Chapter 2
A Reading Assessment System

2.1 Introduction

Learning is the eternal theme of education. All efforts related to education eventually point to one thing – making learning happen. Learning itself, however, is hard to witness. People have to resort to assessments to tell whether or not learning has occurred. Assessment, the medium that makes learning visible, ensures its role as a never out dated issue in education. Extraordinary attention is currently being given to early childhood education, with an emphasis on early literacy acquisition (Jones, 2003). Assessment is a key part of any effective curriculum (e.g., CAPS). It is imperative that all teachers and administrators are knowledgeable about the research supporting scientifically based assessment. All those concerned about reading development must realize that "assessment is a critical part of instruction and can be useful if we understand the pieces of the puzzle" (Valencia, 2002, p. 1). Ideally, purposeful, ongoing assessment should guide and direct subsequent instruction (Cobb, 2003).

The purpose of this chapter is to give an overview of the theoretical framework for this study, to define assessment, to determine why it is important to align assessment and instruction[1] as well as the importance of literacy assessment in a comprehensive school assessment system. In addition, the South African assessment context is discussed, the difference between assessment *for* learning, assessment *of* learning and assessment *as* learning is highlighted, and the role of formative assessment is discussed. Finally, a detailed discussion is included on the types of assessment and how to use these assessments to make data-based decisions.

2.2 Theoretical framework

Curriculum and assessment practices usually involve identifying an underlying philosophy or belief about what, why and how teachers do what they do. A brief review of a theory of child development, learning and assessment that provides a basis for understanding the underlying principles in this study are given below.

[1] Teaching and instruction are used interchangeably in this thesis.

2.2.1 Sociocultural theory of learning

The theoretical framework that forms the basis for this study is the sociocultural/ constructivist theory of Lev Vygotsky (Vygotsky, 1978). The instructional implications of Vygotsky's theory, especially the concept of the zone of proximal development, are aligned with the premise of this research. Vygotsky's theory (1978) enhances the constructivist view by adding a social context of learning and approaches assessment as a means for the teacher to find the optimal level of instruction for each child. In this view, the teacher mediates the child's learning activity by sharing knowledge and meaning through social interaction (Dixon-Krauss, 1996). This study's focus on developmentally appropriate progress monitoring assessment is compatible with the sociocultural/constructivist theory of learning and can be used to develop a school-wide progress monitoring assessment system.

Vygotsky's theory is a constructivist one in which social, cultural, and historical forces frame our understanding of learning and teaching (Vygotsky, 1978). Constructivist perspectives from cognitive psychology view education not as an accumulation of facts, but rather as a process that occurs when learners construct meaning from their encounters in the world and with other learners. Learning, including linguistic comprehension and composition, is synonymous with constructing meaning (Garcia & Pearson, 1990). The basic principles of Vygotsky's framework are discussed below.

2.2.1.1 Construction of knowledge

Children construct knowledge. This underlying belief is the foundation of the constructivist view of education, one that remains strongly endorsed by early childhood educators. Vygotsky (1978) and Piaget (Gruber & Vonèche, 1995) both believed that children are active participants in the construction of their own understanding. Vygotsky placed the individual's development within cultural/historical activity while Piaget felt that "what the child [himself] brings to the world makes growth possible" (Gruber & Vonèche, 1995, p. xxxvii). For Piaget, people play only an indirect role in cognitive development; in Vygotsky's framework, the teacher's ideas influence what and how the child learns (Shayer, 1997). Vygotsky's theory is consistent with the constructivist view that sees the learner as an active participant while adding the social context for learning (Dixon-Kraus, 1996). "Both the emergent literacy and the Vygotskian perspectives stress the cultural and social aspects of learning. During the emergent literacy period, children

learn the importance of literacy because it mediates a variety of cultural activities in their everyday lives. They also learn how to participate in socially organized practices involving the use of printed symbols" (Dixon-Krauss, 1996, p. 19). Because of the emphasis on the construction of knowledge, the Vygotskian approach stresses the importance of identifying what the child actually understands. Through sensitive and thoughtful exchanges with the child, the teacher discovers exactly what the child's concept is. In the Vygotskian tradition, it is common to think of learning as appropriation of knowledge, which underscores the active role that the learner plays in this process (Bodrova & Leong, 1996).

This is consistent with the views of early childhood educators who believe that children actively construct knowledge within a social context that affects what and how they learn. They do not acquire knowledge and skills all on their own, automatically developing qualitatively more complex skills, ideas, and understandings as they mature. They do not simply learn what is taught and "reinforced" – the behaviourist psychology that once dominated learning theories. Learning and teaching are complex enterprises in which children, adults, the things children work and play with, language interactions, and all aspects of the child's life – in and out of school – interact to influence that learning (McAfee & Leong, 2002).

2.2.1.2 Importance of social context

Vygotsky believed that development cannot be separated from its social context (Vygotsky, 1978). Social context is defined as "everything in the child's environment that has either been directly or indirectly influenced by culture" (Bodrova & Leong, 1996, p. 9). Development requires the acquisition of culturally generated knowledge. This is critical since the child's social world shapes what he knows and how he thinks (Bodrova & Leong, 1996). Before they began producing tools and developing a social system for cooperation, human beings evolved in a way similar to other animals. When humans began to use language and to develop tools, cultural evolution became the mechanism that shaped further development. Through culture, one generation passes knowledge and skills on to the next. Each generation adds new things, and thus the cumulative experience and information of the culture are passed on to succeeding generations. Vygotsky assumed that children do not invent all of their knowledge and understanding, but appropriate the rich body of knowledge accumulated in their culture. The developing child acquires this information and uses it in thinking. Thus the cultural history of our

ancestors influences not just our knowledge but our very thought processes (Bodrova & Leong, 1996).

From Vygotsky's perspective, the child's mind is formed by individual history and is the result of his interactions with others within a specific social context (Vygotsky, 1978). In the sociocultural framework, there are three levels of interaction within the social context: **immediate interactive** - the individual(s) with whom the child is interacting at a particular moment; **structural** - the social structures that influence the child (i.e., school, family); and **social** - features of society (i.e., language, numerical systems, technology). Interaction in the social context is part of the developmental and learning processes. Children acquire mental processes by interacting with others. Only after a period of shared experience is the child able to internalize these mental processes and use them independently (Bodrova & Leong, 1996). In Vygotskian theory, this learning can be mediated between a child and an adult or between a child and more capable peers (Vygotsky, 1978). Sylva, Melhuish, Sammons, Siraj-Blatchford, and Taggart (1994) report that cognitive and language development can occur when a less able learner witnesses a successful performance in a more capable learner and internalizes it. The incomplete strategies of the less capable learner are improved by watching a successful performance by his/her more capable peer.

2.2.1.3 The relationship of learning and development

Vygotsky believed that children must accumulate a great deal of learning before development takes place. Therefore, learning can lead development. "If we believe that development must come first, we reduce teaching to presenting material that the child already knows" (Bodrova & Leong, 1996, p. 12). Instruction is only useful when it moves ahead of development. When it does, it impels or awakens a whole series of functions that are in a stage of maturation lying in the zone of proximal development. This is the major role of instruction in development. This is what distinguishes the instruction of the child from the training of animals. This is also what distinguishes instruction of the child which is directed toward his full development from instruction in specialized, technical skills such as typing or riding a bicycle. The formal aspect of each school subject is that in which the influence of instruction on development is realized. Instruction would be completely unnecessary if it merely utilized what had already matured in the developmental process, if it were not itself a source of development (Vygotsky, 1978).

Teaching is a difficult art because we cannot make exact predictions about when a child will move through each stage of development or what specific activities will bring about these changes. Assessment that leads development cannot possibly occur through achievement tests given one to three times a year. Teachers must continually assess and adjust their teaching methods to accommodate the needs of each child.

2.2.1.4 The role of language in development

Language plays a central role in mental development because it is created and shared by all members of a specific culture. It is learned through shared experiences, is used for many mental functions, and facilitates the acquisition of other tools. In the foundation phase classroom, shared activity provides the social context for learning. Shared activity is not limited to adult-child interactions, but rather includes interactions between more knowledgeable peers or even imaginary participants (referred to as private speech by Vygotsky). The vehicle for these interactions is language. When the child, confronted by a tricky challenge, is 'talked through' the problem by a more experienced agent, the child can often succeed at tasks which would otherwise prove impossible (think of learning to tie your shoelaces). Later on, when the adult is absent, the child can conduct a similar dialogue, but this time with herself. But even in this latter case, it is argued, the speech (be it vocal or 'internalized') functions so as to guide behaviour to focus attention, and to guard against common errors. In such cases, the role of language is to guide and shape our own behaviour – it is a tool for structuring and controlling action and not merely a medium of information transfer between agents (Daniels, 2001). Language is a mental tool for thinking. As children learn to use language, they no longer need the objects present to think about them. They exchange social information as they create new ideas, and share those ideas with others. Without language, we would never know each other's meanings (Bodrova & Leong, 1996). Because of the limitations of written language for children in the foundation phase, dialogue between teacher and learner becomes a critical tool for learning and assessment.

Language is instrumental in the development of cognition and part of the cognitive process by making thinking more abstract and independent from immediate stimuli, and by bringing memories and anticipations to bear on new situations. Through dialogues and shared experiences, children acquire the cognitive processes necessary for future learning (Bodrova & Leong, 1996).

2.2.1.5 The zone of proximal development

For Vygotsky, a child's potential level of development was just as important as the child's actual level of development. These two levels form the boundaries of the zone of proximal development (ZPD). The ZPD is defined as "the gap between the child's current or actual level of development determined by independent problem solving and the child's emerging or potential level of development determined by problem solving supported by an adult or through collaboration with more capable peers" (Dixon-Krauss, 1996, p. 196). Effective teaching involves activities that are just beyond what a child can do independently but within what a child can do with assistance. To do this, teachers must be aware of both levels of development. They must assess what the child already knows as well as what skills might be attainable with assistance. If we use only a child's independent performance to plan instruction, as might be the case with traditional achievement tests, we risk not teaching those skills that are on the edge of emergence. Vygotsky believed that assessment should also measure a child's potential development, what they are in the process of learning, as well as a child's actual level of development. The ZPD encompasses the discrepancy between a child's actual level of development and the level a child can reach when performance is supported by assistance during collaboration with an adult or more capable peers (Dixon-Krauss, 1996). The ZPD changes as children move through different levels of development. "What the child did only with assistance yesterday becomes the level of independent performance today. Then, as the child tackles more difficult tasks, a new level of assisted performance emerges" (Bodrova & Leong, 1996, p. 37). The ZPD and the level of assistance necessary for a child to move through each stage of development are different for every child. Some children require assistance on almost every task, while others make significant gains with little assistance. Some types of assistance may work for some children and not others or may work for some tasks but not for others. Therefore, teachers must become adept at assessing both what a child can do independently and what he/she can do with assistance to insure that each child is receiving instruction within his/her ZPD (Bodrova & Leong, 1996).

Because of the high stakes attached to the South African Annual National Assessments, districts are attempting to identify children at risk of academic failure in the primary grades so that interventions can be implemented to insure success for these learners. Tests designed to compare provinces and school districts and to hold

them accountable to the public were not designed for high stakes decisions about individual children and are not useful in helping teachers implement changes in teaching to meet the needs of individual children. Furthermore, even if these tests did provide helpful information, results of these tests come too late to benefit the children held accountable for them. Vygotsky's sociocultural theory is an appropriate lens through which to look at the issue of developmentally appropriate assessment in primary grades. With the Vygotskian focus on learning through social interaction, it would appear that assessment instruments that assess skills in isolation are giving a teacher information about what a child knows at a specific moment in time (the independent developmental level of the child), but does not address the issue of what a child is able to do with teacher assistance (the potential developmental level of the child). Traditional standardized high stakes assessments (e.g., ANA, PIRLS, etc.) pose a problem for sociocultural theorists. They do not portray an accurate picture of a child's total literacy development because they do not provide information about a child's emergent literacy development at which instruction should be aimed (Dixon-Krauss, 1996).

2.3 Defining assessment

The word assessment derives from a concept that indicates assignment of value to objects, and has a variety of meanings for parents and professionals. According to Jones and Chittenden (1995, p. 1), assessment can be defined as “the process of identifying, collecting, and analysing the records of learning in order to make informed judgements about learners”. Some early childhood professionals have devoted considerable energy to assuring that young children are spared inappropriate testing experiences; others spend a significant portion of their professional lives conducting and interpreting assessments (OECD, 2001). According to Jones and Chittenden (1995), assessment in early literacy classes can be confusing because learners are assessed in many different ways for many different purposes, using literally hundreds of different instruments.

In one way or another, all early childhood assessments involve a process of gathering information about children in an attempt to better understand and support learning and development (Airasian, 1996; NAEYC, 2002; NAEYC 2009). Throughout the past decade, studies of effective reading instruction have found school-wide and classroom-level practices that correlate with children’s reading achievement. One such finding is

that schools demonstrating higher reading achievement systematically use classroom-based assessment information as a part of a school-wide conversation to inform programme decisions, to communicate with parents, and to develop coherence across the school programme (Mosenthal, Lipson, Sortino, Russ, & Mekkelsen, 2002; Taylor, & Critchley, 2002; Taylor, Pressley, & Pearson, 2002; Walpole, Justice, & Invernizzi, 2004).

Reading assessment, if used effectively, can provide teachers and their learners with the information they need to move their learning forward. But after more than a hundred years of encouragement and a significant body of research on the topic, the idea that assessment and teaching are joint activities is still not firmly placed in the practice of teachers. Instead, assessment is often viewed as something in competition with teaching, rather than as an integral part of teaching and learning. In the current accountability environment, assessment is not seen as a source of information that can be used during teaching. Instead, it has become a tool exclusively for summarizing what learners have learned and for ranking learners and schools.

Clearly, reading assessment is an important aspect of the classroom and educational programme in all schools. Research indicates that teachers' knowledge of and beliefs about assessment will influence their use of classroom assessments (Aschbacher, 1993; Shepard, 2000).

2.4 Aligning teaching and assessment

Classroom assessment is most effective and useful for a teacher (as well as for learners) when it accurately matches the instructional content that has been taught (Stiggins, 1994; Valencia, 1990; Wiggins, 1989). This linkage of instruction with desired learning that is accurately assessed is recognized as instruction-learning-assessment alignment (Beck, 2007; Cohen & Hyman, 1991; Witte, 2012). Central to this process is connecting what is taught in the classroom to the accurate assessment of learner learning based on the provided learning experience(s).

Regardless of a teacher's delivery method (e.g., whole group, small group, etc.), the teaching process needs to start with organizing and matching the teaching and learning activities to the intended academic goals and/or expected performance expectations. The goals, which reflect national and/or provincial learning expectations, indicate what

learners are expected to be knowledgeable about and be able to do relative to certain content areas (e.g., language, mathematics) (Stiggins, 1994; Valencia, 1990; Wiggins, 1989). Classroom assessment needs to be designed to measure the learner's progress in accomplishing the learning outcomes that are connected to those goals.

In order to facilitate the entire process, teachers must be clear about what their learners are expected to learn. What is taught is just as important as how it is taught (Beck, 2007; Cohen & Hyman, 1991). This requires a solid awareness of the instructional goals that exist across the grades. Knowing the curriculum continuum is essential since teachers must know what skills learners should possess when they enter a specific grade, and also what they should be able to do once they have completed that grade. Unfortunately, sometimes what-is-taught is not what-is-assessed and when this mismatch takes place teaching-learning-assessment alignment does not occur.

When assessment is aligned with instruction, both learners and teachers benefit. Learners are more likely to learn because instruction is focused and because they are assessed on what they are taught (Witte, 2012). Teachers are also able to focus, making the best use of their time. Because assessment involves real learning, they can integrate assessment into daily instruction and classroom activities (Valencia, 1990; Wiggins, 1989).

That is why it is so important, from a teaching perspective, to have complete clarity regarding the desired goals for the learners and to possess valid and reliable assessment measures that allow for the collection of meaningful learner data. In particular, the assessment system needs to be "laser accurate" when it comes to evaluating learner accomplishments relative to the identified learning goals.

2.5 Literacy assessments as part of a comprehensive school assessment system

As a society, we've shifted the thinking about schools from places where passing or failing was emphasised to places where the expectation is for all learners to succeed (Sieborger, 1998). With this shift, the role of assessment has changed from separating successful and unsuccessful learners to becoming a set of educational practices that support the learning of all learners (Stiggins, 2002). Timely, reliable assessments

indicate which learners are falling behind in critical reading skills so teachers can help them make greater progress in learning to read. Reliable and valid assessments also help to monitor the effectiveness of instruction for all learners; without regularly assessing learners' progress in learning to read, teachers cannot know which learners need more help and which are likely to make good progress without extra help. Because scientific studies have repeatedly demonstrated the value of regularly assessing reading progress (Fuchs & Fuchs, 1999; Shinn, 1998; Torgesen, 2004), a comprehensive assessment system is a critical element of an effective school-level plan for preventing reading difficulties.

An assessment system is a group of policies, structures, practices, and tools for generating and using information on learner learning. Effective comprehensive assessment systems are those that provide information of sufficient quality and quantity to meet all stakeholders' information and decision-making needs in support of improved quality and learner learning (Ravela, Arregui, Valverde, Wolfe, Ferrer, Rizo, Aylwin, & Wolff, 2009). The National Research Council (NRC, 2001) defines a quality assessment system as one that is coherent, comprehensive, and continuous. These aspects of a quality assessment system are defined below.

Each school should have a comprehensive assessment system aligned to instruction that identifies the assessment measures the school will use to guide instructional decisions. Because of the nature of learning in the foundation phase and the interplay between internal and external factors, the literature suggests that it is important to use a variety of assessment measures, in different learning contexts, over time. A comprehensive assessment system requires multiple data sources from multiple viewpoints and reading contexts. A single 'snapshot' assessment is inadequate, especially in the early years when growth can be rapid, episodic, and children's competence varies according to the task and context of learning. Assessing reading knowledge and skills through a comprehensive assessment system, which may include screening can assist teachers to identify children that need further diagnosis and assistance. Some research has indicated the need for a comprehensive system of reading assessment in the early years, which would serve as guides for teachers (McGee, 2007, Valencia & Villarreal, 2003; Valencia, 2007).

However, an assessment system alone cannot ensure that all learners learn what they need to know to succeed. Teachers need curriculum and instructional tools to teach

effectively, as well as the ability to use assessment information skilfully. Yet, without strong assessments, any effort to raise outcomes for learners will likely fail (Herman, Osmundson, & Dietel, 2010; Alliance for Excellent Education, 2010). Learners, parents, teachers, community members, and department officials all need valid and reliable information to strengthen teaching and learning. To ensure that all learners know what they need to know, teachers have to know what they know now.

A comprehensive and coherent system provide users at multiple levels of the system (district, school, classroom) with appropriate data, at suitable levels of detail, to meet their decision-making needs. A comprehensive, coherent and continuous system provides continuous streams of data about learners learning throughout the year, thus providing district and school decision-makers with periodic information for monitoring learner learning, establishing a rich and productive foundation for understanding learner achievement (Herman, Osmundson, & Dietel, 2010).

An ideal comprehensive assessment system would be organized around the following principles:

Coherence – The system is aligned with the same significant, agreed-upon goals for learner learning – that is, important learning goals (Porter, Polikoff, & Smithson, 2009). A coherent system would be organized around a limited number of foundational early literacy skills in the outcomes, rather than attempt to align all pieces to every outcome. The system would ensure that all components, at all levels, are truly aligned to those foundational early literacy skills (Center on Education Policy, 2009).

Comprehensiveness – The system consists of a toolbox of assessments that meet a variety of different purposes and that provide various users with information they need to make decisions (Alliance for Excellent Education, 2010). A comprehensive system includes formative assessments that show teachers whether learners truly understand the content or where they are struggling, along with tools to suggest steps they could take to help learners overcome their difficulties. The system would also include measures that provide data to inform school leaders about teachers' effectiveness at improving learner learning over the course of a year and that suggest professional development strategies (Herman, Osmundson, & Dietel, 2010). The system would include classroom assessments that provide learners and parents with an ongoing

record of learner progress, along with indicators to show areas where improvement is needed.

Accuracy and Credibility – The information from assessment supports valid inferences about learner progress, as well as actionable information for multiple users. To serve as credible measures of outcomes, assessment systems must show whether learners are on a path that will lead to success. In order to accomplish this goal, the assessment system should be grounded in a clear, evidence-based idea of learning and development that leads to reading success (Pellegrino, 2004). Accurate and credible assessment also measure – and support – good teaching. According to Popham (2001), learners can come into class with high levels of background knowledge and can perform well, regardless of what the teacher does. By collecting evidence on whether assessments are "instructionally sensitive", the effect of good teaching can be detected.

Fairness – Assessments enable all learners to demonstrate what they know and are able to do. Assessment systems should ensure fairness by allowing learners at all ranges on the achievement continuum to demonstrate what they know and can do. Fairness also implies transparency (Alliance for Excellent Education, 2010). Learners should know what the expectations are, and assessments should measure what they are expected to learn.

A comprehensive school assessment system must be designed to take what is known from scientifically based reading research and translate it into effective reading practices. The overall goal of a school assessment system, specifically for the Foundation Phase, is to build the capacity, communication, and commitment to ensure that all learners are readers by grade 3.

2.6 Assessment in the South African context

Roughly a decade after the implementation of the new post-apartheid curriculum, the provision of appropriate support to teachers to effectively use classroom assessment remains one of the most critical challenges facing the Department of Basic Education in South Africa (Vandeyar & Killen, 2007). While research evidence demonstrates the significant positive impact of assessment on learning and learner performance (Black & Wiliam, 1998; Harlen, 2005; Stiggins, 2001), there are a number of factors that impact on effective classroom assessment practices. In South African schools these factors

include inadequate teacher expertise and content knowledge, limited access to relevant teaching and learning resources, poor understanding of assessment and the new curriculum, high teacher workloads and large class sizes; continued reliance on traditional assessment practices; and the unwillingness and/or inability of teachers to adapt their assessment practices to the changing demands of the new education system (Combrinck, 2003; Kanjee, 2003; Pryor & Lubisi, 2002; Vandeyar, 2005; Vandeyar & Killen, 2007). These challenges are especially acute in rural and poor schools.

The primary purpose of assessment at the classroom level is to assist teachers and learners to determine, monitor and improve performance. Used effectively, classroom assessment can assist teachers in identifying learner strengths and weaknesses, provide teachers with ideas for relevant interventions, allow teachers to evaluate their teaching approaches, and provide information to learners on what they need to do to improve their understanding (McMillan, 2001; Stiggins, 2001). According to Airasian and Abrams (2003), good classroom assessment is characterised by learners being assessed on content they were taught; by the application of assessment questions based on the stated curriculum objectives; and by assessment questions and scoring procedures that are clear, explicit, and appropriate.

For classroom assessment to be effectively applied, teachers must possess appropriate knowledge of their subject area, possess relevant assessment skills and have access to high quality teaching resources (Gipps, 1994; McMillan, 2001; National Research Council, 2003; Popham, 2003). McMillan (2001) notes that teachers require specific assessment skills to enable them to effectively apply or develop appropriate assessment tools, to use assessment results to make decisions about individual learners to improve learning, and to provide information to parents, and other teachers. With regard to content knowledge, Gipps (1994) and Popham (2003) argue that teachers cannot assess subject matter well that they do not understand. Gipps (1994) also notes that teachers have to ask the right questions to understand the constructs which they are assessing and be able to develop appropriate assessment tasks to determine the learner's knowledge and understanding.

However, in South African schools, this rarely occurs as many teachers have limited experience and understanding of assessment (Pryor & Lubisi, 2002; Vandeyar & Kilian,

2007). The availability of varied and relevant tools for the effective application of classroom assessment is critical in supporting teachers to address the specific needs of their learners (National Research Council, 2003). In practice, however, most teachers are required to develop their own assessment instruments and tools. Machona and Kapambwe (2003) note that it is impractical to expect teachers, especially those working in disadvantaged schools, to develop high quality instruments to assess learners given their limited expertise and the significant amount of time required to do so. In their review of assessment practices in Africa, Kellaghan and Greaney (2005) also found that the poor quality of classroom assessment can be attributed to the shortage of learning and teaching materials as well as to poorly qualified teachers. To address this challenge, Machona and Kapambwe (2003) argue that it is the responsibility of the education authorities to provide appropriate materials and support to teachers. However, while there is general consensus on the value of supporting teachers to enhance their classroom practices, the provision of relevant tools to assist teachers is not a common practice. Croft's (2008) review on teacher classroom assessment tools and resources found that they were mainly available in a few developed nations. In New Zealand, for example, teachers are provided with assessment resources that include access to item banks for different grades and subject areas, software to compile high quality classroom tests linked to the curriculum, and software to analyse, interpret and monitor learner performance levels (Croft, 2002; Crooks, 2002).

The advent of the post-apartheid South African educational system in 1994 signalled radical changes to the national curriculum, most notably in terms of a new philosophy of outcomes based education (OBE). This required concomitant changes to the development and implementation of assessment policies at all levels of the educational system. In particular, teachers had to digest a whole set of assessment related policies and guidelines that place greater emphasis on classroom assessments, most notably the Assessment Policy in the General Education and Training Band (Grade R to 9) and the National Protocol on Assessment for Schools in the General Training Band (Grades R to 12) (Department of Education, 2005). Most recently the government has revised the 1998 assessment policy. The new Curriculum Assessment Policy Statements (CAPS) (Department of Education, 2012) places greater emphasis on classroom assessment by outlining the range of assessment information available to teachers, specifying the frequency and types of assessment information required for reporting on

learner performance at the different grade levels and providing templates for recording and reporting the performance of learners. However, while the revised policy makes several major advances in simplifying assessment in South African schools, there are still inadequate learning and teaching resources available to specifically assist teachers in improving their classroom assessment practices (Kanjee, 2009).

While the intent of the policies are admirable, they pose a number of challenges for teachers in the classroom. In particular, teachers are faced with a considerable demand to address the more transformational assessment for learning approach that supports the new curriculum, demands that differ significantly from the traditional assessment of learning that had been a pillar of the old education system (Grosser & Lombard, 2003). Furthermore, a number of researchers (Pryor & Lubisi, 2002; Sokopo, 2004; Vandeyar, 2005; Vandeyar & Killen, 2007) have noted that teachers struggle to negotiate the demands of the changes in relation to aspects such as balancing formative and summative assessment as well as the recording and reporting of data. Vandeyar and Killen (2007) describe how teachers still hold very strong teacher-centred conceptions of assessment. Sokopo (2004) notes that teachers interpreted the implementation of classroom assessment as only serving the purpose of gathering of marks rather than for use in improving learning and teaching.

Many challenges teachers have in the effective implementation of assessment policies relate to their enormous workloads for meeting the policy requirements (Ramsuran, 2006; Torrance, 1995). In a report on teacher workload in South Africa, clear evidence is presented on the large volumes of paper work required for the recording of assessment information (Education Labour Relations Council, 2005). Specifically, the report notes that a reasonable amount of time was spent on marking and a significant amount of time was spent on the inputting of marks, which extended from 18% to 36% of total teaching time available. However, limited information was reported on how much time was spent by teachers on preparing for assessments, for example, developing test questions. Given that item writing and test development is an extremely time consuming activity, if this is also taken into account, it is possible that teachers would spend more time on administrative aspects of assessment and less time on learning and teaching activities. Morrow (2007) supports this statement and notes that in practice “teachers are driven to such frenzy about ‘assessment’ that they have little time to teach” (p. 9).

2.7 Differentiating between assessment *for* learning, assessment *as* learning and assessment *of* learning

For most of the last century, assessment was seen as a way of finding out what learners had learned (Wiliam, 2007). People debated about different forms of assessment, but they all agreed that assessment was mainly about assessing the effects of instruction. However, later researchers began to look more scientifically at the role assessment could play in actually improving learner learning instead of just measuring it – a difference that has been neatly captured as the difference between assessment *for* learning, assessment *as* learning and assessment *of* learning (Gipps & Stobart, 1997).

Thinking about assessment from the perspective of the goal rather than the method puts the emphasis on the intended end result (Dietel, Helman, & Knuth, 1991). This section describes three different aspects of assessment: assessment *for* learning; assessment *as* learning; and assessment *of* learning. The order (for, as, of) is intentional, indicating the importance of assessment for learning and assessment as learning in enhancing learner learning (Wirth & Perkins, 2008).

Rethinking Classroom Assessment with Purpose in Mind (Western and Northern Canadian Protocol for Collaboration in Education, 2006) describes these three aspects of assessment as follows (p. 13):

Assessment *for* learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting learners learning (Black, Harrison, Lee, Marshall, & Wiliam, 2003). It is designed to give teachers information to modify and differentiate teaching and learning activities. Assessment for learning occurs throughout the learning process. It is designed to make each learner's understanding evident, so that teachers can determine what they can do to help learners progress (Ainsworth & Viegut, 2006). Teachers can also use this information to restructure and target instruction and resources, and to provide feedback to learners to help them improve their learning. It acknowledges that individual learners learn in idiosyncratic ways, but it also recognizes that there are predictable patterns and pathways that many learners follow. According to Luke and Schwartz (2007), it requires careful design on the part of teachers so that they use the gained information to determine not only what learners know, but also to gain insights into how, when, and whether the learners apply what

they know. The wide variety of information that teachers collect about their learners' learning processes provides the basis for determining what they need to do next to move learning forward. It provides the basis for providing descriptive feedback for learners and deciding on groupings, instructional strategies, and resources.

Assessment *as* learning is a process of developing and supporting metacognition for learners. According to Stiggins, Arter, Chapuis, and Chapuis (2006), assessment as learning focuses on the role of the learner as the critical link between assessment and learning. When learners are active, engaged, and critical assessors, they make sense of information, relate it to prior knowledge, and use it for new learning (Learning for All, 2011). Learners must monitor their own learning and use the feedback from this monitoring to make adjustments, adaptations, and even major changes in what they understand. It requires that teachers help learners develop, practise, and become comfortable with reflection, and with a critical analysis of their own learning.

Assessment *of* learning is summative in nature and is used to confirm what learners know and can do, to validate whether they have achieved the curriculum outcomes, and, sometimes, to show how they are placed in relation to others. Teachers focus on ensuring that they have used assessment to provide accurate and rigorous statements of learners' proficiency, so that the recipients of the information can use the information to make reasonable and defensible decisions (O'Farrel, 2002; Sliney & Murphy, 2008).

This study focuses on assessment for learning that enables teachers to gain the necessary knowledge and information of their learners in order to provide them with personalized, precise instruction and support in order to move forward. Studies have shown that the use of assessment for learning contributes significantly to improving learner achievement, and that improvement is the biggest among lower-achieving learners (Black & Wiliam, 1998).

Assessment for learning is the process of gathering information about a learner's learning from a variety of sources, using a variety of approaches (Mattatall, 2011), or according to Black and William (1998) "assessment for learning is one of the most powerful tools" (p. 2), for interpreting evidence to enable both the teacher and the learner to determine:

• where the learner is in his or her learning;
• where the learner needs to go; and

• how best to get there (Assessment Reform Group, 2002, p. 114).

Research confirms that assessment for learning is one of the most influential tools for improving learning and raising standards, because it is rooted in helping learners learn more (Barr & Tagg, 2004; Alexander, 2006; Darling-Hammond, 2006). Teachers can adjust instructional strategies, resources, and environments effectively to help all learners learn but only if they have accurate and reliable information about what their learners know and are able to do at any given time, and about how they learn best. Ongoing assessment for learning provides that critical information; it provides the foundation for differentiated instruction (Barr & Tagg, 1995; Bateman, 1993; International Institute for Advocacy for School Children, 1993; McIntosh, Vaughn, Schumm, Haager, & Lee, 1993; Tomlinson, 1995; Tomlinson, Moon, & Callahan, 1998; Westberg, Archambault, Dobyns, & Salvin, 1993).

According to Dunphy (2008), assessment for learning occurs throughout the learning process. It is interactive, with teachers:

- aligning teaching with the targeted outcomes by identifying the particular learning needs of the learners or groups and adapting materials and resources accordingly; and
- creating differentiated teaching strategies and learning opportunities for helping individual learners move forward in their learning and by providing immediate feedback and direction to learners (Dunphy, 2008, p. 9).

Teachers also use assessment for learning to enhance learners' motivation and commitment to learning. When teachers commit to learning as the focus of assessment, they change the classroom philosophy to one of learner achievement. They make visible what learners believe to be true, and use that information to help learners move forward in manageable, efficient, and respectful ways (Davies, Arbuckle, & Bonneau, 2004).

Research indicates that when the intent is to enhance learners learning, teachers use assessment for learning to uncover what learners believe to be true and to learn more about the connections learners are making, their prior knowledge, preconceptions, gaps, and learning styles (Duckworth, 1987; Lampert, 2001; Wilson & Peterson, 2006). Teachers must use this information to structure and differentiate instruction and learning opportunities in order to reinforce and build on productive learning and to challenge

beliefs or ideas that are creating problems or inhibiting the next stage of learning. And they use this information to provide their learners with descriptive feedback that will further their learning (Wilson & Peterson, 2006).

Teachers use the curriculum as the starting point in deciding what to assess, and to focus on why and how learners gain their understanding. Assessment for learning requires ongoing assessment of the curriculum outcomes that comprise the intended learning (National Research Council, 2000). Each time a teacher plans an assessment for learning, he or she needs to think about what information the assessment is designed to represent, and must decide which assessment approaches are most likely to give detailed information about what each learner is thinking and learning. The methods need to incorporate a variety of ways for learners to demonstrate their learning.

Assessment for learning includes formative assessment. According to Goldring, Porter, Murphy, Elliot, and Cravens (2007), it is important to remember that assessment should be used as a framework to inform the teaching process. Ultimately, the knowledge collected from assessment should be used to reach individuals and support them in their learning process.

2.8 Formative Assessment

Assessment is vital to the education process. In schools, the most visible assessments are summative (Morrison, 2008). Summative assessments are used to measure what learners have learnt at the end of a unit, to promote students, to ensure they have met required standards on the way to earning certification for school completion or to enter certain occupations, or as a method for selecting learners for entry into higher education (Walvoord, 2010).

But assessment may also serve a formative function. In classrooms, formative assessment refers to frequent, interactive assessments of learner progress and understanding to identify learning needs and then to adjust teaching accordingly. Formative assessment is not a new term and can be defined in many ways. Black and Wiliam (1998) defined assessment as "…all those activities undertaken by teachers — and by their students in assessing themselves—that provide information to be used as feedback to modify teaching and learning activities" (p. 140). This definition does not

limit itself to formal tests, quizzes, or homework. Assessment is a collection of evidence about student learning through a variety of ways such as portfolios, journals, dialogue, questioning, interviewing, work samples, formal testing, and projects. They defined formative assessment as "such assessment…when the evidence is actually used to adapt the teaching to meet student needs" (Black & Wiliam, 1998, p. 140). The key difference between summative and formative assessment is what is done with the information. Summative assessment uses the information to show how the learner performed or how many learning goals he or she has mastered at the end of learning. Formative assessment uses the information collected to determine where the gap of learning is for the learner and then it is used to determine how to close the gap. Stiggins and Chappius (2006) explained assessment for learning as a formative assessment philosophy that involves the learner in their assessments by giving them clear classroom-level targets based on, for example district and provincial guidelines. Those targets are then transformed into dependable and accurate assessments. Formative assessments have also been defined in a number of other ways. The Council of Chief State School Officers' (CCSSO) and Formative Assessment for Learners and Teachers (FAST) collaborative has devised the following definition of formative assessment (2006).

> *Formative assessment is an intentional and systematic process used by teachers and learners during instruction that provides feedback to adjust ongoing teaching and learning to improve learners' achievement of intended instructional outcomes (p. 3).*

Farr (1996) broke down the definition of formative assessment into a number of steps:

- a means to help teachers plan instruction;
- based on trust in teachers' judgment;
- will guide learners to identify their own strengths;
- support learners, not judge; and
- emphasize what learners will do, not know (p. 426).

Formative assessments involve motivating learners and require more feedback to the learners. Formative assessments assess the strength of each individual learner and compares their overall learning to an ideal goal, rather than to each other. Formal

assessments should be reflective, constructive, and self-regulated (Davies & Wavering, 1999).

Formative assessment, when used effectively, can significantly improve learner achievement and raise teacher quality (Race, 2009). Yet high-quality formative assessment is hardly ever a consistent part of the classroom principles. According to Moss and Brookhart (2010), teachers are neither sufficiently acquainted with it nor equipped with the understanding or the skill to put formative assessment to work for themselves and their learners. “Teachers using formative assessment methods and techniques are better equipped to meet diverse learners’ needs – through differentiation and alteration of teaching to increase the stages of learner achievement and to achieve a greater equity of learner outcomes” (Moss & Brookhart, 2010, p. 1). According to Zupanc, Urank, and Bren (2007), there are major obstructions to wider practice, including alleged tensions between classroom-based formative assessments, and summative tests to hold schools accountable for learner achievement.

Short and Fitzsimmons (2007) state that formative assessments use observational procedures or diagnostic measures to provide teachers with detailed information about a learner’s progress and representation of knowledge and skills. Unlike summative tests, in which children are required to sit and answer questions for an extended period of time, well-designed formative assessments are powerful tools with which to assess the often rapid and frequently uneven growth and development of young children. According to Honey (2007), while summative assessments limit how learners demonstrate their knowledge for comparative purposes, formative assessments try to find the optimal situations for making visible a young child’s understanding in order to improve it. The importance of drawing out early learners’ thinking cannot be overstated (Black & Wiliam, 1998).

When teachers join forces with their learners in the formative assessment process, their partnership generates powerful learning outcomes. Teachers become more effective, learners become actively engaged, and they both become intentional learners (Moss & Brookhart, 2010). It could be helpful to think of the metaphor of a windmill to visualize the formative assessment process and its effects. Just as a windmill deliberately joins the power of moving air to produce energy, the formative assessment process helps learners intentionally connect the workings of their own minds to create motivation to learn. Driven by the formative assessment process, learners understand and use

learning targets, set their own learning goals, select effective learning strategies, and assess their own learning progress. And, as learners develop into more confident and competent learners, they become inspired to learn, gradually able to continue during demanding tasks and to adjust their own effort and actions when they tackle new learning challenges (Ames, 1992; Boston, 2002; Vispoel & Austin, 1995). When a windmill twirls into action, its individual blades seem to disappear. The same thing happens to the six elements of the formative assessment process. According to Pinchok and Brandt (2009), these interrelated elements are the following:

- shared learning targets and criteria for success;
- feedback that feeds forward;
- learner goal setting;
- learner self-assessment;
- strategic teacher questioning; and
- learner engagement in asking effective questions (p. 4).

As teachers and learners actively and intentionally engage in learning, the individual elements unite in a flurry of cognitive activity, working together and depending on each other. Their power comes from their combined effort.

Research on the effects of using formative assessments in the classroom shows a powerful effect on learner achievement (effect sizes ranging from 0.40 to 1.76). The effect is attributed to teacher ability to monitor what learners know and how they understand it; to the specific types of feedback that teachers provide to learners based on their performance; and to the specific actions that teachers take to respond to learner results and the supports that they have in place to do so.

In their analysis of 250 formative assessment studies, Black and Wiliam (1998) found a lasting, positive effect on both the quality of teaching and the achievement of learners, with gains frequently more substantial for low-performing learners. Fuchs and Fuchs (1986) examined 21 controlled studies about the effects of frequent formative evaluation on the achievement of learners in preschool through Grade 12. In these studies, teachers conducted formative assessments between two and five times per week. The average effect size was 0.70 for classrooms that used learner data to draw progress reports on each learner and to adjust instruction, and the average effect size was 0.26 for classrooms that used formative assessments but did not systematically organize the resulting data.

Meisels, Atkins-Burnett, Xue, Bickel, and Son (2003) examined changes in reading and math performance from Grade 3 to Grade 4 on the Iowa Test of Basic Skills for learners in classrooms using a performance-based assessment of reading, math, and other academic skills, compared to similar learners in classrooms that did not use the assessment. The learners, who were primarily low-SES and African-American, were enrolled in classrooms that used the assessment for three years before the study. The results showed an impressive gain for learners whose teachers used the assessment. Between Grades 3 and 4, learners who used the assessment improved their performance by 27 points in reading and 20 points in math, compared to changes of 0 and 6 points for learners in the comparison schools, yielding effect sizes of 1.6 in reading and 0.76 in math.

Bursuck, Smith, Munk, Damer, Mehlig, and Perry (2004) conducted a three-year evaluation of Project PRIDE, in which teachers administered the paper DIBELS assessment every two to four weeks with high-poverty learners in Kindergarten through Grade 2 in three urban schools. Each year, the first DIBELS assessment was used to place learners into one of three instructional groups receiving a targeted form of explicit instruction in, phonemic awareness, phonics, reading fluency, vocabulary, and reading comprehension. Subsequent assessments were used to evaluate and adjust these placements. Overall, the Project PRIDE learners outperformed the control group, with almost twice as many learners in the advanced benchmark group in Project PRIDE schools.

Studies of curriculum-based measurement (e.g., Fuchs, et al., 1994; Fuchs, et al., 1992; Fuchs, Fuchs, & Hamlett, 1989a & 1989b) examined the effects of administering weekly or biweekly assessments in reading, math, and spelling, and receiving computer-generated graphs of learner progress together with instructional recommendations. Taken together, these studies demonstrate that learners in classrooms receiving graphical progress reports and instructional recommendations improved more quickly and achieved higher outcomes, compared to both learners in classrooms without instructional recommendations and learners in a control group. Teachers using the assessment, reports, and instructional recommendations recounted addressing more skills, providing more one-on-one instruction, and facilitating more peer-to-peer instruction.

If teachers aim at applying their deeper understanding of learning to their classroom practice, it is clear that they need tools to address learning as understanding, build on learners' pre-existing knowledge, and engage learners actively as learners in the learning process. According to Biggs and Tang (2007), formative assessment holds tremendous power for bringing the learning process back into focus by allowing teacher and learner to dig in, take ownership of their teaching and learning, respectively, and lay the foundation for ongoing educational success and achievement. In this respect, formative assessment has perhaps the most to give at the time when learning is most explosive and unwieldy, namely early childhood (i.e., the foundation phase period) (Davies & Le Mahieu, 2003).

Formative assessment is not a magic bullet, but it can make a key contribution in identifying what learners know, illuminating a course for improvement, and inviting them in as stakeholders in learning. Research clearly indicates that when used routinely in the early grades, formative early childhood assessment systems increase the likelihood that all children will be successful learners in the early years and beyond (Anderson & Krathwohl, 2001; Arter & Stiggins, 2005; Hess, 2006; Newton, 2007; Kennedy, 2010). Regular assessment and appropriate instructional intervention can help decrease the disparities found among young children as a result of differing economic and social/ emotional supports available to them in the early years (ECEA, 2007). The following sub-sections, the characteristics, the advantages and essential elements of the formative assessment process are discussed.

2.8.1 Characteristics of formative assessments

Over the past decade, a number of researchers have identified key characteristics of appropriate, successful formative assessment (Black, 1998; Bransford, Brown, Cocking, Donovan, & Pellegrino 2000; Donovan & Brandsford, 2005; Pellegrino, 2004; Popham, 2006). To be instructionally useful, formative assessment must be timely and ongoing. Formative assessments are meant to provide feedback that can be used to improve teaching and learning. Learners who are struggling are typically assessed more frequently because progress monitoring has been demonstrated to improve learner outcomes. It follows, therefore, that such assessments must be used routinely throughout the school year so that instruction can be modified to improve learning outcomes.

Formative assessments should be used to monitor learner progress so that early intervention becomes a routine part of the learning process. Assessing to guide learner learning and testing for purposes of school accountability should be two distinct activities. Evaluating a learner's performance against benchmarks, monitoring their progress, and inviting them into the assessment process create an opportunity for all learners, but especially low achievers, to take a stake in their learning. Such assessments put the focus on the individual, providing a clear understanding of their problems and a path to improvement (Stiggins & Chappuis, 2006).

Formative assessments should be learner-friendly. Most major assessments serve audiences other than the learner. Feedback reaches all levels of the system, except the one that counts most— the learner. Assessments should help learners understand the teacher's learning intentions and what constitutes success, provide learners with opportunities to revise and improve their thinking, and help learners monitor their own progress over time. If we want reflective learners who take ownership in their own learning, then our learners need to be involved in decision-making at an early age, such as viewing exemplary work to construct their own rubrics (Mindes, 2003; Stiggins & Chappuis, 2006).

Formative assessments should distinguish between audiences. Assessments should be easy to use and understand, which means that they should clearly focus on the intended audience: teachers, learners, or both. For example, young children will lack the language to critically analyse their own performance, but they can understand indicators, such as progress bars and colour codes. Such visual aids also provide teachers with a snapshot of learners' strengths and weaknesses that can help them to effectively target their instruction.

Control of formative assessment should reside as close to the classroom as possible. If formative assessment should inform instruction and learner learning, then it stands to reason that it must feel like a part of the classroom. Too often, educational leaders have treated the classroom as a black box with an eye toward the inputs and outputs and not the classroom experience (Black & Wiliam, 1998). If teachers are to make meaningful use of formative assessment data, then such assessments must have direct relevance to their teaching and learner learning. As Popham (2006) states, "The closer that formative assessments are to the actual instructional events taking place in the classrooms, the more likely will be their positive impact on learner learning" (p. 8).

Formative assessments should be built on solid cognitive, developmental, and educational research. With the significant growth in our understanding of learning, formative measures should be based on current developmental, educational, and cognitive science research that provides a comprehensive view of how young children learn key concepts and skills (Bowman, Donovan, & Burns, 2001; Bransford, Brown, Cocking, Donovan, & Pellegrino, 2000). Assessments designed in this way help teachers ingrain research findings and ideas into their thinking as they interpret learner behaviour and develop an effective approach to instruction.

Formative assessments should be valid and reliable. Without the right evidence, teachers and learners cannot chart an accurate course for improvement. Formative measures, like all other assessments, need the right mix of questions to engage learner understanding from multiple angles. The instruments need to not only develop a more complete picture of how deeply the learner understands the material, but also highlight learner misunderstandings in ways that reveal instructional pathways.

2.8.2 Advantages of formative assessments

Research supports what is known about teacher practice and learner success; learner success is largely dependent on teacher practice (Darling-Hammond, 1999). Teacher quality exerts greater influence on learner achievement than any other factor in education – no other factor even comes close (Hanushek, Kain, O'Brien, & Rivkin, 2005; Wiliam & Thompson, 2007). Marzano (2003) states that "the impact of decisions made by individual teachers is far greater than the impact of decisions made at the school and district level" (p. 71). One of the primary functions of formative assessment is to inform instruction. By providing information about learner understanding relative to goals, objectives, and standards, formative assessment helps teachers to target their instructions for greater effectiveness and make responsive instructional adjustments (Black & Wiliam, 1998; Elmore, 2004). In this respect, teaching and assessing are intertwined. The overlap is beneficial to learners in that they regularly receive feedback in the course of learning, and it's beneficial to teachers because they regularly receive information about their teaching. With formative assessment, teaching and assessing become a cyclical process for continuous improvement, with each process informing the other (cf. Figure 2.1). According to Greenstein (2005), when asked to describe how routine use of formative assessment affects their classroom, teachers typically observe that it:

- helps focus instruction on informed priorities;
- allows for customized learning, helping to build both basic skills and high-level learning in a way that is relevant and responsive to all learners;
- encourages teachers and learners to work together toward achievement;
- increases learner engagement and motivation;
- ensures grades accurately reflect learners' progress toward standards; and
- increases coherence between curriculum, instruction, and assessment (p. 15).

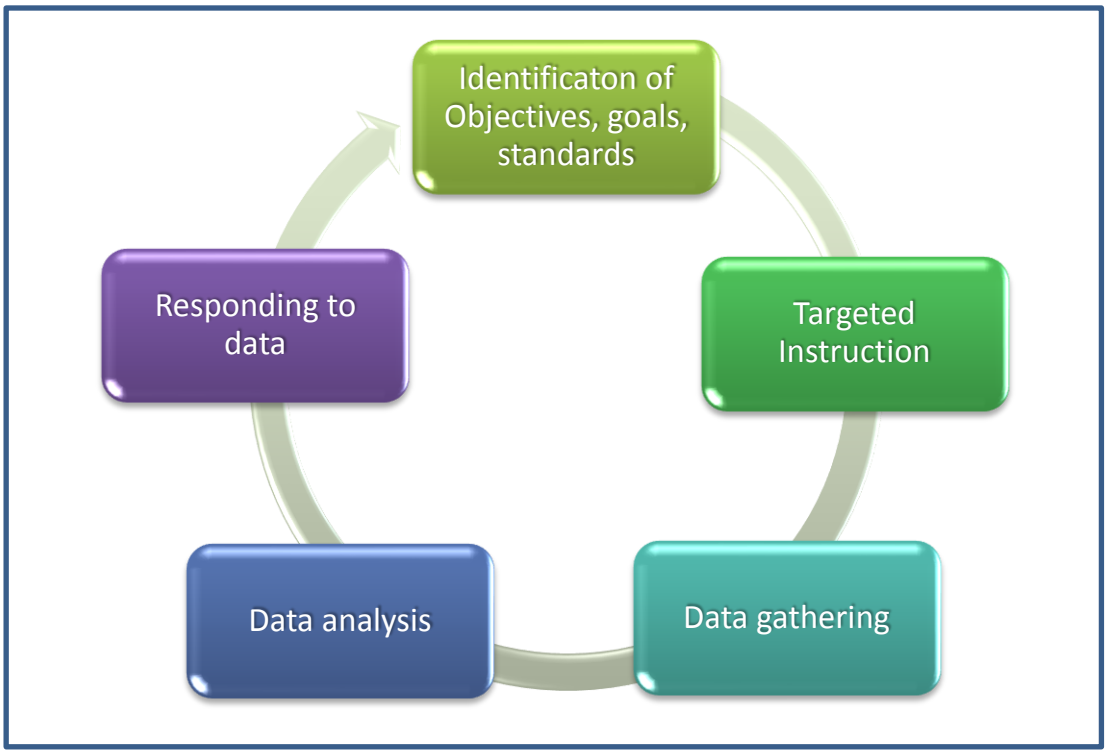

Figure 2.1: Cyclical Process for Continuous Improvement with Formative Assessment (Thompson & Wiliam, 2008, p. 35).

Heritage (2007) categorizes formative assessment into three broad strategies which can also be seen as advantages of formative assessment:

- "On-the-fly," in the sense that the teacher changes course during a lesson to address misconceptions before proceeding with the designed instructional sequence.
- "Planned-for interaction," where the teacher decides beforehand how he or she will draw out learners' thinking during the course of instruction.
- "Curriculum-embedded," where tools and activities are embedded in the ongoing curriculum to gather feedback at key points in the learning process. Examples of curriculum-embedded assessments might include identifying real-life examples and non-examples of geometric shapes to demonstrate understanding (p. 141).

All three assessment strategies have great advantages for teacher and learners and share several characteristics that, when considered together, make them unique to other assessments. Specifically, if these types of formative assessments are planned activities, purposefully implemented to gather evidence of learning. According to Zemelman, Daniels, and Hyde (2005), these types of assessment activities are conducted discreetly as a natural part of teaching, and take place during a lesson or study unit and can provide immediate feedback to the teacher.

2.8.3 Essential elements of the formative assessment process

The formative assessment process can be divided into four essential elements: (1) identifying the learning gap, (2) feedback, (3) learner involvement, and (4) learning progression (Heritage, 2007, p. 142).

Identifying the gap, based on Royce Sadler's influential work (1989), involves understanding the difference between what students know and what they need to know, and where teaching will be most effective to meet desired learning goals. Once a teacher identifies the "just right gap" (Sadler, 1989), he or she can then provide the necessary instructional support to help learners progress toward the learning goal and engage in appropriate cognitive growth activities.

Feedback flows to and from the teacher and his or her learners. Feedback provides critical information that the teacher needs to pinpoint the current status of a learner's learning and informs next steps in the learning process. Feedback is then provided to the learner in the form of clear and descriptive information so that it can be used to improve learning. Feedback that is not designed and intended to close the instructional gap does not meet the formative assessment definition of feedback (Sadler, 1989). Feedback, when used as part of a formative assessment system, is a powerful way to improve learner achievement. Feedback by itself, though, is less useful. As Hattie and Timperley (2007) note, "Feedback has no effect in a vacuum; to be powerful in its effect, there must be a learning context to which feedback is addressed" (p. 82). They propose a formative assessment system that has three components: Feed-up, feedback and feed-forward (cf. Figure 2.2). Feed-up ensures that learners understand the purpose of the assignment, task, or lesson, including how they will be assessed. Feedback provides learners with information about their successes and needs. Feed-forward

guides learners learning based on performance data. All three are required if learners are to learn at high levels.

Each of these three components has a guiding question for teachers and learners:

- Where am I going? (feed-up)
- How am I doing? (feedback)
- Where am I going next? (feed-forward)

Learners must be **actively involved in their own learning** and the assessments they are engaged in. This happens best by collaboration between the teacher and fellow learners to develop a shared knowledge about their current learning status and what they need to do to progress in their learning. Doing so builds metacognitive skills, which learners need in order to monitor their own learning and to determine when they need assistance.

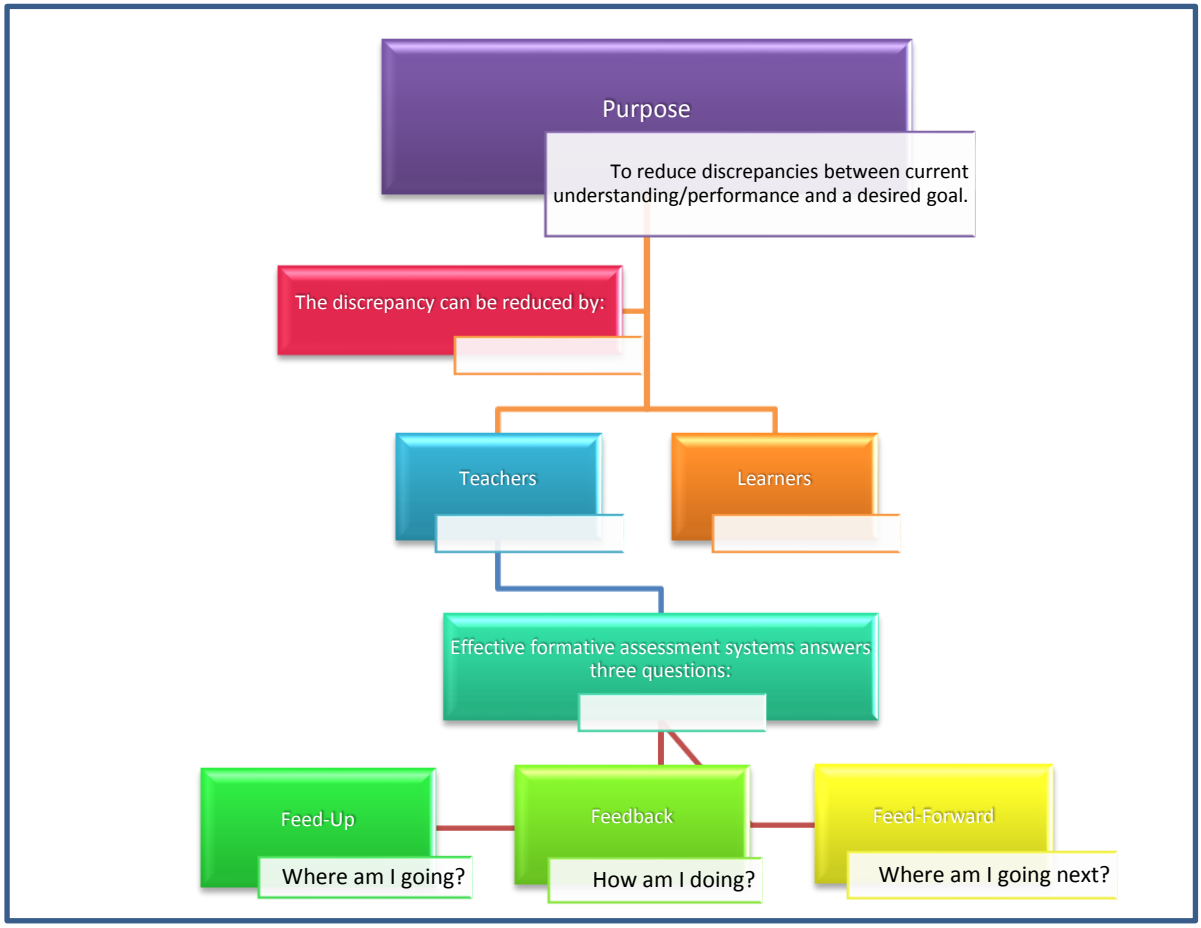

Figure 2.2: Formative Assessment System
(adopted from Hattie and Timperley, 2007, p. 82).

Learning progressions break down a larger learning goal into smaller sub-goals. It is necessary for helping teachers locate learners' current learning status in relation to a continuous set of skills needed to master the learning goal. Once a teacher has identified learner locations on the learning progression continuum, he or she can work with the learners to set short-term learning goals and clarify the criteria that learners must meet for success (Mulford, 2008; Pinchok & Brandt, 2009).

Forster and Masters (2004) describe learning progressions as "a description of skills, understanding and knowledge in the sequence in which they typically develop: a picture of what it means to 'improve' in an area of learning" (p. 1), typically represented visually on a vertical progress map. Popham (2008) defines learning progressions as a "carefully sequenced set of building blocks that learners must master en route to a more distant curricular aim. The building blocks consist of subskills and bodies of enabling knowledge" (p. 83). Learning progressions are used for planning out formative and summative assessment strategies in that they carefully lay out the progression of concepts and skills learners need over time (more than one year, for example) and that will lead to deeper connections among a larger network of concepts and skills.

According to Felder and Brent (2005), learning progressions should be detailed enough to focus teachers on the appropriate learning that needs to occur, provide information on learners' acquisition of these skills so that appropriate instructional and assessment actions can be taken, and explain where learners should be on this continuum.

An example of learning progressions in the South African context can be found in the Curriculum and Assessment Policy Statement (CAPS) (cf. Appendix B). The knowledge, concepts and skills contained in the Curriculum and Assessment Policy Statement has been organised, per term, per year (cf. Table 2.1) using these headings:

- an introduction containing guidelines on how to use the Foundation Phase document;
- content, concepts and skills to be taught per term;
- guidelines for time allocation;
- requirements for the Formal Assessment Activities and suggestions for informal assessment; and
- lists of recommended resources per grade (DBE, 2011, p. 8).

If the learning targets are clearly defined, classes of learners will be on a continual movement toward these targets, gathering skills and knowledge along the way.

Teachers will continue to assess their learners with frequency, but these assessments should get more refined and focused as learners approach the agreed-upon learning goal.

Table 2.1: Skills to be taught in English Home Language

OVERVIEW OF THE LANGUAGE SKILLS TO BE TAUGHT IN THE HOME LANGUAGE GRADES R-3				
	GRADE R	**GRADE 1**	**GRADE 2**	**GRADE 3**
PHONICS	• Identifies rhyming words in well known rhymes and songs such as Humpty Dumpty • Begins to recognise that words are made up of sounds, e.g. the beginning letter(s) of their names • Segments oral sentences into individual words • Divides multisyllabic words into syllables • Recognises aurally and visually some initial consonants and vowels especially at the beginning of a word	• Identifies letter-sound relationships of all single letters • Builds words using sounds learnt (e.g. words with. -at, -et, -it, -ot, -ut, -ag, e.g. -ig, -og, -ug, -an, -en, -in, -un, -am) • Uses consonant blends to build up and break down words (r and l blends) • Recognises common consonant digraphs at the beginning and end of a word, e.g. sh, ch and th • Recognises plurals ('s' and 'es') and word endings ('ing' and 'ed') aurally • Groups common words into sound families	• Consolidates Grade 1 phonics • Revises common consonant digraphs (sh, ch, th) at the beginning and end of words • Recognises 'wh' at the beginning of a word • Uses initial and final consonant blends to build up and break down words, , e.g. bl-a-ck, bri-ng, sa-ng 3-letter consonant blends at the beginning of words, e.g. str-ip, str-ap • Recognises vowel digraphs, e.g. 'oo' as in moon, 'ee' as in tree, 'oa'; 'ea' short 'oo' as in book, 'ai' as in 'rain' • Recognises 'silent e'/split digraph in words, for xample. tape • Recognises at least 5 new vowel digraphs, e.g. 'ar' as in car, 'er' as in fern, 'ir' as in shirt, 'or' as in short, 'ur' as in church etc. • Recognises common double consonants such as ll,at the end of words • Recognises and uses suffixes such as -ly, -ies • Spells words correctly using their phonic knowledge • Builds words using the phonic sounds taught during the year.	• Consolidates Grade 1&2 phonics • Recognises consonant digraphs at the beginning and end of words (sh-, -sh, ch-, -ch, th-, -th and wh-) at the beginning and end of words • Recognises 'silent e' or split digraphs in words (e.g. same, bite, note) • Recognises vowels such as -ere, -air, -are • Recognises and uses spelling patterns (e.g. -igh (high), -ough (tough), -eigh (neigh), -augh (caught) • Recognises and uses rhyming words (e.g. blow, flow, glow) • Recognises that some sounds can be represented by a number of different spelling choices, e.g. ow (cow) ou (found), aw (draw), au (autumn); t*ie*, h*igh*, sk*y*; f*ew*, bl*ue* • Recognises digraphs making /f/, e.g. 'ph' as in elephant) • Recognises silent letters in words, i.e. 'k', 'l', 'b' 'w' • Recognises hard and soft sounds of 'c' and 'g' • Recognises and uses synonyms and antonyms • Recognises and uses prefixes such as un-, re-) and suffixes such as -ful, -ness)

Figure 2.3 illustrates Heritage's (2008) "learning goals/progression" concept. When teachers begin to meet the learners where they are at developmentally at the beginning of a year, semester, or lesson/ unit, this may require assessing on a broader range of levels of skills. Through continual evidence gathering and fine tuning of learner instruction, teachers can begin to narrow their differentiated focus and begin to move toward the specific learning goals they have for the learners. Although it is impossible to have all learners at the exact same level, it is important to understand that properly articulated learning progressions, and their subsequent assessments, will allow teachers to understand where their learners are at and allow them to refine that process in order to move their learners toward their goals throughout the year.

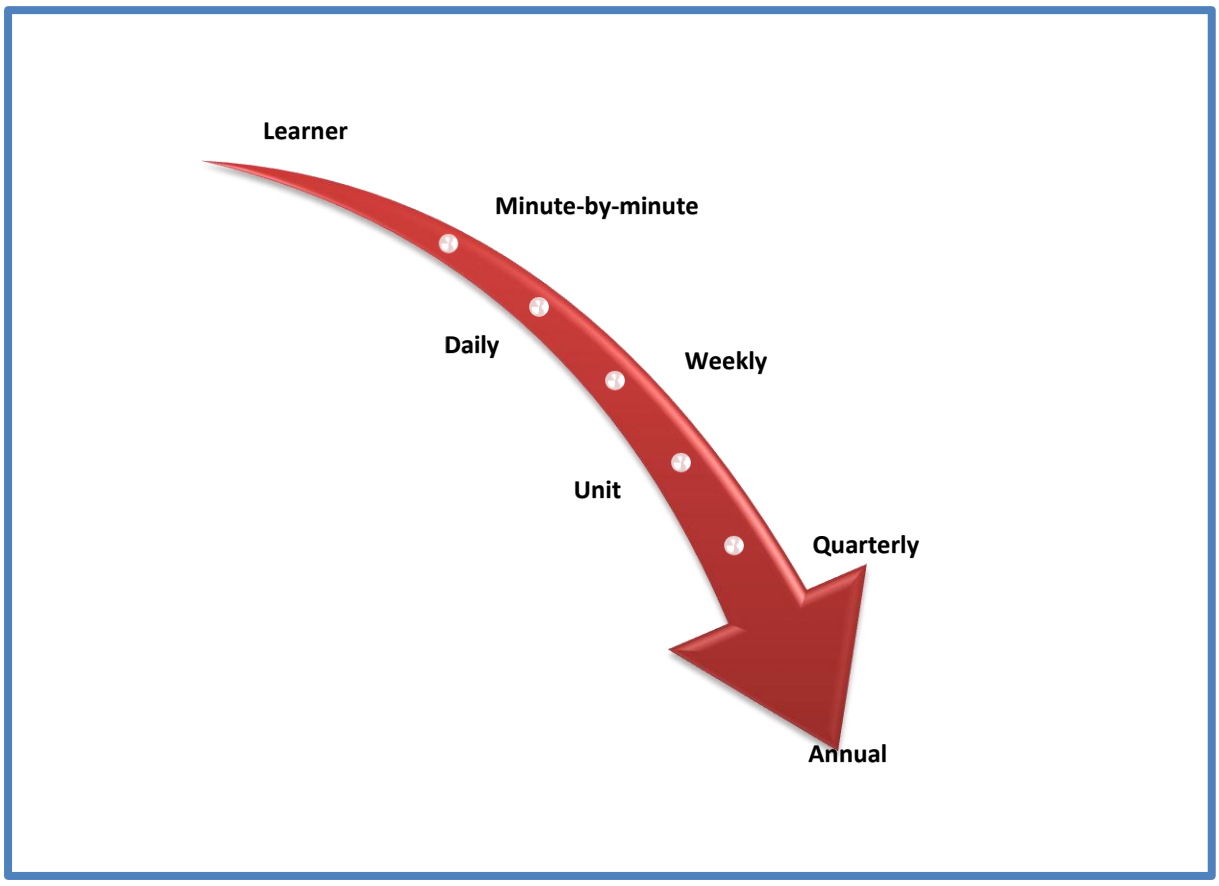

Figure 2.3: Learning Goals or Progression Concept (Heritage, 2008, p. 7).

2.8.4 Principles of formative assessments

According to Brandsford, Vye, and Bateman (2002), it could help to think about formative assessment as primarily a part of an ongoing instructional process (p. 174). This puts the emphasis on how instructional adjustments will be made as learning occurs and is consistent with the need to demonstrate validity in assessing performance as indicated by how data are used (Brandsford et al., 2002). Years of research indicate that effective instruction depends on many factors, including the style of teaching, objectives, characteristics of learners, and the context of learning. Popham (2008) states that there should be a strong emphasis on what teachers do with assessment data and how instructional variables may influence the effectiveness of applying different variations of the entire process of formative assessment. The focus is here both on the content and context of formative assessment: its basic principles and some of the reasons it has risen to prominence and gained support as an effective means of improving learners learning.

The information in this section has been aligned around three significant principles: (1) formative assessment is learner focused, (2) formative assessment is instructionally informative, and (3) formative assessment is outcomes based (Greenstein, 2010, p. 16 - 19).

1) Formative assessment is learner focused

Formative assessment is purposefully directed toward the learner. It does not emphasize how teachers deliver information but rather, how learners receive that information, how well they understand it, and how they can apply it. With formative assessment, teachers gather information about their learners' progress and learning needs and use this information to make instructional adjustments (Bransford et al., 2002). By applying formative assessment, teachers also show learners how to accurately and honestly use self-assessment to improve their own learning. Instructional flexibility and learner-focused feedback work together to build confident and motivated learners (Greenstein, 2010, p. 16).

2) Formative assessment is instructionally informative

> During teaching, teachers assess learners understanding and progress toward learning goals in order to evaluate the effectiveness of their instructional design. Both teacher and learners, individually and together, review and reflect on assessment outcomes. As teachers gather information from formative assessment, they adjust their teaching to further learner learning (Greenstein, 2010, p. 17).

3) Formative assessment is outcome-based

> Formative assessment focuses on achieving goals rather than determining if a goal was or was not met, and one of the ways it does so is by helping to clarify learning goals for both teachers and learners. Teachers give frequent and substantive feedback to learners about their progress, pointing out both strengths and areas that need improvement. Teachers plan steps to move learners closer to learning goals. Work is assessed primarily on quality in relation to goals rather than learner attitude or effort (Greenstein, 2010, p. 19).

Formative assessment is not a “one size fits all” practice. Rather, it is differentiated, depending on learner characteristics, learning objectives, and situational factors. There are many variables to consider in effectively developing and implementing formative assessment. One important variable to consider is the use of different types of assessment to determine whether learners have met important formative outcomes.

Hasbrouck (2006) states that assessment should include suggestions for screening learners for early indicators of reading delays, monitoring progress to contribute to instructional decision making, diagnosing learners who may not be making progress, and deciding programme outcomes. It is often true that a school may use a particular assessment measure for more than one purpose (Mansell & James, 2009). When used at different points in time, certain measures can screen learners, monitor progress, and determine whether learners have met important formative outcomes (Ainsworth & Viegut, 2006).

The next section explores each of the specific assessments that should be used as part of a school's formative reading and assessment plan.

2.9 Types of assessment

Assessment is used in educational settings for a variety of reasons, such as keeping track of learning, diagnosing reading and writing difficulties, determining eligibility for programme, evaluating programme, evaluating teaching, and reporting to others.

According to Good, Simmons, and Kame'enui (2001), assessment at the primary level that provides data for educational decision-making and accountability must not only indicate if learners are learning, but if they are learning at a rate that will allow them to attain the desired criteria on high stakes tests such as the ANA or PIRLS tests. They must document and account for growth on a continuum of skills, predict success or failure on using criterion measures of performance (ANA and provincial assessments), and provide appropriate instructional goals that, if met, will prevent reading failure (Sibley, Biwer, & Hesch, 2001).

Assessments provide different types of information at various stages of the instructional decision-making process. Educators must be adept at using a wide range of assessments to obtain timely and accurate information related to the knowledge, skills, habits and needs of learners (Minneapolis Elementary Literacy Framework, 2006). The aim of this section is to provide an overview of four types of assessments namely screening, diagnostic, progress monitoring and outcomes-based assessments, that can be used for instructional decision-making, communicating, and collaborating to improve learning achievement (Braun, Kanjee, Bettinger, & Kremer, 2006; Dietel, Herman, & Knuth, 1991; Hosp & Ardoin, 2008).

2.9.1 Screening assessment

Parents, family members, teachers, and other caring adults often have questions about the development of young children they know and care for. Parents and early childhood teachers may suspect developmental problems but not be able to provide specific descriptions. Teachers need to know which learners are struggling in academic areas. Widespread developmental and academic assessments are expensive and time-consuming, and considered too severe to address general questions about learning and development (Ross, 2005). Screening assessments are the best choice for an initial look at a child's learning or development, to

document typical development and identify children who might have developmental delays (Bartolotta & Shulman, 2008; NICHD, 2000; Ringwalt, 2008).

According to Black and Broadfoot (2004), screening is a very general type of assessment that addresses common questions parents and teachers have about children. Screening assessments are designed to efficiently identify those learners who need more thorough and detailed assessment. Salinger (2010) stated that screening is ideally brief and cost-effective so that large numbers of learners can be assessed in a relatively short period of time. According to Meisels (1988), the processes and tests used in screening are designed to be quickly and easily administered without highly specialized training.

The reliability of screening assessments and the predictive validity are influenced by the developmental stages of children and the timing of assessments. While many children enter pre-school understanding phonological awareness and other predictive skills, others develop this knowledge during the Grade R year and become normally progressing readers. By nature, screening assessments tend to be formal, providing valid and reliable data regarding children who may be in need of further assistance (Minneapolis Elementary Literacy Framework, 2006).

Knowledge of letter names, phonemic blending and segmentation, letter-sound fluency, nonsense word fluency, oral reading fluency, vocabulary and comprehension are areas that can be assessed using screening assessments (Wren, 2001). The knowledge gained can be used to help teachers form groups for differentiated instruction and identify learners who may need additional assessment (Minneapolis Elementary Literacy Framework, 2006).

2.9.1.1 Characteristics of screening assessments

The information gathered during screening assessments is fairly general, also the idea behind screening is to assess large groups of learners quickly, to identify the few who will benefit from a more comprehensive and thorough assessment in the areas where problems are identified (Torgesen, 2004). Screening tests have relatively few items, so information is gathered only on major indicators of development and learning.

According to Berls and McEwen (1999), “developmental screening instruments are normally norm-referenced, comparing a child’s performance in physical, social, cognitive, and communication domains to a group of same age peers” (p. 777). Many early childhood programmes have criterion-referenced lists of skills to screen children’s pre-academic knowledge, such as recognition of numerals and letters. Learners in the primary grades need to be screened in reading to identify those who are falling behind grade level expectations and need additional instruction to catch up (Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008).

According to Ackerman and Barnett (2005), screening assessments are only a sample of academic or developmental levels, at a certain point in time. Screening tests normally have a cut-off score, with scores below the cut-off indicating lower than expected performance. Ackerman and Barnett (2005) also note that a preschool teacher can use screening results to identify those children who need extra help learning letters and numbers. Learners who score below the cut-off point for grade level expectations in reading are referred for more intensive assessment and instruction.

Screening is only the first step in answering questions about children’s development and learning (Glascoe & Shapiro, 2002). Scott-Little, Kagan, and Clifford (2003) argue that the results of screening assessments are best used to sort learners into groups or categories relative to cut-off scores. Because screening results are based on a minimum of detail, results can only indicate, for example:

- “Yes, development is on track, he/she is reading at grade level” (scores above cut-off).
- “No, language development seems delayed, he/she could use some extra help in reading” (scores below cut-off).
- “Maybe; it’s unclear whether there might be a problem, he/she is almost at expected levels in reading” (scores right at cut-off, scattered, unclear) (Scott-Little, Kagan, & Clifford, 2003, p. 27).

For screening tools, additional information is needed regarding how well these tools identify children who do indeed have a developmental delay (i.e., sensitivity), and how well they guard against misclassifying children as needing additional screening for a developmental delay who are, in fact, developing normally (i.e., specificity)

(Halle, Zaslow, Wessel, Moodie, & Darling-Churchill, 2011). According to Musgrave (2007), the quality of a screening instrument depends on the extent to which it sorts groups of learners accurately, represented by the technical terms sensitivity and specificity. *Sensitivity* means that a screening test is sensitive enough to identify those learners whose development is at-risk or progressing below expectations. A screening test that is 100% sensitive will not miss any learners who are having developmental or learning problems. *Specificity* refers to how selective the test is at identifying *only* those learners whose performance is truly problematic (Taylor, 2000, p. 203). A test that is 100% specific would never indicate problems for learners who are developing typically. It should be clear that there are no tests that are 100% accurate, but evidence about sensitivity and specificity should be reported for screening tests, and is an important consideration in selecting screening instruments (Kennedy, 2010).

2.9.1.2 Recommended practices in screening

Screening instruments have a number of appealing features. They are relatively simple and easy to administer. When conducted properly, screening is a set of procedures rather than simply a test. According to Schultz (2001), good screening practices improve the validity of results, and ensure that instruments are used consistently for the purposes of screening assessment (Schultz, 2001, p. 23):

Screening procedures should include multiple sources of information. Screening is never conducted as an end in itself, but rather to document those learners whose development is on track, and to identify concerns (Manswell & James, 2009). The implication for practice is thoughtful attention to combining screening tests with observation and interviews with parents, and reviewing results in light of family input and feedback.

The best screening procedures have predetermined decision rules to guide follow up of results. Screening procedures should always include referral and follow-up guidelines. For example, when scores indicate typical or normal development, the next screening is scheduled for six months to one year. When scores suggest a concern, more extensive assessment is needed. When scores are equivocal or borderline, the next screening may be scheduled in three months.

Screening results should only be used for the purpose for which they are developed; to identify learners who will benefit from further assessment. The results of screening tests are too broad and general to be used to diagnose a learner, to determine eligibility, or to identify instructional goals.

Developmental screening instruments should be norm-referenced; sensory and early academic screenings that are criterion-referenced should have explicit standards for comparison. All screening instruments should be standardized in their administration and scoring. For a meaningful comparison of individual scores to a norm or pre-set criteria, all learners must have the same experience during the screening assessment.

Screening instruments must have data available to document reliability and validity, as well as sensitivity and specificity. Data about the technical properties of the test are necessary for professionals and teachers to have confidence in the results of screening. Professionals and teachers need to know that the results of screening assessments are accurate and meaningful.

Screening procedures must be culturally and linguistically relevant. Results of screenings are only valid if the procedures and methods are appropriate for a given learner's culture and language background. Including parent input about developmental expectations and the learner's behaviours over time and settings is one of the best ways to ensure congruence with the learner's life context.

According to the Pennsylvania Standards for Learning (2005), the results of screening efforts can be inconclusive or confusing for some learners. Sometimes a score will just barely be above the cut-off that indicates a developmental problem. Other times a learner's score will indicate a developmental concern at one screening point, and then no problems the next time, only to show a different concern at the third assessment (Glascoe, 2001).

When young learners with uneven patterns of screening scores are from families confronted by poverty, a chronic lack of basic resources may explain depressed scores on screening assessments (Boethel, 2004). For example, infants and toddlers who are malnourished or have chronic, untreated health conditions may demonstrate developmental delays better treated by food and medical care rather than early

intervention programmes. Learners who have not had the benefit of preschool often perform poorly on academic screenings, as do primary school learners who have experienced substandard teaching. Marshark and Spencer (2009) state that learners who perform inconsistently on screening assessments should be monitored closely and provided additional help as necessary to support development.

2.9.2 Diagnostic assessment

Parents and teachers need more in depth information than screening assessments provide, in order to make appropriate decisions and select effective interventions. According to Alliston (2007), “a complete description of a young child’s delay is necessary in order to integrate individualized intervention strategies” (p. 4).

Preschool- and primary teachers must identify the specific components of early reading skills that are problematic for learners who are struggling, in order to tailor effective instruction (Wren, 2004; Rhodes & Shanklin, 1993). According to Westwood (2004), diagnostic assessments (e.g., DIBELS Deep) are designed to provide detailed information about developmental delays and early academic problems.

According to The National Joint Committee on Learning Disabilities (2005), diagnostic assessments document a more precise identification of problem areas for a learner not making progress. These assessments, which provide information to plan instruction to meet a learner’s needs, provide a more detailed inquiry of a learner’s difficulty at any time of the year. Many progress monitoring assessments, such as running records, individual reading inventories, and curriculum-based measurements (Fuchs et al., 2003) assist a teacher with analysis of the errors that a learner is making. The goal is more informed instruction. Diagnostic tools must be both reliable and valid for more discriminating skills within the larger construct (Legg, 1991). For example, while phonemic awareness is a predictor of future reading success, a diagnostic assessment needs to provide information about the specific aspects of phonemic awareness a learner is struggling with so a teacher can focus on those areas. In addition, to be useful, diagnostic assessments must help teachers plan their teaching differently so that learners are more successful than if the teachers had not used the assessments (Fuchs, 2002; Kame'enui, 2002).

More detailed diagnostic assessment is needed for learners who are not making adequate progress, regardless of alterations made to the classroom instructional programme (Thurlow, Moen, Liu, Scullin, Hausmann, & Shyyan, 2009). However, in schools where teachers effectively use screening, progress monitoring, and diagnostic assessments, the number of referrals for more intensive evaluations can be reduced, allowing resources to be focused on children for whom further information is most important (Rudner & Schafer, 2002).

Diagnostic assessments provide more detailed information about learners' current levels of performance and instructional needs. Diagnostic assessments are used when more in-depth analysis of a learner's strengths and weaknesses is needed to guide instruction (Minneapolis Elementary Literacy Framework, 2006).

They can be used to identify discreet skills and specific needs in the areas of oral language development, reading fluency, comprehension, and advanced literacy skills. By analysing the results of diagnostic assessments, teachers can determine where to focus instruction. Such assessments can also be used to determine if more extensive testing or additional support might be appropriate (Minneapolis Elementary Literacy Framework, 2006).

Shepard, Kagan, and Wurtz (1998) state that the purpose of diagnostic assessment in early childhood is to identify and secure appropriate intervention services for children whose development and learning are delayed. Access to targeted interventions involves identifying the nature and severity of developmental, academic, or learning problems comprehensively and systematically. Comprehensive, in-depth testing of any sort is relatively expensive, time-consuming, and often requires the expertise of specialists. As a result, diagnostic assessment of young children is reserved for those few who do not demonstrate typical growth and learning trajectories, for example, those identified by screening assessments as having potential developmental or academic problems. Diagnostic assessment may indicate the need for additional or alternative instruction in pre- or early academic areas (Bowman, Donovan, & Burns, 2000).

2.9.2.1 Characteristics of diagnostic assessments

The questions used in diagnostic assessments are quite specific, so the information-gathering process is relatively lengthy and detailed, often including medical and social histories, and comprehensive developmental testing by a variety of professionals (Horton & Bowman, 2002).

Diagnostic tests have many fine-grained items that assess very specific indicators of development and learning (Hess, 2007). According to Black and Broadfoot (2004), performance is generally summarized numerically in standard scores such as percentile ranks, standard deviations in relation to the mean, age or grade equivalencies, or percentage delay from an age or grade norm.

Diagnostic assessments are scored in various ways, but raw scores are normally converted to standard scores that are used to inform decisions about access to specialized interventions. Results give information about relative areas of developmental strengths and weaknesses, and further describe how severe the problems are (Harrison & Boney, 1995; Kusek & Rist, 2004; Snow & Van Hemel, 2008). Individualized instruction is selected or designed accordingly, learners receive additional help, and progress toward goals is monitored frequently (Hosp, Hosp, & Howell, 2007).

2.9.2.2 Recommended practices in diagnostic assessment

One major advantage of diagnostic assessment instruments is that they come with specific directions for administration and scoring, and often include a test kit of materials (Black & Broadfoot, 2004; Levesque & Carnahan, 2005). Cautious selection of assessment instruments is important because good decisions can only be made on the foundation of good information.

Epstein, Schweinhart, DeBruin-Parecki, and Robin (2004, p. 48) argue that when conducted properly, diagnostic assessment involves systematic decision-making rather than administration of a single test:

Diagnostic procedures should always include multiple sources of information. Diagnostic testing is never conducted as an end in itself, but rather to determine the need for early intervening (Hess, 2007). The implication for practice is careful and

systematic efforts to interpret test results in the context of information gathered via direct observation of a child in familiar environments, interviews with parents and other caregivers, and review of pertinent screening results, portfolio artefacts, as well as medical and educational records (McLean, 2005). The more a child's language, early experience, and family background differs from the majority culture, the more lengthy and complex diagnostic assessment may need to be in order to yield accurate and valid results.

Diagnostic assessment is used to include learners, never to exclude learners. In particular, assessment of early learning and academic skills should never be used as the sole criterion to deny children preschool entrance. When scores on school readiness tests suggest a concern, children should be referred for additional help to accelerate their learning (Shepard, Kagan, & Wurtz, 1998).

Use of individual norm-referenced diagnostic tests that are not directly connected with the curriculum should be limited with young children. Diagnostic assessment is time consuming and diverts time from teaching and learning opportunities. Administration of individual developmental and academic assessments should be limited to those children for whom screening results have indicated a potential developmental delay or concern (Hosp, Hosp, & Howell, 2007).

Developmental and academic diagnostic instruments should be norm-referenced with explicit standards for comparison. Norms may be derived from a conventional norming process for developmental tests, or set via determination of local norms or accepted grade level expectations for academics. All diagnostic instruments should be standardized in their administration and scoring. For a meaningful comparison of individual scores to a norm or pre-set criteria, all learners must have the same experience during the diagnostic assessment.

Diagnostic instruments must have data available to document reliability and validity and/or data to support cut-off scores for eligibility decisions. Data about the technical properties of tests are necessary for professionals to have confidence in the results of diagnostic assessment (Shepard, Kagan, & Wurtz, 1998). Teachers and professionals need to be confident that the results of diagnostic assessments are accurate.

Diagnostic procedures must be culturally and linguistically relevant. Results of diagnostic assessments are only valid if the procedures and instruments used are appropriate for a given child's culture and language background (Hosp, Hosp, & Howell, 2007). Lack of proficiency in English may be misinterpreted as cognitive or academic delay, and unfamiliar patterns of behaviour may be misinterpreted as behaviour problems. It is especially important that English Language Learners be screened for language proficiency in both English and their primary language, to prevent misinterpretation of assessment results. Testing for developmental delay or disability should be conducted to the extent possible in the child's primary language, which may involve the use of interpreters, alternate forms of information gathering, and professional judgement (McLean, 2005). Care should be taken to ensure that all children understand directions for test administration.

Interpreting diagnostic assessments can be confusing or do not seem to adequately reflect a child's abilities. The performance of young children is highly flexible even within a single assessment session. Sometimes a learner will perform very poorly on a screening test and then score well on more comprehensive assessments (Jablon, Dombro, & Dichtelmiller, 1999; Schultz, 2001). Other times, children may receive a score that is just above or below the cut-off for eligibility. It is difficult to make a decision about eligibility or the need for additional support based on a single test score when children's behaviours are flexible or inconsistent (Fletcher, Lyon, Fuchs, & Barnes, 2007).

2.9.3 Progress monitoring assessment

Research indicates that the ultimate purpose of all assessment in early childhood programmes is to support growth, learning, and development of young children (Assessment Reform Group, 2006; Black & Broadfoot, 2004; Clarke, 1998). The unquestionable focus of an early childhood assessment system is the gathering of information that is directly connected to young children's daily learning experiences (Harlen, 2005; Gipps, McCallum, & Hargreaves, 2000).

Progress monitoring assessment is a process that informs parents and teachers about what learners already know and are able to do, what they are expected to be learning next, and how quickly they are progressing (Elliot, 1995; Moss & Brookhart, 2010). Although commonly listed and described as a particular category of

assessment activity, in everyday practice progress monitoring assessment is more appropriately considered to be a dynamic component of the curriculum and teaching. Progress monitoring assessment is required to provide a starting point, continual feedback, and periodic review of the effectiveness of teaching and learning. Quality progress monitoring assessments for instructional purposes is a matter of collecting information that is directly relevant and useful for planning the curriculum and activities, designing plans for individual learners, and monitoring progress toward learning goals (Blaz, 2008; Cohen & Spenciner, 2003; Carr & Harris, 2001; Moir & Moore, 2004; Elliot, 1995; O'Neel, 1996).

2.9.3.1 Purposes of progress monitoring assessment

The primary purpose for progress monitoring assessments is identification of developmental and academic competencies for individual children and monitoring of progress over time (Fuchs & Fuchs, 1999; Shapiro, 2002). Continuous awareness of each learner's acquisition and use of knowledge and skills, provides a starting point for design and modification of curriculum activities. In addition, classroom-level assessments supply instant feedback on the extent to which learners are making progress in meeting developmental and academic standards. Data on learner growth and learning outcomes provides the best information for frequent improvement of teaching, allowing teachers to modify teaching in response to learners' rates of learning and needs for support (Lewis, 2011; Tomlinson, 2002; Westwood, 2004; Wirth & Perkins, 2008).

According to Allen (2011), progress monitoring assessments also provide a basis for the development of individualized instruction and early intervention. The specific information gathered from progress monitoring assessment supplies a rich description of present levels of developmental and/or academic performance, and indicates clearly which learners are acquiring new knowledge and skills as anticipated (Luke & Schwartz, 2007). Ideally, progress monitoring assessment data targets next steps in learning plans and guides early intervention plans or specially designed instruction.

According to the National Joint Committee on Learning Disabilities (2005), progress monitoring assessments also generate data that is immediately relevant for learners and parents. Progress monitoring assessment data can assist parents to understand

their children's progress over time and in relation to the curriculum (e.g., CAPS). Assessment that describes a child's development and learning in terms of familiar and practical daily skills and behaviours is meaningful to parents (McCain & Mustard, 1999).

2.9.3.2 Characteristics of progress monitoring assessments

The information gathered from progress monitoring assessment is very specific to individual learners, reflecting every learner's unique growth and learning in relationship to the curriculum. Progress monitoring assessments ideally use multiple sources of information from multiple perspectives to build a distinctive profile of growth and development for each learner (cf. Seefeldt 1992; Sroufe, Cooper, & DeHart, 1992; Kostelnik, Soderman, & Whiren, 1993; Spodek, 1993; Berk, 1996). In theory, there is no such thing as too much progress monitoring assessment information; nonetheless, there are practical limits on the amount of teaching time teachers wish to divert to collecting assessment data. According to Richards and Bohlke (2011), the secret of effective progress monitoring assessment is to systematically sample important aspects of learning and development in ways that are efficient, yet representative of children's complete repertoires.

Black, Harrison, Lee, Marshall, and William (2004) states that developmental and academic instruments to inform and monitor progress and instruction are criterion-referenced, comparing a child's performance with a pre-specified set of performance standards. Results of assessments represent the difficulties of learner growth, development, and learning as individualized descriptions of skills and behaviours. Research indicates that a hallmark of progress monitoring assessment is frequent repeated measurements that indicate the level and rate at which learners are progressing (McMaster, 2007; Gilliam, 2010; O'Meara, 2011, Duffy, 2007; Stecker, Fuchs, & Fuchs, 2008). Progress monitoring assessments should be curriculum-referenced, directly reflecting the content learners are learning. In other words, the curriculum provides the criteria for performance assessments, and teachers assess what they teach, and vice versa. According to Johnson (2009), the alignment between curriculum and assessment is an essential feature of assessment to inform and monitor instruction.

Many researchers believe that when the content of the curriculum and the progress monitoring assessment is similar, teachers can effortlessly incorporate assessment within their daily routines and schedules, improving the validity of results. It is essential, therefore, that progress monitoring assessment items represent the skills necessary for young children to function spontaneously and independently, and include all areas of a general developmental and/or early academic curriculum (Gipps, McCallum, & Hargreaves, 2000).

2.9.3.3 Recommended practices for progress monitoring assessment

The challenge for teachers is to determine how much assessment data to gather and how to use the resulting information. The key is to organize a sustainable infrastructure that facilitates gathering meaningful information on every child regularly and systematically (Seefeldt 1992; Sroufe, Cooper, & DeHart, 1992).

The best instructional assessment information is collected frequently and used continuously to inform curriculum and teaching decisions. Young children learn quickly, and regular monitoring of progress is necessary to document incremental improvements in skills and behaviours (Harlen, 2005; Gipps, McCallum, & Hargreaves, 2000). Teachers are more likely to collect, interpret, and apply assessment data if the process is built into the daily classroom schedule and responsibilities (cf. chapter 5).

Assessment to inform and monitor instruction is most accurate if multiple sources are considered and multiple methods used (Kostelnik, Soderman, & Whiren, 1993). Because much of young children's learning and development occurs outside classrooms, it is important that competencies and progress are considered in all contexts and environments.

Assessment instruments should be criterion-referenced with items that reflect functional skills. Repeated measures of performance across a sequence of skills that reflects curriculum goals provides the best documentation of children's progress. Assessment to inform and monitor instruction is only as good as the curriculum and teaching young children receive (Spodek, 1993). Assessing what we teach and teaching what we assess is essential for meaningful assessment.

Classroom progress monitoring assessment instruments should ideally reflect a logical teaching sequence. These assessments are most useful if items are organized in a sequence that reflects major skills in the curriculum, along with prior knowledge and/or prerequisite skills. This organization maps the curriculum for teachers and provides guidance for selection of subsequent learning goals (Berk, 1996).

If results of progress monitoring assessments are being used to develop instructional plans and monitor progress toward outcome goals, the assessments must be reliable and valid.

2.9.4 Outcomes-based assessment

While screening, progress monitoring, and diagnostic assessments all provide important information, outcome assessments are what the public hears about. Outcome assessments are end-of-the-year assessments used to evaluate the effectiveness of a school's overall progress in improving reading achievement. The Department of Basic Education, district and school administrators, and teachers are all stakeholders in the results of outcome assessments, which show whether their schools are performing satisfactorily. In 2011, the South African Department of Basic Education administered the first Annual National Assessment (ANA) for grade levels below Grade 12. The ANA is an important strategy of the Department of Basic Education to improve the quality of learning outcomes in the education system. According to the DBE (2010a), the results of the ANA should be seen as complimenting and further supporting the assessment programmes used by schools to continuously assess the progress of learners and also to make major decisions about learner retention or promotion. The Department of Basic Education can also use these assessments to identify and make decisions about schools that are not performing as they should, specifically related to language/literacy competence.

When developing and implementing outcomes-based assessment strategies, learning activities should have at least one of three purposes in mind: to improve, to inform, and/or to prove (Nicols, 1991). The results from an assessment process should provide information that can be used to determine whether or not intended outcomes are being achieved and how the curriculum and policy can be improved.

An assessment process should also be intended to inform decision-makers about significant issues that can impact the curriculum and learner learning.

Outcomes-based assessments are often required to document continuous curriculum improvement and sufficient progress in meeting the aims and intentions of the programme. The information gathered during outcomes-based assessment is shared, often to identify areas that need improvement (Scott-Little, Kagan, & Clifford 2003).

2.9.4.1 Recommended practices in outcome assessment

The challenge for administrators and teachers who are responsible for design and outcomes of early childhood programmes is to collect enough data to accurately represent group outcomes within a reasonable structure and timeline. It is important to keep in mind the following recommended practices that are best for outcome-based assessment (Walvoord, 2004, p. 59):

Programme goals provide the best starting point for outcome-based assessment. The goals a programme or curricula are striving to achieve will determine the desired outcomes, which in term will guide selection of evaluation and accountability measures.

A good outcome-based assessment starts with identification of all stakeholders as both respondents and as audience for the results. The strongest and most defensible results are obtained by collecting objective input from multiple perspectives (Spear-Swerling & Sternberg, 1996). Sharing results internally, as well as externally, and involving all stakeholders in analysis and discussion of the outcome-based assessment data provides a feedback circle that is comprehensive, engaging, and meaningful for everyone involved.

All outcome-based assessment data, including intended and unintended results, should be used to inform continuous programme improvements. Good outcome assessments are comprehensive in addressing all the relevant and important aspects with equal attention, and often uncover areas for improvement. The best results, negative or positive, are those that are used to maintain and improve effectiveness (Snow et al., 1998; Paris, 2002). The process can be threatening at first, but after a few opportunities to interpret the assessment data, it

becomes very motivating and comforting to have systematic data to support programme-level decision making (Baker & Smith, 2001). In addition, tracking programme evaluation results over time becomes a powerful method for documenting ongoing programme improvements.

Measures used in outcome-based assessments should be unbiased and proven instruments with supporting studies of reliability and validity. Technical adequacy of the actual measures used to collect data is important to ensure objectivity and accuracy of results. There is little sense in implementing a well-designed plan for outcome-based assessment unless the measures used to generate the data are trustworthy (Baker & Hall, 1995; Fuchs, 2002; Walpole et al., 2004).

Outcome-based assessment means that the assessment process must be aligned with the learning outcomes. This means that it should support the learners in their progress (formative assessment) and validate the achievement of the intended learning outcomes at the end of the process (summative assessment). It also means that the assessment process should be adapted depending on the kind of outcomes that it is aimed to appraise.

2.10 Data based decision making

Making decisions about teaching and learning is as core a component to teaching as providing the teaching itself. Effective use of assessment data to plan, judge, and modify teaching is a fundamental competency for good teaching (Hosp & Ardoin, 2008). A logical or practical rationale for linking assessment and teaching is that teachers need to make screening, diagnostic, progress, and outcome decisions, and those decisions need to be accurate; if they are not, valuable teaching time could be lost in presenting teaching strategies that do not address the learners' needs. When it comes to planning teaching practices for learners, the best way to maximize the accuracy of teachers' decisions is to base them on data (Shepard, Hammerness, Darling-Hammond, & Rust, 2005). Research indicates that when teachers use assessment data to make their teaching decisions, learner performance increases (Black & William, 1998; Fuchs & Fuchs, 1986). The learners of teachers who collect systematic progress monitoring data, and use it to make decisions, score on average

a full standard deviation higher than their peers whose teachers do not collect and use these data (Stecker & Fuchs, 2000). In addition, teachers using systematic progress-monitoring data make changes in their teaching more frequently for their learners who are experiencing difficulties (Fuchs, Fuchs, Hamlett, & Strecker, 1991). This type of formative evaluation is really the driving force for linking assessment and teaching because it represents decision making for learning – that is, decisions used to plan teaching (Torgesen & Miller, 2009). However, it is not just the act of collecting information that effects greater learner learning. Teachers need to actively use the information to critically evaluate their teaching in order to determine how it could be changed to better meet the learner's needs (Fuchs, Fuchs, Hamlett, & Strecker, 1991). The DBE (2010) specifically state that, "Decisions and plans on what, when and how to teach must be informed by the evidence that comes out of the assessments, both school-based and ANA assessments" (p. 12).

Assessment data will be used to make instructional decisions for individual learners and to inform a schools entire system of reading instruction (Snow et al., 1998; Snow & Strucker, 2000). First, data is used to make decisions about an individual learner. For example, screening data may identify a learner at risk for reading difficulty and lead to an immediate plan for extra support within the classroom. Progress monitoring data is used to indicate whether a learner is making adequate progress toward a goal, and if any instructional changes are necessary. Second, learner assessment data assists the school in making decisions about its system of reading instruction, the quality of teaching, the quality of the materials used, and the need for professional development.

The basic idea is simple. When only a few learners are experiencing difficulty and demonstrating insufficient progress, the teachers can focus on ways to improve reading instruction to meet the specific needs of individual learners. However, when many learners are neither meeting established goals nor making adequate progress, it becomes critical for the school and teachers to consider the overall programme and the support needed for teachers when developing a plan to increase reading performance (Fuchs, 2002). When grade-level teachers examine data, patterns and trends may emerge that indicate that many teachers are having difficulty with instruction of a specific skill. If so, the school leadership (i.e. Head of Foundation Phase and SMT's) can tailor professional development and in-classroom support to

address this need. It is possible that only certain teachers are having difficulty, and targeted assistance may be necessary to support such teachers.

When many learners are struggling, whether in selected classrooms or throughout the school, it is important for the school to view this as a system-level issue and make decisions that will improve instruction for large numbers of learners (Harry & Klingner, 2006; Harry, Klingner, & Hart, 2005). When underlying system-level problems for example, insufficient training on a new programme, are addressed only on an individual learner level, they will continually have to be addressed and will soon overwhelm school resources (Kincheloe, 2004, 2010; MDRC, 2002). By carefully analysing data to determine whether underlying system level issues are occurring and then addressing those alongside individual issues, schools will be able to simultaneously improve instruction while reducing the likelihood that more learners may have reading difficulty. Schools will increase the odds that more learners will become strong readers by addressing system level needs quickly. When the system is not overwhelmed by a large number of many below-grade-level learners, those individual learners still identified as at-risk can receive the targeted interventions they need (Reeves, 2008).

2.10.1 Making decisions for individuals

The first step in making appropriate instructional decisions for individual learners is to use the screening data to determine the learner's reading level (e.g., reading at a level of proficiency to meet grade-level goals, met the identified formative goals, or performing well above grade level). If the learner is performing below expectations, then the school or teacher identifies the necessary instructional support, sets data decision rules, and establishes a progress monitoring plan (e.g., a school may decide to monitor a learner by using a particular assessment every week - DIBELS Progress Monitoring). Generally, instructional support and progress monitoring continue even when the learner makes adequate progress. If the learner is not making adequate progress, the school will need to fully analyse the situation and determine the reason for the lack of progress. The school should consider all three reasons when analysing a learner's lack of progress (Ralabate, 2011):

1. The **level of support** that is to be provided is not actually occurring. For example, if a grade 3 learner was to have repeated oral reading fluency practice each day, but has not received such practice, then the support has not been provided.
2. The **quality of support** is not what the learner needs to be successful. For example, the passages provided to a learner for oral reading practice are too difficult.
3. The **level and quality of support are implemented as intended** and the learner is still not making adequate progress. In this case an instructional change is needed (p. 38).

When learners continue to make insufficient progress despite the intended quality and level of support, the school will need to find ways to increase the intensity of the support provided. Implementation variables to consider include time of instruction, content, programmes and materials, grouping for instruction, and coordination with others. Table 2.2 shows implementation variables that can be altered to increase instructional intensity.

Table2.2: Variables to Increase Instructional Intensity

Element	Specific Adjustments Less Intense → More Intense				
Instructional Time	Increase attendance	Provide instruction daily	Increase response opportunities	Vary schedule of easy/hard tasks/skills	Add a second instructional period (double dose)
Programme Efficacy	Pre-teach components of core programme	Use extensions of core programme	Supplement core with appropriate materials	Replace current core program	Implement a specially designed programme
Programme Implementation	Model lesson delivery	Monitor implementation frequently	Provide ongoing support	Provide additional professional development	Vary programme schedule
Grouping for Instruction	Check group placement	Reduce group size	Increase teacher-led instruction	Provide individual instruction	Change instruction
Coordination of Instruction	Clarify instructional priorities	Establish concurrent reading periods	Provide complementary reading instruction across periods	Establish communication across teachers	Meet frequently to examine progress

(University of Oregon Center of Teaching and Learning, 2008).

2.10.2 Making system-level decisions

When it becomes evident that many learners within certain classrooms or in the school as a whole are not meeting grade-level goals, the school should carefully examine its system of reading instruction (Reeves, 2008). Data will assist the school staff to identify issues that need to be addressed. The first question to ask is the following: Is our system of reading instruction and support effective for at least 80% of learners in our school? After careful examination of screening, progress monitoring, and summative data, the school might determine that reading instruction is highly effective, generally effective, or seriously ineffective. Based on the answer to the first question, the school should drill down more deeply to examine the system of reading instruction at each grade level, at each level of instruction (at or above grade level, somewhat below grade level, and well below grade level) (MDRC,

2002). After analysing data, a school may determine that learners who began the year at or above grade level exceeded grade-level expectations. However, this same school may determine that learners who started the year below grade level did not make sufficient progress to reach reading goals.

2.11 Summary

A comprehensive assessment system, linked to formative reading goals and overall reading proficiency, is an essential component of a schools overall **reading plan**. Data from reading assessments should be used to make decisions about individual learner instructional needs; the needs of groups of learners; the quality and level of implementation, and intervention programmes; and about teacher support and professional development needs. Schools should use reading assessment data to identify learners who need added support and intensified progress monitoring, as well as teachers who would benefit from additional support and to determine if different materials are needed.