

## CHAPTER 9: CONCLUSIONS AND RECOMMENDATIONS

*“When I got my library card, that was when my life began.”*

*Rita Mae Brown*

This study proposed to identify, illuminate and explain relationships between some major explanatory factors and successful reading at Grade 5 level in South African primary schools. The potential significance of this study is that factors associated with reading literacy achievement can be illuminated and understood against objective measures of achievement in each of the 11 official languages.

South Africa’s contextual background includes many problematic social and economic issues against which the National and Provincial Departments of Education are expected to provide quality education. Some prominent issues the country faces, such as learner drop-out and failure rates, the impact of HIV/AIDS, and the prevalence of poverty, pervade the country’s profile. These issues, as outlined in Chapter 1, were done so not in an attempt to find answers in the current study, but rather to sketch a contextual background against which many learners in the South African schooling system are expected to perform and progress from one grade to the next.

This study made use of data from the Progress in International Reading Literacy Study 2006 (PIRLS 2006), in which a total of 40 countries and 45 education systems (e.g. Belgium – Flemish and Belgium - French) participated. PIRLS 2006 required the assessment of learners who have had four years of schooling, and for most countries this requirement translated to Grade 4 learners. The South African PIRLS 2006 study assessed a first population of Grade 4 learners in uniformity with other countries, but also included a second population of Grade 5 learners as a national option within the study. Chapter 6 provided detailed results for Grade 5 learner performance on the PIRLS 2006 assessment and illustrated evidence that South Africa achieved the lowest

Grade 4 score of the 45 participating education systems and Grade 5 lower from all other countries' Grade 4 achievement.

In addition to providing overall achievement results for South African Grade 5 learners, Chapter 6 also provided achievement results per language. The inclusion of language in this study should not create the impression with the reader that the study was linguistic in nature. Instead, language provided an important basis on which to separate learners to assist with multi-level analyses and simplified the data of a study that was in essence repeated 11 times over to include all official South African languages.

The PIRLS 2006 reading assessment was administered to a sample of 14 657 Grade 5 learners in aggregated selected schools across all 11 official languages. Of importance in this study is to note that results for each language referred to the language of the test, not home language. The language of the test was the language that should have coincided with the language in which the learner had been receiving instruction for the first four years of schooling, and may have been different from the learner's home language.

This PhD study takes the form of a secondary analysis of the South African PIRLS 2006 data, thus utilizing achievement data as obtained from a nationally representative sample within the context of an internationally comparative study. Of significance in this study is that data was available for almost 15 000 Grade 5 learners taken from a representative national sample. The available data not only pertains to achievement data, but also contextual data on learner, home, classroom and school-level. Such a rich source of data allowed multi-level analyses.

This final chapter summarizes:

- The research study, its aims and objectives (section 9.1)
- The research questions of this study and evidence in support of answering these questions (section 9.2)
- Reflections on the conceptual framework (section 9.3)

- Methodological reflections (section 9.4) and limitations of the study (section 9.5)
- Conclusions and recommendations (section 9.6).

## **9.1. SUMMARY OF THE RESEARCH APPROACH**

This study proposed to identify, illuminate and explain relationships between some major explanatory factors and successful reading at Grade 5 level in South African primary schools by making use of the PIRLS 2006 achievement and contextual data. With 11 official languages, current educational policy in South Africa advocates that learners in Grade 1 to 3 are taught in their mother tongue. When these learners progress to Grade 4, the language of learning and teaching changes to a second language, which in most cases is English. At this developmental stage, learners are also expected to advance from learning to read to a stage where they can use reading in order to learn. Using learners' achievement scores as obtained in the PIRLS 2006 assessment when tested in their language of learning, this study aimed in large part to investigate whether instruction in one's own native language contributes significantly to the relationship of explanatory factors with associated reading performance.

For the purposes of answering the research questions posed by this study, Hierarchical Linear Modelling (HLM), also known as Multi Level Modelling, was used. The aim of these analyses was to establish the relationships between one or more explanatory variables (in this case obtained from suitable items in the contextual questionnaires on learner- and school-level) and the outcome variables (reading achievement scores for the different language groups). Despite the availability of data for all 11 official languages, a decision was taken to aggregate achievement data into five language groupings, namely Afrikaans, English, Nguni, Sotho and Tshivenda. Based on linguistic similarities, it was hoped that this re-grouping of data would aid in the analyses and model-building to illuminate any important factors associated with reading achievement per language grouping.

The analysis of the PIRLS 2006 achievement and questionnaire data followed a confirmatory, not exploratory, approach. For purposes of using a confirmatory approach, Creemers' Model of Educational Effectiveness was used as theoretical point of departure, where PIRLS 2006 questionnaire items at learner- and school-level were matched and fitted against the framework. The implication of this approach was that, instead of using all variables available to the researcher from the different questionnaires, only a selection of variables that were expected on the basis of the model to be related to reading literacy achievement was used for analytical purposes. In this way, the study was not guided by the available data alone. Instead existing research into what is known about explanatory factors that are likely to influence learner achievement was utilized in order to have a theory to guide the analysis of data.

## **9.2. SUMMARY OF RESEARCH QUESTIONS AND RESULTS**

This study aimed to investigate the factors associated with reading performance in the learners' language of learning, as measured in all South Africa's 11 official languages. The main research question that guided this PhD study was:

What are the factors that could be associated with Grade 5 learner performance in reading literacy in South Africa?

Measurements obtained from the PIRLS 2006 project were used in an attempt to answer this question. Factors emanating from contextual questionnaires of Grade 5 learners, their home environment, their schools and classrooms, were identified in conjunction with learners' test scores on the PIRLS 2006 achievement tests. In order to answer the main research question, it was divided into five sub-questions, namely:

1. What was the Grade 5 learner performance on the PIRLS 2006 assessment?
2. What is the extent of variation across the language groupings in Grade 5 learners' reading literacy performance?

3. What factors related to the learners' background (for example motivation to read, language skills and home environment) affect performance in reading literacy?
4. To what extent does the school and classroom environment affect reading literacy performance?
5. How do these relationships between factors differ or remain constant across the language groupings in South Africa?

The following section elaborates on this study's attempts to find answers to each of these questions.

### **9.2.1. What was the Grade 5 Learner Performance on the PIRLS 2006 Assessment?**

The South African Grade 5 learners attained very low reading achievement scores, especially in comparison with their Grade 4 counterparts internationally. South African Grade 5 learners achieved on average only 302 (SE=5.6) points (see Chapter 6). The poor reading achievement of Grade 5 learners was reflected in equally poor achievement scores for Grade 4 learners, who achieved on average 253 points (SE=4.6). Average achievement for both these grades was well below the fixed international reference average of 500 points. Closest to South Africa's mean reading achievement score was Morocco, the only other African country that participated in PIRLS 2006, with a Grade 4 average of 323 points (SE=5.9).

Achievement was also presented in terms of learners' abilities to reach the internationally set Low, Intermediate, High and Advanced benchmarks (as discussed in Chapter 6). Nationally, as little as 6% of learners were able to reach or exceed the High International Benchmark for Grade 5 competence, in comparison to 41% internationally. Moreover, as many as 78% of South African Grade 5 learners were unable to reach the Low International Benchmark at all, in contrast to only 9% of learners internationally. International patterns show a substantial spread of achievement across each of the benchmarks, yet the South African pattern painted a very bleak picture of devastating

underachievement, as also echoed by the South African Grade 4 report (Howie et al, 2009).

South Africa's poor learner performance in the PIRLS 2006 assessment is mirrored by equally poor performance in other international and national studies. The SACMEQ II report (Moloi and Strauss, 2005) indicates that only 12.2% of Grade 6 learners in South Africa have pre-reading skills at a very basic level. As little as 16.0% of Grade 6 learners have skills to read for meaning, while only 6.6% of learners were able to employ critical reading skills. These results concur with the national 2003 Systemic Evaluation (SE) results of 52 000 Grade learners showed a national average of only 39% for literacy. The difficulty of Grade 5 learners to respond to written responses in the PIRLS 2006 assessment is discussed in following sections. These difficulties were also of concern to Grade 3 learners who were assessed in the Systemic Evaluation, as learners seemed to have great difficulty in this study too in producing their own written responses.

Learners who wrote the PIRLS 2006 test in Afrikaans (n=1 678) achieved the highest scores, followed by learners who wrote the test in English (n=2 793). A substantial drop in achievement is illustrated for learners who wrote the test in isiNdebele (n=798), isiXhosa (n=1 470), Sepedi (n=1 349) and Siswati (n=1 147). Learners who wrote the test in isiZulu (n=1 733), Sesotho (n=959), Setswana (n=1 055), Tshivenda (n=784) and Xitsonga (n=891) achieved better scores than their counterparts representing the other African languages. Results per language therefore indicated that learners who wrote the assessment in Afrikaans and English performed substantially better than learners who completed the assessment in any of the African languages (see Chapter 6).

### 9.2.2. What is the Extent of Variation across the Language Groupings in Grade 5 Learners' Reading Literacy Performance?

The PIRLS 2006 data was reduced and recoded into five language groupings, namely Afrikaans, English and Tshivenda as lone-standing language groupings, followed by the Nguni languages (consisting of isiNdebele, isiXhosa, isiZulu, Siswati and Xitsonga), and the Sotho languages (consisting of Sepedi, Sesotho and Setswana). Average achievement scores for these language groupings, (as discussed in Chapter 7), are provided in Table 9.1:

**Table 9.1: Average Grade 5 Achievement Score per Language Grouping**

Language Grouping	N	Average Achievement Score	SE
Afrikaans	1 678	415.7	12.0
English	2 793	398.0	17.1
Nguni	6 039	243.3	4.4
Sotho	3 363	267.1	5.2
Tshivenda	784	262.1	15.0

The Grade 5 learner performance varied greatly across the five language groupings (refer to Chapter 7 for additional tables and information). The difference in performance can be most strongly observed between the European-based language groupings (Afrikaans and English) and the African-based language groupings. There was as much as a 173 point difference between the highest performing group (i.e. Afrikaans) and the lowest performing group (i.e. Nguni). In the South African context these language groupings may be a proxy for socio-economic factors.

Due to the differences in average achievement scores between language groupings, the assumption was that variation would exist between different groupings of learners, particularly by language. The extent of variation in the reading scores within classrooms and schools is also reflected by the amount of variance estimated (as discussed in Chapter 7). The greatest variance found lies within the English grouping for reasons described earlier (see Chapter 7). Table 9.2 indicates the range of variances applicable within language groupings:



**Table 9.2: Variance Across Language Groupings**

Language Grouping	N	Un-weighted Variance	Weighted Variance (Total Student Weight)
Afrikaans	1 678	16 052.2	17 027.5
English	2 793	21 925.7	24 012.1
Nguni	6 039	8 813.2	9 386.4
Sotho	3 363	8 916.9	9 021.1
Tshivenda	784	9 761.4	9 291.6

This is the first study of its kind nationally to be able to illustrate the vast variation in reading achievement scores. Previous Mathematics studies (for example, Howie, 2002) have also found that South African classrooms are characterized by large variation, rendering any generalizations very difficult with diverse groups of learners. The most homogenous of the five language groupings was Tshivenda. Even Afrikaans represents a heterogeneous grouping of Afrikaans first language speakers and Coloured learners who speak Afrikaans as a first language and perhaps includes learners from other communities who speak Afrikaans as a second language. This same pattern is of relevance to the other language groupings as well, where substantial heterogeneity may exist amongst learners within groups.

### **9.2.3. What Factors Related to the Learner’s Background Affect Performance in Reading Literacy?**

Studies on the factors associated with learner performance, using PIRLS 2006 data, have been conducted by Frank and Rosen (2008) in Sweden, Geske and Ozola (2008) in Latvia and van Daal, Begnum, Solheim and Ader (2008) in the Nordic countries. This study is distinct from these other studies in that it sought to investigate explanatory factors within the learners’ background, for example motivation to read, language skills and home environment, that affect performance in reading literacy, and the manner in which these relationships between factors differ or remain constant for the five language groupings in South Africa. For the purposes of answering these questions, Hierarchical Linear Modelling (HLM) was used to determine the effect of a number of variables at learner-level and at school-level on reading achievement as



response variable, while controlling for language. Furthermore, the theoretical underpinning of an adapted Creemers' Model (see Chapter 5) provided the basis for the selection of the variables for the HLM analyses.

The results were presented in Chapter 8. Table 9.3 summarizes results on learner-level for the overall model and for each of the language groupings separately. Entries in the table were characterized by statistical significance at  $p=0.01$  or 1% cut off.

**Table 9.3: Summary of Learner-level Model Results with Significant Coefficients**

Fixed Effect	Overall	Afrikaans	English	Nguni	Sotho	Tshivenda
<b>Learner-level</b>						
Learner age	-8.76	-16.49	-31.70		-11.37	-21.81
Learner sex	-27.50	-25.48	-23.53	-30.98	-24.52	-
Learner time spent reading	-9.55	-	-	-11.40	-8.15	-
Reading opportunity used by learner	10.50	-	-	14.50	12.95	14.55
Reading time created by parent	-	-	-	-	-	-
Reading opportunity created by parent	-8.32	-10.05	-11.44	-	-8.08	-
Learner and parent social background	6.30	10.02	11.82	-	-	-

Note: Only statistically significant coefficients ( $p<0.01$ ) are presented in the table.

All the learner-level variables included in the overall theoretical model were statistically significant for at least one language grouping in affecting Grade 5 learner performance in reading literacy. The exception was *reading time created by the parent*. *Learner age* and *learner sex* were statistically significant for all groupings, except Nguni for age and Tshivenda for sex.

For Afrikaans and English Grade 5 learners significant factors that affected reading literacy performance included *learner age*, *sex*, *reading opportunity created by the parent* and *learner- and parent social background*.

The Nguni grouping had three factors of significance at the learner-level, namely *learner sex*, *learners' time spent reading* and the *reading opportunity used by the learner*. For the Sotho grouping, *learner age*, *learner sex*, *learner time spent reading*, *reading opportunity used by learner* and *reading opportunity*

*created by parents* were significantly associated with reading performance. The Tshivenda grouping manifested significant factors for learner age and reading opportunity used by the learner.

Factors that were not statistically significant in the learner-level model included *learner time spent reading*, *reading opportunity used by learners* and *reading time created by parents* for the Afrikaans and English groupings. For the Nguni and Tshivenda groupings, no factors at parental level were of statistical significance. *Reading opportunity created by parents* was of only statistical significance for the Sotho grouping. While these factors proved to be of statistical nonsignificance in this study, their educational significance should not be discounted. It is possible that the factors are indirectly contributing to achievement via other factors found to be significant.

The significance of learner-level factors in this study is confirmed by the work of Pretorius and Machet (2004) in another smaller South African study that portrays the effectiveness of a literacy enrichment programme on learner-level and its discernable impact on primary school learners' literacy accomplishments. Of importance in the significance of so many learner-level factors on reading achievement across the overall- and language grouping models is the possibility for policymakers and educators to intervene effectively at learner-level. Any interventions or policy changes that are closely related to specific types of learners are more likely to result in change than changes to the school-level factors. If, for example, educators and policymakers are aware of the fact that boys in all cases perform significantly lower in reading than girls, any interventions can be tailored and developed with boys in mind. Similarly, if reading achievement is lower in each successive increasing age group amongst Grade 5 learners, policies of keeping learners in the same grades for consecutive years may prove to be ineffectual, and alternative ways of assisting older learners have to be considered.

#### 9.2.4. To What Extent do the School and Classroom Environment Affect Reading Literacy Performance?

Table 9.4 provides results of significant factors for the overall South African school-level model and school-level models for each language grouping separately:

**Table 9.4: Summary of Model Results with Significant Coefficients**

Fixed Effect	Overall	Afrikaans	English	Nguni	Sotho	Tshivenda
<b>School-level</b>						
School socio-economic status	69.10	87.60	71.05	-	-	-
Afrikaans	-10.93	-	-	-	-	-
Nguni	-70.90	-	-	-	-	-
Sotho	-68.00	-	-	-	-	-
Tshivenda	-73.51	-	-	-	-	-
Teacher quality	-	-	-	-	-	-
Teacher time spent on reading in class	-	-	-	-	-	-
Reading opportunity created by teacher	-14.12	-	-	-	-	-
School educational quality	-	-	-	-	-	-
School time spent reading	-	-	-	-	-	-
Reading opportunity created by school	-	-	-	-	-	-

Note: Only statistically significant coefficients ( $p < 0.01$ ) are provided in the table.

Results of this study (as indicated by Table 9.4) indicate that none of the teacher level variables (including that of teacher quality) were significant in the overall model, with the exception of *reading opportunity created by the teacher*. Where teachers fail to create such opportunities for learners, average reading achievement was 14.1 (SE=5.4) points lower.

The work of Lee, Zuze and Ross (2005) in their secondary analysis of the SACMEQ II data showed patterns of higher achievement in schools with more resources and higher quality teachers. Prinsloo and Stein's (2004) study of South African teachers, point out that an aspect of teacher quality is the teacher's ability to function in complex communicative environments in which the differences in children's literacy experiences result from how the teachers invent their activities around literacy differently, despite following the same 'broad' curriculum.

Chapter 8 elaborated on the provision in each model of a variable for school socio-economic status. This variable was created to convey the social background of the school by averaging indices of resources across the set of children in the school. The interpretation of the model now allows for explanations of teacher- and school-level *time spent on reading, opportunities created by the teacher and school for reading and the quality of teachers within a socio-economic context* that were accounted for in the model.

The overall model showed that, after taking account of *teacher and school time spent on reading, opportunities created for reading and teacher quality, school socio-economic status* was still associated with a 69.1 (SE=5.2) points higher average reading achievement. For separate Afrikaans and English groupings, *school socio-economic status* accounted for 87.6 and 71.1 points higher average reading achievement scores respectively.

The absence of socio-economic and other school-level effects for the African languages can perhaps be explained by minimal socio-economic variation between schools for the African language groupings. Few well-resourced schools from Black communities were available in the South African PIRLS 2006 sample. An alternative explanation for the lack of variance in African language groupings may also point to the inability of response options to items in the PIRLS 2006 contextual questionnaires to provide sufficient variation. A tradition of social desirability has the implication that learners, teachers and principals alike may tend to mainly select very positive response options, thereby rendering any observations of manifest variation nearly impossible.

With the absence of statistical significance for school-level factors for each of the separate language groupings, it also has to be borne in mind that with the particular use of Creemers' Model of Educational Effectiveness, there may be a number of relationships that could not be found or tested for the purposes of this study. It could be that no appropriate variables were identified under the relevant components in the conceptual framework. A decision was taken to follow a confirmatory approach in this study. While reasons for this decision are well documented (see Chapter 5), an exploratory and not confirmatory

approach to data analysis may be more appropriate in ascertaining relationships for African language groupings. Although several of the predicted components were not found to be of statistical significance at school-level in this study, this outcome does not mean that associations do not exist.

Despite the lack of detectable school-level factors for African language groupings, overall model results, and Afrikaans and English results nonetheless illustrate the effect of school socio-economic status as consistent with other research, which identifies socio-economic status as the dominant predictor of reading achievement.

### 9.2.5. How do these Relationships between Factors Differ or Remain Constant across the Language Groupings in South Africa?

Table 9.5 reflects on a summary of statistically significant results for the overall model and for models applied to each of the language groupings separately that were presented in Chapter 8:

**Table 9.5: Summary of Model Results with Significant Coefficients**

Fixed Effect	Overall	Afrikaans	English	Nguni	Sotho	Tshivenda
<b>School and Classroom-Level</b>						
School socio-economic status	69.10	87.60	71.05	-	-	-
Afrikaans	-10.93	-	-	-	-	-
Nguni	-70.90	-	-	-	-	-
Sotho	-68.00	-	-	-	-	-
Tshivenda	-73.51	-	-	-	-	-
Teacher quality	-	-	-	-	-	-
Teacher time spent on reading in class	-	-	-	-	-	-
Reading opportunity created by teacher	-14.12	-	-	-	-	-
School educational quality	-	-	-	-	-	-
School time spent reading	-	-	-	-	-	-
Reading opportunity created by school	-	-	-	-	-	-
<b>Learner-level</b>						
Learner age	-8.76	-16.49	-31.70	-	-11.37	-21.81
Learner sex	-27.50	-25.48	-23.53	-30.98	-24.52	-
Learner time spent	-9.55	-	-	-11.40	-8.15	-



reading						
Reading opportunity used by learner	10.50	-	-	14.50	12.95	14.55
Reading time created by parent	-	-	-	-	-	-
Reading opportunity created by parent	-8.32	-10.05	-11.44	-	-8.08	-
Learner and parent social background	6.30	10.02	11.82	-	-	-

Note: Only statistically significant coefficients ( $p < 0.01$ ) are provided in the table.

Patterns of statistical significance between the Afrikaans and English language groupings were directly similar, with *school socio-economic status*, *learner age*, *learner sex*, *reading opportunity created by the parent* and *learner- and parent social background* having associations of statistical significance with reading literacy performance.

A much more varied picture emerges between the African language groupings, specifically at learner-level, where the Sotho grouping was the only one with a significant factor in the form of *reading opportunities created by parents*. While similarities between these groupings were observed for *reading opportunities used by learners* and *time spent reading by learners*, the effect of *learner age* and *learner sex* varied, with learner age not being of statistical significance for the Nguni grouping and learner sex not being of statistical significance for the Tshivenda grouping.

Of interest is that the results for this study showed no statistical significance for school-level factors associated with reading outcomes for any of the language groupings. Also of interest was the nonsignificance of school socio-economic status for the African language groupings (see Chapter 8 and explanations provided in this Chapter under 9.1.4).

The coefficients indicating the effect between *learner opportunities used to read* and *time spent reading* were of opposite sign, suggesting association with higher and lower reading scores respectively. It was therefore not possible to separate the effects of *time spent on reading* and *opportunity created to read* in

the results of these models (as discussed in Chapter 8). It is plausible that the interaction between these two factors occurs, and hence cautioned against making any interpretations of the significance of *time spent on reading*, require interpretation in conjunction with the *opportunities created for reading*.

### 9.3. REFLECTIONS ON THE CONCEPTUAL FRAMEWORK

In not only understanding the reasons for poor reading achievement, but also identifying those factors that can be associated with successful readers and those factors associated with readers at risk of failure, three contextual systems seem to be of major influence in reading achievement, namely the school, the home and the learners themselves.

Creemers' Comprehensive Model of Educational Effectiveness underpinned the conceptualization and design for this study, as it most closely supported preliminary ideas and appeared highly relevant to already existing reading achievement literature. Creemers' framework provided the basis for a comprehensive analytical model in this study's attempt to evaluate achievement across language groupings in the PIRLS 2006 South African data.

Creemers' model focuses on the explanation of learner outcomes by alterable educational factors, by discerning contrasting but connected levels of structure, for effectiveness in education. Higher levels provide conditions for lower level changes and educational outcomes are induced by the combined effects of levels. The model has four levels, namely the learner-level, classroom-level, the school-level and the context (or country) level. A detailed description of the various components was given in Chapter 3.

Table 9.6 (below) illustrates how components of quality, time and opportunity, as taken from Creemers' model, were populated with variables from the PIRLS 2006 contextual questionnaires. Justification for using the framework was given in Chapter 3. Table 9.6 further summarizes the statistically significant effects found in this study for the overall model and per language grouping separately. It confirms the statistically significant effects found in the overall, Afrikaans and



English models for school socio-economic status, followed by statistically significant effects found at school-level for the overall model. At learner-level, different significant factors as per language grouping are indicated (as discussed in detail in Chapter 8 and in explanations provided in this Chapter under 9.1.3).



**Table 9.6: Factors of Reading Effectiveness and Statistically Significant Effects (adapted from Creemers, 1999)**

Levels	Components of Quality, Time and Opportunity	PIRLS 2006 Explanatory Variables	Statistically significant effects					
			Overall	Afrikaans	English	Nguni	Sotho	Tshivenda
Context	Quality:	Demographics and resources (School SES)	x	x	x			
	Time:	Curriculum characteristics and policies						
	Opportunity:	Governance and organization of educational system						
School	Quality (educational):	School environment and resources Instructional activities and strategies	x					
	Quality: (organizational)	Governance and organization of educational system						
	Time:	Teacher training and preparation Home-school connection						
	Opportunity:	Curriculum characteristics and policies						
Classroom	Quality:	Demographics and resources Instructional materials and technology						
	Time:	Teacher training and preparation						
	Opportunity:	Classroom environment and structure Instructional strategies and activities Home-school connection	x					
Learner	Quality:	Learners' out-of-school activities	x	x	x	x	x	x
	Opportunities used:	Home-school connection	x	x	x			
	Motivation:	Activities fostering reading literacy	x	x	x		x	
	Social background:	Demographics and resources	x	x	x	x	x	x
		School environment and resources	x	x	x			
		Home resources	x	x	x			
Basic skills/Higher order skills:	Language in the home							

It has to be kept in mind that not all of the variables from the contextual questionnaires were used in building the learner- and school-level models. Instead, only some variables were selected in accordance with the factors as outlined by Creemers. In this way, a theoretical point of departure served as justification for including and excluding variables into the model. Chapter 7 described the construction of the scales which were used at the learner- and school-level. Reference can be made to Chapter 7 for detailed descriptions and tables of variables that were included in the learner- and school-level models.

The use of Creemers' Model of Educational Effectiveness as conceptual framework in this study begs the following question: To what extent does the presupposed model capture the PIRLS 2006 data adequately? It can be argued that it was never the intention for the PIRLS 2006 data to fully capture Creemers' Model, since the model was not used here to broaden an understanding of school effectiveness. Nonetheless, it was used as theoretical point of departure for this study without the intent to be fully captured by the PIRLS 2006 data.

Based on model results (as discussed in Chapter 8) some surprising results emanated contrary to expectation. One such outcome was the statistical nonsignificance of school socio-economic status for the African language groupings. These results should not be interpreted as suggesting there is no socio-economic association with average reading performances for African language groupings at school-level. Instead, there may be a number of direct relationships that could not be found or tested given this study's data source and conceptual framework. For a number of Creemers' factors no appropriate variables could be identified under the relevant components in the conceptual framework (e.g. basic skills, variables that measure resources rather than opportunity, as described fully in Chapter 7). Although several of the predicted Creemers' components did not exhibit association in this, this outcome does not mean that the associations do not exist. It merely suggests that the predicted components are not directly affecting achievement in the current study.

Reflections on the conceptual framework used in this study and the study of PIRLS 2006 data to adequately mimic the components as specified by Creemers, invite another question: How should the model change to suit the South African landscape more adequately? Perhaps modifications should be explored rather than confirmed, since use of the South African PIRLS 2006 data source to capture the essence of Creemers' components often resulted in the elimination of or adaptation to factors.

Another model aspect where evidence may have been suppressed in the data and not adequately reflect the conceptual framework, was that the school and teacher was inseparable given the sampling of one class representing the school. The inseparability of the school and teacher could be mediated with the inclusion of more teacher or classroom data and invites the following question for consideration in future research: Could more than one classroom per school warrant changes of design, thereby improving the explanatory power of this model? For example, could data in future be selected from two or more classrooms per school, with fewer sampled schools, and if so, could the choice of such schools for a second classroom be random choices of schools that have been already stratified by some salient feature (e.g. school variability)?

In conclusion, Creemers' framework was used as it supported preliminary ideas about reading achievement most closely. However, although the presupposed model was apparently adequate for the overall, Afrikaans and English models and literature, the framework did not fit patterns found for the African languages, and may therefore suggest further changes to the framework to suit the South African landscape more adequately. It is my firm belief that suggested changes to a framework would have to include adjusted measures on aspects of teachers' beliefs about reading, its role and importance in the classroom and perceptions of adequate time spent on the activity in attempts to gauge the South African classroom environment.

## **9.4. METHODOLOGICAL REFLECTIONS**

This study took the form of a secondary analysis of the South African PIRLS 2006 data. Some design issues needed to be kept in mind with the interpretation of results. In this section a number of considerations are discussed in relation to the PIRLS 2006 data and methodology employed in the study that may impact on the results:

### **9.4.1. The PIRLS 2006 Assessment Instruments and Contextual Questionnaires**

As an international comparative study, the PIRLS 2006 data collection instruments consisted of reading achievement booklets comprising reading comprehension passages with accompanying questions in various formats. As part of assessing reading comprehension and understanding the contexts in which Grade 5 learners read, the assessment also included the administration of questionnaires to school principals, teachers, parents and learners.

As seen in the results, in some cases, learners experienced great difficulty in responding to the PIRLS 2006 reading passages. Some of these difficulties may have been associated with translation issues. In conversation with translators, it became clear that many of the African languages are regionally influenced. So, for example, is the Sepedi that is spoken in one region of the country different from the Sepedi that is spoken in another region, thereby rendering translations impossible to be reflective of each region. Despite this regional difference, the PIRLS 2006 South African data collection instruments reflected the accepted, standardized versions of all 11 official languages as far as possible in 2004. Of the PIRLS 2006 participating countries, South Africa proved to have the most complex situation by far in terms of the number of indigenous languages and their implementation as LOLT in schools. Language and cultural complexities highlighted the importance of acknowledging diverse cultures in cross-national studies of this nature.

Other cautions have been reported about the reliability of questionnaire data and the problem of social desirability. Of particular interest in the PIRLS 2006 teacher- and school questionnaire data was that some items in these questionnaires may have involved value judgments, and despite reassurances of confidentiality, in all likelihood, teachers and principals may have felt the need to place themselves in a better light in providing socially acceptable responses. For example, in the PIRLS 2006 principal questionnaire, 80% of principals confirmed cooperation and collaboration among teachers in the school. Such a high percentage is in direct contrast to teacher reports that were collected during interviews at the time of the PIRLS 2006 data collection and visits to schools. Many teachers admitted that their workload and administrative duties prevented them from collaborating and cooperating with their colleagues. The PIRLS 2006 teacher and school questionnaires may not always have led to reliable responses, specifically where teachers felt obliged to provide answers in line with their perceptions of the purpose for which the research sought to gather evidence.

#### **9.4.2. The Use of Hierarchical Linear Modelling Techniques**

In previous chapters and in discussing the results, it was noted that for the purposes of this study, the aim was not for findings to point to causality or to provide evidence for a causal relationship among any of the variables used in the model. At the most, some causal relationships could be rendered plausible or probable on the basis of the data. Since it is not possible to rule out all other explanations or factors that influence reading achievement, and since one is restricted by what the data set and its structure could provide, the aim of the analysis was to attempt to identify those factors which might be deemed most 'probable' in plausible claims of the form that 'factor A contributes most to reading literacy achievement for a particular language group'.

Answers to research questions posed in this study were explored through Hierarchical Linear Model (HLM) techniques. In using a theoretical point of departure (in the form of Creemer's Model of Educational Effectiveness) as justification for including some PIRLS 2006 variables directly or indirectly in the

model, the study took a confirmatory approach. While other statistical techniques could have been used fruitfully in attempts to answer the research questions posed by this study (such as Structural Equation Modelling), the choice for HLM was justified in its ability to take account of the nested structure of the data, its ability to impute missing values and its ability to use all five Plausible Values as outcome variables in computing model results (as argued in Chapter 5). However, a limitation of using HLM is its inability to test indirect effects of explanatory variables on an outcome variable, and in this study only direct effects could be tested.

For the purposes of building multi-level models more effectively, it was decided not to analyze data individually for each of the 11 official languages. It is noted that 11 official languages imply that analyses would have to be repeated and replicated 11 times over, with a chance that, due to small sample size, the languages spoken by less than 5% of the South African population (namely isiNdebele, Siswati, Tshivenda and Xitsonga) would be excluded from the analyses.

#### **9.4.3. The Distinction Between First Language, Language of the Test and Language of Learning**

A distinction was made in this study between 'first language', 'language of learning' and 'language of the test'. South African children are by policy intended to start their learning at school from Grade 1 to 3 in their home language (mother tongue). However, many schools are faced with teaching learners in these initial grades in a language of learning that is nonetheless different from what is spoken at home. For Grade 1 to 3 learners, 'home language' does not necessarily coincide with 'language of learning' or 'language of the test'. When learners approach Grade 4, the language of learning changes, resulting in more than 80% of learners being taught in a dominant second language (mostly English, a language spoken as another tongue by less than 10% of the population).



For the purposes of data analysis in this study, language groups was defined by means of 'language of learning' (in Grades 1 to 3), since the term 'home language' was not accurately indicative of whether a learner did in fact receive instruction in his or her home language. The terms 'language of learning' and 'language of the test' were used interchangeably, even if it was functionally possible that in a few cases the equivalence was moot.

## **9.5. LIMITATIONS OF THE STUDY**

The methodological reflections of this study highlight decisions made in the conceptualization, use of data source and data analysis of this study. While decisions can mostly be justified and explained, the limitations of the study should also be noted. A number of possibilities deserve mention, namely:

1. The PIRLS 2006 data does not necessarily capture educationally and statistically significant factors at play at learner- and school-level in order to explain reading achievement scores sufficiently in a South African context. While more statistically significant factors were found for the Afrikaans and English language groupings, this significance may be reflective of the European (or predominantly Western) background of these learners who took part in a conceptualised and designed study that is also based on European (or Western) ideals. In terms of an African school context, the SACMEQ study makes provision for such a special context (e.g. asking teachers to comment on the availability of resources such as mud walls and thatched roofs typically found in many African communities). Multi-level modelling of data may prove itself useful with the use of a data source which takes these unique contextual aspects into account.
2. Statistically significant or indirect factors may be at play that are hidden from the current data source or may have inadvertently become hidden in the re-structuring of the dataset according to language groupings. Indirect effects were not tested in this study. This decision was taken in an attempt to streamline the data analysis process by not replicating the study 11 times over. By aggregating data to language groupings, little

variation in achievement could be found for African language groupings. Despite linguistic similarities, more variation may have become evident had the African languages been treated separately.

3. A decision was taken to follow a confirmatory approach in this study by relying on a theoretical framework to underpin the selection of variables for model-building purposes. In light of the lack of variation (and consequently the lack of factors of statistical significance) for the African language groupings, an exploratory approach may have been warranted instead. In using a confirmatory approach, statistically significant factors may have become hidden through the exclusion from the framework of key variables.
4. In the absence of identifiable reading effectiveness models, a school effectiveness model (in the form of Creemers' Model of Educational Effectiveness) was adopted. Significant factors found for the Afrikaans and English groupings approximate this model, but little similarity could be found for significant associations with Creemers' components and average reading scores for African language groupings. An adapted model suited to a South African schooling context is therefore still needed, possibly with a holistic, systems approach that would allow for complex relationships. A systems theory approach may provide valuable theoretical insights, taking into account the nested structure of data of this nature. More specifically, at macro (or school-) level, individual differences may become discernible when data is not handled at an aggregated (or pooled) level.

## **9.6. CONCLUSIONS AND RECOMMENDATIONS**

In South Africa, grave concerns about low levels of learner achievement pervade research initiatives and educational debates. Despite considerable investment in educational inputs (such as policy, finance and resources), processes (such as curriculum provision, teacher support and development), outcomes in the form of learner achievement remains disappointingly low.

### 9.6.1. Main Conclusions

The five main conclusions that can be drawn from this study are as follows:

1. **The language of the test (i.e. Language of Teaching and Learning) is a critical explanatory variable for reading achievement in South Africa.** As much as 36% of explained variance in South African schools is attributable to language (see Chapter 8, section 8.7). An implication is that languages other than Afrikaans and English should be targeted for supportive interventions.

The Revised National Curriculum Statement (RNCS), as issued by the national Department of Education in South Africa and described in detail in Chapter 3, professes to follow a balanced approach to literacy development. Such a balanced approach recognizes the fact that learners, upon entering their formal schooling years in Grade R, arrive at school with prior knowledge and a high proficiency in their home language, developed through a range of interactions with others at home in the context of nurturing, care and play (“Revised National Curriculum Statement Grades R-9”, 2002).

The RNCS encourages learners in the Foundation Phase (that is from Grade R-3) to do wide reading, while teachers should provide learners with opportunities for writing and developing their vocabulary and language use. Learners should be helped to discover techniques and strategies to unlock the ‘code’ of the written word, such as developing word recognition and comprehension skills by means of phonemic awareness, knowledge of letter-sound correspondence and knowledge of blending, which is described as the ability to put together two or three letters to make a sound.

At the end of the Foundation Phase, the balanced approach to reading literacy as outlined in the RNCS (“Revised National Curriculum Statement Grade R-9”, 2002) culminates in the Grade 3 learner having

been exposed to Reading and Viewing as a Learning Outcome, resulting in abilities to:

- Use visual cues to make meaning, e.g. read graphical texts such as photographs, maps and diagrams.
- Make meaning of written text, e.g. comment on stories or poems that were read and show understanding by answering questions on main ideas, key details, cause and effect, conclusions and personal opinions.
- Read texts alone, and use a variety of strategies to make meaning.
- Consolidate phonic knowledge, e.g. recognize that the same sound can be spelled in different ways or recognize that the same spelling can represent different sounds.
- Read for information and enjoyment, e.g. choose a variety of books to read and state what was or was not liked about them.

The foregoing description of the RNCS's view of literacy at Foundation Phase presents a utopian outlook on the reading development and context of Foundation Phase learners in South Africa. While evidence was presented in this study of the importance of learner time spent reading, learners' use of opportunities to read and parental support in providing reading opportunities, many social challenges and obstacles may prevent these RNCS ideals from being realized in the lives of many learners.

Indeed, the ideals of the DoE as described in the RNCS might well be attained in a system where:

- the majority of learners have access to social support systems in the form of literate parents
- the majority of learners have access to ample reading material in their home language

- the majority of learners' basic needs (in the form of food, shelter and clothing) are met.

While the Language in Education Policy currently strongly advocates the development of indigenous languages and opportunities for learners to be educated in their mother tongue, the South African context may rather warrant an approach to bi-literacy. During the Foundation Phase, home language is predominant, but in ensuing phases the role of the second (or even third) language becomes much more pronounced. In essence, problems with the Language in Education policy are not inherent to the policy itself, but rather with the implementation thereof. A vast difference exists between policy- and curriculum documents and what happens at learner-level in classrooms throughout South Africa.

2. **Learner-level factors explain most of the differences in reading scores within language groupings.** Vast differences in reading scores exist between the language groupings and the aggregation of data to language grouping may have provided sufficient variation for discernible effects to be detected at learner-level (see Chapter 8, section 8.7). In this study significant associations with learner age and sex confirm findings elsewhere in the literature on the topic.

The results of this study pointed to evidence for associations found at the learner-level. Age was an important predictor of reading achievement in nearly all the presented models, with the implication that reading achievement shows downward patterns per year of age of learners at Grade 5 level. This evidence clearly suggests that a suitable approach to underachievement is the early diagnosis and targeted support of learners with difficulties. This strategy is easier said than done, since many teachers in South African classrooms are faced with large classes and little experience in diagnostic testing. Anecdotal evidence points to some teachers' dilemmas where, even when teachers are aware of learners with difficulties in their classrooms, they are not knowledgeable about

appropriate steps to support the learners or to obtain additional assistance to target the problem.

One strategy to handle learners with difficulties in the South African education system has been to promote learners to progressive grades once they have been in a grade for three consecutive years. This approach may well be viable in a system where effective learner support and remediation strategies are in place. In reality, it often results in underachieving learners who cannot keep up with classwork, culminating in an increased risk of dropping out.

The results for this study showed that boys were consistently obtaining lower reading achievement scores than girls. In line with international patterns of reading achievement between boys and girls, national interventions could therefore be aimed and targeted at boys, if only to serve as an avenue to get boys interested in reading.

3. **Most of the differences in reading achievement scores cannot be explained using the conceptual framework for this study.** In particular, the framework was insufficient to explain the performance of children using African languages as LOLT (see Chapter 8, section 8.7). The African language grouping models did not fit the conceptual framework and little evidence could be found for factors included in the model where one would have expected statistically significant effects. This lack of evidence suggests that the current contextual data for African learners is insufficient to give evidence about associations and that stronger association and more data is required for the model to be tested effectively for the African language groupings.
4. **The conceptual framework was more appropriate in explaining reading achievement scores for the Afrikaans and English language groupings than for those from African language groupings.** Significant effects of school socio-economic status were found for the Afrikaans and English groupings, corroborating literature that infers the

influence of socio-economic status on learner achievement (see Chapter 8, section 8.7).

- 5. School-level factors have no discernible effect on Grade 5 learners from African language groupings.** Only one factor (reading opportunity created by the teacher) showed statistical significance at school-level for the overall South African model (see Chapter 8, section 8.7). Since the absence of statistical significance should not be equated with the absence of educational significance, this finding may be related to minimal variation within the African language groupings. The aggregation of learner-level data to groupings of linguistic similarity may hide associations that might be found from separate analyses of sufficient data from each model.

Results that emanated from this study, as discussed in Chapter 8, pointed to the fact that very few statistically significant factors could be found at classroom- and school-level for each of the models that were built in this study. Apart from teacher time spent on reading in the overall model, none of the school-level factors in models to follow proved to have the same statistical significance.

The importance of these factors at classroom- and school-level, are however, not diminished. A lack of statistical significance should not be regarded as lack of importance of the factor's effect on reading achievement in totality. Instead, as suggested by the discussion in Chapter 8, otherwise significant effects could be hidden within or beyond the current data source, but yet still represent important associations with reading achievement, and hence mirror literature on the topic and what is known about that which works in terms of classroom practice.

From descriptions in Chapter 6 that particularly focused on teacher behaviour in the class, it became apparent that for the majority of Grade 5 learners' teachers there is still a heavy reliance on textbooks and very little use of other resources in teaching reading. Also of interest was the



reported late introduction of reading skills and strategies to learners from Grades 1 to 4, a pattern that proved inconsistent with international patterns where learners are introduced to more complex skills and strategies much earlier in their formal schooling careers. Principal reports on learners' perceived readiness to read when entering the school in Grade 1, mirror those on the late introduction of reading skills and strategies. Low percentages of learners' principals reported that learners entered their schools in Grade 1 with a sufficient repertoire of early literacy skills, such as basic letter and word recognition, basic numeracy skills and basic sentence construction abilities.

### **9.6.2. Additional Reflections**

In writing additional reflections, I share my views and beliefs which may not be grounded in empirical evidence, but arose from experiences in the field, resulting in reflections on the South African situation.

The picture painted by the South African educational landscape is one where, for many children, basic needs are not met and social amenities are absent and do not form part of the child's frame of reference. While there is importance and nobility in pursuing and assessing ever increasing reading literacy levels, its importance pales when the empty stomachs of and absence of parental guidance for many children are taken into account.

As a country, South Africa's first participation in PIRLS took place in 2006. Participation in other international studies included participation in the Trends in Mathematics and Science Study (TIMSS), and repeated participation in the Southern and Eastern African Consortium for the Monitoring of Educational Quality (SACMEQ). While South Africa is not a newcomer to international testing, there is still a peculiar test naivety among learners and schools. Many Grade 5 learners encountered reading comprehension assessment for the first time when they participated in PIRLS 2006. Large scale assessment of learners in future testing must ensure that:

- Learners have had sufficient opportunity to learn the skills and content that will be tested
- If the stakes of the test are high, learners must be provided with more than one opportunity to demonstrate their capabilities, specifically in the presence of language difficulties unrelated to the subject (such as translation issues which were encountered in the PIRLS 2006 reading assessments).

Many Grade 5 learners had difficulty answering the questions in the PIRLS 2006 assessment, specifically since the assessment entailed a format and required tasks that were completely new to these learners. Anecdotally, there was evidence that a number of learners were not familiar with the question format. Especially multiple-choice items proved to pose quite a challenge. While this inability at learner-level to deal with the PIRLS 2006 assessment format is problematic in itself, the root of the problem could be found at teacher level. Teachers may require and expect very little of their learners in reading comprehension tasks, and surface level questioning on passages may have become the norm. When confronted with stringent assessment tasks, such as those found in PIRLS 2006, it is therefore not surprising that learners found the task unfamiliar and were unable to produce even a minimum level of response required by the assessment.

While participation in international assessments provides an opportunity to gauge the extent of difference between the intended, implemented and attained curricula, I also came to realize that in the South African context, the oral tradition of many learners is not accounted for by the format of these assessments. In many African cultures, a high premium is not placed on the ability to express oneself in reading and writing. Instead, higher value is placed on the ability to communicate orally. With a high premium placed on oral communication, there is very little need for books and printed media, thus enforcing a vicious cycle with little availability of printed media in indigenous languages. While the national curricula make provision for Learning Outcomes related to speaking (specifically in the Foundation and Intermediate Phases),

the curricular emphasis still remains on the ability to read and write. The oral aspect of learners' ability to comprehend reading passages is omitted in international assessments and evidence for a large part of what learners may understand had they been given tasks orally are lost.

A uniformly constructed curriculum has to be able to be implemented in a diverse and complex South African education system. While the South African PIRLS 2006 reading achievement results mainly show extremely poor achievement, evidence was found that some learners were able to reach satisfactory reading achievement scores. The implication of this varied reading performance points to the ability of some teachers in the education system to interpret the curriculum and teach at its required level. For the majority of teachers, however, the interpretation and implementation of the curriculum remains a challenge that is often beyond their grasp.

In South Africa, vast differences exist between groups of learners in terms of performance and educational experience. While improvements in educational access can be seen, issues around quality and equity are still of concern. Of specific concern is the ever-widening gap that seems to pervade South Africa's education system, with vast differences in performance and educational quality between high and poor performing schools. The implication of poor performance directly translates into lack of skills and knowledge, a dire consequence for a country in desperate need of skilled, knowledgeable workforce. The question remains as to how such gaps can be narrowed without requiring high performing schools to sacrifice acceptable standards in order for poor performing schools to be adequately resourced to catch up and narrow the gap.

Lastly, the often dire social circumstances of learners deem any gauge or measurement of ability almost futile. Assessing learners' reading performance in South Africa often takes place while hunger and many other physical needs have not been met. These circumstances beg the question of how learners can be expected to achieve optimally when basic needs are unmet and whether any

systemic interventions can permit an adequate gauging of what learners are truly able to achieve currently.

### **9.6.3. Recommendations**

In this section, recommendations are provided based on the main conclusions that were drawn from this study.

#### **9.6.3.1. Recommendations for Policy and Practice**

*1. The South African context warrants a stronger bi-literacy approach.* Given that, during the Foundation Phase, home language is predominant, in ensuing phases the role of the second (or even third) language should become much more pronounced. This study provided evidence for the problematic achievement of learners when assessed in their language of learning (i.e. the language of the test). The Language in Education Policy strongly advocates the development of indigenous languages and opportunities for learners to be educated in their mother tongue, with the language of learning changing from an indigenous language to English for most learners in Grade 4. This language change does not take place effectively for most learners, and teachers likely revert back to instruction in learners' home language. In essence, problems with the Language in Education policy are not inherent to the policy itself, but rather with the implementation thereof. A vast difference exists between policy- and curriculum documents and what happens at learner-level in classrooms throughout South Africa.

*2. Early diagnosis and targeted support of learners with difficulties is needed.* Factors affecting reading achievement at learner-level were very pronounced in this study. The Afrikaans and English models' results confirm existing literature on learner-level factors (like age and sex, as discussed by Mullis et al (2007) in the PIRLS 2006 International Report) that affect reading achievement. With reading achievement showing downward patterns for increases in age while a learner remains in Grade 5, a suitable approach to underachievement is the

early diagnosis and targeted support of these learners with difficulties. This, however, is easier said than done, since many teachers in South African classrooms are faced with large classes and little experience in diagnostic testing. Anecdotal evidence points to some teachers' dilemmas where, even when they are aware of students with difficulties in their classrooms, they are not knowledgeable in taking appropriate steps in providing the correct support or additional assistance to target the problem.

With boys consistently achieving lower reading scores than girls, national interventions could be aimed and targeted at boys, if only to serve as an avenue to get boys interested in reading. Areas of future research may have to be targeted at the most basic variables related to the learner, as these are most likely to result in informed policy changes and targeted teacher training in areas of learner support where it is needed most.

*3. Learners in Foundation Phase should be afforded more opportunities not only to read, but also to write.* From responses gathered in the PIRLS 2006 reading assessment, it became clear that the problem of reading comprehension did not end with reading alone. Learners in general were not able to pen their ideas or thoughts adequately and while responses to questions were often on the right track, learners stopped short of providing sufficient detail, evidence or reasoning in their written responses.

While little evidence was found for the effect of school- and classroom-level variables in this study, the educational significance of the school environment should not be diminished. The recommendations that are made in this study on classroom- and school-level mirror some of the recommendations made by Howie, Venter, Archer, Long, Scherman, van Staden and Zimmerman (2009) in the PIRLS 2006 provincial reports:

*4. More attention needs to be paid to the development of teaching reading strategies during the Foundation- and Intermediate Phases in schools.* Anecdotal evidence that was gathered during the PIRLS 2006 data collection highlighted repeated reports by teachers that they lacked the knowledge and

skills necessary to teach young learners how to read, and specifically achieve the aims and objectives entailed by an Outcomes-Based philosophy of education.

*5. More complex reading skills and strategies need to be introduced to learners at an earlier stage than they are reportedly being introduced at this point.* Foundation phase teachers seem very capable of teaching learners to decode text, yet proficiency in more complex reading skills and strategies are lacking. These elements include reading connected text, identifying the main idea of text, explaining or supporting understanding of text, comparing text with personal experience, comparing different texts, making predictions about what will happen next, making generalizations or inferences and describing the style and structure of text.

*6. A culture of reading needs to be fostered and developed at school-level at each phase in primary schools.* It was heartening to see that during PIRLS 2006 data collection many schools urged learners to have reading books with them to be read when they had some idle time in the classroom upon completion of tasks or assignments. Yet, this phenomenon was not discernible in the majority of schools and instead it became apparent that the idea of reading for pleasure had not been fostered in many schools.

*7. Teachers need to be made aware of the importance of reading across all Learning Areas, not only for Literacy or Languages.* For some teachers, a compartmentalized perception exists in which they do not regard the teaching of reading in their subject areas as part of their responsibilities, if they do not teach Literacy or Language. This perception means an added burden to teachers working specifically in the areas of Language and Literacy. It also means that teachers in other Learning Areas may be faced with learners who are not able to use reading to learn, thereby frustrating any attempts to teach content in these other Learning Areas.

*8. Classrooms need to be adequately resourced with developmentally appropriate materials for the teaching and learning of reading at all primary*

*school grades*. It is, however, important to note the distinction between the availability of resources and their actual use. In many schools, resources are available, yet these resources are not being used for fear of damage, loss or (as is the case with Physical Science) a lack of teacher knowledge on how to use equipment.

9. *Teachers need to creatively develop additional reading materials to promote a variety of text experiences for learners.* These materials include the use of newspaper cuttings and magazine articles. Examples from the immediate environment can be used (e.g., billboards or advertisements), while material from other Learning Areas should not be excluded when providing learners with a rich experience in text types.

10. *Teachers need to create a literacy-enriched classroom environment so that learners can become involved and familiar with the printed word.* From the PIRLS 2006 data collection it became apparent that many learners were not used to reading the printed word in their language of teaching.

11. *Each school should be equipped with a functioning school library which is actively used by teachers and learners.* Partnerships with NGOs and businesses in the community may prove meaningful in fostering and cultivating a love for reading by both teachers and learners.

12. *Teachers should exhibit reading behaviour more often and more clearly in the presence of learners.* By modelling the desired behaviour, learners may be better inspired to show similar behaviour, instead of merely following instructions from teachers who themselves never visibly engage in any reading.

13. Lastly, *creativity around reading should be fostered.* In a number of participating PIRLS 2006 schools, evidence was found that creative ideas and activities encourage reading and a love for reading. Examples of such activities include 'readathons' in which prizes were awarded to learners who read the highest number of books in a given time, or events involving learners and parents over weekends in reading groups where volunteers from communities



read stories aloud to families. In impoverished areas, creativity can be fostered even in the absence of financial resources. In one example, a school principal agreed to do something embarrassing (i.e. sit on the school's roof) if learners were able to read a specified number of books in a given time. Other examples include teachers who took library books to the children on the sport field and did not wait for learners to come to the library, or a teacher who dressed up as 'The Reading Witch' once a week to read to her learners, to their great amusement.

### **9.6.3.2. Conceptual Framework Recommendations**

*a). Improved indicators of context are needed for South Africa.* Evidence was provided that the conceptual framework was inadequate in identifying factors affecting reading achievement for all South African language groupings. More specifically, the framework was only appropriate in explaining reading achievement scores for the Afrikaans and English language groupings than for those from African language groupings. It may be suggested that the current contextual data for African learners is insufficient and that more variation is required for the model to be tested effectively, specifically for the African language groupings.

*b) An exploratory approach is warranted when dealing with contextual data and South Africa's 11 official languages.* While a decision was taken to use a confirmatory approach in this study, it may be recommended that an exploratory approach may be more appropriate when working with African languages. The treatment of the 11 official languages into five language groupings may have also affected the frameworks' adequacy in capturing statistically and educationally significant factors that affect Grade 5 reading achievement scores. African languages may have to be treated separately in future research, since aggregation may lead to the identification and significance of some factors becoming hidden from the framework.

Lastly, the absence of an identified model for reading achievement may suggest changes to the framework to suit the South African landscape more adequately.



Finally, the results of this study can be summarized in three main findings:

Grade 5 learners in South African primary schools who participated in PIRLS 2006 were not able to achieve satisfactory levels of reading competence. The gravity of this finding is exacerbated by the fact that these learners were tested in the language in which they had been receiving instruction during the Foundation Phase of schooling.

Significant factors associated with reading literacy are mostly found at learner-level, but this does not mean that the existence of teacher- and school-level factors is not of importance. While some explanatory factors at learner-level can more easily become the target of reading interventions, the higher level effect of the classroom and school are not diminished by this study.

Since the completion of this study, the National Department of Education announced the abolishment of OBE as part of curricula in South Africa. Participation in PIRLS 2011 will also be undertaken, where unanswered questions left by this research may be answered.

The cultivation of a passion for reading, a culture of reading in South African households, classrooms and schools and the continual monitoring of reading achievement remain imperatives for the South African schooling system in years to come.

The importance of a reading literate country is emphasized by Mullis et al (2007) in the introduction of the PIRLS 2006 International Report:

In today's information society, the ability to read is essential for maximizing success in the endeavours of daily life, continuing intellectual growth, and realizing personal potential. Similarly, a literate citizen is vital to a nation's social growth and economic prosperity (p.15).

The ultimate cost of an illiterate population for whom reading is inaccessible and unvalued include dire life-long economic and social consequences, both for the individual and communities.