill and Oakhill 1991). In her research into the reading ability of primary school students in South Africa, Strauss (1995) reports that the black Grade 6 students she had tested had good decoding skills, but very poor comprehension skills (less than 30 per cent comprehension levels). Decoding is a necessary reading skill but it alone does not constitute reading: comprehension is the *sine qua non* of reading. Whether we read for entertainment, relaxation, study or work purposes, we are not going to be entertained, relax, study or do our work properly if we do not understand what it is we are reading. Through decoding we 'learn to read', while comprehension enables us to 'read to learn'. This, as we shall see later, is the crux of the relationship between reading and academic performance. The terms **good** and **poor readers** are therefore used in the sense of good and poor comprehenders, irrespective of their decoding skills. These terms also exclude from consideration readers who have specific decoding problems, such as students suffering from dyslexia.

### From 'learning to read' to 'reading to learn'

Let us now consider how the two main categories of reading skills, decoding and comprehension, develop in the South African schooling context. In our schools, as in most schools world wide, reading skills are developed in the first four years (Grades 1-4) through the medium of mother-tongue basal readers which are mainly short narrative texts. During these years there is an emphasis on the development of decoding skills. Once children have been taught to read (that is, decode) in the early grades, reading as a language and information-processing skill is largely taken for granted, the assumption being that once children have 'cracked the code' they can use their decoding skills to make sense of the information they read. There is, of course, a certain truth in this. However, decoding skills and the development of meaningful comprehension skills (the transition from 'learning to read' to 'reading to learn') do not automatically take place in all children.

Furthermore, the nature of the texts that pupils are required to read changes from mainly narrative to more expository types of text which are often conceptually more sophisticated and, unlike narrative texts, tend to deal with topics and issues that are unfamiliar to the readers' frames of reference (Chall, Jacobs and Baldwin 1990; Macdonald 1990a).

Once children have been taught to read in the early grades, reading is largely taken for granted and is therefore easily dismissed. Little intensive and sustained effort goes into developing comprehension skills and children are not exposed to a wide variety of texts on which to hone their comprehension skills (Spingies 1993). Schools that emphasise reading skills beyond the early grades are the exception rather than the rule, even in the more privileged schools. Although many teachers readily accept that reading is important, the actual attention given to reading after about Grade 4 is apparent rather than real. Reading is often regarded by teachers as a leisure-time activity. If periods are assigned to free reading, they are typically used as a homework period. Consequently, for many children reading develops at a suboptimal level and they have problems accessing, understanding and integrating information from written texts. These learners have difficulty reading to learn and this handicap disadvantages them through an uncertain scholastic career in primary and secondary school, and even up to tertiary level.

In South Africa, these problems are especially acute for learners who are studying through the medium of a second language (L2), for they have to acquire language, reading and textual skills in a second language in order to read to learn. The majority of these students come from an oral rather than reading culture. This means that they are seldom exposed to storybook reading as children, and they have very little experience of the printed word before they start school. Because books are not an integral part of their lives from kindergarten, they often have difficulty learning to read. When they begin their schooling, they typically start to read in their primary language, but once they can decode words, very little sustained effort goes into helping them make the transition from decoding to reading with comprehension, or to progress from the simple and familiar narrative texts to the

more complicated and unfamiliar expository texts (that is texts with the function of conveying information, like textbooks).

Very few basal readers are published in African languages. Resources are sparse and often poorly managed, so very few schools have adequate collections of narrative texts with which to attract children to the pleasures of reading and to ensure that the decoding-comprehension interaction is accomplished. Furthermore, expository texts hardly exist in African languages. After Grade 4, black children therefore move from a sparse first language (L1) narrative text base to an extensive L2 expository text base. Both Macdonald (1990b) and Strauss (1995) report that there is a tendency for children in historically disadvantaged schools to become what Devine (1988) calls "sound-centred readers", where the pedagogic focus is on enabling readers to decode printed information, but little attention is paid to the meaning of the passage. Consequently, learners decode but they never really comprehend and this hinders them academically.

When the change to English as a medium of instruction occurs, many black pupils have barely mastered reading comprehension skills in their home or primary language. As a result, they have decoding skills but few comprehension reading skills to transfer to English. They then proceed through a disadvantaged educational system which does not promote reading skills, nor does it provide adequate textbooks. It is characterised by a strong reliance on an oral transmission of information, on rote learning and verbatim recall that is often imperfectly understood. The deleterious effects of this system at primary school level are amply documented in the Threshold Project Reports (Macdonald 1990a; 1990b) and the effects are evident at the level of higher education as well.

### **The relationship between reading and academic success**

Research findings in applied linguistics and reading research consistently show a strong correlation between reading proficiency and academic success at all ages, from the primary school right through to university level: students who read a lot and who understand what they

read usually attain good grades. In fact, the relationship between reading and learning begins even earlier in the pre-primary school years - children who are exposed to storybook reading before they go to school tend to have larger vocabularies, greater general knowledge and better conceptual development than their peers, and in addition, they learn to read and write more easily and quickly (Heath 1983; Ninio 1983; Snow 1983; Wells 1986; Elley 1991; Feitelson et al. 1993). The correlation between reading proficiency and academic performance obtains for both those who study through their first language (L1 students) and for those who do not (L2 students). In fact, several teachers and researchers argue that reading is probably the most important skill for L2 students in academic or learning contexts (Saville-Troike 1984; Carrell 1989; Hafiz and Tudor 1989; Mbise 1993; Fasheh 1995).

Given the extensive reading that students are required to do at tertiary level, the lack of good reading skills is a widespread problem for L2 higher education students in South Africa. For example, more than a decade ago, the 1989 results of reading tests at the University of Natal, Pietermaritzburg, indicated that black L2 students had average reading rates of 174 words per minute (wpm)<sup>1</sup> and a 62 per cent level of comprehension, while white L1 students had average reading rates of 246 wpm and a 76 per cent level of comprehension (Blacquiere 1989). The picture is even bleaker at historically disadvantaged universities. Perkins reports that the 1989 intake of students at the Student Orientation Programme at the University of Transkei were given the Stanford Diagnostic Reading Test: "Results indicated that only 13,8 per cent of the students had the reading skills necessary to comprehend textbooks for first-year students. Twenty-six per cent were found to be unable to cope without assistance" (Perkins 1991: 232). Since the opening up of educational opportunities for all, more students are therefore entering higher education with suboptimal reading skills.

At institutions specialising in distance education which relies fundamentally on tuition via the printed word and hence via reading, the reading ability of students is equally woeful. Using inference test items as an index of reading

ability, Pretorius (2000) found that more than half the 1 200 undergraduate Psychology and Sociology students at the University of South Africa (Unisa) who were tested, were reading at frustration level (they had 50 per cent or lower comprehension levels of the expository texts they were expected to read). Furthermore, the reading results showed a very clear relationship between academic performance and reading ability. On the basis of the marks they received in their final

examination, the students were divided into four groups, viz. fail (49 per cent or less), at risk (50 to 59 per cent), pass (60 to 73 per cent) and distinction (73 per cent or more) and their reading scores were then compared to their academic grouping, as shown in Table 1. As can be seen, clear differences emerged in reading ability across the different academic groups in both groups of students.

**TABLE 1: MEAN INFERENCE SCORES OF DIFFERENT GROUPS ACCORDING TO ACADEMIC PERFORMANCE<sup>a</sup>**

	Fail 1 (0-39%)	Fail II (40-49%)	At Risk (50-59%)	Pass (60-72%)	Distinction (73+%)
Psychology	44.6	50.4	55.2	60	70.1
Sociology		39.5	57.8	61.6	-

<sup>a</sup> The mean scores are expressed as percentages.

The average reading speed of a small sample of students was also tested (N=24). This was a mere 96 wpm, far below the recommended minimum of at least 150 wpm for L2 readers. Research suggests that reading at too slow a rate not only reduces enjoyment of reading but also jeopardises efficient comprehension (Anderson 1999). This was clearly evident among these readers, for not only did they read slowly, they also averaged only a 40 per cent comprehension rate.

South African students at all levels are proving to be unskilled readers. If we wish to address this reading crisis in our country, we need to further explore the nature of reading problems and how they impact on academic performance. To understand the relationship between reading and academic achievement one needs to examine the kinds of ability and skills that reading promotes on the one hand, and the benefits of reading, on the other. One of the reasons for the positive relationship between reading and scholastic success lies in the nature of reading and the kinds of linguistic-cognitive process necessary for skilful and meaningful reading. Another reason lies in the role that reading materials (for instance, storybooks, textbooks, notebooks and summarised notes) play in learning in the contemporary world.

### Reading as a linguistic-cognitive process

The first crucial reason underlying the strong relationship between reading ability and academic performance has to do with the development of language and cognitive information-processing abilities that promote the construction of meaning during the reading process. Reading obviously involves the processing of linguistic data. On these grounds, it is often argued that the reason why L2 students have poor comprehension levels is their low L2 levels, especially their limited vocabulary. While this argument is not without substance, the relationship between linguistic proficiency and reading proficiency is more complex. Reading involves several component knowledge structures and processes apart from linguistic knowledge and processing. If language proficiency alone were the basis of skilled reading, all L1 students would automatically be good readers. Language proficiency can, in fact, be greatly enhanced by extensive reading. Students who are exposed to wide reading have been shown to produce longer sentences, employ more complex grammatical structures, and to have a larger vocabulary (Snow 1983; Wells 1986; Hafiz and Tudor 1989; Elley

1991; Feitelson et al 1993; Cho and Krashen 1994).

For example, Daneman (1991) argues that the reason why some students have larger vocabularies is because they read more and that through reading they learn new words by inferring meaning from context. The findings of Sternberg and Powell (1983) support this hypothesis. According to their study, the obtained correlation between vocabulary size and comprehension derive from an individual's ability to learn or acquire new information from the context. They argue that the same types of syntactic, semantic, integrative and inferential processes that are used to decode and comprehend texts that contain known words are also used to infer the meaning of unknown words. In this view, then, differences in vocabulary knowledge (as well as grammatical knowledge) may not be the main cause of differences in comprehension, but are the *result* of differences in comprehension skills which depend on the amount of reading students undertake. In other words, non-beginner L2 students (that is, students who have been studying L2 and use it as the medium of learning for at least two or more years) who have small vocabularies and low proficiency levels also do little reading in the L2. Studies indicate that reading can boost language proficiency levels considerably, but the reverse does not necessarily follow - an increase in language proficiency does not necessarily boost reading skills (for instance, Hacquebord 1994). Although language is the medium through which reading occurs, language is a necessary, though not sufficient, condition for skilful reading.

Besides linguistic knowledge, reading also involves the processing of text knowledge and general knowledge, which entails massive amounts of cognitive processing involving inferring, understanding, integrating, and evaluating information within and across texts. It also entails recognising inconsistencies in text information, monitoring the comprehension process and applying repair strategies when comprehension breaks down, adding new knowledge gained from texts to existing knowledge bases in memory, and modifying existing knowledge bases in memory in response to information acquired from texts. Reading is

thus a distinctive cognitive-linguistic meaning construction skill that develops through constant exposure to the printed word. Furthermore, reading skills that are developed in one language can always be transferred to another language. As we saw from the previous section, the problem with many of our L2 students is that they never properly develop reading skills in their L1 so that they cannot transfer reading skills to the L2 when they switch to English as a medium of tuition. The educational system never really gives them adequate opportunities to develop their reading skills in the L2.

Reading thus promotes the development of "meaning making" and information processing abilities that are valued in the learning context and are indeed necessary for success in the technological and information age in which we live. The greater exposure learners have to print, the more easily and quickly these processes are automated and effective and the more opportunities the reader has for building up new knowledge structures derived from the information in the text. Differences in reading ability create what has been called the **Matthew effect**<sup>2</sup> (Stanovich 1986), whereby "the rich get richer and the poor get poorer". The phenomenon arises as follows: students with difficulties in reading read less than good readers. Because they read less, the processing mechanisms are exercised less and subsequently the cognitive-linguistic process and skills that support comprehension are not as well developed as in good readers. Because reading is a frustrating and exacting task, they lose the motivation for reading, which in turn affects the amount of reading practice they get. Their teachers and parents also tend to have lower expectations of them. Lowered expectations, lowered motivation, lowered self-esteem and lowered levels of practice and exposure to print all exacerbate reading problems, and so the negative cycle continues.

As Spear-Swerling and Sternberg (1996: 9) put it "... children who start off poorly in reading rapidly become even more disadvantaged relative to other readers, whereas the reverse happens for children who have a successful start in reading". There are various reasons why some children start off poorly in reading. These include a lack of prior exposure to literacy practices such as

storybook reading in the pre-primary school years, poor teaching and inadequate opportunities to properly develop reading skills, all of which are typical of disadvantaged educational systems. Whatever the causes, the outcome is similar - poor academic performance. In the learning context, skilled readers become 'rich' students - advanced schooling relies heavily on knowledge being acquired via more textbooks, and these textbooks also become longer and more complex, in terms of contents and concepts. Skilled readers cope with these text demands and in the process increase their knowledge as well as their cognitive-academic and literacy skills; unskilled readers cannot cope with the reading demands, their access to information is impaired, their knowledge accumulates slowly and in a fragmented manner, so they fall further and further behind in terms of linguistic, cognitive, academic and literacy skills.

Unless there is active intervention to help unskilled readers, the Matthew effect will continue in the careers of these students. Reading problems do not simply disappear as children get older. In fact, some research suggests that individual differences between readers in terms of reading comprehension tend to become more pronounced as the years of schooling increase. Just and Carpenter (1987) report that in the United States of America the differences between skilled and unskilled readers in the twelfth grade are greater than differences in the first grade. As Chall, Jacobs and Baldwin (1990: 3) put it, "the gaps become greater with increasing age". For example, poor readers at the end of Grade 1 may, developmentally, only be a year or less behind good Grade 1 readers. Yet, if nothing is done to help these poor readers, by the time they reach Grade 12, the reading gap may have widened by five or more years, so that poor matriculation readers may have the reading skill of learners in Grade 6 or 7. In fact, many first-year L2 students at the University of Pretoria were found to be reading at around Grade 7 or 8 level (Webb 1999).

The Matthew effect in reading resonates at a wider level in the learning context because many underachieving L2 students exhibit this syndrome in their academic performance. In other words, the Matthew effect in reading spills over into academic performance in general. Many

students continue to perform poorly and never really 'grow rich' linguistically, cognitively, textually, or in terms of subject-related knowledge, in spite of their perseverance in their studies. One of the major reasons for this is that many students are poor readers and therefore poor processors of information which inhibits their academic success.

Reading research is only beginning to uncover the powerful effects of print exposure on the development of cognitive-linguistic abilities that underpin language comprehension in particular and academic performance in general. The cognitive-linguistic skills that develop as a result of exposure to written language are crucial in the learning context because they enable learners to access and understand print information autonomously, rapidly and effectively. Yet there are many students, particularly those who have to study through the medium of an L2, who struggle throughout their entire schooling to read effectively and therefore do not become independent learners.

### **The role of reading materials in the learning context**

The second reason for the positive connection between reading and academic achievement lies in the role that the printed word plays in the learning environment. We live in a technological and information age which is dominated by information management and dissemination. As Stanovich et al (1996: 19) point out, most of the world's knowledge is stored in print - either paper print or, increasingly, electronic print - and retrieved through reading. Reading provides us with access to information, and in today's world information is power. Because printed information is a permanent visual representation, it allows the user to reflect on form and content and constantly refer back to them in a way that oral transmissions of information do not (Hron et al 1985). Owing to memory demands imposed by the ephemeral linear processing of oral discourse and the fact that acoustic information is only available for a short period, much of this information cannot be held in memory from oral face-to-face interactions or from radio or television transmissions, as effectively as it can

from print. Reading is thus a durable, effective and powerful means of accessing information. Furthermore, since reading is a means of accessing information, it is also a mechanism for building, modifying and consolidating declarative and procedural knowledge structures, including general background knowledge, domain specific knowledge, knowledge of language, knowledge of the conventions underlying different genres of print information, as well as knowledge of reading. These knowledges and the processes that integrate them form the basis of comprehension and learning.

The importance of being able to read to learn is particularly imperative when seen in the light of the role that textbooks and other books play in the learning context. As Grabe (1991: 389) points out, "literacy in academic settings in developed countries exists within the context of massive amounts of print information". Yet even in developing countries, textbooks, particularly expository texts, constitute the main medium whereby new information and knowledge is acquired, especially in the more advanced years of study. It is only through reading that one can independently access these knowledge bases. It has been estimated that about 75 per cent of the information which senior secondary learners need is accessed via textbooks (Hugo 1991) rather than transmitted by teachers in the classroom. It is impossible for teachers to impart all the information covered in the syllabus during classes alone. Texts not only help to reinforce those aspects of knowledge dealt with during class periods, but they also provide learners with access to information outside the classroom. Textbooks are therefore rich sources of formal knowledge. The ability to access and understand print information independently is an important component of being literate; the student can then read in order to learn and consequently gain personal autonomy. Academic success at secondary and higher levels is particularly dependent on accessing information from texts in an efficient and meaningful manner. Texts increasingly contain low-frequency words that do not usually occur in ordinary conversational discourse, the texts become conceptually more complex and at tertiary level often present multiple points of view and conflicting theoretical paradigms. Not only do students have to read,

understand and critically evaluate numerous texts, they also have to accumulate systematically conflicting information from various sources and integrate it into coherent knowledge systems or schemas on various topics.

Obviously, students who have problems reading, especially the reading of expository texts, also have problems with reading to learn because of their ineffective and limited access to rich print sources. If they cannot access information autonomously, and if they rely largely on oral transmissions for accessing and learning, they seldom become independent learners. They are thus faced with a tremendous handicap in a technological and information-driven age.

## Implications

The old adage "what they don't know won't hurt them" suggests that being unaware of something unpleasant prevents us from being concerned about it. The title of this article, with considerable writer's licence, turns this adage around and argues instead that what students do not or cannot read *will* hurt them - profoundly - in the course of their academic journey. I argue that the relationship between reading and scholastic success is not a trivial one. It is no coincidence that reading skills and academic performance are close correlates. Successful learning is essentially the ability to integrate new information with existing knowledge and then modify and expand existing knowledges, and that is what effective reading comprehension entails - constructing meaning so that new, incoming information on the page is integrated with existing knowledge structures in memory and with given information already encountered in a text. Academic success relies on successful learning; successful learning relies on the ability to read.

Given the low reading levels of students in South Africa and the strong relationship between reading ability and academic performance, there is a compelling need for more libraries to be opened throughout South Africa. Libraries in developing countries are not simply middle-class centres of reading for pleasure, to be shut down when funds are short. A nation that cannot read is a nation that cannot achieve in the learning

context. The close relationship between reading and academic achievement is the basis on which arguments about the future *raison d'être* of libraries should be premised. If large sections of our population cannot or do not read because of economic constraints, then it behoves national and provincial governments to make reading material accessible, via libraries, to people who cannot afford them.

If the largely oral socio-cultural context of our students fails to support the acquisition of literacy which results in skilled reading, and if the primary and secondary schools struggle to ensure the development of these skills, then libraries have a fundamental role to play in becoming centres of reading and therefore of learning in both urban and rural communities. Libraries should have active and on-going reading awareness campaigns, where reading is not linked only to leisure but also to the establishment of academic success. If people are made aware of the academic consequences of poor reading ability, there may be a greater incentive to make use of libraries. Through reading, students can improve their language proficiency, expand their vocabulary and enrich their general knowledge, and these in turn will have a positive effect on their ability to read to learn in the academic context.

Many people may not be able to afford to send their children to better schools, but they can more readily afford to send their children to libraries. Libraries could also play a more active role in promoting family literacy, encouraging parents or older siblings to read storybooks to young children from the pre-primary years, providing exemplars of reading practices, holding workshops where parents are shown how to read books to young children, and offering venues for volunteer parents or older students to form extra-mural reading groups for children. Libraries could also liaise with schools, from pre-primary to secondary level, to actively promote reading. Libraries should provide role models for reading, and provide centres where the printed word is available to people who would otherwise not have access to it, and where reading is practised, both for pleasure and as a basis of academic success.

#### Endnotes

1. Because reading rates vary depending on the reading level (for instance, unskilled versus or skilled readers), text genre (narrative versus expository), reader familiarity with the topic, and the purpose of reading (such as pleasure versus study reading), it is difficult to agree on what an optimal reading rate is for different age groups and reading levels. Nuttall (1986:56) states that a reading speed of 300 wpm is the norm for adult L1 readers of English with an average education and intelligence reading a narrative text, while Dubin & Bycina (1991) suggest that 200 wpm is the minimum required for proper comprehension. Segalowitz, Poulsen & Komoda (1991, in Anderson 1999:2) argue that the reading rates of bilingual L2 readers are usually about 30 per cent slower than L1 reading rates. Some researchers suggest that L2 readers who study through the L2 should try to approximate L1 reading speeds (Jensen 1986, in Anderson 1999:3).

2. The term comes from the book of Matthew in the New Testament, 25: 29 "For unto everyone that hath shall be given, and he shall have in abundance, but from him that hath not shall be taken away even that which he hath."

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