CHAPTER FOUR

CONCEPTUAL FRAMEWORK FOR THE STUDY

4.1 ORIENTATION

As stated in Chapter One, this research aims to explore schooling conditions and teaching practices for the implementation of the curriculum for Grade 4 learners' reading literacy development across a range of education contexts in South Africa. This goal is founded on the recognition that teachers' practices are influenced by the context in which they teach, their teaching interactions with learners, their own conceptions of reading literacy and the teaching of reading literacy and the curriculum from which they must teach. Therefore, there are three key elements incorporated into the conceptual framework for the study presented in this chapter: (1) teaching context, (2) the teacher, and (3) the curriculum. Addressing these elements for the conceptual framework has necessitated the amalgamation and/or adaptation of concepts and components from other conceptual models in the literature. Section 4.2 clarifies the concepts and components from relevant models used in the conceptual framework presented in section 4.3. Although literature specific to the conceptual framework is presented, the framework is also based on understandings garnered from the literature reviewed in Chapters Two and Three.

4.2 CONCEPTUAL FRAMEWORK UNDERPINNINGS

This section explicates the concepts and models which have informed the development of a conceptual framework for this study. In sub-section 4.2.1, levels and dimensions of curriculum (Schmidt *et al.*, 1996; Van den Akker, 2003) are deliberated on, particularly as these levels and dimensions relate to teachers' teaching practices. Sub-section 4.2.2 examines how teachers' classroom practices are formed, with specific attention afforded to how these practices both influence and are influenced by teachers' conceptions for teaching reading literacy and the context in which they teach.

4.2.1 Macro to micro infiltration: the role of the curriculum for teaching reading literacy

In this sub-section, ideas on levels and dimensions of curriculum (*4.2.1.1*) are broached in relation to teachers and their teaching practices. This is followed by the consideration of the

International Association for the Evaluation of Educational Achievement's (IEA) model for the provision of educational experiences (Schmidt *et al.*, 1996), a model used in the design and interpretation of IEA studies (*4.2.1.2).*

4.2.1.1 Levels, dimensions and components of the curriculum

- *Levels of curriculum*

A country's official curriculum offers what Van den Akker (2003, p.2) calls a "plan for learning", and which distinguishes between various levels of the curriculum:

- a system/ society/ nation/ state (or macro) level
- the school/ institution (or meso) level
- classroom (or micro) level
- individual/ personal (or nano) level.

Van den Akker (2003, p.2) further explains that curriculum development at the system or macro level is usually generic in nature whereas "site-specific" approaches are more applicable for the remaining levels. This study touches on each of these levels to varying extents. That is, the *macro level*, the *meso level*, the *micro level* and the *nano level*.

- *Dimensions of curriculum*

Schmidt *et al.* (1996) point out that a feature of IEA studies is that they recognise the need to consider educational outcomes in relation to educational inputs. IEA studies vary in form and content but overall retain curriculum-based explanatory designs based on the original work of Travers and Westbury (1989) (IEA, 1998). A number of manifestations of the IEA's working model also assume that various factors influence the educational process at three different levels, namely system, classroom and student[17], which are akin to the levels of curriculum outlined in the sub-section above. These three levels are however represented by three conceptions of the curriculum, the *intended*, the *implemented* and the *attained* (Schmidt *et al.*, 1996).

As Schmidt *et al.* (1996) explain, each of the three curriculum dimensions represents a particular set of variables and a societal context in which they are embedded. The *intended*

[17] These levels are evident in the PIRLS 2006 explanatory model, introduced in Chapter Three.

curriculum involves the macro education system's goals and means. Decision-making about these factors can occur at local or regional level, or via a central, national authority with official curriculum visions, aims and goals presented in national and regional guides, or through documents used to guide the education process. The *implemented curriculum* pertains to practices, activities and institutional arrangements in the educational context of meso level schools and micro level classrooms. Practices occur to implement the visions, aims and goals specified in the intended curriculum. Significant for the conceptual framework for this study is that implementation is influenced by the background, ideas, attitudes and pedagogical orientation and practice of teachers. The *attained curriculum* is concerned with the outcomes of schooling evidenced by what learners have actually attained through their educational experiences. What students learn is influenced by what the education system has intended them to learn. Learning is also influenced by the quality and manner in which these intentions have been implemented (Schmidt *et al.*, 1996). For this study, the attained curriculum is evidenced by learners' achievement profiles for the PIRLS 2006.

Van den Akker (2003) also recognises that teaching curricula which offer plans for learning can be presented in various forms, and thus refers to the common distinction which is made via these three levels of curriculum present in any teaching and learning situation. These levels are also depicted in Table 4.1 (below), which outlines Van den Akker's (2003) typology of curriculum representations:

Table 4.1: **A typology of curriculum representations** (source: Van den Akker, 2003, p.3)

INTENDED	*Ideal*	Vision (rationale or basic philosophy underlying a curriculum)
	Formal/ Written	Intentions as specified in curriculum documents and/or materials
IMPLEMENTED	*Perceived*	Curriculum as interpreted by its users (especially teachers)
	Operational	Actual process of teaching and learning (also: curriculum-in-action)
ATTAINED	*Experiential*	Learning experiences as perceived by learners
	Learned	Resulting learning outcomes of learners

This typology advances each of the three dimensions of curriculum by breaking them down into further sub-levels within each level. In applying this typology to the intentions of this study, the focus of this research is on the macro level intended curriculum in the form of the contents of the formal RNCS for Home Languages at Grade 4 (the formal/ written curriculum) and its micro level implementation by teachers who interpret its contents (the perceived curriculum) taking into account their meso level school context and then operationalise it in classrooms (the operational curriculum).

- *Curricular components*

Klein (1991) refers to different elements of curriculum decision-making that can occur at any of the levels while Van den Akker (2003) refers to 'curriculum components'. For Van den Akker (2003, p.4) "(o)ne of the major challenges for curriculum improvement is creating balance and consistency between the various components of the curriculum", and he provides a list of ten components that address ten specific questions about the planning of student learning (Table 4.2):

Table 4.2: **Curriculum components** (Van den Akker, 2003, p.4)

COMPONENT	QUESTION
Rationale	*Why are they learning?*
Aims and objectives	*Toward which goals are they learning?*
Content	*What are they learning?*
Learning activities	*How are they learning?*
Teacher role	*How is the teacher facilitating learning?*
Materials and resources	*With what are they learning?*
Grouping	*With whom are they learning?*
Location	*Where are they learning?*
Time	*When are they learning?*
Assessment	*How far has learning progressed?*

The relevance of these components varies across the curriculum levels (Van den Akker, 2003). The *Rationale* component serves as a major orientation point offering overall principles or the central mission of the plan, with the nine other components ideally being linked to this rationale. The ten components are also ideally consistent with each other. Not all address what knowledge is important for inclusion in teaching and learning, for instance, *Grouping*, *Location* and *Time* refer to organisational aspects. Furthermore, *Rationale*, *Aims and objectives* and *Content* components are usually dealt with in curriculum documents at the macro level. All ten components are involved when looking at the operational curriculum in schools and classrooms, and have to be coherently addressed for successful implementation and continuation. The *Teacher role*, *Materials and resources* and *Learning activities* components are central to the micro-curriculum, whereas *Assessment* must receive

attention at all levels and representations as alignment between assessment and the rest of the curriculum may be critical for successful curriculum change (Van den Akker, 2003).

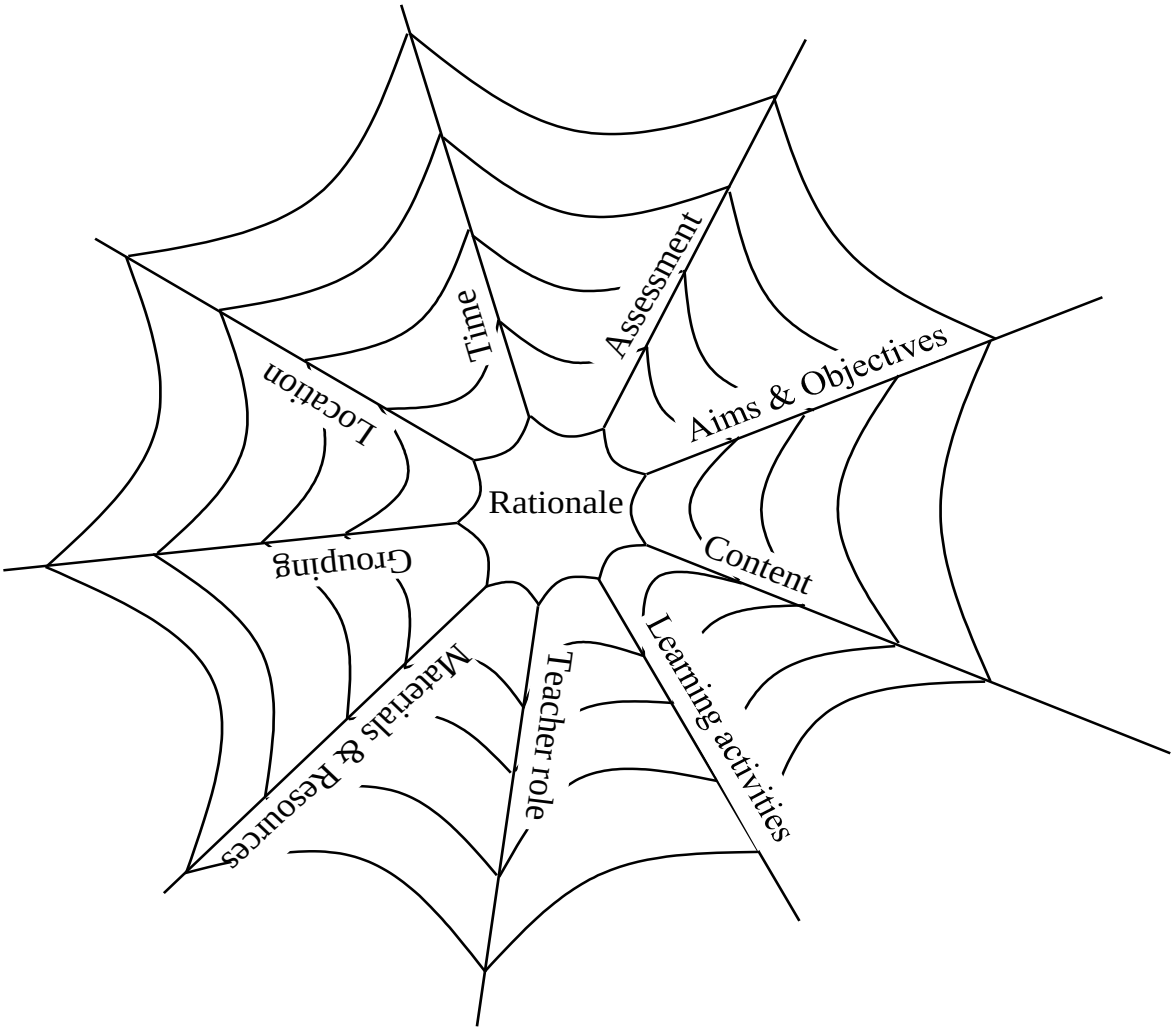

Figure 4.1: **Curricular spider web** (source: Van den Akker, 2003, p.5)

Van den Akker (2003) actually prefers to arrange these ten components in a spider web (Figure 4.1, above), a visualisation that demonstrates not only their interconnectivity but also their vulnerability. The spider web is illustrative of the expression that "every chain is as strong as its weakest link". Although in curriculum design these components may receive attention at different stages, eventually they need to show some kind of alignment to maintain coherence (Van den Akker, 2003, p.5).

In the next sub-section are presented the generic model of an IEA research study (*IEA guidebook*, 1998) and Schmidt *et al.*'s (1996) model of the provision of education experiences which incorporates the three curriculum levels showing their inter-relationships. Aspects of Van den Akker's (2003) typology of curriculum representation and curriculum components may also be represented, although these are not instantaneously identifiable in the models themselves.

4.2.1.2 The IEA model of provision of education experiences

The generic model of an IEA research study is shown in Figure 4.2 (below), (IEA, 1998; Travers & Westbury, 1989). The model incorporates the system, school or classroom and student levels, and the three dimensions of curriculum referred to as 'curricular content'. Importantly, the model takes account of the role of curricular antecedents (system features and conditions; community, school, student and teacher characteristics) and curricular context (institutional settings; school and classroom conditions and processes; the student) in the implementation of curricular content:

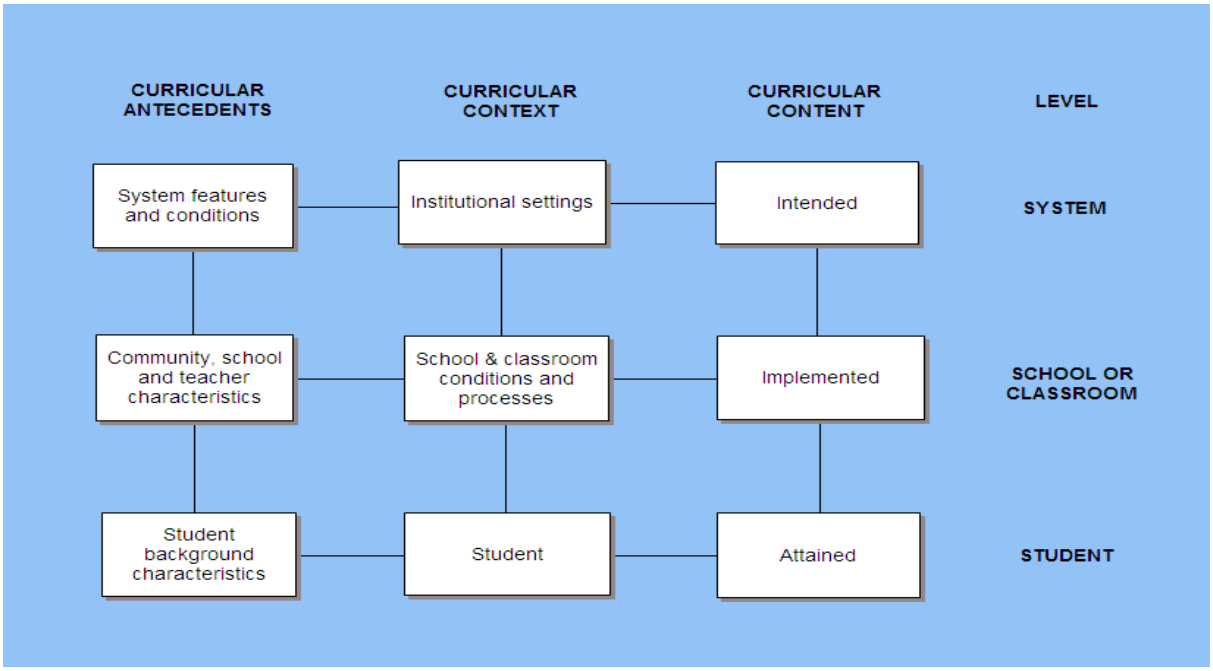

Figure 4.2: **Model of an IEA research study** (IEA, 1998, p.53; Travers & Westbury, 1989)

A later version of the conceptual framework for the IEA studies used largely in the context of Mathematics and Science performance, Schmidt *et al.*'s (1996) model of the provision of educational experiences, includes the dimensions of curriculum without Van den Akker's (2003) additional sub-levels and components outlined in the previous sub-section. The model is based on a number of notions dovetailing with the ideas of Van Den Akker (2003) regarding curricular components outlined above. First is the notion that learners' curricular experiences reflect the complexity of the education system as a whole, with many factors having an impact on education. Therefore, efforts to identify the effects of a single, isolated aspect of the system fail because of the interrelated nature of the educational system (Schmidt *et al.*, 1996). This argument about interrelatedness supports this study's goal to explore teachers' practices linked to learner achievement and the context in which they teach. This is instead of judging the effectiveness of these teachers' practices solely based

on learner achievement. Secondly, the model is also based on the notion that any given system's provision of educational experience is limited, as no system can provide for all possible experiences. Thus, decisions made impact what is and what is not included. Thirdly, the model is based on the idea that curriculum has both intended and implemented aspects (Schmidt *et al.*, 1996).

The model (Schmidt *et al.*, 1996) (Figure 4.3 below) expands the idea of the *Intended*, *Implemented* and *Attained curriculum* into a column and row structure. The rows are divided according to elements pertinent to the *system* or macro level, the *school* or meso level, the *classroom* or micro level and nano level *student* experiences. As Schmidt *et al.* (1996, p.22) declare

> *(i)t is neither possible or desirable to identify and measure every possible factor that affects an educational system- or even all of those portrayed in the model... However, this model of students' educational experiences recognizes the interconnections between major components of the educational system in a way analogous to conceptualizations of many proponents of systemic educational reform.*

The model is also a useful tool for placing teachers' teaching practices within the larger education system and showing the possible interrelationships between the components of this system and teachers' implementation of the curriculum in individual classrooms.

The columns, meanwhile, address four key questions fundamental to cross-national studies, written at the bottom of each. While these questions are different from those addressed in this study, there are similarities. While one question "*What have students learned?*" was already addressed via the outcomes of the PIRLS 2006 assessment (Howie *et al.*, 2007), three questions in the model's columns are still relevant for this study and touch on aspects of the research questions presented in Chapter One:

- "*What are students expected to learn?*"
- "*Who delivers the instruction?*"
- "*How is the instruction organised?*"

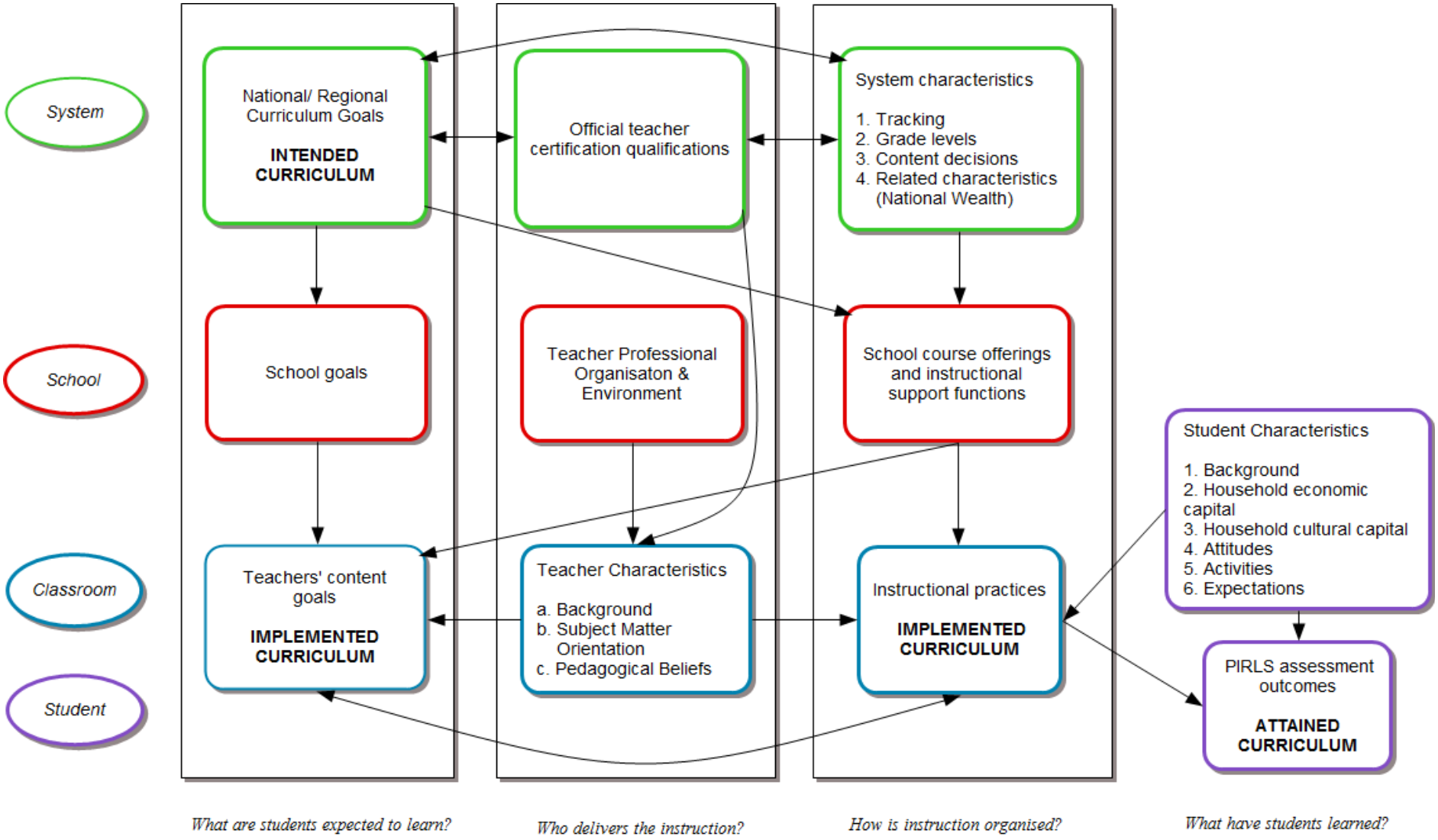

Figure 4.3: **The provision of educational experiences** (source: Schmidt *et al.*, 1996, p.19).

Addressing the model's question "*What are students expected to learn?*" requires a description of what knowledge and skills learners are expected to attain, one which can be dealt with at the national or regional level, school-site and classroom level. Learning goals specified at a national or regional level are considered part of the intended curriculum, whereas learning goals specified at the school or class level are part of the implemented curriculum. If one connects this to Van den Akker's (2003) typology of curriculum representations, this meso level goal-setting may incorporate the *perceived curriculum* sub-component of the implemented curriculum. The question "*Who delivers the instruction?*" specifically explores the role of the teacher delivering instruction. The question "*How is instruction organised?"* pertains to the influence of instructional organisation on both the implemented curriculum and students' learning experiences (Schmidt *et al.*, 1996, pp.19-20).

As Pudi (2006) points out, the teacher is the filter through which the intended curriculum must pass. Therefore, the next sub-section expands on ideas around the micro level of the curriculum, specifically focusing on teacher characteristics and their perceptions and operationalisation of it as aligned to the questions of Schmidt *et al*.'s (1996) model.

4.2.2 Focus on the micro level

This research is premised on the supposition that what happens in the classroom at the micro level cannot be divorced from the knowledge, beliefs, goals and interpretation of the curriculum by individual teachers in their schooling contexts. At the micro level, the question "*How is instruction organised?"* pertains to the influence of instructional organisation on both the implemented curriculum and students' learning experiences. Decision-making about instruction occurs at all levels of the education system, including classroom teachers. The influence of the school and the teacher were also discussed extensively in the literature review in Chapter Three. The organised implementation of the curriculum in the classroom includes the role of learners in classrooms and factors related to the classroom itself. These factors include: textbook usage; lesson structure; instructional materials; assessment of students; teacher and student interaction; homework; and grouping of learners in classrooms (Schmidt *et al.*, 1996), factors not dissimilar to Van den Akker's (2003) curriculum components.

Again, the question "*Who delivers the instruction?*" explores the role of the teacher delivering instruction. It is the teacher who moulds instructional activities which impact learners' learning experiences. According to Schmidt *et al.*'s (1996) model, the factors influencing the teacher's role can be investigated by examining official teacher certification qualifications, the professional organisation and environment of the teacher which influences their teaching

(including time usage- time spent planning, time teaching or cross-grade level teaching, cooperation and collaboration amongst teachers), and teacher characteristics. Teacher characteristics influence the quality of instruction and thus the quality of learners' educational experiences. Teachers' backgrounds and their beliefs are included. Background variables include: age; gender; education; subject taught; and teaching experience. Beliefs involve subject-matter orientation and subject-matter specific pedagogy which influence instructional practices and learner achievement. Subject-matter beliefs include views a teacher has of a subject as a discipline whereas pedagogical beliefs deal with the teacher's beliefs about good ways to teach particular topics in the subject (Schmidt *et al.*, 1996). Schmidt *et al*. (1996) further highlight the relationship between subject matter orientation, pedagogical beliefs and what teachers do.

Poulson and colleagues (2001) point to a growing body of research that suggests that it is not only teachers' behaviour in the classroom that influences what children learn but also teachers' knowledge (both formal and practical); values, beliefs, theories and thought processes which are important. Teacher knowledge is considered an integrated system of internalised information about learners, content and pedagogy. Beliefs are a personalised form of dynamic knowledge, implicit assumptions or interpretive filters that guide teachers' perceptions, judgements and behaviour regarding content, learners and learning. Teachers' goals are defined as their expectations about the intellectual, social and emotional outcomes for learners as a result of classroom experiences (Artzt & Armour-Thomas, 1998), in this case their classroom reading experiences. Most teachers thus have a "personal theory" of what they wish to teach which frames their teaching activities (McKenzie & Turbill, 1999, p.8).

The relationship between beliefs and practice is complex, because the relationship seems to be dialectical rather than unilateral as practice does not necessarily flow from beliefs, with changes in beliefs sometimes occurring as a result of change in practice (Poulson *et al.*, 2001). Moreover, Lin, Schwartz and Hatano (2005) argue that the problems that teachers face, such as assisting diverse learners to achieve reading literacy, can take more time to solve. Also, potential solutions have to be weighed against the competing values of other teachers, the school as a whole, district, provincial and national education directives and even the values of learners, their parents and the community itself. Lin *et al.* (2005) further contend that teaching involves active adaptation to learners and the teaching environment. It is therefore appropriate to consider teachers' practices, which are driven by their underlying knowledge, beliefs, goals and thought processes, as adaptive practices based on their continually evolving thinking about their learners' needs and their teaching context.

Adding to ideas about subject matter orientation and pedagogical beliefs in specific reference to reading instruction practices, Leu and Kinzer (2003, pp.15-16) state that teachers provide effective reading instruction by relying on different types of frameworks. These assist them in deciding what and how to teach whilst reducing the number of conscious decisions that they have to make in interactions with learners. There are three types of frameworks: (1) a *material framework*, (2) a *method framework* and a (3) *literacy framework* (Figure 4.4, below):

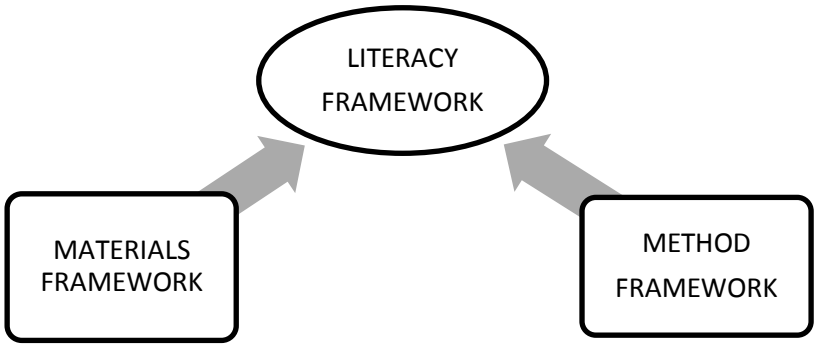

Figure 4.4: **Teacher frameworks for deciding what and how to teach reading** (Leu & Kinzer, 2003).

Both the *material framework* and *method framework* are concrete in nature. Teachers using a *material framework* generally use and follow very closely materials such as reading programme manuals and lesson-planning information that is available to them. A *method framework* is used by teachers who follow specific reading instruction methods with instructional steps and options which they can incorporate into each step to meet instructional goals. However, the most powerful and flexible of the three frameworks is a *literacy framework* which is the ultimate goal of effective teachers. The literacy framework provides teachers with insights about teaching and individual learners in the classroom, allowing for the individualisation of instruction. With a literacy framework, teachers' beliefs are organised around two issues, namely, what to teach, and, how to teach. Teachers become knowledgeable about a wide range of materials and methods and are able to articulate beliefs around these two issues. Thus, a literacy framework helps teachers to adapt lesson plans and activities on the basis of materials and methods. The choices that teachers then make are deliberate, reasoned and consistent with their beliefs. Literacy frameworks are not static devices as they are modified as knowledge about materials, methods, and the reading process develop and change (Leu & Kinzer, 2003).

McKenzie and Turbill (1999) further theorise that student learning, teacher practices and classroom practice are not only interdependent but are also embedded in the cultural setting

of the school. This commentary brings the meso school level to the fore as it relates to micro level classroom practices. Mckenzie and Turbill (1999) argue that student learning is at the core of the school culture and is influenced by a complex mix of interactions between the series of events and processes that can occur between all the layers of the school culture.

4.3 CONCEPTUAL FRAMEWORK FOR THE STUDY

In this section the relevant constructs and concepts outlined above are illuminated in the conceptual framework for the study. The overall approach followed is described (4.3.1) and each level of the conceptual framework discussed (4.3.2).

4.3.1 Approach followed

The conceptual framework for this study concurs with Schmidt *et al.*'s (1996) acknowledgement of the impossibility of addressing all possible factors that affect the education system. Therefore, the study focuses on the practices of the teacher in implementing the intended curriculum and the factors that influence this implementation. At this point in the chapter it is useful to present the conceptual framework for the study (Figure 4.5, below), an adaptation of Schmidt *et al.*'s (1996) model of the provision of educational experiences (Figure 4.4, above).

The adapted model has been presented in a linear flow diagram as Schmidt *et al.*'s (1996) model was found to be too cumbersome to use as an interpretational tool, due to its complex column and row structure and resultant difficulties in examining the proposed interplay of the components. As a result, all the components of the original model have been retained, albeit arranged in such a way as to better show how they interact with others conceptualised for this research. The adapted model thus retains macro level factors linked to the intended curriculum, meso level school factors and nano level learner factors. Each of these levels is important for the conceptual framework in so far as they impact activities at the micro classroom level. In adapting the model for the purposes of this study, it was noted that Schmidt *et al.*'s (1996) model did not account for Van den Akker's (2003) extension of our understandings of the three dimensions of curriculum. It did not include the ideal and the written curriculum as part of the intended curriculum, the perceived curriculum and operational curriculum as part of the implemented curriculum, or the experiential and learned curriculum as part of the attained curriculum. As a result these sub-levels have also been incorporated into the framework.

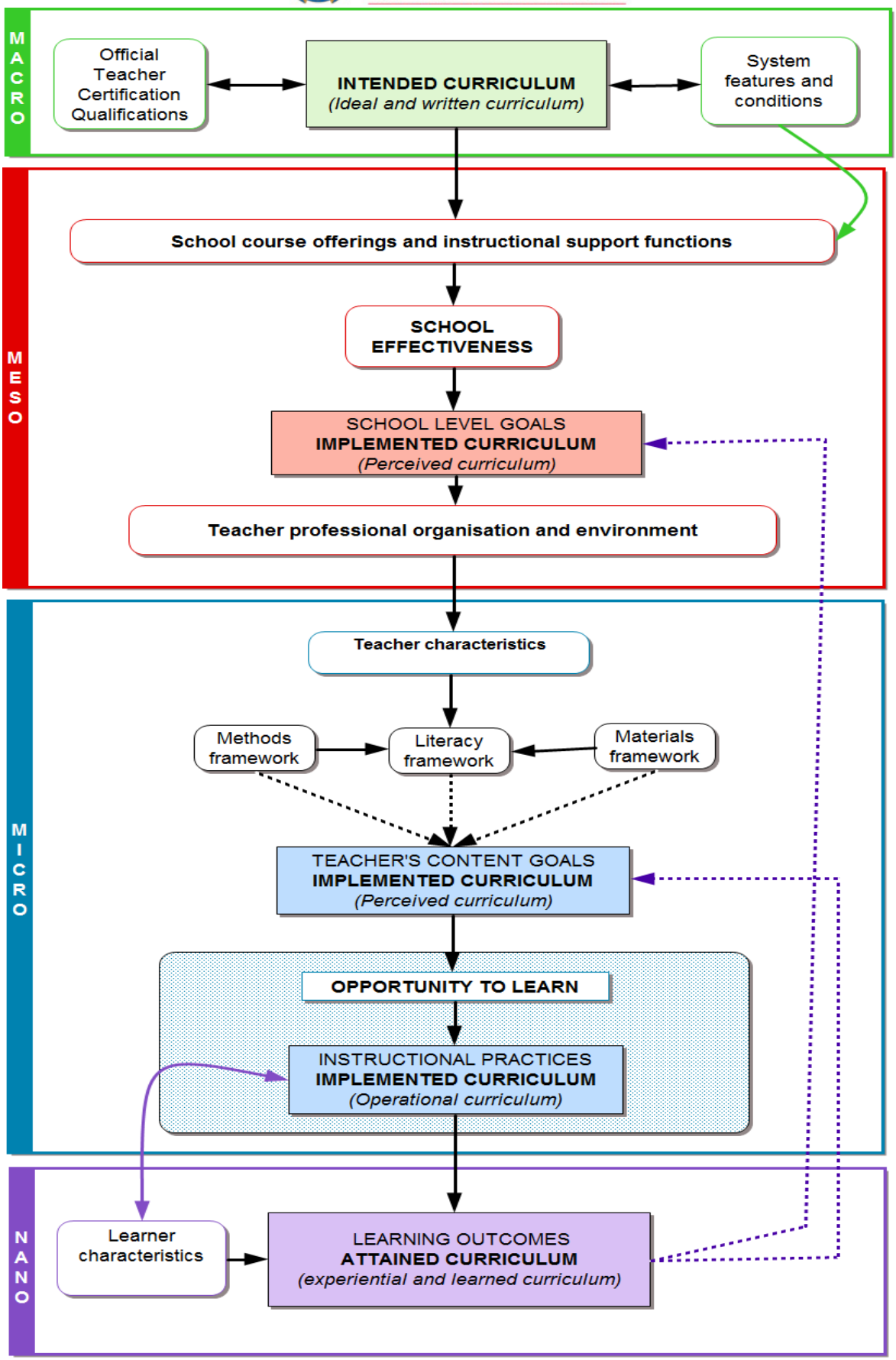

Figure 4.5: **Factors influencing curriculum implementation for learners' reading literacy development** (adapted from Schmidt *et al.*, 1996; Van den Akker, 2003, Leu & Kinzer, 2003).

The adapted model also integrates Van den Akker's (2003) curriculum components. Each of the ten components (aims and objectives; rationale; contents; grouping; time; location; teacher role; materials and resources; learning activities; assessment), which are comparable to items in the PIRLS 2006 school and teacher questionnaires, is discussed in the next sub-sections in terms of where it was thought they best fit in terms of curricular decision-making by the role-players at each dimension of the curriculum. The model also takes into account Leu and Kinzer's (2003) ideas about teachers' literacy frameworks as associated with teachers' micro level classroom practices. Some literature insights discussed in Chapter Three are also integrated into the framework.

4.3.2 Discussion of components of the conceptual framework

To recap the value of the conceptual framework for this study, the research focuses on the implementation of *macro level* official curricula and policies for reading literacy instruction by teachers. The macro level component of the conceptual framework is therefore outlined in sub-section *4.3.2.1.* The *meso level* schooling context creates the professional environment in which teachers teach reading literacy. The meso level component of the conceptual framework is considered in *4.3.2.2*. For this research, at the *micro level*, reported and actual classroom practices for teaching literacy are investigated together with the conceptions and experiences of selected individual teachers of reading literacy. The *nano level* experiences of learners are not a specific focus for the study, albeit information about learners' achievement levels in reading literacy in the PIRLS 2006 (the attained curriculum) is used as a central tool for describing the schooling contexts in which these learners learn and the teaching practices they experience. Also, the idea that learner characteristics also exert an influence on their contexts and teachers' practices is acknowledged. The micro and nano level components of the conceptual framework are discussed in sub-section *4.3.2.3.*

4.3.2.1 The macro level component of the conceptual framework

Schmidt *et al.* (1996) point out that it is impossible to investigate typical instructional practices without a characterisation of relevant subject matter in the form of the intended curriculum. By this claim, they recommend that an understanding of relevant subject matter content is needed for any analysis of instructional practices. Recognition of the importance of this statement for the design of this study has meant that macro level policies in the form of the intended curriculum for Grade 4 Languages, i.e., the RNCS (DoE, 2002a), and other policies and directives for curriculum implementation and resource allocation in schools are

relevant for this research (see DoE 1997; 2008a; 2008b; 2008c; 2008d)[18]. The intended curriculum with its ideal and written sub-levels consists of *aims and objectives*, *a rationale* and curricular *content*, three of the ten components forming part of Van den Akker's (2003) curricular spider web.

The *content*, *aims and objectives* and *rationale* of the intended curriculum both influence and are influenced by *system features and conditions* and *official teacher certification qualifications* at the macro level. *System features and conditions* can determine the nature of instruction. For example, major system-level organisational aspects include variations in the age-grade structures of the educational system, the nature of the schools that serve an array of grades, and the curricular streams into which learners are placed. Economic resources also influence how instruction is organised as well as influencing the qualifications of teachers, the instructional resources available to teachers and the time and material resources available for learners (Schmidt *et al*., 1991).

As Schmidt *et al*. (1991) argue, decision-making about instruction is widely distributed. Other embedded sub-levels impacting curricular-decision-making also operate generally at the macro level. These sub-levels include a scholarly *academic level* (university academics), a *societal level* (governmental agencies, business, industry, political and civic groups), and a *formal level* (local, provincial government, publishers, teacher unions, and education organisations outside of individual schools). The *formal level* is likely to have a more direct influence on individual schools than the academic and scholarly levels (Klein, 1991) which are distal to schools.

4.3.2.2 The meso level component of the conceptual framework

The meso school level is also referred to as the *institutional level* and includes participants in curriculum development at the individual school site (Klein, 1991). Participants at the institutional level are likely to be involved in collective curriculum planning for more than one classroom at the individual school. Decisions made at this level are made by school-based role-players, such as school management via departmental, grade level and general staff meetings. Significant curriculum development is not often undertaken at this level although it is an essential focus for school improvement (Klein, 1991).

At the meso level, the intended curriculum is therefore perceived by these role-players to institute school level goals for curriculum implementation. For this research it is hypothesised that these curricular implementation goals would have to be formulated on the basis of

[18] These macro level policy directives were discussed in Chapter Two.

school course offerings and instructional support functions as determined at the macro level, and considerations of the factors that contribute to or impede *school effectiveness in reading instruction* at the school site.

Consideration of factors that contribute to or impede school effectiveness in reading instruction has led to the inclusion of a *school effectiveness* component to curricular decision-making at the meso level. An aspect missing from Schmidt *et al*.'s (1996) model is that of school effectiveness. Although Schmidt *et al*. (1996) recognise that *teacher characteristics* and teachers' *professional organisation and environment* impact implementation there is no direct reference to the role that *school effectiveness* characteristics play in the effective implementation of the reading curriculum. Perhaps the Schmidt *et al*. (1996) model does not take school effectiveness into account as the model was developed by scholars in contexts with less likelihood of poor school effectiveness factors impacting educational outputs. In a developing country context such as South Africa, factors impeding school effectiveness are likely to be more prominent.

The conceptual framework for this study therefore incorporates school effectiveness in reading instruction as a factor impacting school level goals in the implementation of the curriculum. As suggested by Postlethwaite and Ross (1992), factors impacting school effectiveness in reading instruction include: *teacher quality* (as determined by teacher characteristics and official teacher certification qualifications); *school management characteristics*; *location of the school*; *materials and resources* that are available and the *involvement of the community* particularly parents in the school. *Learner characteristics* at the nano level will also have an impact on the school's effectiveness in reading instruction. It is hypothesised that these factors in a school likely impact the effectiveness of the school and its capability of interpreting macro curricular intentions and translating them into school goals. Moreover, schools will have to take these factors into account in their interpretations of the curriculum for the formulation of school level goals to implement the curriculum.

School goals then lead to determination of instructional support availability to staff, learner *grouping*, *time* allocation for learning, *location* of learning and, certainly, the setting of school curricular *aims and objectives* and the *content* of learning. The organisation and management of *teaching support availability* to teachers is also an addition to the model at this level. All of these meso level components together constitute the *professional organisation and environment* of the school.

4.3.2.3 The micro and nano level components of the conceptual framework

Within the context of meso level school goals and the professional organisation and environment of the school, the curriculum is implemented by the teacher in the micro level classroom. Klein (1991) refers to the micro level as the *instructional level,* which is compiled from what the classroom teacher decides in planning about the curriculum. As decisions made at the other levels are channelled through the teacher, the instructional level is therefore especially influential, with teachers being fundamental curriculum decision-makers who often determine what decisions are actually implemented. Teachers can decide how they implement the curriculum, choosing to implement according to directives from higher levels, to modify what others expect or even to ignore completely decisions made at other levels. Teachers will have their own firm beliefs about what the curriculum ought to be for their group of learners and are not only reactive in relation to the expectations of others. They may also be proactive in developing their own curricula and implementing their own beliefs and values as to how to best educate their learners (Klein, 1991).

According to Schmidt *et al.* (1996), teacher characteristics such as background, subject matter orientation, and pedagogical beliefs impact ***teachers' content goals.*** For this research, it is also hypothesised that teachers' *grasp of curricular materials* and *expectations of learners* will also play a role in this goal-setting. In connection to subject matter orientation and pedagogical beliefs, it is further hypothesised that the *types of framework* teachers have for deciding what and how to teach reading (a methods, material or literacy framework) (Leu & Kinzer, 2003) impact more specifically on their content goals for teaching reading literacy.

It would appear that the decisions teachers make about a plan for learning then create the nature of Opportunities-To-Learn (OTL) in the classroom. Thus, teachers interpret the *rationale, aims and objectives, content, time, location,* and *grouping* components of the curriculum to formulate their own *roles* in teaching as well as *learning activities* and *assessment.* Moreover, teachers' planning should be based on their use of the *materials and resources* available to them at the school and in consideration of the *characteristics of the learners* in their classes. According to Schmidt *et al.* (1996), these nano level learner characteristics include their backgrounds, socioeconomic status, household cultural capital, attitudes, motivation, out-of-school activities and expectations. In a linguistically diverse country such as South Africa, language is also a major learner characteristic impacting learning and teaching.

Teachers' content goals, namely the perceived curriculum (Van den Akker, 2003), are then enacted in the classroom leading to the *operational level* of decision-making. The operational

level is the interactive level or the way in which the curriculum unfolds in the classroom due to the engagement of the teacher and learners with the content to be learned (Klein, 1991). Meaningfully, Klein (1991) stresses that teachers may have certain curriculum implementation plans from any of the other levels but the circumstances of the classroom and the interaction of the teacher and the learners may create a much different curriculum. Due to the pace and complexity of the operational level of curriculum decision-making, the teacher can be too engaged in making on-the-spot decisions which characterise the operational curriculum to be able to describe or analyse it comprehensively (Klein, 1991).

Teachers' knowledge, skills, goals and beliefs about the intended curriculum will not only influence teaching and learning but will also be influenced by what takes place within the classroom through teachers' processing of their classroom experiences in teaching reading literacy. They will also be influenced by teachers' adaptation to the school context in which they find themselves, as well as their interactions with learner outcomes (the attained curriculum). Ideally, reflection on the attained curriculum should lead to adaptation of both school and classroom level goals.

4.4 CONCLUDING COMMENTS

This chapter has explained concepts and components from relevant models which are used in the conceptual framework for this research. The actual conceptual framework adapted from these concepts and components was then presented and its relevance as an interpretative tool for this research discussed.

In the next chapter, the research design and methodological undertakings that address the research questions posed for this study are outlined.

-⌘-

CHAPTER FIVE

RESEARCH DESIGN AND METHODOLOGY

5.1 ORIENTATION

In this chapter, the research design and methodological undertakings that address the research questions posed for this study are outlined. Firstly, the research paradigm for the study is discussed (5.2). Secondly, the research design for the study is explicated (5.3). Subsequently the methodological norms for the research are taken into account (5.4). Lastly, as ethical conduct permeates all aspects of a study, the ethical undertakings for the study are considered (5.5).

5.2 RESEARCH PARADIGM

In this section, the ontological and epistemological positions for the study are discussed (5.2.1). Thereafter, the complementarities of qualitative and quantitative research are argued (5.2.2) and dialectical thinking and pragmatism as an epistemological basis for the research (5.2.3) are considered.

5.2.1 Ontological and epistemological considerations

The selection of research methods cannot be divorced from researchers' theoretical concerns or conceptions of knowledge building (Hesse-Biber & Leavy, 2005). Creswell (2003) maintains that although philosophical ideas are largely hidden in research, they still influence the actual practice of research and thus need to be identified. These conceptions of knowledge building or paradigms can be treated as the belief systems that researchers share, which in turn influence the kinds of knowledge sought and how collected evidence is interpreted (Morgan, 2007). The choice of mixed methods for this research is partly founded on my identification with a pragmatic viewpoint of knowledge generation, together with my acknowledgement of a number of arguments of an auxiliary nature that support the mixing of quantitative and qualitative research methods for this study.

Qualitative and quantitative research paradigms are dominant in the social sciences. The emergence of mixed methods research offers an alternative research paradigm which combines, integrates or mixes qualitative and quantitative methods (Morgan, 2007). As

Morgan (2007) indicates, rather than assessing any new approach strictly on its own merits, the implications of that approach should be pondered within the realms of an ongoing research context in which researchers have established commitments to other sets of beliefs and practices or research paradigms. Thus, established qualitative and quantitative research paradigms and the paradigmatic arguments for mixing them for this research are now contemplated.

Researchers' beliefs about the research questions to ask and usage of methods to address these questions are generally based on their stances about what can be known and how to go about achieving such knowledge. These stances are important components of researchers' ideas about reality or ontology and the nature of knowledge or epistemology as reflected in their worldviews (Morgan, 2007). Quantitative research is associated with the ontological view of a social world that is external, independent, fixed or objectively real, whereas qualitative research is linked to ideas of a world that is constructed, subjectively experienced and the product of human thought as expressed through language (Opie, 2004). Each of these ontological vantages on the social world drive epistemological assumptions about which knowledge is deemed valid, which in turn impacts the type of knowledge or research evidence that is sought (Cohen, Manion & Morrison, 2000; Opie, 2004).

According to Creswell (2003), quantitative research has traditionally been linked to the so-called 'scientific method', also identified as positivist or post-positivist research, empirical science and post-positivism. As its name suggests, post-positivism specifically refers to the thinking that followed positivism, which challenged the notion of an absolute truth awaiting discovery, and recognised that there cannot be absolute certainty about knowledge claims when studying human behaviour and actions. Nonetheless, post-positivism does reflect a deterministic philosophy in which causes do probably determine outcomes, a stance which is often reflected in the design of the research associated with this paradigm. Research data, evidence and rational considerations shape knowledge, and, researchers will collect information on instruments based on measures completed by participants or researcher recorded observations. The goal is to develop relevant, true statements, which can explain the situation of concern or which describe causal relationships of interest (Creswell, 2003).

However, if it is assumed that reality is interpreted and therefore knowledge is experiential, personal and subjective, reflecting an interpretivist or constructivist epistemology, then there will be a need to undertake in-depth interpersonal gathering of information with the individuals involved in a situation (Cohen, Manion & Morrison, 2000; Opie, 2004). The social constructivist knowledge claim therefore offers an alternative to positivist and post-positivist viewpoints of knowledge development. Assumptions associated with social constructivism

posit that individuals seek understanding of their life worlds and, in so doing, develop subjective, multiple and varied meanings. This leads researchers to look for the complexity of views as opposed to narrowing meanings into a few categories or ideas. As such, research questions are broad and general to allow participants to construct their meanings of a situation (Creswell, 2003).

Epistemological wrangles, or so called 'paradigm wars', about the epistemological superiority of each research paradigm outlined above have abounded for many years (Fleisch, 2008, p.141; Northcutt & McCoy, 2004). To explain, there has been an argument made for the incommensurability of paradigms, which means that radically different assumptions about the nature of reality and knowledge make it impossible to translate and reinterpret research between them (Morgan, 2007). Expressly, the qualitative and quantitative research paradigms have been represented as two essentially different, mutually exclusive paradigms through which to study the social world (Brannen, 2004). As a result researchers who have chosen to work within one research paradigm have inherently rejected the principles of other paradigms (Morgan, 2007). Regardless, a case has been made against this separate paradigms outlook. It is argued that the zealous following of a singular research paradigm may lead to a warped sense of its value in the research process, with a failure to engage pragmatically with those aspects that it cannot, by its makeup, address (Brannen, 2004). A number of motivations for using more than one research paradigm in a research undertaking have thus been offered. In sub-sections 5.2.2 and 5.2.3 which follow, the motivations that have been identified as meaningful in relation to this research are outlined.

5.2.2 The complementarities of qualitative and quantitative research

Combining quantitative and qualitative research paradigms brings to the fore the question of researchers' movement between paradigms at the levels of epistemology and theory (Brannen, 1992). To address this question, some methodologists argue that that there is not an inevitable link between ontological and epistemological assumptions on the one hand and methodological commitments on the other (Brannen, 2004; Bryman, 2004). Bryman (2004) explains that the links forged between ontology, epistemology and methods are at best tendencies rather than definitive connections, and, on this basis, argues that research methods should be viewed as autonomous from ontological and epistemological commitments (Hammersley in Brannen, 2004). Thus, my aim was to select research methods that were best suited to interrogating the questions that I wished to address, rather than selecting methods that purely paid homage to their presumed link to the ontological and epistemological position for the research. Indeed, Northcutt and McCoy (2004) call for

reconciliation between quantitative and qualitative paradigmatic views to utilise the strengths of both to the benefit of the research undertaking as a whole.

There is growing consensus regarding the critical value and complementarities of quantitative and qualitative research (Fleisch, 2008). Qualitative and quantitative data can be complementary although not necessarily at ontological and epistemological levels. Complementarities occur when differing data sets are used to address complementary but different aspects of the research (Hammersley in Brannen, 2004), a feature present for this research.

It would seem that Brannen's (1992, p.16) justification for combining qualitative and quantitative approaches, which is one solution to the so-called "duality of structure" in understanding society reflected in both approaches, dovetails with the argument for complementarity between the two paradigms. That is, there are macro-structural ways of understanding society which call for a deterministic explanatory mode associated with quantitative research. There are also micro-structural approaches to understanding society which emphasise the creative and interactive explanations and processes associated with qualitative approaches (Brannen, 1992). Macro-structural and micro-structural levels of inquiry thus cannot be conducted using the same methods. However, according to Brannen (1992), macro-level social phenomena need to be grounded in statements about social behaviour in concrete micro-level contexts. This justification conforms to the aims for this research in that meso-level school data and micro-level data collected from teachers in Grade 4 classrooms were used to both ground and illustrate the macro-level PIRLS 2006 systemic data used for secondary analysis. The macro therefore becomes more clearly known through the lens of the micro. If the macro cannot be fully understood without speaking through the micro then micro and macro cannot stand in opposition to each other (Mason, 2006), which, seemingly intimates that they are complementary in nature.

5.2.3 A dialectical stance and pragmatic epistemological underpinnings

Recognition of the argument for the complementarity of qualitative and quantitative research in addition to the research questions, led to the use of a mixed method design for this research. Mixed method research is placed in the middle of the extremes of quantitative research and the extremes of qualitative research as it attempts to respect the wisdom of both while seeking a workable middle ground for research problems of interest (Johnson, Onwuegbuzie & Turner, 2007). This middle ground is perhaps reflective of ideas about dialectical thinking in research, which involves the dynamic integration of opposing perspectives to achieve the goal of constructing knowledge by finding a resolution to

contradictions (Reznitskaya & Sternberg, 2004). It entails inviting the juxtaposition of contradictory or opposed ideas. When dialectical thinking is applied to the research realm, some scholars propose a dialectical stance when reasoning for the use of multiple paradigms when doing research. These theorists believe that all paradigms are valuable, albeit that each offers only a partial worldview. Thus, from a dialectic stance, the assumption is that all paradigms have something to offer to the research process and the use of multiple paradigms affords a greater understanding of the issue under empirical scrutiny (Tashakkori & Teddlie, 2003).

Pragmatism, in its many forms, originated from the work of Pierce, James, Mead and Dewey (Creswell, 2003), and as an epistemological stance for this research ensconces these ideas and those introduced in the sub-section above most appropriately. Knowledge claims are thought to arise from actions, situations and consequences rather than from antecedents, as in the case of post-positivism. The concern is with applications and solutions to problem situations, and, the problem is more important than the actual methods chosen (Creswell, 2003).

Pragmatism is further based on the idea that a false dichotomy exists between quantitative and qualitative research and that researchers should make the most efficient use of both research paradigms to understand educational and social phenomena (Onwuegbuzie, 2002). Pragmatism is not committed to any one philosophical system of reality and knowledge (Creswell, 2003). Knowledge from the pragmatic viewpoint is considered to be both constructed and based on the reality of the world we experience and live in (Johnson & Onwuegbuzie, 2004). On the basis of my understanding, both qualitative and quantitative research methodologies were integrated into this research in the form of a mixed method research design.

5.3 RESEARCH DESIGN

In this section, the research questions and how these questions are addressed are briefly considered as an introduction to the research design for the study (5.3.1). The actual mixed method research design chosen for the research and reasons for this design choice are then explicated (5.3.2). Thereafter, research methods, sampling, data collection and analysis procedures for the first quantitative phase of the research are introduced (5.3.3), followed by discussion of the same methodological foci for the second qualitative phase (5.3.4).

5.3.1 Research question overview

The research design is based on the research questions for the study. To reiterate, the overall research question is:

What influence do schooling conditions and teaching practices have on curriculum implementation for Grade 4 reading literacy development?

Answering this overall research question requires integration of the findings from two research sub-questions for the study. The two sub-questions each manifest at two phases of the research process, one of which is quantitative and the other qualitative.

To recap, the first research sub-question is:

What are the schooling conditions in which Grade 4 reading literacy instruction practices occur at each identified PIRLS 2006 achievement benchmark?

To answer this question, selected data from the PIRLS 2006 school questionnaire are used to provide a descriptive overview of a representative sample of schools' Grade 4 schooling contexts on the basis of their learners' mean performance in PIRLS 2006 and the predominant language profiles of learners in schools. The question is also addressed via school case studies selected from the representative sample to complement and extend the findings from the first phase.

The second research sub-question which deals with teaching practices for Grade 4 reading literacy is:

What are the practices of teaching Grade 4 reading literacy at each identified PIRLS 2006 achievement benchmark?

To answer this question, selected data from the PIRLS 2006 teacher questionnaire are used for description and comparison of practices according to class average profiles and language of teaching. Thereafter qualitative analyses of cases characterised by learner performance trends in reading from PIRLS 2006 and language of instruction complexities, with purposively selected teacher participants, are undertaken during the second phase to complement findings from the first phase.

5.3.2 Mixed methods as research design

In this sub-section, the rationale for the use of mixed methods is discussed (*5.3.2.1*), followed by consideration of the specific design used (*5.3.2.2*).

5.3.2.1 Rationale for use

Once a study combines both quantitative and qualitative techniques to any degree, the study is no longer considered a mono-method design (Leech & Onwuegbuzie, 2009), which has led to the use of a mixed method design for this study. Mixed method research is an approach to theoretical and practical knowledge that attempts to consider multiple viewpoints, perspectives, positions and standpoints (Johnson, Onwuegbuzie & Turner, 2007). The benefits of mixing qualitative and quantitative designs are generally stated as enhanced triangulation, a more robust development of theory and the potential to more comprehensively understand the research situation (Anaf & Sheppard, 2007). In support of this, Johnson, Onwuegbuzie and Turner (2007) suggest that there are five broad purposes for mixing quantitative and qualitative research. The first purpose is that of *triangulation,* which involves the use of different methods within a study to seek convergence and corroboration of the results from different methods studying the same phenomenon. A second purpose is that of *complementarity*, which, as already outlined, involves seeking elaboration, enhancement, illustration, and clarification of the results of one method with the results of the other. A third purpose is *the use of one method for the development of or to inform the other method*, and, the fourth purpose is *initiation, or discovering paradoxes and contradictions that lead to reframing the research questions*. A final purpose is that of *expansion*, which involves seeking to expand the breadth and range of inquiry by using different methods for different inquiry components (Johnson, Onwuegbuzie & Turner, 2007).

Except for the triangulation[19] and research question reframing goals, the other three purposes played major and minor roles in the design of this study. The research design for this study departs from the understanding that both qualitative and quantitative research can complement each other. The design also ensues from recognition of the important links that can be forged between information gleaned from larger representative samples and delving into micro-level cases linked to these samples to explore the processes and realities present

[19] The triangulation goal is not used for this research, based on agreement with the argument of Bryman (2007) who asserts that the metaphor of triangulation has sometimes hindered the process of constructing a negotiated account between quantitative and qualitative research findings. He further argues that mixed methods research is not necessarily an exercise in testing findings against each other but is rather about forging an overall or negotiated account of the findings that brings together both components of the conversation or debate, a goal for this research.

in individual micro level contexts (Fleisch, 2008). This is reiterated by Johnson, Onwuegbuzie and Turner (2007), who state that mixed methods can be used to probe a data set to determine its meaning. The goal of mixed method use for this research is therefore to add breadth and scope to the study, as well as to contribute to the knowledge base via examination and attempts to understand different aspects of a complex phenomenon (Onwuegbuzie & Collins, 2007), such as the teaching of Grade 4 reading literacy. For this research a mixed method design is particularly suitable as there are multiple facets of the research questions that need exploring (Anaf & Sheppard, 2007).

5.3.2.2 The specific mixed method design used

A myriad of mixed methods research designs are available for use but the number of designs available can make choosing a suitable one challenging, which has necessitated typologies (Leech & Onwuegbuzie, 2009). A number of typologies are also offered to assist researchers in their choice of a mixing design (Tashakkori & Teddlie, 2003). Leech and Onwuegbuzie's (2009) typology of mixed methods research design, which was developed according to three dimensions, was used to aid in the choice of a mixed method design for this study. These dimensions are (1) the *level of mixing of methods* (partially mixed versus fully mixed); (2) *time orientation* (concurrent versus sequential) and, (3) *emphasis of approaches* (equal status versus dominant status). Fully mixed methods involve the use of quantitative and qualitative methods within one or more stages of the research process or across these stages, whereas when partially mixed methods are used the qualitative and quantitative components are conducted either concurrently or sequentially in their entirety and are only mixed at the data interpretation stage. Affording equal status means that the qualitative and quantitative phases of a study have approximately equal emphasis with respect to addressing the research questions (Leech & Onwuegbuzie, 2009).

For the purposes of this research, a *partially mixed sequential equal status design* (Leech & Onwuegbuzie, 2009) was considered most appropriate as the research comprised two phases, one quantitative and the other qualitative. In the first phase, teacher and school level survey data from a nationally representative sample from the PIRLS 2006 were used to describe Grade 4 Language teachers' reading literacy instruction strategies and the schooling conditions in which they were implemented. This description took place on the basis of the reclassification of the teacher and school survey data according to class language profiles and learners' average class performance aligned to each of the benchmarks of the PIRLS 2006 discussed in Chapter Three. Thereafter, qualitative case studies of teachers' practices and contexts for teaching (Yin, 2003) from each reclassification

sub-sample were purposively selected to add illuminating depth to the study[20]. The results of the quantitative first phase were used to inform the use of the qualitative method (Onwuegbuzie & Collins, 2007), particularly in terms of sampling decisions and to aid in the development of data collection strategies for the qualitative method. Figure 5.1 (below) illustrates the *partially mixed sequential equal status research design* for this study. It also outlines the methodological undertakings for each phase of the research in terms of sampling choice and specific methods of data collection, aspects which will be explicated in-depth in the sub-sections following this illustration.

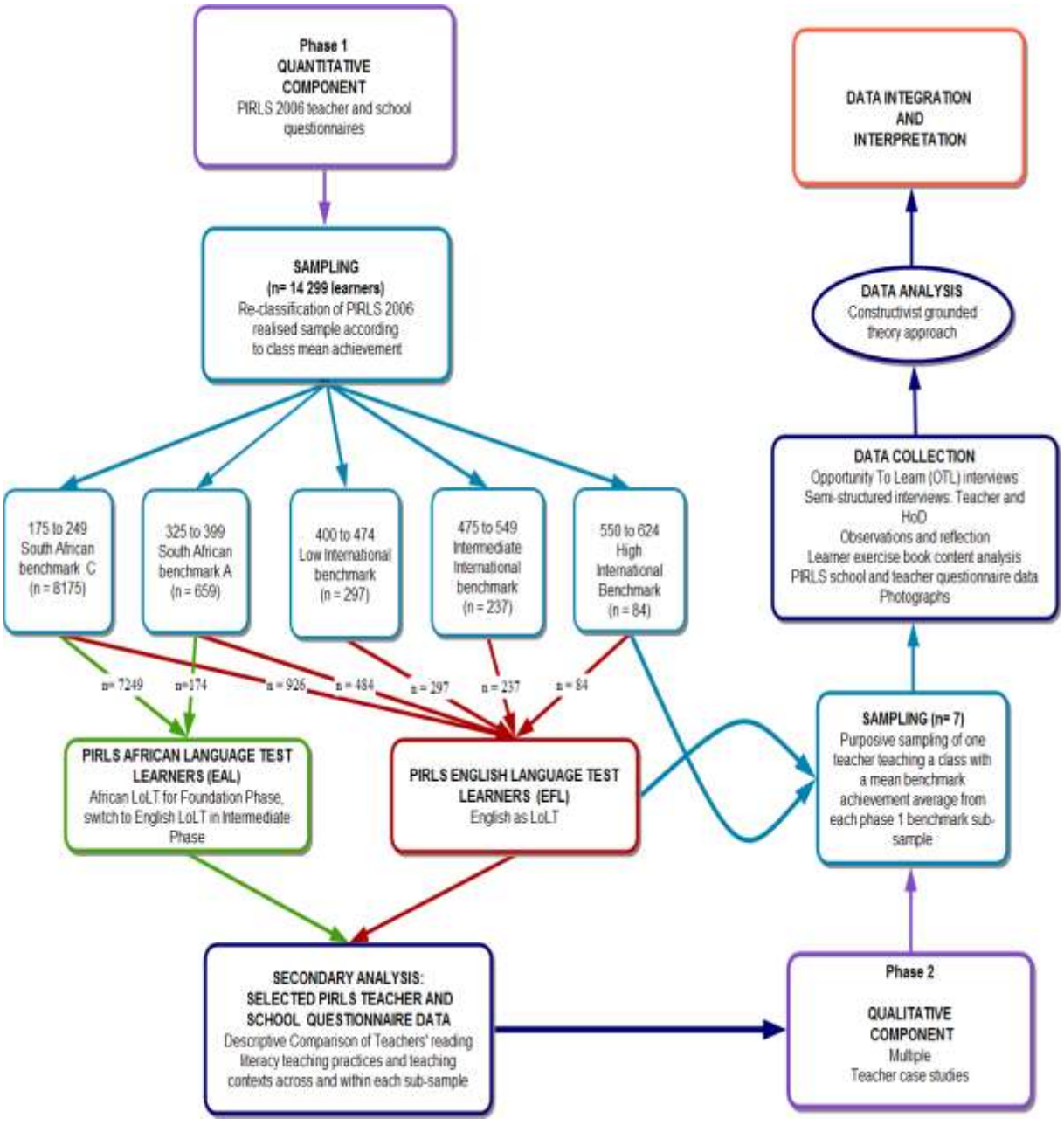

Figure 5.1: **The partially mixed sequential equal status research design for this study**

[20] The nature of this reclassification of the data will be explained further in sub-section *5.3.2.2*

5.3.3 Phase one: contextual questionnaire data from the PIRLS 2006

This phase of the research partly addressed both research sub-questions for the study. In this sub-section, an overview of the research process employed to address these questions via the phase one quantitative component of the study is firstly discussed *(5.3.3.1).* The sampling strategy used is then outlined *(5.3.3.2),* followed by the explication of the analytical strategies utilised *(5.3.3.3).*

5.3.3.1 Secondary analysis of selected items from the PIRLS teacher and school questionnaires[21]

To collect baseline information about key factors related to learners' home and school environments, cross-sectional structured survey questionnaires were collected from learners, parents, teachers and school principals as part of the PIRLS 2006 (Howie *et al.,* 2007). Of relevance to this study were the administrations of both the school and teacher questionnaires. For phase one specifically, in cognisance of the role of meso school contexts in implementation of the curriculum in micro level classrooms[22], selected items from the PIRLS 2006 school questionnaire were included for secondary analysis in phase one to answer research sub-question 1. For these purposes, the data were reclassified according to class mean performance on the four PIRLS 2006 international benchmarks and South African benchmark(s) generated according to English First Language (EFL) and English Additional Language (EAL) classroom sub-samples. The school questionnaire sought information from the school principal at each sampled school about the school's reading curriculum and instructional policies, and also sought indications of the its demographics and resources (Kennedy, 2007).

The teacher questionnaire data were used to answer research sub-question 2 by means of description and comparison of classroom reading literacy teaching practices, also using reclassified data from the PIRLS 2006 sample. The teacher survey questionnaire sought information about the structure and content of reading instruction in the classroom as well as within the school as a whole. Information about teachers' preparation to teach reading and experience at Grade 4 was also sought (Kennedy, 2007). In South Africa, Grade 4 language teachers responsible for teaching reading completed the questionnaire.

[21] Summaries of both the PIRLS 2006 teacher and school questionnaire items used for the analysis in Chapter Five are situated in Appendix D.
[22] As highlighted for the conceptual framework in Chapter Four.

5.3.3.2 Phase one sampling

In this sub-section, the sampling process for the PIRLS 2006 is discussed, followed by elucidation of the sampling process for this particular study based on the PIRLS 2006 sampling frame.

- PIRLS 2006 sampling

The sampled schools, Grade 4 learners and teachers for the PIRLS 2006 main study were used in the secondary analysis of PIRLS data for phase one of the research. Therefore, it is important to outline the sampling approach undertaken for the main study. A standardised sampling approach was specified by the PIRLS 2006 sample design. The international desired target population were all learners enrolled in the grade that represents the first four years of formal schooling in a country, provided the mean learner age at the time of testing was at least 9.5 years. Due to sampling that involved schools and learners in classes, a three-stage stratified cluster sample design was employed, with schools being sampled in the first stage, intact classes in the next stage and learners in the final stage (Joncas, 2007a).

Stratification or the grouping of sampling units into smaller sampling frames according to information found in the initial sampling frame could be employed to ensure adequate representation of specific groups. This sampling was used when the usual proportional allocation did not result in adequate representation of some groups. In most countries participating in PIRLS 2006, the sample allocation amongst strata was proportional to the number of learners found in each stratum. The school sampling method was a systematic (random start, fixed interval) probability proportional-to-size (PPS) technique. To draw school samples representative of the learner population a measure of size (MOS) at the school had to be provided, together with the expected number of sampled learners per class and variables describing school characteristics (e.g., gender of learners and degree of urbanisation). Within each sampled school all Grade 4 classes were listed and a systematic random start was used (Joncas, 2007a).

In South Africa, pseudo- or combined classes were constructed when individual classes were too small. Furthermore, schools were sampled according to province and language to create 62 explicit strata. Implicit regional stratification then occurred to create 250 implicit strata (Howie *et al*., 2007). In South Africa, Grade 4 learners were assessed with a mean testing age of 10.9 years. South Africa realised 100 percent of the international desired population for PIRLS 2006 with only 4.3 percent exclusions. Out of a population of 15,045 schools and

942,494 learners, a total of 429 schools were in the realised sample, with 16,073 learners assessed at Grade 4 (Howie *et al.*, 2007; Joncas, 2007b).

School participation was calculated at 96 percent after replacements, classroom participation was recorded at 100 percent, and there was a 92 percent learner participation rate (Kennedy, 2007). Teachers who taught the participating learners in the sampled classes within sampled schools completed the PIRLS teacher questionnaires, while their principals completed the PIRLS school questionnaires.

- Reclassification of the PIRLS 2006 sample according to achievement benchmarks

As mentioned above, the realised sample for PIRLS 2006 was reclassified for this study based on a goal to investigate how teachers engaged with reading literacy instruction given learners' language backgrounds, learner performance as determined by a class average benchmark and a variety of schooling contexts. The reclassification strategy was also based on my assumption that the majority of learners in a sampled class were likely to perform at similar levels of literacy development as a result of similar educational experiences. The South African Grade 4 schools and associated class samples were therefore reclassified according to the mean achievement score of each sampled class of learners. These class averages were then checked for their potential alignment to each of the PIRLS international benchmarks.

The process of reclassification undertaken is now discussed. To do so, it is first necessary to outline the process of benchmarking for the PIRLS 2006 main study, followed by the consideration of the reclassification process undertaken.

- *The PIRLS 2006 Benchmarks*

As stated in Chapter Three, South African learners' performance in the PIRLS 2006 assessment was scrutinised by means of a process of benchmarking[23] (Howie *et al.*, 2007). To recap, benchmarking provides qualitative indications of learners' performance on a scale in relation to questions asked in an assessment. Four PIRLS 2006 international benchmarks were identified, namely: *Low* (400); *Intermediate* (475); *High* (550); and *Advanced* (625). Criteria were established for identifying learners reaching each of the benchmarks, and all learners scoring within +/- 5 score points of each were included in scale-anchoring analyses. Once the number of learners achieving each benchmark was established, criteria were then

[23] See Chapter Three for a description of each of the benchmarks.

identified to delineate the assessment items that these learners were likely to have answered correctly and which discriminated the benchmark in question from the other benchmarks (Kennedy & Trong, 2007). This scale anchoring then allowed for the development of descriptions of skills that learners at each benchmark demonstrated. Items that anchored or described the skills associated with the achievement of each benchmark were determined via the percentages of learners who answered items correctly or received partial credits for items. For example, for a constructed response item from the assessment to be anchored as a descriptor at the *Intermediate International Benchmark*, at least 50 percent of the sampled learners had to achieve either a partial credit (at least 1 or 2 points when the maximum number of score points was 3) or the maximum score for the item. For a multiple-choice item, at least 65 percent of learners at this *Intermediate International benchmark* had to have answered the item correctly and less than 50 percent of learners situated at the next lowest benchmark, the *Low International Benchmark,* had to have answered the item correctly (Kennedy & Trong, 2007). Once each benchmark anchoring item had been identified in this manner, the items were reviewed by the PIRLS 2006 Reading Development Group, a group that then developed descriptions of learner performance associated with the achievement of each benchmark according to the properties of the anchoring item (Kennedy & Trong, 2007).

- *Reclassification of the PIRLS 2006 Grade 4 achievement data into benchmarks*

For this research, the realised sample of schools for the PIRLS 2006 (N =429) was reclassified according to the mean PIRLS 2006 achievement performance of each school's sampled Grade 4 classes. The data were prepared for the phase one analysis in the following way: (1) firstly, learner performance data for schools with learners tested in Afrikaans[24] were removed from the sample; (2) the mean Grade 4 class performance score of each remaining class was then calculated; (3) As PIRLS background questionnaire data are aligned to average learner performances, each learner (N= 14 299) in each class in the sample for this study was allocated the mean class performance score to allow for comparison of teaching practices according to class average performance; and (4) mean class performances were then checked for their potential alignment to each of the PIRLS 2006 international benchmarks.

Each of these classes was then further categorised according to the stated Language of Learning and Teaching (LoLT) at the school, be they schools where the language of instruction had not changed at Grade 4, referred to as English First Language (EFL) medium

[24] A sampling decision prompted by both the potential of lack of language diversity in these schools and the goal to focus on English as main language of instruction at Grade 4 for this research.

schools, or schools where the language medium had changed, referred to as English Additional Language[25] (EAL) medium schools. Table 5.1 (below) presents the reclassification of the data according to the number of learners for EFL and EAL schools aligned to the class average scores on the PIRLS 2006 international benchmarks.

Table 5.1: **Percentage of learners according to PIRLS 2006 class benchmarks per EAL and EFL class reclassification**

CLASS AVERAGE ON PIRLS INTERNATIONAL BENCHMARKS	Did not reach benchmark Below 400		Low International benchmark 400 to 474		Intermediate International benchmark 475 to 549		High International benchmark From 550 to 624	
	n	% (SE*)	n	% (SE)	n	% (SE)	n	% (SE)
ALL learners	13 681	93 (1.4)	297	3 (1.1)	237	3 (1.2)	84	1 (1.0)
EFL learners	2185	70 (5.3)	297	11 (4.3)	237	13 (5.0)	84	6 (3.9)
EAL learners	11496	100	*NR***	*NR*	*NR*	*NR*	*NR*	*NR*

**SE = Standard Error of measurement*
***NR = Not Reached*

For the PIRLS 2006 main study, very small numbers of South African learners reached the *High* (550) *and Advanced* (625) *International Benchmarks,* and only English and Afrikaans learners were represented at either (Howie *et al.,* 2007). For this research specifically, removal of the Afrikaans test language results and calculation of learner performance according to average class achievement revealed that no learners were in classes with a mean performance at the *Advanced International Benchmark.* As is evident in Table 5.1 (above), 93 percent (SE = 1.4) of all learners tested in either an African language (EAL) or English (EFL) were in classes where the average class performance was below the *Low International Benchmark*. Moreover, very small percentages of learners were in classes with an average performance at the *Low, Intermediate or High International Benchmarks*. When this sample was then reclassified further, it was apparent that 70 percent (5.3) of learners tested in English were in EFL classes where the class average did not reach the *Low International Benchmark* of 400. Only 11 percent (4.3) of learners were in EFL classes where the class average was at the *Low International Benchmark*, 13 percent (5.0) of learners in EFL classes where their mean class performance reached the *Intermediate International Benchmark* and six percent (3.9) of learners were in classes with an average at the *High International Benchmark*. Disconcertingly, all learners tested in an African language were in EAL classes where the average class achievement was below the *Low International Benchmark*. The fact that there was a bottom effect in the data, specifically with regard to

[25] Although these EAL learners learn in English as the main language of instruction from Grade 4, the learners were assessed in the language of instruction from Grades 1 to 3, an African language, for the purposes of the PIRLS 2006.

learners tested in an African language (EAL), prevented meaningful analysis when only using the PIRLS international benchmarks of 400, 475 and 550. For further analytical purposes, it was thus necessary to create new benchmarks to allow for greater insight into group variations between the sampled South African Grade 4 classes, especially those with EAL learner cohorts. Benchmarks reflective of the levels of performance that the majority of South African learners reached thus needed to be created to assist understandings of teaching practices at these achievement levels. The value in creating these benchmarks is that instructional interventions aimed at improving South African learners' reading literacy cannot be appropriately designed without an understanding of the needs of the majority of learners, their teachers and schools.

Table 5.2: **Average class performance distribution for South African benchmarks and class language profile**

LEARNERS IN CLASSES WITH AN AVERAGE AT EACH OF THE SOUTH AFRICAN BENCHMARKS IDENTIFIED	South African Benchmark D 100 to 174		South African Benchmark C 175 to 249		South African Benchmark B 250 to 324		South African Benchmark A 325 to 399		PIRLS International Benchmarks 400 and above	
	n	% (SE)	n	% (SE)	n	% (SE)	n	% (SE)	n	% (SE)
ALL learners	2495	18 (2.9)	8175	51 (3.7)	2352	17 (2.9)	659	7 (1.6)	618	7 (1.4)
EFL learners	448	13 (5.0)	926	25 (7.0)	326	8 (3.7)	484	23 (6.4)	618	30 (5.3)
EAL learners	2047	19 (3.5)	7249	59 (4.1)	2026	20 (3.5)	174	2 (1.2)	*NR**	*NR*

**NR = Not Reached*

Table 5.2 (above) presents the possible choices considered for the establishment of the South African benchmarks used in this study. The learner mean class average achievement data was segmented in the same way as the PIRLS International Benchmarks, starting at 75 scale points below the PIRLS *Low International Benchmark* of 400, a scale point of 325, referred to as *South African Benchmark A. South African Benchmark B* is a scale point of 250, *Benchmark C* is a scale point of 175 and *Benchmark D* is a scale point of 100 on the achievement scale. I decided that Benchmark A (325) and Benchmark C (175) would be appropriate choices for further analysis for this study. The majority of the learners (51%, 3.7) were in classes with an average achievement score at South African Benchmark C (175) with 59 percent (4.1) of the EAL learners and 25 percent (7.0) of the EFL learners represented at this benchmark. Whilst only seven percent (1.6) of the learners were in classes with an average represented at Benchmark A, two percent (1.2) of learners in EAL classes were represented, the highest achieving EAL classes in South Africa according to class average, making this benchmark an extremely important analytical choice for this

research. Also, nearly as many EFL learners (23%, 6.4) were in classes reaching Benchmark A as those EFL learners in classes reaching Benchmark C (25%, 7.0).

Table 5.3: **Final sample used for secondary analysis of PIRLS teacher and school questionnaire data**

LEARNERS IN CLASSES WITH A MEAN REACHING THE SELECTED BENCHMARKS	South African Benchmark C 175 to 249		South African Benchmark A 325 to 399		Low International Benchmark 400 to 474		Intermediate International Benchmark 475 to 549		High International Benchmark 550 to 624	
	n	% (SE)	n	% (SE)	n	% (SE)	n	% (SE)	n	% (SE)
EFL learners	926	25 (7.0)	484	23 (6.4)	297	11 (4.3)	237	13 (5.0)	84	6 (3.9)
EAL learners	7249	59 (4.1)	174	2(1.2)	*NR**	*NR*	*NR*	*NR*	*NR*	*NR*

**NR = Not Reached*

Table 5.3 (above) delineates the final sample used to reclassify the associated school and teacher questionnaire data for secondary analysis. To reiterate the sampling process used, only teacher and school questionnaire data aligned to certain class average achievement benchmark and language profiles were used. That is, the questionnaire data for teachers and schools where learners were assessed in English (EFL) and the class average achievement was at one of five established benchmarks were used. These benchmarks were: the *High* (550), *Intermediate* (475) and *Low* (400) *International benchmarks* and *South African benchmarks A* (325) and *C* (175). For those learners assessed in the African languages (EAL), teacher and school questionnaire data in cases where the class performance average was aligned to South African *benchmark A* (175) and *C* (325) were used as no EAL learners were in classes with an average reaching the PIRLS international benchmarks. The identified analysis sub-samples are labelled as EFL 175, EAL 175, EFL 325, EAL 325, EFL 400, EFL 475, and EFL 550 for the purposes of reporting in the findings chapters for this study.

In the next sub-section the process of secondary data analysis of selected school and teacher questionnaire data as used for comparison according to language profiles and average class performance on these benchmarks is described.

5.3.3.3 Phase one secondary data analysis

Secondary analysis involves exploring new research questions and/or theoretical frameworks using existing data (Smith, 2008). For this study, the existing PIRLS 2006 data were used for the purpose of secondary analysis. Structured surveys such as the PIRLS contextual

questionnaires provide data that are categorised and tabulated, such that these data can be explored quantitatively via descriptive or inferential statistics (Baumann & Basson, 2004). Secondary analysis of the PIRLS 2006 teacher and school questionnaire datasets was considered meaningful for this research as it is a useful option for those who have access to databases that may not have been fully tapped in the original designs (Thorne, 1993).

For the PIRLS main study, teacher questionnaire data were reported by means of percentage of learners responding to each category of a variable accompanied by mean reading achievement of the learners in each category. Thus the teacher data were presented from the perspective of learners' educational experiences. In some cases response categories were collapsed and indices compiled. The same descriptive reporting occurred for this study, however the descriptive summaries of response distribution were considered within and across the reclassified sub-samples according to benchmark mean performances and the class average performance assigned to each learner that was generated for this research (Trong & Kennedy, 2007). As a result, seven different educational landscapes defined by average class performance on the benchmarks and class language profile (i.e. EFL and EAL 175, EFL and EAL 325, EFL 400, EFL 475 and EFL 550) were presented for both internal analysis of each benchmark and for cross-comparison with the other benchmark scenarios. For the main study, the school questionnaires were completed by the principal at the sampled school and these data were reported according to the percentage of principals responding to each item. The same reporting convention was used for reporting of the school questionnaire data for this study.

Frequencies and mean scores were generated for selected variables in the teacher and principal questionnaire data. Where appropriate, the mean scores were calculated per benchmark and presented as cross-tabulations. IDB analyser (IEA, 2009) was used in order to correctly estimate the standard errors given the cluster sample.

To summarise the data further, a number of scales were also explored. Exploratory factor analysis was used to identify groups of variables that correlated with each other and to determine the underlying dimensions of a set of factors (Field, 2009). Principal Components Analysis (PCA) using varimax rotation was chosen as a preferred method of factor extraction for the analysis (Kremelberg, 2011). Initial attempts to execute the factor analysis for the selected items revealed that it was not feasible due to small sample sizes for some of the sub-samples. As a result, selected sub-samples were merged. The EAL 175 (175 to 249 on the PIRLS achievement scale) and EAL 325 (325 to 399) datasets were thus merged to create the EAL 175-325 benchmark merged on the basis of these benchmarks' EAL and class average performance below the PIRLS international benchmarks commonalities. The

EFL 175 (175 to 249) and EFL 325 (325 to 399) benchmarks were merged as EFL 175-325 due to their EFL and performance below the PIRLS international benchmarks commonalities. The rationale for the merge of the EFL 475 (475 to 549) and EFL 550 (550 to 624) samples were their EFL and highest class average benchmark commonalities. The EFL 400 sample was not merged with any others as descriptive analysis for some of the items had already revealed that at times the benchmark shared commonalities with the lower benchmarks and at other times commonalities with the higher class average benchmarks. Where merged data are presented it is stated in Chapter Eight. Significance testing between each of the sub-samples is also reported. Moreover, the baseline factor analyses scores for the overall sample are provided in Appendix J.

A number of criteria were used for the factor analysis. Firstly, the Kaiser-Meyer-Olkin (KMO) was used to verify the sampling adequacy for each analysis. KMO values greater than .5 were considered acceptable for inclusion with the further acknowledgement that values between .5 and .7 are judged as mediocre, values between .7 and .8 as good, values between .8 and .9 as great and values above .9 as superb. Secondly, Bartlett's test of sphericity was also used to indicate whether correlations between the variables were sufficiently large for PCA with a significance of less than .05 (ρ< 005). Thirdly, the proportion of common variance or communality present in each variable for the scale across the merged benchmarks was checked. Those items with communality of .4 were retained for each component generated. Moreover, components with eigenvalues meeting Kaiser's criterion of 1 were retained for analysis at each benchmark (Field, 2009). For each remaining component, items with negative factor loadings and factor loadings under .4 were removed. The remaining items loading onto a component were then analysed for any underlying structure or latent variable. Items that did not fit conceptually with the rest of the items of a component were also removed. Only factors meeting all the criteria above are presented in Chapter Eight.

Once the scales (factors) were identified, their internal reliability was explored. The reliability analyses of the scales were calculated for all the benchmarks. Factors were analysed to see if the factors formed reliable scales using Cronbach's alpha. As these were considered exploratory analyses, a lower coefficient of .5 were considered the criterion to be included (see Howie, 2002). The inter-item correlation coefficients were analysed to ensure that no items were correlated too highly (Cronbach's alpha was greater than .7), the variance statistics and the Cronbach's alphas were also considered in the item-deletion statistics. In this regard, if the Cronbach's alpha was substantially higher after a particular item was deleted and did not adversely affect the conceptual composition of the scale, particular items

were subsequently considered for deletion. Where this occurred, this is explicitly mentioned in the text. If not the original scale was included in its entirety.

Whilst secondary data analysis can reveal what is happening it cannot disclose why in detail, as this requires combined approaches (Smith, 2008). Moving from this macro-level secondary analysis selected PIRLS 2006 teacher and school questionnaire data, micro-level case studies were initiated for exploratory illustration of teaching practices and schooling contexts for the development of reading literacy.

5.3.4 Phase two: case studies of teachers' reading instruction practices and teaching contexts

This second phase of the research also partly addressed the two research sub-questions for the study, both of which were addressed via qualitative case studies of selected teachers' reading literacy instruction practices and their schooling contexts for the development of reading literacy. In this sub-section, the second qualitative phase of the mixed methods study is thus described. Firstly, the value of qualitative research methods for the second phase is presented *(5.3.4.1).* Subsequently, in sub-section *5.3.4.2,* the rationale for the use of multiple case studies is discussed. Thereafter, the purposive sub-sampling strategy employed for the selection of cases and participants is outlined *(5.3.4.3*). This is followed by the exposition of the data collection (*5.3.4.4*) and data analysis (*5.3.4.5*) strategies used for the second phase.

5.3.4.1 The value of qualitative methods for phase two

As Yin (2003) suggests, surveys can try to deal with phenomenon and context but on account of their descriptive nature their ability to do so is restricted. The second phase of this research addressed the PIRLS 2006 school and teacher survey questionnaire data's restricted ability to investigate teaching practices and the contexts in which teachers address reading literacy instruction using qualitative research strategies. In so doing, the aim was to complement and extend the findings from the secondary analysis of the survey data.

The properties that made qualitative methods apt for this phase of the research are their purported emphasis on the qualities of phenomena and their focus on processes, interpretation and on the socially constructed nature of reality (Denzin & Lincoln, 2000). As Mason (2006, p.17) writes: "A distinctive strength of qualitative research lies in its intimate and habitual concern with context, with the "particular" and with understanding the situatedness of social experience, processes and change". Qualitative research undertakings seek elucidation of research questions by examining social settings and the people who are

part of these settings. The researcher interprets phenomena in interaction with participants according to the representations of meaning that they afford to them, in so doing seeking to build a holistic picture with detailed descriptions of the participants' perspectives. The researcher is able to share in the understandings and perceptions of others, and the social shaping and processes that people use to create meaning in their lives and maintain their social realities (Berg, 1998; Macmillan & Schumacher, 2000). Qualitative research is best when it delves in unfettered ways into the complex processes and contextual realities of teaching and learning both inside and outside the classroom (Fleisch, 2008). The methodological vehicle chosen to do this was multiple case studies, which are discussed in the next sub-section.

5.3.4.2 Utilisation of multiple/collective case studies

In this sub-section my argument for the use of case studies for the second phase of the research is presented, with specific reasoning for the use of multiple case studies.

- Why case studies?

Many qualitative researchers are committed to a case-based, insider's perspective of a phenomenon. This position directs their attention to the specifics of particular cases (Denzin & Lincoln, 2000). A case study provides a comprehensive examination of a single example and in so doing delivers a unique illustration of real people in real situations (Cohen *et al.*, 2000; Flyvbjerg, 2004). A case study is further delineated as being composed of any social entity that can be restricted by parameters and that uncovers a specific dynamic and relevance, revealing information that can be captured within its realms (Henning, van Rensburg & Smit, 2004). Case study research as such involves the study of an issue, via one or more cases in a bounded system, with the general goal of developing as full an understanding of each case as possible (Creswell, 2007; Silverman, 2005).

The specific strengths of case studies are that they provide illustrations of effects of phenomena in real-life contexts, especially as context is recognised as a powerful determinant of both the cause and effect of phenomena and understandings of them. Moreover, the illustrative, in-depth description that a case study provides helps to report on complex dynamics (Cohen *et al.,* 2000), such as the teaching of reading literacy at Grade 4 in a range of diverse schooling contexts. Case studies are based on recognition of the embedded state and complexity of social truths (Bassey, 1999). They do not give indications of causality when considering teaching and learning practices but they can provide rich descriptions of the dimensions and dynamics of classroom learning (Barone, 2004). The

study of selected cases for this phase of the research was considered useful as these cases were aimed at providing detailed illustration, insight, discovery and interpretation of teachers' teaching practices for reading literacy and the schooling contexts in which these practices took place, a goal of this research. The case studies were considered especially useful for exploration of selected teachers' practices and teaching contexts, to add illustrative depth to the reporting of teacher questionnaire data from the first phase of this research and to provide a wealth of details and a nuanced view of teachers' practices in their unique contexts (Flyvbjerg, 2004).

- The use of multiple case studies

Multiple or collective case studies were used because looking at a range of similar and contrasting cases can aid understanding of a single case by grounding it through specifying how, where and why it occurs as it does (Merriam, 1998). This was necessary given the complexity of teaching and learning contexts presented in South African primary schools, and the need to investigate the diverse classroom realities that teachers may face in their task of further reading literacy development. Multiple case studies can also aid in building a stronger understanding of the issue of interest (Barone, 2004) and the inclusion of multiple cases is a common strategy used to increase the credibility of the findings in the analysis of these cases (Merriam, 1998). For this research, it also provided for opportunities to gain a depth of perspectives about teaching Grade 4 reading literacy in a diverse range of educational contexts (Northcutt & McCoy, 2004).

The selection of multiple cases was also based on use of the phase one reclassified sample for purposive sub-sampling. A discussion of the selection process and sampling rationale for each of these cases follows.

5.3.4.3 Purposive sampling: case and participant selection

Purposive or non-probability sampling is used in case study research because it entails the deliberate selection of a particular section of the population to include in the study for the purpose of fulfilling the criteria for participants as set forth by the research questions (Cohen *et al*., 2000). Therefore, teachers and schools were selected on the basis of their ability to purposefully inform an understanding of the research problem and central phenomenon of the study (Creswell, 2007), which was to explore schooling conditions and teaching practices for reading literacy development across a range of educational contexts as determined by class average performance in the PIRLS 2006.

At the research design stage, quantitative data can assist sampling for the qualitative component by identifying representative sample members or helping to identify outlying or deviant cases (Johnson, Onwuegbuzie & Turner, 2007). Building on the reclassification of the initial three-stage stratified cluster sample from PIRLS 2006 in phase one (see *5.3.2.2)*, schools with Grade 4 classes which were reclassified according to class language profiles and by the average class performance of learners on the PIRLS 2006 international benchmarks and South African benchmarks, provided the sample for purposive strategies used to select the case studies in this second phase. EFL and EAL schools with PIRLS 2006 Grade 4 class average at benchmarks 175, 325, 400, 475 and 550 were therefore included in the sample.

Moreover, although sampled schools meeting these criteria were scattered throughout all of the nine provinces in South Africa, focus was first placed on Gauteng schools from the sample. This decision was based on ease of access for research purposes due to my residence in the province. Using this purposive sampling frame of Gauteng schools reaching each of the class benchmarks, a convenience sampling strategy was then employed. Convenience sampling involves choosing the nearest sites and/or individuals to serve as participants, and continuing this process until the required sample size has been obtained (Cohen *et al.,* 2000). Notwithstanding cognisance of the role of province[26] in the selection of cases, I acknowledged that each case would also present a diverse teaching and learning scenario.

Permission to approach schools selected from the Gauteng sub-samples of EAL and EFL 175, EAL and EFL 325, EFL 400, EFL 475 and EFL 550 was obtained from the DoE, then also from school management at each site to approach individual teachers. Thereafter, teachers who had taught the learners who completed the PIRLS 2006 assessments, who had completed a PIRLS 2006 teacher questionnaire, and who were still teaching Grade 4 in the same school sampled for PIRLS 2006 at the time of data collection for this study in 2009, were initially sought for participation. The Head of Department (HoD) responsible for the Grade 4 Language subject area at each school was also sought for participation.

[26] Each South African province has its own educational nuances due to the influence of: local governance by each of the provincial departments of education; a differing population dynamic and differing language profile to the other provinces; the availability of and access to resources, all of which could influence teaching and learning in schools. Of the nine South African Provinces, the Gauteng Province specifically achieved the third highest score of these provinces in the PIRLS 2006 assessment for Grade 5 learners. The South African province with the highest average performance was the Western Cape, achieving 404 points which is 51 points above the average achievement score of the Gauteng province. The Gauteng province scored 67 points above the Eastern Cape which was the lowest performing province. The Gauteng performance of 353 was slightly higher than that of KwaZulu-Natal at 314 (Howie, Venter, Zimmerman & Archer, 2009).

However, of the seven schools approached, with the exception of the teacher at EAL 325, teachers who had participated in the PIRLS 2006 study were either unavailable to participate; could not remember participating; were no longer teaching Grade 4 at the school; or had left the school. Therefore, except for the teacher at EAL 325, an HoD and a Grade 4 teacher teaching in each EAL 175, EAL and EFL 325; EFL 400, EFL 475 and EFL 550 school, and who volunteered to participate, were purposively chosen.

Also, there was only one school in Gauteng with a Grade 4 class average at EFL 475. The teachers at the school declined to participate and thus a school in KwaZulu-Natal reaching EFL 475 was approached for participation. The KwaZulu-Natal school approached was the only public school of the four reaching this class average benchmark in the province, which was why it was specifically chosen for inclusion. It must also be noted that upon data collection at the EAL 325 school selected, it was discovered that it was actually an EFL medium school. A decision was taken to continue data collection at the school as it turned out to be a private Roman Catholic township school with only second language English learners attending, and this meant that its difference from other township schools was considered analytically meaningful. Moreover, of the seven intended case studies of Grade 4 teachers' practices in context, six were undertaken due to difficulties in getting schools at EFL 175[27] to participate in the research during the time allocated for data collection.

This resulted in six cases altogether. The participants at each of the six school case sites were recognised as the "… experiential experts on the phenomenon being studied" (Rudestam & Newton, 2007, p.107) and considered to be "information rich" in that each possessed knowledge of and experience with the issue under investigation (Northcutt & McCoy, 2004, p.87). Each selected case was viewed as a critical case, which involves the choice of a representative case most likely to represent the phenomenon under exploration, thought to have been achieved by the sampling criteria of class average performance and language of instruction. The main argument for the use of this type of case is that what is valid for these participants is more likely to be valid for others too (Flyvbjerg, 2004; Merriam, 1998). A short overview of the biographical details of schools and the teachers that chose to participate in the study are set out in Table 5.4[28].

[27] Members of the EFL 175 school who had wanted to participate could not get permission from the principal due to his continual absence and thereafter also indicated that they could not participate as the school was dysfunctional, particularly during teacher strikes taking place at the time.
[28] Chapters Seven and Nine provide more biographical details for each of the schools and teachers.

Table 5.4: **Biographical details of purposively selected school and teacher participants**

SAMPLE CHARACTERISTICS	South African Benchmark C 175 to 249	South African Benchmark A 325 to 399		Low International Benchmark 400 to 474	Intermediate International Benchmark 475 to 549	High International Benchmark 550 to 624
Language background of class	EAL	EFL	EFL	EFL	EFL	EFL
Province	Gauteng	Gauteng	Gauteng	Gauteng	KwaZulu-Natal	Gauteng
Location	Rural township	Urban	Urban Township	Urban	Suburban	Suburban
School pseudonym	F	E	D	C	B	A
Private/ public	Public	Public	Independent	Public	Public	Independent
Teacher's years of teaching experience	12	14	15	12	15	31
Teacher's years of experience at Grade 4	1	7	15	2	8	10
Teacher's age range	30-39	30-39	30-39	30-39	40-49	50-59 years

5.3.4.4 Data collection

In this sub-section, the approach to data collection and the actual data collection strategies employed for each case are considered.

- <u>Approach to data collection</u>

As Merriam (1998) points out, a case study does not have any particular methods of data collection, and any methods of gathering data may be employed to address the research questions posed. Indeed, case-based research leads to detailed data about the phenomenon being studied, no matter what particular research methods have been used (Henning *et al*., 2004). Thus, given the range of data collection methods that could have been employed, Charmaz's (2006, p.15) caveat that "*(h)ow* you collect data affects *which* phenomena you will see, *how*, *where*, and *when* you will view them, and *what* sense you will make of them" was borne in mind during the selection of the actual methods chosen for this phase. Figure 5.2 (below) illustrates the data collection methods used for each case study of teacher practices in context. Each method informed the overall case and further acted to inform either the

implementation or analysis of the other methods. As such, each method led to the convergence of evidence for the overall case (Yin, 2003).

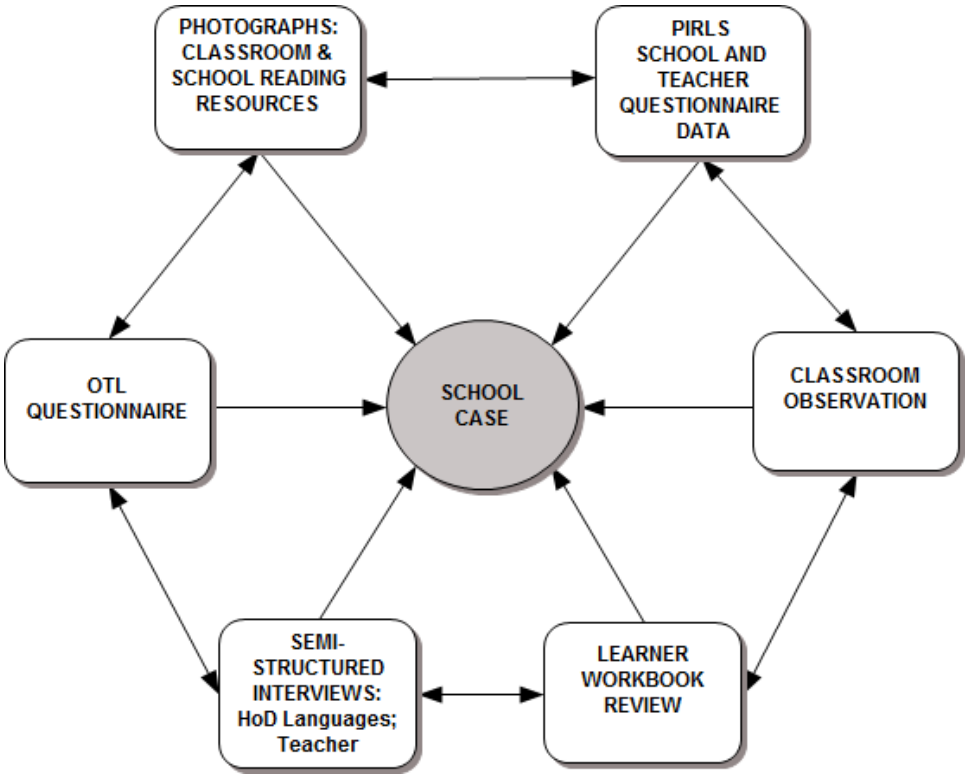

Figure 5.2: **Case study data collection methods** (adapted from Yin, 2003).

- Data collection strategies employed

Each of the data collection methods that were chosen to aid in answering the research questions for phase two of the study is now considered.

- *PIRLS 2006 school and teacher questionnaire data for case study contextualisation purposes*

As indicated above, the PIRLS 2006 school questionnaire gathered information from school principals about availability and use of materials to teach reading, the school reading curriculum and instructional policies, in addition to school demographics and resources (Kennedy, 2007). Whilst these school questionnaires were not a central focus for analysis for phase two of the research, selected PIRLS 2006 school questionnaire items completed by principals at the purposively selected participating schools were utilised to contextualise the teachers' teaching practices. This was viewed as important to cover the contextual conditions that formed the boundaries of these cases (Yin, 2003) as these conditions are highly pertinent to understanding teachers' practices.

Also, the PIRLS 2006 teacher survey questionnaire sought information about the structure and content of reading instruction in the classroom, amongst other aspects (Kennedy, 2007). Except for one teacher at EAL 325, the other participating teachers who had not completed the questionnaire in 2005 filled in a PIRLS 2006 questionnaire. Each of the teachers' responses to selected items about teaching practices from this questionnaire acted as further teaching practice reference points for these cases.

- *Opportunity To Learn open-ended questionnaires*

Opportunity-To-Learn (OTL) was introduced as part of the IEA's First International Mathematics Survey in the 1960s. The Mathematics curriculum was conceptualized as functioning at the three levels of the intended, implemented and attained curriculum. To examine the implemented curriculum, an OTL questionnaire was administered to the teachers of the learners who were assessed. Teachers were asked whether the content needed to respond to items on the achievement tests had been taught to their learners. In instances where the content had not been taught reasons for this were explored (McDonnell, 1995).

A similar strategy was initiated for this research. The participating teachers at each school were given the PIRLS 2006 assessment passages released for public scrutiny to review, together with an open-ended questionnaire which sought their judgement on the suitability of the passage for their learners (see Appendix E). In particular, the teacher participants gave their opinions on the suitability of the passage for their learner group in terms of: length; vocabulary; cognitive level; and cultural appropriateness. They were also asked whether or not their learners would be able to successfully read the passage on their own and with comprehension, giving reasons for their answers. Another question sought the teachers' comments on the similarities and differences between the passage and the type of passages they would usually give their learners to read. The teachers were further asked what kind of teaching support they would need to give to their learners to help them to read and understand the passage. Finally, the teachers indicated what kind of assessment strategies they would use if they were to assess their learners' reading comprehension using the passage. I surmised that teachers' responses to such questions might yield further insights into the performance of prior learners in the PIRLS 2006 assessments at the school.

- *Semi-structured interviews*

Interviews are essential sources of case study information (Yin, 2003). The purpose of a qualitative research interview is to obtain nuanced descriptions of the interviewee's

interpretation of the phenomenon under investigation (Kvale, 1996). Qualitative interviewing is thus a directed conversation which permits in-depth exploration of a particular topic from the experience of the participant himself or herself (Charmaz, 2006). In the use of semi-structured interviews specifically, the topics for discussion are pre-specified and listed on an interview protocol, but the questions can be reworded and do not need to be presented in a set order (Johnson & Turner, 2003). Ideas and issues emerge during the interview which allows the researcher to pursue these leads (Charmaz, 2006).

On the basis of my recognition of the benefits of this method, semi-structured interviews were initiated with both the participating Grade 4 teacher and the HoD responsible for overseeing the Language subject area at Grade 4 in the sampled schools. The interview schedules in Appendix F outline the lines of inquiry for these interviews. In sum, the teacher interviews focused on teachers' understandings of and goals for teaching reading literacy; viewpoints of the curriculum for the teaching of reading literacy; descriptions of typical lessons; opinions on what experiences have shaped their teaching strategies; experiences in interacting with their learners for reading literacy; and ideas about which strategies are most useful. The HoD interview focused on: the HoDs' career path; their role as HoD at the school; the goals and planning process for reading literacy development undertaken by the HoD and teachers; the strategies for reading development used; teaching time allocation for Language and for reading instruction, specifically at Grade 4; description of a typical learner at the school; and opinion on the official teaching curriculum.

- *Classroom observation and follow-up interviews*

Non-participant observations assisted towards gaining greater understanding of the cases (Stake, 1995) and provided the opportunity to investigate teachers' teaching practices *in situ* instead of just from the second-hand accounts provided via the other data collection methods for the study (Cohen *et al.*, 2000). As a result, this allowed me to see things that may otherwise have been missed and to explore areas of practice that teachers may not have spoken about or reflected on in the interviews and questionnaires (Cohen *et al.*, 2000). This meant that the observational evidence was used to provide additional information (Yin, 2003) about teachers' teaching practices, and, was not used as the main source but rather a supplementary source of information. I asked to observe one reading comprehension lesson undertaken by each teacher. Each participating teacher chose when and which lesson I would observe. I postulated that asking the teacher to decide which lesson I could observe would perhaps result in the teacher delivering a lesson based on her ideas of best practice in teaching reading comprehension. For these cases, my role was that of non participant observer, in that I was present in the participant teachers' classrooms and my role as

researcher was known to the teachers and their learners, but I did not actively participate in the social interactions and teaching undertakings in the classes observed (Cohen *et al.*, 2000). Specific foci for the observation were organised around four areas, as outlined in Table 5.5 (below), namely, the physical, human, interactional and programme settings in each class and the specific focus areas for each (Cohen *et al.*, 2000):

Table 5.5: **Broad focus areas for classroom observations** (adapted from Cohen *et al.*, 2000, p.305).

SETTING	*FOCAL AREAS FOR OBSERVATION*
Physical	• *Resources for reading and the classroom in which the observation took place.*
Human	• *The characteristics and makeup of the learner cohort in the classroom in terms of gender, diversity and behaviour.*
Interactional	• *The teaching interactions that took place, either formal or informal, verbal and non-verbal between the teacher and learner.* • *The nature of questions asked and quality of responses given.*
Programme	• *The teaching resources and their allocation.* • *The events or sets of activities that took place and the sequence of these events or activities.* • *What the teacher was trying to achieve in terms of stated and non-stated goals.*

Each of the observations was videotaped and the audio[29] of teacher and learner interactions was transcribed for later analysis. Furthermore, as suggested in the work of Silverman (2005), field notes made at the time of the observation were kept to systematise the process. After the observation I also interviewed the teacher about the lesson. Moreover, each passage and questions used for the reading comprehension during the lesson observed was collected for later comparison, with the passages and questions from other lessons observed for the other cases. The passages and questions were then compared in terms of complexity of ideas and questions, level of vocabulary used, number of words and developmental appropriateness for Grade 4 learners.

- *Document review*

In literacy research, the analysis of artefacts usually involves the examination of physical evidence of literacy instruction, learning or practice (Purcell-Gates, 2004). For this research, this meant that a review of products of literacy instruction, learning and practice took place. The Language workbooks of a learner in each participating teacher's class were reviewed. The quantity, quality and type of activities evident, especially for reading comprehension, were recorded as well as the quality of the learners' written responses to these activities in terms of amount, content and developmental level. As data for the cases were collected

[29] The exception was School B (EFL 475), whose teacher did not give permission for recording of her lesson to take place using a digital voice recorder or video camera. In this instance, detailed field notes provided the basis for the analysis.

between June and November 2009, learner workbooks were also collected at different times during the year. As such, only workbook entries until the end of June 2009 were analysed, to ensure comparability of the documents for the analysis.

- *Photographs*

Photographs were taken of both the literacy resources available at the school, reading materials available in the Grade 4 teachers' classrooms, and of the print environment in the classroom overall (see Appendix H).

Table 5.6 (below) gives a breakdown of which data sources were collected from each of the six schools.

Table 5.6: **Data sources for each phase two school case**

EFL 550 SCHOOL A	***EFL 475 SCHOOL B***	***EFL 400 SCHOOL C***	***EAL 325 SCHOOL D***	***EFL 325 SCHOOL E***	***EAL 175 SCHOOL F***
HoD Interview	HoD Interview	HoD Interview	HoD Interview	-	HoD Interview
Teacher interview	Teacher interview	Teacher interview	Teacher interview	Teacher interview	Teacher interview
Classroom observation	Classroom observation	Classroom observation	Classroom observation	Classroom observation	Classroom observation
OTL questionnaire	OTL questionnaire	-	OTL questionnaire	-	OTL questionnaire
Library and class photographs	Library and class photographs	Library and class photographs	Class photographs	Class photographs	Class photographs
PIRLS teacher and school questionnaire	PIRLS teacher and school questionnaire	PIRLS teacher and school questionnaire	PIRLS teacher and school questionnaire	PIRLS teacher and school questionnaire	PIRLS teacher and school questionnaire
Learner workbook	Learner workbook	Learner workbook	Learner workbook	Learner workbook	Learner workbook

- *Denotes missing data*

Following from the collection of these data, data analysis was undertaken, the process of which is discussed in the next sub-section.

5.3.3.5 Phase two data analysis

In this sub-section the overall approach to analysis is first discussed. Thereafter, the initial and focused coding and memo-writing is considered, followed by explication of the cross case-analysis and synthesis.

- Approach to analysis

In qualitative research, data are interpreted by looking for themes grounded in the participants' responses (Hesse-Biber & Leavy, 2005). Constructivist grounded theory (Charmaz, 2006) techniques were used to assist in the analysis of the data collected for this phase of the research. Scholars have updated traditionally positivist or post-positivist approaches to grounded theory by situating them in the social constructivist, postmodern and social justice frameworks (Ellington, 2008). As Charmaz (2006) indicates, grounded theory serves as a way of learning about the worlds we study and is a method to assist in the development of theories to understand them. These theories are not discovered, as in Glaser and Strauss's (1967) classic grounded theory, but rather constructed on the basis that participants' implicit meanings, and researchers' grounded theories are constructions of reality. As such, a constructivist revision of Glaser and Strauss's grounded theory captures more closely grounded theory's combination of systematic rigour in analysis, with the creative and dynamic character of the interpretive research process (Pidgeon & Henwood, 2004). To elaborate, grounded theory methods "… preserve an open ended approach to studying the empirical world yet add rigor to … research by building systematic checks into both data collection and analysis" (Charmaz, 2006, p.23).

Each case was analysed separately and once this took place a cross-case synthesis occurred (Yin, 2003). It is important to note that researchers can adopt and adapt grounded theory guidelines to conduct different studies (Charmaz, 2006), and as a result analytical guidelines were adopted and adapted as needed for the analysis of the phase two data.

- Initial coding, focused coding and memo-writing

The first step in the analysis process was to initiate coding of each of the data sets for this phase of the research. Qualitative coding is a first analytical step towards moving beyond concrete statements in the data to making analytic interpretations. Coding can be seen as the groundwork to analysis that prepares the way for a much more intensive study (Potter & Wetherell, 1987) by shaping an analytic frame from which to build analysis. Coding "fractures data into concepts and categories" (Henning *et al*., 2004, p.131) and entails categorising

segments of data with a short name that simultaneously summarises and accounts for each piece (Charmaz, 2006).

Grounded theory coding particularly involves an initial phase in which each word, line or segment of data is named, and a focused, selective phase in which the most significant or frequent initial codes are used to sort, synthesise, integrate and organise large amounts of data. However, contrary to a quantitative logic that applies preconceived codes to the data, codes are created from what is seen in the data (Charmaz, 2006) via inductive logic. Potter and Wetherell (1987) note that coding is distinct from doing analysis itself. The goal of the initial selective coding is not to find results but rather to break down an unwieldy body of information into more manageable chunks. The categories used for coding purposes flow from the research questions of interest. However, as coding has a pragmatic rather than an analytic function it is recommended that this process of collecting together information for analysis should be done as inclusively as possible. Therefore, all borderline information that seemed only vaguely implicated was incorporated (Potter & Wetherell, 1987).

In practical terms, this initial coding process of all the generated data for phase two of the study was undertaken in a certain manner. Firstly, each verbatim data transcript was read to get an overall impression as to the emerging themes apparent throughout the text, then the transcript was read again. As this was done, units of meaning in the text were segmented out and the data were fractured through open, inductive coding procedures, by which the development and labelling of concepts in the texts considered to have potential relevance to the research occurred. Codes were attached to each of the units of meaning that were singled out from the transcript and the outcome was a condensation of what each participant originally said or did (Cohen *et al.*, 2000; Henning *et al.*, 2004; Pidgeon & Henwood, 2004; Rudestam & Newton, 2007).

After the initial coding was completed, more selective, conceptual and directed coding was undertaken. This focused coding involved using the most significant and/or frequent earlier codes to filter through large amounts of data. Decisions were made as to which initial codes made the most analytical sense to allow for more incisive categorisation of the data (Charmaz, 2006). A kind of implicit quantification is present in this process, as a theme is more likely to be identified the more times the phenomenon it signifies is represented in the course of coding (Bryman, 2004). When the collection and coding of additional data no longer led to new insights for a specific category - a point of data saturation - a summary of each of the categories or themes elicited was described (Pidgeon & Henwood, 2004; Rudestam & Newton, 2007). I took up Charmaz's (2006) proposal of questions to ask to evaluate the quality of the data and thus contemplated whether I had enough background

data about persons, processes and settings for ready recall about contexts of the study; whether I had gained detailed descriptions of a range of participants' views and actions; whether the data revealed what was beneath the surface; whether I had gained multiple views of the participants' range of actions; whether I had gathered data that enabled me to develop analytic categories; what kinds of comparisons I could make between data; and how these comparisons generated and informed my ideas for the study (Charmaz, 2006). At this point, I considered relationships between the categories and more formal theory. As such, hypotheses for how these codes related were considered and integrated into theory (Pidgeon & Henwood, 2004; Rudestam & Newton, 2007).

Throughout the coding process, I generated theoretical memos to aid in openly representing emerging theoretical reflections. These memos contained hunches and insights, comments on areas in need of further investigation, deliberations about refinements of codes, explanations of modifications to categories (Pidgeon & Henwood, 2004; Rudestam & Newton, 2007).

Computer-Aided Qualitative Data Analysis Software [CAQDAS] was used to assist the coding and analysis process. This software has been specifically designed for the use of qualitative researchers, who tend to deal with large amounts of text data. The specific software used, *Atlas.ti*™, does not automatically do coding analysis for the research analyst but allows one to work interactively with the data and may lead to more varied representations of the data and coding. *Atlas.ti*™, as a CAQDAS tool, specifically allows the researcher to see their data and the coding associated with that data side-by-side on the computer screen, and includes reorganisations of the data by codes as well as many other representative possibilities (Yates, 2001).

- Cross-case content comparison

A qualitative approach to comparison works by seeking to understand the distinctive dynamics, mechanics and particularity of each case holistically, and then to make comparisons at the level of analysis. This is instead of using standardised measures or comparators applied to all of the cases, as, although standardisation may be useful for some comparative purposes, it "can have a stultifying effect on our capacity for understanding and interpreting social change" (Mason, 2006, p.16). This is as when social existence is viewed as multi-dimensional as it is for this research, change can potentially occur on a range of dimensions that cannot be compared in a "like with like" fashion (Mason, 2006, pp.16-17).

Constant comparative methods are used to establish analytic distinctions and make comparisons of each analytic work as data are compared with data to find similarities and differences (Charmaz, 2006) both within and across the cases. The grounded theory focus on constant comparison of data meant that (1) data were compared with data from the beginning of the research, not after all of the data were gathered; (2) data were compared with emerging categories; and (3) relations between concepts and categories were demonstrated (Charmaz, 2006).

5.4 METHODOLOGICAL NORMS FOR THE STUDY

This section first expounds the approach to the methodological norms for the study (5.4.1). In sub-section 5.4.2, the methodological norms for phase one of the study are specifically discussed. In sub-section 5.4.3, the methodological norms for the second phase are described.

5.4.1 Approach to the methodological norms

Taylor (2001) maintains that academic analysis must involve a more systematic investigation. The paradigmatic choices available for research present a large number of terms for evaluating and describing the validity of a research study. In fact, definitions for validity have evolved over the years, and, the quantitative and qualitative research traditions differ with both treating issues of validity differently, despite sometimes similar terminology (Dellinger & Leech, 2007). Indeed, reliability and validity are treated separately in quantitative research, whereas in qualitative research these terms are not viewed separately. Rather terminology which encompasses both, such as trustworthiness, credibility, dependability, transferability and confirmability, may be used (Golafshani, 2003; Tobin & Begley, 2004).

Although I chose to deal with the methodological norms for both the qualitative and quantitative phases of the research separately, I also had to take cognisance that this study was a mixed methods undertaking, which presented other considerations in terms of ensuring the quality of the undertaking. My central consideration for the validity of the mixed methods nature of this study was to ensure its design quality and interpretive rigour. Design quality refers to the quality of inputs such as data, design, and data analysis procedures. Interpretive rigour involves the integrity of the process of meaning making (Teddlie & Tashakkori , 2009). Also, Teddlie & Tashakkori (2009) indicate that transparency is used as an indicator for quality in both quantitative and qualitative studies. Transparency is judged by the clarity of explanations that researchers provide regarding all stages of the research process. To achieve this, my goal in writing this chapter was to provide clear explanations of

who the research participants were, how they were selected, how the data were analysed and how conclusions were derived from it (Teddlie & Tashakkori, 2009).

5.4.2 Methodological norms for phase one

Any study undertaken under the auspices of the IEA such as the PIRLS 2006 must conform to the technical standards which have been stipulated for such studies. The validity and reliability standards for IEA studies usually relate to: the measurement of student achievement in a school subject as a key objective; the collection of data via survey samples in school settings; simultaneous data collection in a large number of countries by national teams using internationally agreed upon instruments and following internationally agreed procedures; and the management and coordination of the study by an international team. The standards are as a result grouped into four areas, namely, (1) the design, management, operation and quality control of international studies; (2) the construction of instruments for measuring student achievement and background questionnaires for collecting information from students, teachers and schools; (3) survey data collection procedures in schools; and (4) data processing, analysis and reporting (Gregory & Martin, 2001).

For data collection specifically, quality control is an integral part of an IEA study at both the national and international levels. Such quality control involves internal mechanisms built into each stage of data collection to ensure that the procedures are implemented correctly with external reviews of the process by parties separate from those being evaluated (Gregory & Martin, 2001).

Therefore, these rigorous standards directed the implementation of the PIRLS 2006 study in South Africa. To ensure consistency in the fieldwork within and across countries and to ensure compliance with the IEA/PIRLS 2006 data collection guidelines and standards, a monitoring process was put into place and an international quality control manager acted as an external, objective observer of the process. National quality control officials were also appointed with monitoring occurring in eight percent of the sampled South African schools (Howie *et al.,* 2007).

5.4.3 Methodological norms for phase two

In 1985, Lincoln and Guba (1985) spoke of ensuring the trustworthiness of qualitative research and later indicated that this trustworthiness involved credibility, dependability, transferability and confirmability (Tobin & Begley, 2004). The attempts made to ensure the trustworthiness of the qualitative component of this research are discussed in terms of

credibility, dependability, confirmability, and transferability. Also, my own reflexivity in the process is considered.

5.4.3.1 Credibility

The credibility of a study is viewed as the fit between participants' views and the researcher's representation of these views. Credibility can be demonstrated by means of strategies such as triangulation, member checks and audit trails, amongst others (Tobin & Begley, 2004). A criterion for the credibility of the second phase of the research was based on the quality of the case studies. I hoped to achieve credibility via the collection of multiple sources of data evidence for each of the cases. As another quality check, participants had the opportunity to review, corroborate and revise the research findings, should they deem it necessary, through a process of member validation (Barone, 2004; Bryman, 2004). The aim of member validation was to seek corroboration of the account that I arrived at. I sought correspondence between my findings and the perspectives and experiences of the participants involved in the research (Bryman, 2004). Member validation was also used within the interview process as topics were confirmed, rephrased and probed to gain access to the holistic and subtle meanings of the participants (McMillan & Schumacher, 2000).

5.4.3.2 Dependability and confirmability

Dependability can be ensured by making sure that the research is logical, traceable and clearly documented, in other words, by creating an audit trail. The creation of an audit trail also means that confirmability or authentication of the interpretation can be achieved (Tobin & Begley, 2004). Therefore, each case for this research has a formal presentable database so that other researchers can review or trace the case study evidence directly (Yin, 2003). Anfara, Brown and Mangione (2002, p.28) reinforce the value of a presentable database by stating that "… providing access to the decisions that are made in the process of conducting qualitative research is part of responding to the question of whether or not the findings are sufficiently credible and trustworthy". The CAQDAS software, *Atlas.ti*, assisted in the creation of an audit trail in which the evidence for the conclusions drawn were presented in a linear manner to show how the data collection and analysis led to the conclusions drawn (Barone, 2004; Bryman, 2004). I also tried to achieve consistency in coding the raw data in ways such that another individual could understand the themes and arrive at similar conclusions (Rudestam & Newton, 2007).

5.4.3.3 Transferability

Transferability (or external validity) relates to the generalisability of the research (Tobin & Begley, 2004). Flyvbjerg (2004) argues that formal generalisation via quantitative measures is just one way in which knowledge can be accumulated, and maintains that even if knowledge cannot be formally generalised, as with qualitative case studies, this does not mean that these cases cannot contribute to "the collective process of knowledge accumulation in a given field or in a society". Also, as situated and contextual understandings are at the core of qualitative explanation and argument, Mason (2006) considers it unfortunate that qualitative explanations are seen as too localised or contextualised to underpin generalisation or theorisation. She further qualifies this statement by suggesting that understanding how social processes and phenomena are contingent on or embedded within particular contexts is a crucial part of social explanation, and understanding how they play out across a range of different contexts also makes possible cross-contextual generalisations (Mason, 2006).

Furthermore, those who read case study-based research findings have the opportunity to decide for themselves what knowledge is applicable to their own unique circumstances. Readers of case study research can judge the implications of this type of study for themselves (Cohen *et al.,* 2000). The illustrative, in-depth description that is afforded by the qualitative case study thus offers "others… a database for making judgements about the possible transferability of findings to other milieus" (Bryman, 2004; Cohen *et al.*, 2000).

Case studies also allow for the presentation of research in a more publicly accessible format capable of serving multiple audiences. The research process itself is thought to be more accessible and, as such, is argued to aid in the democratisation of decision-making and knowledge (Cohen *et al.,* 2000). Associated with this strength is the recognition that the concrete, practical, context bound knowledge produced can contribute to the learning process of others who can use it to aid in their understanding of the issue that is illustrated. As the research has aimed to be praxis enriching, the case study approach taken provided an avenue for learning about the practical manifestations and implications of teachers' practices through case studies (Flyvbjerg, 2004). These case studies therefore began in the practical world of teachers' practices and experiences in specific schooling contexts but the knowledge generated in terms of these cases is considered as capable of contributing to practical situations and theory building (Cohen *et al.,* 2000).

5.4.3.4 Researcher reflexivity

Ellington (2008) asserts that very few researchers still truly believe in objectivity and the discovery of an a-historical, unbiased and universal truth via research undertakings with most acknowledging the impossibility of eliminating subjective influence from research processes. To try to circumvent the challenges posed by my own bias and subjectivity in the research, a process of researcher reflexivity was initiated. Reflexivity also aids dependability as the researcher keeps a self-critical account of the research process (Tobin & Begley, 2004).

In addition to these practical attempts aimed at addressing possible subjective bias, there is recent literature that provides an applicable argument to thwart the viewpoint that a qualitative case study can be problematic as it can be subjected to the bias of the researcher. In this literature, Flyvbjerg (2004) presents the argument that the case study contains no greater partiality in terms of a researcher's bias towards verification of her pre-established ideas than other methods of enquiry. The difference is that it is more likely that the researcher's initial ideas will be directly engaged as her subjective views can be tested in-depth, up close in relation to phenomena as they unfold in practice by means of a case study design. Thus, it is more plausible that a researcher's preliminary ideas will be falsified in this way due to the allowance for the in-depth viewpoints of those who participate in her research (Flyvbjerg, 2004).

5.5 ETHICAL CONSIDERATIONS FOR THE STUDY

Clearance to undertake this study was received from the Ethics Committee of the Faculty of Education at the University of Pretoria. Ethics is a critical part of the research process from the initial formulation of the research issue to the interpretation and reporting of the research findings. The guiding ethical principle for this study was respect of the rights of research participants to safeguard their integrity (Hesse-Biber & Leavy, 2005). As researcher, I undertook to adhere to the principle of respect for participants' integrity by ensuring their informed consent, confidentiality and anonymity, and by undertaking to protect them from any harm during the research process.

Consent to conduct the PIRLS 2006 main study was received from the then National Minister of Education by the PIRLS national research co-ordinators in 2005. The sampled schools, teachers and learners who participated in the PIRLS 2006 gave their informed consent and assent for participation prior to data collection for the study. Permission was also sought from the learners' parents. Therefore, permission to conduct secondary analysis of the PIRLS

2006 teacher and school survey data for this study was received from the co-national research coordinators for the main study.

For the second phase of the study in particular, the guiding ethical consideration for informed consent was my acknowledgement that participants had the right to know that their viewpoints were being researched. Furthermore, participants were entitled to be informed about the nature of the research and that they could withdraw from the research at any stage (Ryen, 2004) without fear of negative repercussions.

As a starting point, permission was obtained from the DoE to approach schools to participate in the second phase. Thereafter permission was also obtained from the management of the schools purposively sampled to approach potential teacher and HoD participants for participation in the study. I then visited each purposively selected school and met with potential participants for the second phase of the research[30]. At each meeting I explained the goal of the research and outlined what would be expected of these possible participants if they chose to participate in the research. I also answered any questions, explained ethical procedures for the study and left a letter of informed consent for consideration by these individuals. The letter dealt with: written clarification of the research purpose and process; explanation that the participants could discontinue their participation in the research at any time during the process; and the assurance that their confidentiality and anonymity would be ensured at all times. The participants also had to give permission for their interview responses to be recorded using a digital voice recorder and for classroom practices to be recorded using a digital video recorder during the classroom observations. The participants were also informed about who would have access to the data they provided and about for which purposes their contributions would be used.

For those teachers and HoDs who then chose to participate in the research, at each phase of data collection, the process was explained, participants were reminded of their right to withdraw from the research at any time and all other ethical aspects were reiterated. For reporting purposes, the names of participating teachers, HoDs and schools have been protected and pseudonyms assigned. Also, in reporting the context of the case studies, every effort was made to make sure that the school is not distinguishable via contextual details given (Creswell, 1998; Cameron, 2001).

[30] An initial visit was not made to the school in KwaZulu-Natal due to geographical distance.

5.6 CONCLUDING COMMENTS

Now that all design considerations and methodological undertakings for the research have been presented, it is essential to outline the relationships of these methodological undertakings to the research questions posed for the study. Table 5.7 (below) provides indications of the relationships between the overall research question, the operational sub-questions and the data sources used to address the questions. The last column of the table also outlines in which chapters each of the research questions and associated data are discussed in the rest of this thesis.

Table 5.7: **Data collection and sampling aligned to the research questions**

Overall research question	*Sub-questions linked to each overall research question*	*Data source for research sub-questions*	*Chapter in thesis*
What influence do schooling conditions and teaching practices have on curriculum implementation for Grade 4 reading literacy development?	**Research sub-question 1:** What are the schooling conditions in which Grade 4 reading literacy instruction practices occur at each identified PIRLS 2006 achievement benchmark?	PIRLS 2006 School Questionnaire Data	Quantitative findings: Chapter 6
		Teacher interviews HoD interview Photographs	Qualitative findings: Chapter 7
	Research sub-question 2: What are the practices of teaching Grade 4 reading literacy at each identified PIRLS 2006 achievement benchmark?	PIRLS 2006 Teacher Questionnaire Data	Quantitative findings: Chapter 8
		Teacher interviews HoD interview PIRLS 2006 teacher questionnaire Classroom observation OTL questionnaire Learner workbook review	Qualitative findings: Chapter 9

In the next chapter, Chapter 6, the quantitative findings for research sub question 1 are presented.

-⌘-