# Running Records for Assessment *'as'* Learning: Examining Student Metacognition through Retrospective Miscue Analysis

by

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# Dedication

In loving memory of my Nanny, Louise Modien, whose early support of my educational endeavors remains with me always.

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# CHAPTER I

## Introduction

The role of assessment in reading is multifaceted. It can be both summative and formative in nature and often requires significant amounts of time to prepare and administer. Once teachers decide on *what* they are assessing, they need to determine *how* they will go about assessing it. This task can often be complex and challenging. At all times, the implication of assessment can be directly linked to what is learned (Johnston & Costello, 2005). Thus, the importance of clear assessment practices and focused learning objectives directly translate into the teaching that takes place in the classroom. Educators need to ensure that they are effective in both planning and assessing in order to provide optimal learning environments for students.

Recent perspectives outline three purposes of assessment: assessment *for* learning, assessment *as* learning, and assessment *of* learning (Earl, 2003). Assessment *for* learning is described as making students' understanding visible in order to plan for future instruction. It can be considered, "an investigative tool to find out as much as they [teachers] can about what their students know and can do, and what confusions, preconceptions, or gaps they might have" (Western and Northern Canadian Protocol for Collaboration in Education, 2006, p. 29). Assessment *for* learning is regarded as students being able to think about their own thought processes and learning (i.e. metacognition). During assessment *as* learning, "students become adept at personally monitoring what they are learning, and use what they discover from the monitoring to make adjustments, adaptations, and even major changes in their thinking" (p. 41). Lastly, assessment *of* learning is the process of determining and confirming what students know and whether or not they have met curriculum outcomes. This form of

assessment is often characterized by public results and report cards that affect students' futures (Western and Northern Canadian Protocol for Collaboration in Education).

During the assessment of reading, many teachers engage in the practice of miscue analysis (hereafter referred to as MA) and/or running records (hereafter referred to as RR). Bean, Casidy, Grumet, Shelton, and Wallis (2002) reported that 62% of International Reading Association teachers who regarded themselves as reading teachers were using RR to assess their students' reading progress. The Ontario provincial curriculum outlines the need for teachers to assess students' use of semantic, syntactic, and graphophonic cueing systems during their oral reading, listing running records as a suitable tool for collection of information (Ontario Ministry of Education, 2006). This diagnostic process allows educators to obtain several kinds of assessment information. Assessment *for* learning is arguably the primary source of assessment, as teachers use the information gathered to plan for future teaching. Assessment *of* learning can also be obtained through this process, as teachers find benchmarks and levels of performance that indicate a standard level a student is performing at (reading accuracy, error rate, and self-correction rate). However, assessment *as* learning, wherein students think about their own thinking and processing of oral reading (metacognition), can often be underutilized in the process of assessing reading using RR and MA.

Retrospective Miscue Analysis, hereafter referred to as RMA, is one way students can become a part of the reading assessment process, therefore utilizing the purpose of assessment *as* learning. Engaging students in RMA sessions further supports the Ontario Curriculum, ensuring that students utilize analytical, critical and metacognitive thinking skills (Ontario Ministry of Education, 2006). Opportunities for student reflection are an optimal part of effective instruction; a RMA session is one way that teachers can support

learners in becoming more reflective as, "students learn best when they are encouraged to consciously monitor their thinking as they learn" (p. 9).

During RMA sessions, students are engaged in a conversation about their reading with the teacher. A MA and/or RR is administered and then discussed to help the student understand the miscues he/she made, whether these mistakes made sense, or if they should have been corrected. The RMA process often helps struggling readers because it enables them to "understand themselves better as readers" (Fountas & Pinnell, 2001, p. 490). As discussed by Goodman (1996), once readers understand and/or remove the mystery from the reading process and are able to examine the power of their own miscues, they begin to value themselves as learners, which often leads to greater reading proficiency. The metacognitive process by which students engage in during RMA sessions can be viewed as an effective part of assessment *as* learning.

## Rationale and Background to Project

Branksome Hall, an all girls' independent day and boarding school, located in the heart of Toronto, is a member of the Canadian Independent Association of Schools (CIAS), which has a long-standing relationship with the Ontario Institute for Studies in Education (OISE) at the University of Toronto. Branksome Hall is committed to on-going professional development for its teachers and often collaborates with OISE as part of this commitment. During the fall of 2008, three other teachers and myself were approached by Branksome Hall's Director of Curriculum and asked if we were interested in participating in an action research project that was being lead by the University of Toronto, OISE. Our team of four, two teachers from the junior school (including myself) and two teachers from the middle and senior school agreed to participate in the 16 month action research project with a focus on differentiation of assessment. This action research project was timely for myself, for I saw it

as an opportunity to simultaneously weave my graduate project into the process and provide and in-depth review of literature that could help inform and guide the study and professional development my colleague and I wanted to provide during the OISE project. Therefore, the purpose of my graduate project is two fold. Firstly, to provide a literature review of current and seminal research in the areas of reading, reading assessment, RMA, and metacognition. Secondly, to make suggestions for professional development to my current staff based on my review of literature.

What follows is a brief review of the OISE action research study and the rationale my colleague and I had for initiating our research focus. I have included each of these components to support my choices for the literature review and the implications for professional development.

Over-arching Purpose of the OISE/Branksome Research Study

- Improve student learning through purposeful assessment
- Guide and develop collaborative teacher inquiry projects that focus on a particular aspect of differentiated teaching practices related to student assessment
- Learn new techniques and ideas for effective practice with teaching and assessing
- Develop communities of practice in our schools to support and extend professional learning
- Develop strategies to use in professional learning communities for sharing expertise

Specific Purpose of Branksome Junior School Research Study

- Examine the use of RR and MA as an effective form of, "Assessment *as* Learning" for reading
- Examine:
    - Student self-perception of reading skills (metacognitive knowledge – person, Flavel, 1979)
    - Students' ability to recognize the demands of the reading process (metacognitive knowledge – task, Flavel, 1979)
    - Students' ability to utilize reading strategies (metacognitive knowledge – strategy, Flavel, 1979)
    - Students' ability to increase metacognitive functioning (metacognitive experience – evaluating and monitoring, Flavel, 1979)

The purpose of the Branksome action research study is to investigate the extent to which readers are metacognitive during the reading process, with an inherent relationship to assessment *as* learning, through the use of RR, MA, and RMA. To accomplish this purpose, questionnaires, interviews, and RR will be administered and oral reading assessments will be tape-recorded. More specifically, the study is designed to address the following questions:

1. How do the participants view themselves as readers (their attitude toward reading) and what is their concept of 'good readers'?
2. How effective are students at independently recognizing and describing their errors?
3. What kinds of strategies (word identification and/or comprehension) do the readers suggest to help them improve and how effective are the strategies they suggest?
4. Once metacognitive reading strategies are taught, do readers' self-concepts and reading abilities improve?

During the past year, Branksome Hall Junior School engaged in the implementation of a new Language Arts protocol. This protocol involved the use of several tools such as the Fountas and Pinnell Assessment System (2008), RR, fluency scales, and Dominie test of Writing (Rowland, 2002) to help better understand, assess, and plan for reading and writing instruction. As the first full year of implementation came to a close, my colleague, Roxanne (pseudonym), and I believed that time for refection of the effectiveness and usefulness of the protocol was important. Furthermore, as the two principle members of the OISE action research team, we thought our review of the implementation could somehow help us find an area of further investigation for an action research topic.

As part of the OISE differentiated assessment project, each research team was asked to examine an area of student assessment. The document, *Rethinking Classroom Assessment with Purpose in Mind; Assessment **for** Learning, Assessment **as** Learning, and Assessment **of** Learning* (Western and Northern Canadian Protocol for Collaboration in Education, 2006) was used as a cornerstone for setting a purpose for the action research study. With the timely

implementation of the Branksome Hall Language and Literacy protocol, the Junior School team decided to examine the use of RR through the lens of, 'Assessment *as* Learning.'

The use of RR and benchmarks can easily provide assessment *of* learning because they offer a quick summative measure of a student's reading performance (accuracy rate, error rate, self-correction rate, comprehension, etc). Many teachers move to assessment *for* learning by analyzing the miscues, reviewing the levels of comprehension and fluency to inform and modify (differentiate) their teaching and learning activities. However, when examining the use of RR *as* learning, we surmised there was a need to review whether or not this process was effectively happening (or happening at all).

"Assessment *as* learning is based in research about how learning happens, and is characterized by students reflecting on their own learning and making adjustments so that they achieve deeper understanding" (Afflerbach, as cited in Western and Northern Canadian Protocol for Collaboration in Education, 2006, p. 41). Roxanne and I believe that students may often be 'left out' of the analysis process during a RR session and therefore not develop a deeper understanding of their reading habits. Concerns that students may feel they are being assessed with no understanding of what the assessment means/shows became evident to us. Furthermore, we were curious about how effectively students could identify their strengths and challenges during an oral reading session and independently suggest possible strategies that may help them improve.

> Too many students have reading assessment done *to* them, or *for* them. Only reading assessment that is done *with* students and eventually *by* students can foster true independence and success in reading. Accomplished readers are flexible in their routines of metacognition and comprehension monitoring, as demanded by the particular act of reading. The ability to self-assess is multifaceted, and good readers

apply their self-assessment strategies on demand. (Afflerbach, as cited in Western and Northern Canadian Protocol for Collaboration in Education, 2006, p. 42)

Once the initial question about how effectively teachers use RR *as* learning was postulated, Roxanne and I knew we needed to briefly review research in the area of reading assessment and explore the link to student metacognitive practices. A premier researcher in this area is Yetta Goodman, who examines the use of RMA. RMA is a collaborative session between the student and teacher in which a discussion about the student's reading takes place. The discussion follows an oral reading where a RR has been administered. Over a 20-year period of observation, three major conclusions emerged from Goodman's research on RMA sessions:

1. Readers revalue themselves as readers: they develop greater confidence as readers and define themselves as better readers.
2. Readers become conversant about the reading process and are able to articulate the ways in which they construct meaning as they read.
3. The reader's reading improves according to miscue analysis (Goodman & Paulson, 2000 p. 2).

Goodman's conclusions about the use of RMA sessions were in-line with the metacognitive practices we purposed to explore. Therefore, the focus of the study (How effective are students at being metacognitive during the reading process?) and the context in which the research would be observed (RMA sessions) were established for the action research project.

It is my belief that in order to gain a thorough understanding of the field of literacy and ensure the pedagogical depth of any educational research initiative, specific theoretical foundations of reading and bodies of literature need to be examined. Due to many teachers'

time constraints, the OISE commitment does not require participants to provide an in-depth literature review. However, I saw an opportunity for me to initiate my graduate project and develop a more thorough background to the OISE action research initiative by independently examining the literature in the related fields. Therefore, in Chapter II I discuss specific theoretical foundations of reading and in Chapter III I provide an examination of current and foundational research in areas relating to the OISE action research project. In Chapter IV, implications for professional development based on my review are outlined. Below I define key terms that are used throughout the project.

## Definitions

The purpose of this section is to define specific terms and describe the context in which they will be used. As suggested by Berg (2001), while it is important that the reader understand what is meant by the terms used, they may not agree with the definitions provided. However, as long as readers understand what the researcher means by the use of certain terms, they can decide for themselves how effectively the concepts work in the study. The definitions below are taken from a variety of scholars' work.

### *Assessment*

Wolf (2007) defines educational assessment as, "any procedure for gauging the progress of a student in acquiring and mastering educational knowledge and skills" (p. 691). Earl (2003) discusses assessment simply as, "gathering information about student performance" (p. 5). Educational assessment can take a range of forms including (but not limited to) quizzes, tests, interviews, rubrics, criterion references, observations, checklists, and anecdotal notes. Assessment often can be considered summative or formative in nature.

Formative assessment

Formative assessment helps teachers gain an understanding of student ability so that future teaching can be shaped to meet the needs of the learner. As suggested by Earl (2003), formative assessment helps teachers create descriptions of student learning that will serve the next stage of learning. Assessment *for* learning and *as* learning are both formative in nature.

Summative assessment

Summative assessment is, "intended to certify learning and report to parents and students about students' progress in school, usually by signaling students' relative position compared to other students" (Earl, 2003, p. 22). Assessment *of* learning is summative in nature.

*Metacognition*

The term metacognition was developed by psychologists to describe people's awareness and knowledge of their cognitive processes (Anstey & Bull, 1996). The term metacognition is often referred to as one's ability to think about his/her thinking. As suggested by Jacobs and Paris (1987), "metacognition focuses on self-regulated thinking – what people know and how they apply that knowledge to particular tasks" (p. 255). For the purpose of this project, Flavell's (1979) early work on metacognition and the defined levels of it (metacognitive knowledge and metacognitive experience) are followed.

*Miscue*

Kenneth Goodman developed the term miscue and it can be defined as "an observed response (the OR) that does not match what the person listening to the reading expects to hear (the ER)" (Goodman, Watson, & Burke, 1987, p. 37). Miscues can change, disrupt, or enhance the meaning of a text. Goodman initiated the use of miscue to "eliminate the pejorative connotations of words such as error and mistake and to underscore the belief that

all reading is cued by language and personal experience and is not simply random, uncontrolled behaviour" (p. 5). A reader's miscue represents his/her use of linguistic or conceptual cognitive structures during an oral reading (Goodman & Goodman, 1994). These structures, or language cueing systems, are the sources of information readers use when trying to comprehend a text. Three cues operate during reading – graphophonic, syntactic, and semantic. Goodman (1996) also discussed pragmatics as part of the cueing systems, but now integrates it into the semantic system.

*Miscue Analysis (MA)*

MA is the examination of a reader's oral reading performance. "It provides an in-depth analysis of a student's reading behaviour and text processing" (Fountas & Su Pinnell, 2001, p. 489). MA is quantitative and qualitative; quantitative because it is a diagnostic instrument that examines the exactness of reading and therefore gives equal weight to errors; and qualitative because it evaluates why miscues are made and assumes that all miscues derive from the language and thought a student brings to the written material in the attempt to construct meaning from reading (Goodman, Watson, & Burke, 1987).

According to Goodman and Goodman (1994), the following conditions are required for MA: written material that is new to the reader, challenging and lengthy enough material that will produce enough miscues to identify patterns, and independent and uninterrupted oral readings. The student reads a passage while being audio taped, and then is asked to close the book and retell the story. At a later point in time, the teacher listens to the tape and records the miscues on a 'Reading Miscue Inventory - RMI' (Goodman, Watson, & Burke, 1987). The RMI includes a coding form that has the text the student reads. Once miscues have been recorded, they are analyzed by examining the reader's use of graphophonic cues (also known

as visual cues), semantic cues (also known as meaning cues), and syntactic cues (also known as structural cues).

*Retrospective Miscue Analysis (RMA)*

RMA is a conversation between a teacher and student wherein the teacher guides the talk, encouraging the student to discover why he/she may have miscued, what strategies he/she may or may not have been using, and if the strategies he/she used helped monitor for meaning. RMA "is an instructional activity or strategy lesson which opens up to the reader and to the teacher/researcher language about reading and the reading process, thereby 'revaluing' the reader and the reading process itself" (Goodman & Paulson, 2000, p. 3).

*Running Records*

Developed by Marie Clay (1979), RR are a method of recording and analyzing students' oral reading. A RR can be taken on any text a child is reading, wherein the teacher uses a blank form to record a check mark for every word read accurately and codes for errors by using other symbols. The process of recording errors is helpful for quantifying the record. Thus, information about how many words a child reads correctly (subtracting the errors from the total number of words in a text) is used to calculate the accuracy score and this score is used to determine the gradient of book difficulty for the child.

The RR process is not generally tape recorded, as the coding takes place as the child reads. After the RR is completed, the teacher calculates an error rate, reading accuracy and self-correction rate, and analyzes the error for the likely sources of information used during the reading process. Similar to MA, the teacher analyzes errors for visual cues (also known as graphophonic cues), meaning cues (also known as semantic cues), and structural cues (also known as syntactic cues).

*Miscues and Errors*

The words miscue and error are often used interchangeably. Both terms refer to the changes a reader makes during the oral reading process. Furthermore, both miscues and errors are 'coded' for meaning once the oral reading session is competed. In other words, an analysis of the error(s)/miscue(s) take place to glean relevant information on the sources of information the reader attends to during the reading process. Throughout this project, MA will refer to the process of coding the errors/miscues that are collected on the RR during the reading observation. This choice was made because the use of a RR (Clay, 1979) as a diagnostic tool to observe oral reading is used in the Branksome Hall study and the format for discussion about errors/miscues is RMA, which is rooted in Goodman, et al. (1987) work. Therefore, the work (and terminology) of Clay and Goodman is woven together for the purpose of this project.

*Skills*

"Reading skills are automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved" (Afflerbach, Pearson, & Paris, 2008, p. 368). *The Literacy Dictionary* (Harris & Hodges, 1995) defines skill as: "an acquired ability to perform well; proficiency" (p. 235). Thus, if a child is a skilled reader he/she is no longer depending on strategies to support his/her reading because the reading process has become automatic and efficient.

*Strategies*

"Reading strategies are deliberate, goal-orientated attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings of texts" (Afflerbach, Pearson, & Paris, 2008, p. 368). *The Literacy Dictionary* (Harris & Hodges, 1995) provides the following definition of strategy: "in education, a systematic plan,

consciously adapted and monitored, to improve one's performance in learning" (p. 244). Emergent and struggling readers often need strategies to support the reading process. The use of strategies assists readers in becoming more skilled in their reading behaviours. Young readers often move from being strategic readers to skilled readers.

*Zone of Proximal Development*

Cognitive psychologist Lev Vygotsky defined the zone of proximal development (ZPD) as, "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (as cited in Guterman, 2002, p. 284). The consideration of a child's ZPD is paramount in teacher planning because it ensures that students' learning abilities are planned for and instructional goals are differentiated based on the students' needs.

The aforementioned terms were discussed based on their relevance not only to the review of literature that follows but also to their significance in relation to the fields of reading and reading assessment. It is imperative that educators share a common understanding of vocabulary to avoid misunderstandings that may arise from varied interpretations of a term. As suggested earlier, terms like miscue and error are often used to describe the same concept, and thus become interchangeable. However, it is important to clarify not only the original authorship of a term, but also the author's intended meaning of the word and reasons for defining it in a particular way.

Understanding the vocabulary and contents of the research surrounding RR, MA, and RMA is critical for determining the implications of RMA sessions as a form of assessment *as* learning (the objective of the OISE action research project). As suggested by Goodman and Paulson (2000), RMA discussions provide an opportunity for students to revalue themselves

as readers and become more confident and informed about the reading process. Through careful reflection about how they read and the linguistic cueing systems they do and do not depend on, students can become a part of the assessment process. Once students start self-assessing they are on the path to developing true independence and success in reading.

Students who engage in reflection can develop metacognitive awareness and can often experience positive shifts in their learning outcomes. Swanson (1990) reported that highly metacognitive students outperformed less metacognitive students in problem solving, regardless of their overall aptitude level. The fostering of metacognitive growth during RMA sessions suggests a positive correlation to improved student learning outcomes. To further understand RMA and the development of metacognitive awareness, it is important to review the educational and cognitive theories that provide a framework for educational practices.

# CHAPTER II

## Theoretical Foundations

In this chapter I discuss key educational, literary and cognitive theories in order to scaffold the context of the literature review. The theoretical frameworks explored below include: bottom-up and top-down theories, interactive model of reading, schema theory, reader response theory, and sociocultural theory (including zone of proximal development). Following a discussion of the theories, the tenants of each theory are related and applied to reading instruction.

### *Finding a Home in Reading Theory*

Theories create the framework for which one can explain classroom practice. They can help explain pedagogical choices and why things happen the way they do. They are an attempt to construct meaning and a way of interpreting the happenings of a classroom. If a teacher lacks the development or articulation of theory, she runs the risk of confusing both the student and/or herself. If the goal of teaching is to gain meaning and understanding, theories must be present in the classroom. "Good practice and good theory go hand in hand. They cannot be separated from one another and they form the key to successful learning" (Anstey & Bull, 1996, p. 31). In a review of exemplary practices in reading instruction, Hall (2003) suggested that the most effective teachers displayed consistency between their pedagogical theories and their practices. She went on to suggest that, "effective teachers of literacy show a higher level of consistency between their theoretical beliefs and choice of teaching activities than the comparison sample" (p. 321).

Teachers sometimes engage in intuitive teaching, making decisions and planning according to 'common sense.' Although this approach may in some ways seem logical, it can be problematic in nature due to the simplification of what is actually involved in the process

of teaching. A teacher's intuition is generally constructed from particular and specialized experiences that the teacher remembers. However, two clear problems can arise from this construction. Firstly, the experience from the past may not be applicable to the current teaching/student needs, rendering the choice of instruction ineffective. Secondly, given the highly selective nature of memory, the process by which someone may recall a teaching moment can be highly influenced by both the successes and failures of the previous experience. Furthermore, the older the experiences that teachers are recalling, the less likely they are able to be used to successfully plan for the needs of students for the future. In order for teachers to be clear and effective in their planning and teaching, they need to explore the theories in which they root their practices.

When examining reading and cognitive theories I became aware of how my beliefs, practices, expectations, actions, knowledge and attitude were perhaps a blend of several aspects of individual theories. This blend of theories is supported by the work of Pressley, Wharton-McDonald, Allington, Collins Block, Morrow, Tracey, Baker, Brooks, Cronin, Nelson, and Woo (2001) wherein they suggested that the most effective literacy teachers were not worried about theoretical purity, but the application of relevant theory to the learner.

Over my 10 years of teaching, I believe I have formed a personal theory of literacy teaching and learning most closely aligned with the elements of schema theory and the interactive model of reading. Although I can easily suggest the reasons I align my practice with these two theories, most significantly, when combined they account for a child's personal experiences and the simultaneous use of a variety of sources (sensory, syntactic, semantic, pragmatic), a variety of components of other theories I be review in this chapter are also woven into my pedagogical beliefs. What follows is a brief synthesis and critique of the following theories: bottom-up and top-down theories, interactive model of reading, schema

theory, reader response theory, sociocultural theory, and Vygotsky's zone of proximal development.

*Bottom-up and Top-down Theories*

Bottom-up theory dominated the teaching of reading, curriculum documents, and commercially produced reading schemes up until the mid to late 1970s. This hierarchy of knowledge suggested that the reading process consisted of a number of skills, which if taught in an appropriate sequence (simple to complex), could be put together to perform the reading process (Anstey & Bull, 1996). This hierarchy included three sets of skills that would lead to reading: sight vocabulary (at the base of the hierarchy), word identification and meaning (at the top).

Sight vocabulary is a reader's ability to recognize a word as a whole, without breaking it into parts. Two of the cues a reader may use to identify these words are configuration cues (the internal and external shape of a word) and/or picture clues (readers use the association of a picture to aid their reading). Sight vocabulary skills are well suited to recognizing the whole word, rather than the analysis of the sounds within a word. Analyzing sounds is part of word identification skills.

Word identification skills can be broken into two parts: phonic analysis and structural analysis. Each of these skills assist the reader by analyzing words into more manageable parts so that she can sound out or identify the word. Phonic analysis is concerned with the analyses of words through the association of single letters of the alphabet with their sound (for example, d+o+g = dog) or combinations of letters to form sounds (for example, ch, sh, dr). Structural analysis is concerned with analyzing words in terms of word-meaning elements such as roots, affixes, compounds, hyphenated forms, inflected and derived endings, and contractions. Some of the common terms associated with phonic analysis are:

consonant, vowel, consonant blend, consonant diagraph, vowel diagraph, and diphthong. Some of the terms associated with structural analysis include: compound word, prefix, suffix, word roots, and syllabification.

Although many aspects of the bottom-up theory are sill highly relevant today, there are some shortcomings to an approach that initially focuses so heavily on sight vocabulary and phonic and structural analysis as a means for effective reading. For example, bottom-up theory does not account for individual differences in ability, or social and cultural differences. Phonic and structural analysis lessons are often taught the same way with the same materials and content for all children, whether they are meaningful to them or not. Many of the old texts and resource materials developed for a bottom-up approach included names and illustrations of white Anglo-Saxon, middle class people, thus excluding children who came from a variety of other social classes and cultures. The sentence and speech patterns within the texts did not resemble normal patterns of language and thus there was little transfer from 'school reading' to real reading (Anstey & Bull, 1996). This exclusive learning pattern/setting would have negative consequences for children who were from different backgrounds because of their dependence on different pragmatic cueing systems for understanding. Moreover, children from diverse backgrounds may become frustrated when trying to understand the Anglo-Saxon conventions presented in the text, which could lead to a withdrawal from learning. Furthermore, the highly repetitive and compartmentalized structure to the teaching could result in boredom and dislike of reading for any student, especially those whom do not learn well from such regimented styles.

According to bottom-up theory, meaning (located at the top of the hierarchy), was centered on the work of Bloom (1956). Bloom created a taxonomy of cognitive skills that was organized into six major categories: knowledge, comprehension, application, analysis,

synthesis, and evaluation. Although Bloom's work contributed much to the understanding of comprehension, one of the criticisms of his work was that the learning practices for comprehension translated into testing and questioning rather than learning. Thus, the emphasis was on behaviour rather than comprehension, and students who were "constantly tested and asked questions about what they had read may have learned how to answer questions but they may not have learned how to comprehend" (Anstey & Bull, 1996, p. 73).

In contrast, top-down theorists such as Goodman (1976), Pearson and Johnson (1978), and Smith (1978) suggested that children commence their reading by trying to make meaning and using their prior knowledge to understand a text at the beginning, rather than end, of the reading process. This view moved meaning making to the base of the hierarchy of skills, replacing the notion that children begin reading by using their perception of individual letters and print. With background knowledge and knowledge about language, syntax, and semantics at the base of the top-down model (known as 'inside the head' factors), 'outside the head' factors, including print illustrations, diagrams, and the reading environment were also represented at the base of the model. The model also described how a child sifted through, selected, and made meaning with the text. The actual reading aloud of material, if necessary, checked individual pronunciation (Smith, 1978).

To this day, much debate continues about the two models, and the importance and sequence of the knowledge and skills presented in them. The important contribution of top-down theory, in terms of adding to the debate on reading acquisition skills, was the acknowledgement of readers' prior knowledge as an influential factor in reading. This recognition was critical because it communicated that students come to reading from a variety of social, economical, and cultural backgrounds, and all of these aspects influence their ability to read and comprehend. Although there can be little doubt that the knowledge

and skills identified in each of these two theories are important, and necessary at some point in reading, educators need to examine the theories (and what they offer) in conjunction with the needs of their learners.

Worth discussion are some of the disadvantages of the top-down and bottom-up theories. Although top-down theory addressed the need for accounting one's race, class, and/or culture, bottom-up theory did not. As a result, children who are from a minority group would be disadvantaged because they lack the dominant sociocultural pragmatic systems that would support their ability to understand classroom lessons and texts. Furthermore, whenever a program has a skills based approach, there is the risk that learning can become decontextualised, wherein the learning is not transferred into real literacy situations. Lastly, top-down and bottom-up theories assume that there is only one literacy, and therefore that the same skills are equally useful in all literacy situations (which they are not).

*Interactive Model of Reading*

For readers to understand a text they must be skilled at extracting meaning from the written language. This skilled extraction cannot solely be achieved by a child's dependence on past experiences (although it must be present), but must also include the synthesis of information cues within the text such as word-level knowledge, syntactic knowledge, semantic, and pragmatic knowledge (Graves, 2004; Rumelhart, 1994). When planning for successful reading instruction, the 'text' a student is reading needs to be as closely considered as the schemata he/she may or may not be able to access.

The interactive model of reading suggests that, "good readers need to rely appropriately on the texts they are reading and their background knowledge to arrive at meaning" (Graves, 2004, p. 435). This notion of interdependence between the reader and the

text is important for educators, as it centralizes the importance of the types of texts and tasks associated with the books the teachers provide.

The interactive model of reading also proposes that word and letter perception occur simultaneously. Therefore, a child's ability to interpret a letter character is often dependent on the reference of the context it is being used in. This synthesis of orthographic knowledge and lexical knowledge enables a reader to more accurately perceive a letter embedded within a word rather than on its own (Rumelhart, 1994). Rumelhart (1994) also suggested that when readers try to make decisions about the meaning of a word, they depend not only on the meaning of the entire sentence, but the meaning of the general context of which the sentence appears. The interactive model encourages educators to view the reading process as an interaction between several cuing systems rather than a sequence of features that happen in a step-by-step order. The underlying assumption is that "all these knowledge sources apply simultaneously and that our perceptions are the product of the simultaneous interactions among them" (p. 877).

The interactive model or reading emphasizes the importance of the text, the reader, and his/her ability to simultaneously synthesize a variety of knowledge sources (word-level, syntactic knowledge, internalized schemata). However, it is worth suggesting that the interactive model may be limiting in that it would rely heavily on the student's ability to use skills that may or may not be effectively developed (high frequency vocabulary, word identification skills – phonic and structural analysis). Furthermore, mainstream classrooms often have very homogeneous reading resources, and if the texts provided do not offer a range of sociocultural settings, culturally diverse grammatical styles and vocabulary, a student may struggle if he/she does not possess the schemata or word identification skills necessary for fully comprehending the text.

*Schema Theory*

Schema theory emerged from cognitive psychology. Although it is not a reading theory, it is a cornerstone in education due to its influence on understanding comprehension. Schema theory involves one's ability to make sense of what he/she reads and/or experiences based on his/her ability to match or compare it to prior knowledge. Anderson (1977) defines a schema as follows: "a schema represents generic knowledge, that is, it represents what is generally believed to be true of a class of things, events, or situations" (p. 2). Thus, we are able to interpret our own experiences based on comparing and matching them to our existing schemata. For example, students have schemata for the situation of being in a classroom and therefore can use their schemata to help them make sense of other classroom settings.

Schemata provide the framework that can interrelate one's knowledge about a given topic. Schemata are especially useful for comprehension during reading because prior knowledge plays a key role in comprehension. Prior knowledge, in turn, can influence the form and content of new knowledge. Anderson (1977) emphasized the dynamic, constructive nature of schemata use and described how they serve as organizers for learning. Furthermore, Graves (2004) suggested schemata could help the reader make sense of an initial reading by relating new information to prior knowledge. Correspondingly, this process helps determine the importance of information, aiding in the ability to draw inferences, make judgments, and remember key information.

Researchers of schema theory (Anderson, 1977; Reynolds, Taylor, Steffensen, & Anderson, 1982) have examined three different ways of activating readers' schemata prior to reading: unstructured access, structured access, and picture access. Unstructured access requires the reader to 'free associate' about the topic prior to reading. Reynolds et al. found that this free association highlighted the influence of a reader's sociocultural background on

his/her recall of information in a passage. Structured access is concerned with providing readers with text connections such as the title of a passage, the précis of a passage, discussion of the topic being read, and/or the generation of questions they might expect to encounter after the reading. Reynolds et al. noted in their study that all types of structured access prior to and during reading improved the students' recall of what they had read. Lastly, picture access, which encourages readers to view the pictures of a text prior to and during reading, resulted in significant improvements in the recall of information from passages if illustrations were present (Reynolds et al.).

Activating schemata prior to reading serves to increase a reader's comprehension of a text. Students need to be taught strategies on how to access prior knowledge and ways in which to activate prior knowledge most suitable to the required task. It is critical that educators distinguish the difference between pre-reading activities, which students may perceive as simply an activity to please the teacher, and strategies, which might be useful in other reading and learning situations (Anstey & Bull, 1996).

Although the importance of one's schemata cannot be denied in the construction of meaning making, it could prove to be limiting if a teacher did not embrace a more inclusive use of other reading and cognitive theories. An over-reliance on a child's use of schemata may lead to the absence of explicit teaching and an over emphasis on implicit teaching. Furthermore, this over-reliance could lead to students of minority groups being disadvantaged because they lack the background or knowledge to 'drive' the learning (Anstey & Bull, 1996). Another concern one may have about schema theory is recognizing the importance of a common body of knowledge. A common body of knowledge not only enables students to understand and be understood by one another, but also allows teachers to approach instruction with some insight into what knowledge most of their students do or do

not possess (Graves, 2004). During many reading opportunities children work in small groups (i.e. guided reading, shared reading). It is important that readers have a common understanding so that they can work together to develop their skills. If a child does not possess some of the shared understandings of the reading process (i.e. read left to write, look to pictures for clues), he/she will struggle to meet the expectations of the teacher and/or group members, thus leaving him/her feeling excluded from the reading process.

*Rosenblatt's Transactional Theory*

Rosenblatt's (1994) reader response theory highlights the reader's contribution in the two-way transaction with the literary text. Emphasis is placed on the reader's transaction with a text, suggesting that meaning does not reside 'in' the text or 'in' the reader, but rather in the transaction between reader and text (Rosenblatt). The word transaction implies the un-fractured observation of the whole situation (Rosenblatt). Furthermore, the notion of transaction involves the knower, the knowing and the known as one process, with each element conditioning and being conditioned by the other (Rosenblatt). The transactional nature of the theory denotes that the reader is seen as "part of nature, continuously in transaction with an environment" (p. 1058).

Rosenblatt (1994) discussed the transactional implications for understanding language, suggesting that language is rooted in the individual transactions one has with his/her world. One's ability to make sense of new situations and create new meanings is based on his/her ability to apply, reorganize, revise and or extend the private and public elements of his/her personal experiences. Rosenblatt discusses 'private' elements of language usage as an individual's personal association with a word that may or may not agree with the connotations provided by the group. Wherein, 'public' elements of language usage are "usages that some groups of people have developed and that the individual shares" (p. 1060).

Rosenblatt suggested that an individual's language is in one part a set of linguistic elements from the public system that have been internalized based on the person's experiences with words in life situations.

Transactional theory "stresses the meaning one gains from texts is the result of the transaction between the reader and the text" (Graves, 2004, p. 437). The transactional nature of all linguistic activities suggests that whether a person is the speaker, listener, writer or reader, he only has his "linguistic experiential reservoirs as the bases of interpretation" (Rosenblatt, 1994, p. 1062). Moreover, during any transaction with a text, the reader assumes a stance. Based on the stance a reader takes up, and the attention he/she gives to selecting specific details of the author's work, the reader is considered to have a prominent role along side the author.

Rosenblatt (1994) proposed that readers adopt a stance, whether consciously or unconsciously, as a means of a 'choosing activity' or purpose for their reading. She distinguished between predominately aesthetic stance and predominately efferent stance. Rosenblatt stated "a particular stance determines the proportion or mix of public and private elements of sense that fall within the scope of the reader's selective attention" (p.1066). Aesthetic stance is concerned with what happens to the reader, as she is reading; the feelings, ideas, sounds, and attitudes she experiences. Often readers savor the sounds and rhythms of the words taking pleasure in the emotional images, ideas, and scenes as they unfold. During aesthetic reading, both public and private parts of meaning are embraced. The reader focuses on what is being lived through during the reading event (Rosenblatt, 1994). Whereas reading from an efferent stance focuses on the information a reader will learn and take away from her reading. Much of the reading students do is in the content areas for the purpose of learning new information and answering questions. Educators need to ensure that both aesthetic,

reading for pleasure, and efferent, reading for information to take away, opportunities are provided in the learning environment. Furthermore, educators need to be aware that the efferent and aesthetic stances are on a continuum and readers can fluctuate between the two of them during the reading event.

From a transactional theory of reading perspective, it is also important for educators to keep in mind that readers are part of the reading (transaction) and they construct their knowledge jointly with the author. A reader's stance affects their conception of the literary transaction. Thus, a reader's ability to understand the openness or constraints inherent in a text, and interpret, appreciate, criticize, and personalize the literary value of their reading is dependent upon their transaction (Rosenblatt, 1978). Whist transactional theory intends to understand the completeness of a book, it more specifically intends to understand the completeness of the reader.

It is important to note that Rosenblatt's transactional theory is a literary theory and not a reading theory, although the reading field has adopted her work. This distinction is important because the theory should not be judged on the merits of what it does not provide to the field of education or the instruction of reading. Simply, education has gained great insights to how one reads and creates meaning due to Rosenblatt's work and without any in-depth knowledge of literary theory, I will not attempt to provide constructive criticism of her work based on principles of educational/reading theory.

*Sociocultural Theory*

Lev Vygotsky's work in the early 1930's views learning as interactive, uniting the social and cognitive domains. Thus, cognition is seen as a profoundly social phenomenon (Vygostsky, 1978). Vygotsky suggested that a child's learning begins far before school. Thus, children construct their early knowledge based on the interactions and observations in

their environment. Children imitate adults; ask questions, give answers, follow directions about appropriate behaviour, and therefore develop an entire repository of skills. Vygotsky believed that, "learning and development are interrelated from a child's very first day of life" (p. 84).

Sociocultural theory, "views learning as an active and constructive task, and what is learned as subjective" (Graves, 2004 p. 437). Moreover, a basic premise of Vygotsky's theory is that all human mental activity is "derived from social and cultural context because these mental processes are adaptive" (Berk & Winsler, 1995, p. 12). Vygotsky (1986) regarded language as a bridge between the sociocultural world and the cognitive functions of a person, suggesting that the central purpose of speech is to provide communication abilities, social contact and the ability to influence surrounding individuals. Therein lies the central role of language in Vygotsky's theory: a vehicle of communication between individuals, which is situated in the socially shared construction of cognition (Berk & Winsler).

Vygotsky (1978) described the early acquisition of language as a significant part of a child's cognitive development and emphasized that signs, or symbolic 'tools' were the critical link between the social and the psychological. Recognizing other symbolic tools such as counting systems, diagrams, works of art, etc., he suggested that children have experience with counting and mathematical operations long before they are given academic instruction in math, "children begin to study arithmetic in school, but long beforehand they have had some experience with quantity – they have had to deal with operations of division, subtraction, and determination of size" (p. 84). Vygotsky viewed the pre-eminent 'tool' as language because it is the most frequently and widely used representational system. During the early acquisition of language, children depend on gestures as part of their preverbal communicative acts. The gestures are quickly combined with words and "children and their

social partners use them as tools for influencing one another's behaviour" (Berk & Winsler, 1995, p. 14).

Although the tenets of the sociocultural theory are complex and lengthy, Graves (2004) adequately synthesizes three of Vygotsky's principles as pivotal to educational planning and instruction. Firstly, teachers must acknowledge and appreciate how a student's social and cultural background will affect his/her learning. Without the consideration of students' backgrounds and their modes of learning, in-depth understanding and learning is unlikely to occur. Secondly, given the tenet that much of learning is constructed through social interaction, learning needs to take place in a dialogue and interactive rich environment. Students need to be active members in discussions and ensure that they not only understand their classmates, but that their classmates understand them. Thirdly, the classroom is a social context and as a result influences what is and is not learned. Essentially, Vygotsky (1978) underscored the importance of understanding the social and cultural relations a child is part of in order to understand the development of the child, "any learning a child encounters in school always has a previous history" (p. 84).

Although sociocultural theory provides important insights into learning, some potential limitations that may exist within its principles include the following. Firstly, as much as it is important to accommodate for children's differences and recognize students' diverse cultures, backgrounds, and learning styles, we also need to recognize that in society we often need to have common values and characteristics (i.e. kindness, honesty, empathy). Thus, to truly connect and appreciate one another, and function as healthy groups, we need to share some common values. It is therefore important to facilitate opportunities for students to realize what makes them unique and different, and what connects them to one another. Furthermore, the development and delivery of curriculum and lessons, that are completely

individualized and based on a child's social context are un-realistic expectations for educators and could potentially exclude students from one another based on their backgrounds. To facilitate such extreme individualization, teachers may revert to organizing students into homogeneous groups. If this grouping were to happen, classrooms would loose the unique blend of students that makes social construction and learning so rich to begin with.

Lastly, our innate ability to learn from a social context does not preclude that learning is never individual. If one were to examine learning from the philosophical perspective of constructivism, it would be suggested that reality is constructed and/or interpreted in terms of one's own perceptions. Schools and classrooms need to offer more opportunities for both social and independent construction of meaning.

*Zone of Proximal Development*

Lev Vygotsky, contributed perhaps one of the foremost influential bodies of work in teaching and learning theory when he examined children's zone of proximal development (ZPD). Vygotsky (1978) proposed that every child has a zone of actual development and a zone of proximal development. The zone of actual development is defined by what a child can accomplish on his/her own, or "a child's mental functions that has been established as a result of certain already completed developmental cycles" (p.86). Whereas, the zone of proximal development occurs when children are faced with a task they cannot accomplish on their own but need the help of a teacher/expert/capable other to complete/comprehend the task (Vygotsky). Vygotsky suggested that the zone of proximal development defines "those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state" (p. 86). Furthermore, Vygotsky stated that we can teach new things to students only when they are in their ZPD. The work of

Vygotsky is instrumental in planning for student success as students need to be supported in the transition from what is new and unknown to the internalization, understanding and automaticity of a task/concept.

If an educator is to ensure best practices in reading instruction, the zone of proximal development needs to be considered in planning. Because teachers want to plan for student success and avoid students feeling frustrated, teachers must plan instruction based on the needs of the learner. As suggested by Wilhelm (2001), when teachers give students a task within the zone of proximal development, "the opportunity for learning is there, provided we assist. With assistance (teaching), students can do things they could not do before" (p. 12). As teachers work with students in their zones of proximal development, teachers need to be active in offering explanations, modeling desired behaviours/strategies, and providing opportunities for guided practice.

Vygotsky's ZPD offers, as does the later discussed theories, a framework for the design and delivery of reading instruction. Planning for reading instruction is complex and requires thorough consideration of several elements. It is important that teachers are reminded that theory should guide practice, ensuring that instructional choices are well informed. As suggested by Anstey and Bull (1996) "good practice and good theory go hand in hand. They cannot be separated from one another and they form the key to successful learning" (p. 31).

As part of planning for successful reading instruction in my class, I align my pedagogic path with the tenants of schema theory and the interactive model of reading. However, I also source a variety of the aforementioned principles of reading and cognitive theory when necessary. To illustrate how a variety of theories can inform practice, I have briefly examined RR and RMA through the lens of the theories that I have reviewed in this

chapter. I believe the practice of RR and RMA can be, in one way or another, connected to all of the previously discussed theories.

RR are a tool used to code the miscues a child makes in an oral reading and identify a child's level of comprehension on a passage. The primary purpose of RR and RMA is to improve a child's ability not only to read, but also to make meaning from texts. However, RR also serve as a diagnostic tool to inform stakeholders (parents, schools, society) of students' reading accuracy rates and levels of reading ability. Each of the theories previously discussed have an element of comprehension woven into them, therefore demonstrating a very clear (if not simplistic) initial link to theory.

While a child is reading he/she is generally accessing prior knowledge (schemata) as part of creating meaning. This accessing of background knowledge is also correlated to top-down theory. If he/she is not accessing prior knowledge, the results of a RR and RMA will inform both the teacher and student of this void and help in planning for future instruction. When children draw on past experiences, they are more likely to successfully read and comprehend new texts. "Schemata assists the reader in initially making sense of what he or she reads, relating information newly acquired to prior knowledge" (Graves, 2004, p. 434). During RMA discussion, students are actively engaged in conversations about the schemata they accessed, creating meaning. The interactive model also suggests that a child must depend on past experience, however it maintains that creating meaning is also dependent on the synthesis of information cues such as graphophonics, syntactic, semantic, and pragmatic knowledge.

When analyzing RR, every miscue is regarded as an important indication of how a child is processing the written information. The analysis of miscues provides the teacher and student with valuable information about the linguistic cueing systems used (semantic,

syntactic, and graphophonic) while reading. Furthermore, MA can also provide the teacher and student with information about the student's ability to use sight vocabulary and word identification skills (bottom-up theory). The analysis also involves questioning if meaning has been changed as a result of the miscues. Goodman, Watson and Burke (1987) suggest that questions surrounding meaning change are perhaps the most difficult to consider because the teacher needs to evaluate the degree to which the reader changed the author's text. Thus, no one is truly privy to the author's meaning (unless the author is present) and all readers have their own interpretation of a text, which is constructed on the basis of their interpretation. In other words, meaning is created through a transaction with the text (Rosenblatt's transactional theory).

The text a child is reading is a key component to the administration of a RR. If a text is too hard or too easy, the RR provides limited information. The texts used for the purpose of RR (and future instruction) are leveled (generally on a gradient from A to Z corresponding to grade level, for example: A, B, C for Kindergarten, M, N, O for Grade 3). The leveled system ensures that when readers work with a teacher they are reading at a level that is instructional for them, thus they are in their ZPD. The leveling system is foundational to providing appropriate instruction and scaffolding the reading process by providing clear increments of challenge as students progress.

RR and RMA support student improvement by providing insights into how a child processes a text. These insights inform future learning directives and allow for clear differentiation of student needs. Thus, RR and RMA can be considered effective practices that are rooted not only in the research (Fawson, Reutzel, Smith, Ludlow, & Sudweeks, 2006; Moore & Gilles, 2005; Pressley et al., 2001) but also in theory. Furthermore, each of these practices aligns with the theoretical foundations and specific learning outcomes (SLO)

outlined for reading in the *Ontario Language Curriculum* (Ontario Ministry of Education, 2006). The curriculum states that readers should read for meaning through setting a purpose (SLO-1.1, p. 36), use comprehension strategies (SLO-1.3, p.36), make inferences and extend understanding (SLO-1.5 and 1.6, p. 36), read familiar words by automatically recalling sight vocabulary (SLO-3.1, p. 38), use cueing systems to identify unfamiliar words (SLO–3.2, p. 38), and respond and evaluate texts through personal thoughts and feelings (SLO-1.8, p. 37). Specific learning outcome 4.1 (p. 41) directly relates to the practice of RMA suggesting that readers be metacognitive. It seems evident that the *Ontario Curriculum* learner outcomes for reading are based on the same theoretical foundations as RR and RMA. With clear support from research, theory, and the *Ontario Curriculum,* the practices of RR and RMA can be viewed as important activities that help facilitate student growth and success.

Theory goes beyond basic intuitive practice and leads educators to a model of instruction that can be interpreted easily by all stakeholders involved in education. The breadth of knowledge that teachers possess about language and literacy theory directly influences their decisions in the classroom (Anstey & Bull, 1996). The actions and planning of teaching must be rooted in a particular reading theory or theories to ensure clear and intended instruction that is best suited for the growth and success of the students. The following chapter provides an examination of current and seminal research, literature pertaining to best practices in reading, reading assessment (purpose and effectiveness), RR, MA, RMA, and metacognition is examined and analyzed.

# CHAPTER III

## Findings from the Literature

The broad aim of this chapter is to synthesize and analyze current and seminal research in the areas of reading and reading assessment. With research in these areas being so diverse and vast, it was necessary to develop a guiding question that would keep my selection of articles focused. Therefore, the following question was postulated, "How can reading assessment practices including, RR, MA and RMA inform the selection and use of effective literacy strategies?"

Following my guiding question, I refined my selection of articles and texts and the following themes emerged: best practices in reading, assessment (purpose and effectiveness), RR, MA, RMA (as forms of reading assessment), and metacognition. The literature on best practices was reviewed because it often serves as a cornerstone for educators when deciding what instructional and planning choices they should make. I wanted to ensure that RR, MA, and RMA were identified as practices that were effective. The choice to review literature on assessment seemed evident due to the fact that I wanted to understand the practices of RR, MA, and RMA through the lens of assessment, more specifically, as assessment *as* learning. Furthermore, I believed it was prudent to review assessment literature to gain a deeper understanding of how purposeful and effective assessment practices were described, and once again if RR, MA, and RMA were a part of effective practice. The review of literature on RR, MA, and RMA was necessary as each element served as a base for the OISE action research project. Lastly, the research on metacognition was reviewed because it provided insights to assessment *as* learning and offered critical knowledge about the traits, application, and effectiveness of metacognitive behaviours for student learning. More detail about why articles were and were not chosen is provided in the next section on selection criteria.

*Data Sources: Selection Criteria*

Tierney (2006) describes the importance of making the selection criteria for literature reviews explicit. To begin the process, a search using ERIC and Academic Search Premier databases was initiated. Using the following terms, a comprehensive review of literature was located: theories of reading, effective reading practices, reading assessment, literacy assessment, early years assessment, formative and summative assessment, RMA, MA, RR, and metacognition. Due to the diverse nature of themes within the study, several books and articles from respective research fields were available. With totals of over 300 articles and books available, further selection criteria were deemed necessary.

Articles retained for inclusion in the literature review were selected based on document type, publication date, context, and subject focus. Preference was given to articles that were published in refereed scholarly journals. Retained articles also needed to be published within the last 10 years, however, in the case of seminal pieces and areas of study that were not extensive (RMA), allowances were given. The context was kept to primary and middle school education with the exception, once again, on the research in the field of RMA, which includes both secondary, adult learning and ESL learners. The studies chosen for review included both primary and secondary research, with a focus on understanding the reading process and the assessment of reading. Articles that included assessment in specific educational areas (Math, Science) were excluded, as were articles that referred to the assessment of children with learning disabilities and severe medical conditions. Some of the retrieved articles discussed assessment of literacy skills through the use of computer software and web-based programs and these studies were also excluded. Books were selected based on their focus and on their frequency of inclusion on the reference lists of scholarly work being

reviewed. Once all the articles and books were finally selected, a process needed to be developed to ensure an organized and thorough review.

The development of a systematic literature review is important in any study (Berg, 2001; Tierney, 2006). This literature review involved two parts: first, a thorough reading, and re-reading of the articles and secondly, an organization of author information and topic information. Berg (2001) suggests the "Two-Card Method," which organizes information about the author and references on one index card and topical information and a short verbatim excerpt on another. This strategy was utilized with minor adaptations. An electronic file was created for the author and reference information while post-it notes with the author and topical information were created as a secondary organizational tool. On each post-it note, a numerical coding was included that identified key themes in the research paper. The number was also written beside the information in the article so that it could be easily obtained in the future. Having the post-it notes allowed for easy sorting of themes and information into categories and sub-categories. The post-it notes were also helpful in identifying whether several authors made similar statements about common areas of research.

In the sections that follow, I provide an analysis and synthesis of the literature pertaining to the understanding of RR and MA as a form of assessment *as* learning through the practice of RMA. I begin with a review of best practices in reading, proceed to discuss reading and literacy assessment including RR, MA, and RMA and conclude with a review of the literature on metacognition.

*Best Practices in Reading*

Exemplary teaching can be characterized by many traits: a solid base of knowledge, theoretical support for instructional choices, attention to a student's zone of proximal development, and a commitment to improving students' learning are just a few. However,

there are several other key tenets to best practices in reading instruction. The following discussion and examination of research in the area of best practices in reading and literacy highlights several key aspects of exemplary instruction.

Hall (2003) reviewed a body of empirical research characterizing and distinguishing exemplary early years literacy teaching. She defined exemplary teachers by two characteristics: educators who had success in raising student literacy achievement and educators whose students consistently demonstrated higher levels of achievement in reading and writing. Her review of several studies in early years education (based mainly in the US, but also in the UK and New Zealand) discussed two key aspects of literacy instruction and multiple guiding principles of teaching literacy. First, the explicit teaching and learning of the codes of written language are critical. This teaching included explicit instruction in the areas of sound-symbol relationships, word recognition, spelling patterns, vocabulary, punctuation, grammar and text structure. Secondly, exemplary literacy practices involved varied opportunities for students to read and respond to literature and write for a variety of authentic purposes. Hall discussed the importance of opportunities for shared reading, partner reading, independent reading, guided reading, daily writing, and writer's workshop.

Hall (2003) went on to suggest that exemplary teachers not only incorporated multiple goals into a single lesson, but that they also overtly modeled what they wanted their students to be able to do. Moreover, she stated that exemplary teachers ensured children were reading books that were just a little bit challenging for them and that extensive scaffolding was present in the teaching. The themes of explicit teaching, use of texts that are just a bit challenging, and scaffolding support are distinguishing features of teaching within the zone of proximal development.

Lastly, Hall (2003) noted that throughout the studies she reviewed, there was a common theme of clear and systematic assessment practices. She stated, "effective teachers are also more highly diagnostic in their interpretations of their pupils' written work; they are better and quicker than their validation colleagues at offering explanations as to why children read or write as they do" (p. 318). Hall concluded that the complexity of teaching literacy and reading could not be met by one particular method of teaching. Instead, a variety of elements, including the explicit teaching of the codes of the written language, varied opportunities for authentic reading and writing, instruction at the learner's level with just right texts and materials, and systematic assessment practices all need to be woven together for the most effective reading and literacy instruction.

Allington (2002) also examined effective literacy instruction. His conclusions highlight many of the features identified by Hall. Allington collected data in the US from first and fourth grade teachers across six states. The teachers included in his research were chosen based on their ability to be effective in developing reading and writing proficiency (especially amongst schools that enrolled substantial numbers of poor children and children from racial, ethnic and linguistically diverse populations). From his data he compiled six features of effective literacy instruction: time, texts, teaching, talk, tasks, and testing. Allington suggested that effective literacy instruction ensured that children routinely had enough time, around 50% of the day, for reading and writing instruction. Furthermore, he noted that students in effective classrooms had more guided reading, independent reading, shared reading, and social and science reading than those in less effective classrooms.

When examining the texts that were used in effective literacy classrooms, Allington (2002) noted that there was a rich supply of books for the students at a variety of levels and interests. As part of creating student success, students were paired with texts that enabled

them to read with high levels of accuracy, fluency and comprehension. Allington stated, “it is the high-accuracy, fluent, and easily comprehended reading that provides the opportunities to integrate complex skills and strategies into automatic, independent reading process” (p. 743).

When examining teaching practices, Allington (2002) reported that active instruction, the modeling and demonstrating of useful strategies, to be present in the effective literacy classroom. Rather than simply assigning a task and then assessing the task, effective teachers ensured successful teaching moments by demonstrating the strategies that good readers employ. Overall, he suggested that effective teachers, “modeled the thinking that skilled readers engage in as they attempt to decode a word, self-monitor for understanding, summarize while reading, or edit when composing” (p. 743). Allington stressed the need for explicit/active teaching, suggesting that much of what happens in the classroom had been “lost in the shuffle of thinking about classroom instruction” (p. 743). Educators who are exemplary in their teaching know what strategies they need to explicitly teach their students and how to foster students from dependence on the teacher for guidance to independence in their own construction of understanding (i.e. gradual release of responsibility). Clearly, Allington’s findings on teaching practice reflect Vygotsky’s theory of zone of proximal development.

Allington (2002) examined talk in the context of the literacy classroom and suggested that effective classrooms were alive with purposeful conversations. Teachers encouraged teacher/student and student/student talk that fostered the development of problem-posing and problem-solving conversations. He also suggested that effective teachers posed more open-ended questions, thus allowing students to contribute multiple and varied answers to one question. The teachers were also highly effective at probing students for further information by responding with follow-up inquiries (explain how, tell us more). In essence, the talk in

exemplary classrooms was not only purposeful, but also highly personalized to the students and their contributions.

The fifth characteristic of effective literacy practices that Allington (2002) examined was the tasks that students were engaged in. He found there to be a greater use of lengthy assignments, less emphasis on filling the day with shorter tasks, and very little dependence on low-level worksheets. Tasks also included an element of student choice allowing for greater ownership and engagement in work. Allington observed that when children were given high-level tasks that included a degree of personal choice, they were frequently more engaged in their work and spent less off task time than they would in low-level tasks.

The sixth and last characteristic that Allington (2002) observed about exemplary teachers was their use of testing. Marks were based more on effort and improvement rather than simply achievement. Teachers often used rubric-based evaluation that provided students with clear guidelines on how to achieve their marks. Due to the transparency of the evaluation process, much of the responsibility for earning grades in the effective classroom was given over to the students. Allington observed almost no test-preparation activities in the classroom, suggesting that, "these teachers believed that good instruction would lead to enhanced performance" (p. 746). Overall, Allington concluded that the six characteristics of exemplary reading instruction (time, texts, teaching, talk, tasks, and testing) all needed to operate interactively. He stressed that the most effective teachers were the ones who took responsibility for their professional choices and ensured success for their students by providing expert, exemplary instruction in each of the six areas. Allington and Hall's (2003) descriptions of effective teaching practices each suggest the need for variety and balance in instructional choices and methods.

The theme of balance is further explored in Rasinski and Padak's (2004) research. Rasinski and Padak's work examined the theme of balanced literacy instruction as a construct that should most certainly include, but not be limited to, instructional components of word identification, fluency and comprehension. They suggested a need to further explore a more in-depth analysis of what a comprehensive approach to literacy should entail. In essence, they deconstruct the meaning of balance in balanced literacy instruction and how balanced instruction relates to the effective teaching of reading and literacy. Their work explored some common themes noted in the aforementioned research, but also included a couple of new characteristics.

Rasiniski and Padak (2004) explored the notion of balance in weighting instruction. They suggested that equal time devoted to various instructional practices may not produce optimal results. Thus, consideration needs to be placed on the learners' needs. If a learner needs to have more time with phonics instruction over guided reading activities, than that is what the student should have. Furthermore, when considering the balance of instructional grouping, they suggested the teacher needs to recognize the role of appropriate grouping choices. Consideration to whole group, individual, paired and small group instruction, once again, needs to be based on creating the best teaching environment for the learners. In light of research that suggests that children generally achieve significantly more when instruction is organized around small groups (Marzano, Pickering, & Pollock as cited in Rasinski & Padak, 2004), a teacher needs to be mindful that a balanced approach to grouping may not provide optimal learning situations.

Like Allington (2002), Rasinski and Padak (2004) also discussed the need for a balance in text type (narrative, non-fiction, poetry, etc.) and a balance between the cognitive and affective elements of literacy instruction. They asserted that although comprehensive

literacy instruction aims to ensure students learn to read and write, it is also important that the instruction nurtures a love of reading and writing that will span beyond the years of schooling. Rasinski and Padak suggested that, "when we nurture lifelong reading and writing in students, we help them see that reading and writing are more than a set of skills to be mastered in order to make it through school; rather, we help students see that reading is a way to enrich one's life" (p. 95).

The notion of struggling readers was also examined in Rasinski and Padak's (2004) work. They suggested that when considering the struggling reader, equal is not necessarily equitable or balanced. Simply, students who struggle more with reading need to have more instructional time; "A balanced and comprehensive literacy program gives greater instructional attention to students who struggle" (p. 96).

When examining literacy programs, Rasinski and Padak (2004) found that very few programs offered balance between the instructional time of reading and writing. They stated, "most literacy programs, and most balanced literacy programs with which we are familiar, instruction in reading significantly outweighs writing instruction" (p. 97). They believe that a comprehensive program must give reading and writing instruction equal weighting, that all reading should have a writing component, and all writing should have a reading component.

The last aspect on balanced instruction that Rasinski and Padak (2004) explored was the home and school connection. Firstly, they discussed the need for teachers to work with parents providing them with recommendations, support, and materials. Based on the overwhelming research in support of the influence of parents on a child's literacy development (Padak & Rasinski; Postlethwaite & Ross as cited in Rasinski & Padak, 2004), they believe there must be a balance between the instruction that is happening at school and home. Furthermore, they discussed the need for instruction and reading at home to continue

throughout summer months. “A balanced, comprehensive literacy program needs to find ways to keep children engaged in reading throughout the entire year, not just during the portion of the year in which school is in session” (p. 100).

Each of the themes explored by Rasinski and Padak (2004) discussed the notion of how balance can be interpreted to create a comprehensive literacy practice. I thought it important to include their work in understanding what constitutes best practice in reading and literacy instruction because not only are they premier researchers in the area of reading instruction, but the interrelatedness of balanced literacy practices and literacy practices based in best practices seem evident to me. If a teacher strives to create a literacy program that is based in best practice then it must be a balanced program because no single instructional method, theory, or instructional design can meet the needs of all learners.

The work of Hall (2003), Allington (2002), and Rasinski and Padak (2004) all suggest some common themes to creating best practices in reading and literary instruction. Characteristics such as explicit teaching, active teaching, scaffolding, variety of text types and levels, support for struggling readers, weighting of instructional time are found in the work of these scholars. Furthermore, Vygotsky’s zone of actual development and zone of proximal development, bottom-up and top-down theory, interactive model of reading, schema theory, and transactional theory can also be easily identified in the researchers’ work. In conclusion, best practice in reading and literacy instruction needs to comprehensive, active, integrated, differentiated and explicit in nature. No single programs can offer success for all students. Instead each teacher needs to be the architect of her own programming, ensuring that what she builds meets her clients’ (students’) needs. As stated best by Allington (2002), “exemplary teaching is not regurgitation of a common script but is responsive to children’s needs. In the end it will become clear that there are no ‘proven programs’, just

schools in which we find more expert teachers" (p. 747). The aforementioned discussion of exemplary teaching noted the role of effective assessment practices. What follows is a further examination of assessment, more specifically, assessment pertaining to reading.

*Reading and Literacy Assessment*

Much research has been published regarding the assessment of language and literacy (e.g. Cambourne & Turbill, 1994; Coyne & Harn 2006; Earl, 2003; Frey & Schmitt, 2007; Nutbrown, 1999; Tierney, 2006). The common threads throughout the publications are the need for assessment to be purposeful, and to be clear about what is being assessed (i.e., if a teacher is assessing reading, are they assessing word identification skills, fluency, comprehension, all of the above?), and about how the data will inform the teacher's practice/instruction. The scholars agree that classroom assessment should occur only when clear purposes and reliable and accountable techniques for collection have been established.

Nutbrown (1999) discusses three broad purposes of assessment: assessment for teaching (screening, curriculum planning, at-risk identification), assessment for management (value-added and school effectiveness measures), and assessment for research (comparisons of groups: children, teaching methods, ages, longitudinal studies). Coyne and Harn (2006) believe assessment systems should accomplish the following four purposes: screening, monitoring progress, diagnosing, and measuring student outcomes. Lastly, Earl (2003) discusses the purposes of assessment in relation to assessment *of* learning (summative assessment), assessment *for* learning (formative assessment), and assessment *as* learning (metacognition). Within each of these researchers' work, several themes repeat/overlap: screening, planning, and measuring. Further discussion of each theme follows.

Coyne and Harn (2006) examined key skills in early literacy development. Working with a small, suburban US school serving students in Kindergarten to Grade 3, they used a

comprehensive assessment system called, 'Dynamic Indicators of Basic Early Literacy Skills - DIBELS' as an intervention tool with Kindergarten students. The DIBELS tool assessed students' initial sounds fluency, phonemic segmentation fluency, nonsense word fluency, and oral reading fluency. Their study concluded that with school-wide teacher training, the comprehensive DIBELS tool enabled teachers to use assessment data to "make informed, timely, and strategic decisions" (p. 42).

As part of their study, Coyne and Harn (2006) described screening as "assessments to determine which children are at risk for experiencing reading difficulties" (p. 36). Assessments used for the purpose of screening are not designed to tell teachers everything about a child, simply to indicate whether a child is likely to develop difficulties in the near future. Nutbrown (1999) purposes that screening assessments focus on individuals and are concerned with the details about each individual as a learner. Useful screening assessments answer specific questions an educator has about a student. For example, will this child struggle with reading now and/or in the future? Does she have the phonemic awareness and alphabetic knowledge needed for future reading success? Following Earl's (2003) assessment purposes, screening could be seen as either assessment *of* learning or assessment *for* learning. Because assessment *of* learning is partially intended to certify learning in relation to the ability of other students, and the process of screening does inform a teacher of relative positioning, it could easily fit into this context. However, the information gleaned from screening is used to inform instruction, and therefore could also be seen as assessment *for* learning. "Assessment *for* learning shifts the emphasis from the summative to formative, from making judgments to creating descriptions that can be used in the service of the next stage of learning" (p. 23). Although Earl suggests that assessment *for* learning is not intended to make comparative judgments among students, this type of assessment is clearly intended

to plan for the future and therefore, can be situated with the screening component of assessment.

Assessment for the purpose of planning, identified as 'progress monitoring' by Coyne and Harn (2006), 'assessment *for* learning' by Earl (2003), and 'assessment for teaching' by Nutbrown (1999), focuses on using collected data to inform future instruction. Assessment for the purpose of planning has several key features: it is ongoing, it is often open-ended, it happens frequently, and most significantly, it guides teachers in their instruction and helps scaffold next steps (Earl). Assessment for planning enables teachers to, "adjust and intensify instruction and intervention in a timely manner" (Coyne & Harn, p. 39). It also ensures that students are on the path to meeting the targets of curriculum and expected outcomes (Earl; Nutbrown). Essentially, the analysis of data for the purpose of planning "enables teachers to be more responsive to student learning and to know when an instructional adjustment is necessary so their instruction is more efficient and effective" (Coyne & Harn, p. 38).

Another key element to assessment for the purpose of planning is the rigor and expertise of the educator who is collecting and analyzing data. Teachers require on-going professional development and experience in order to analyze and create effective assessment/diagnostic tools (Earl, 2003; Nutbrown, 1996). Teachers need to be confident that they can develop and administer comprehensive assessments that will clearly inform their practice. Further discussion on the effective development of assessments is addressed below.

The measuring of learning is an age-old requirement of teaching. Stakeholders expect to be informed about not only a child's progress, but also his/her relative positioning to other children. Assessment *of* learning, as positioned by Earl (2003), is typically done at the end of a task and takes the form of tests or exams that include questions drawn from the taught material. Unfortunately, the measuring of student outcomes and learning is still a

predominant kind of assessment (Coyne & Harn, 2006; Earl; Stiggins, 2002). "At the current juncture, almost all classroom assessment in a traditional environment is summative assessment" (Earl, p. 25). Stiggins (2002) also recognizes the current focus on assessment of learning and states, "we must make stronger investments in assessment for learning. We can realize unprecedented gains in achievement if we turn the current day-to-day classroom assessment process into a more powerful tool for learning" (p. 761). Summative assessment, which indicates the students who are doing well and those who are doing poorly, does not provide much insight into mastery of particular ideas or concepts because test content is generally too limited and the scoring is too simplistic to represent a broad range of student learning and skill (Earl). Clay (1993) makes an insightful statement about the attraction of summative assessment: "There is a seductive efficiency about final assessment scores. Yet a funny thing happens on the way to those final assessments: day-to-day learning takes place" (p. 3). Furthermore, Clay (1993) suggests that if too much emphasis is placed on testing and summative assessments, we risk depriving teachers and administrators with valuable information about learners and their learning.

In light of educators' responsibilities to provide summative assessment, one would hope for a balance of assessment purposes in the classroom. For children to develop as learners they need clear information and feedback about their skills. They need to become partners with their teachers, and when this partnership happens, students become both self-assessors and consumers of assessment information provided by the teacher (Stiggins, 2006-2007). Children need to be encouraged to be part of the assessment process and take responsibility for understanding how they think and apply their learning in any given context. Extensive research in assessment shows that through the consistent application of assessment for learning, educators can facilitate gains in student achievement, especially for struggling

students (Black & Wilian, 1998). To this end, it is important to briefly review one other element of assessment, assessment *as* learning, a student's metacognitive awareness.

Assessment *as* learning is an extension of formative assessment. Thus, it is intended to involve students as a contributor to the assessment process so they are an active, engaged, and critical assessor who can make sense of information, relate it to prior knowledge, and master skills involved (Earl, 2003). Assessment *as* learning is significant in the learning process because it requires students to be self-motivated, therefore not dependent on others to tell them whether their answers/insights are right.

Students who are effective at this type of assessment are able to "ask reflective questions and consider a range of strategies for learning and acting" (Earl, 2003, p. 25). Flavell (1979) suggested that metacognitive strategies enable one to monitor the process of his/her thoughts, knowledge, or reflections about actions. This self-monitoring and reflection allows students to be a part of their own assessment. "Metacognitive reflection involves the critical revisiting of the learning process in the sense of noting important points of the procedure followed, acknowledging mistakes made on the way, identifying relationships and tracing connections between initial understanding and learning outcome" (Georghiades, 2004, p. 371). Teaching students metacognitive skills and inviting them to be active contributors to the assessment process is part of fostering the skills children need to be independent, reflective, and life-long learners (Earl; de Jager, Jansen, & Reezig, 2005; Guterman, 2005). Paris and Jacobs (1984) related the advantages of metacognition to the process of reading. They suggested that the explicit teaching of metacognitive skills directly correlated to increased levels of reading performance and comprehension. Clay (1979) advocated for teachers to encourage children to develop metacognitive awareness and control of reading and writing by asking such questions as 'You said X. Does that sound right? Make

sense? Look right?' (pp. 72-73). Furthermore, Clay maintains that the development of metacognitive skills (self-extending systems) will generate further learning even after children have completed her intervention program *Reading Recovery*. One could suggest that the purpose of assessment *as* learning is perhaps the most beneficial and sustainable purpose of any form of assessment.

From the preceding discussion, one can ascertain that assessment is multi-faceted and can provide multiple perspectives on learning. Considering the purposes of assessment have been reviewed, it is important to distinguish the criteria to be used to plan for effective assessment.

Nutbrown (1999) stated that educators need to be clear about what they are assessing and the assessment techniques they choose to use. Thus, the technique used is directly dependent on the purpose for which the assessor intends to use the results. Earl (2003) stated that it is not possible to use one assessment technique for many purposes; "different purposes [of assessment] require vastly different approaches, and mixing the purposes is likely to ensure that none of them will be well served" (p. 13). Nutbrown also suggested that effective literacy assessment techniques should include the following four, at minimum, elements: a reflection about literacy development, key concepts of literacy (skills, whole to part), strands of literacy development (use of environmental print, books, early writing etc), and the use of literacy to assess literacy. This final aspect relates to the idea that assessment should be authentic, reflecting what children actually do when they are engaging in day-to-day literacy activities.

Frey and Schmitt (2007) also suggested the need for assessment tasks to be authentic. They stated, "the attribute of directness, the closeness of the connection between the assessment task and the actual real-world task, is a useful one" (p. 410). Therefore,

assessment of literacy should be in-tune with the context that students live/play/learn in. Literacy assessment that is authentic is designed in ways that provide insights into children's day-to-day literacy, for example their knowledge of environmental print, how they use books and/or how they retell a story (Nutbrown, 1999). Bergen (1993) identified three qualities of "good" authentic assessment. The first criterion was that authentic assessment is often group-based with each individual contributing. Secondly he suggested that authentic assessment measures many facets simultaneously. Lastly, Bergen suggested that authentic assessment tasks must be applied in a way that reflects the complex roles of the real world. Newman, Brandt, and Wiggins (1998) concur with Bergen suggesting that authentic assessment measures real-world problems or tasks, and are authentic only when performances "have meaning or value beyond success in school" (p. 19). If assessment is not done in authentic ways, educators run the risk of it becoming "the opposite of authentic: flimsy, baseless, ungrounded, unwarranted" (Nutbrown, p. 38). Authentic assessment practices are part of formative assessment, thus they are effective only if they provide information to the teacher and student about the next steps in the learning process.

Cambourne and Turbill (1994) further explore assessment as a way of informing future learning. They engaged in a research project examining responsive evaluation. As members of a team, they read research in the area of assessment and evaluation, debated on the meaning of terms (assessment, evaluation, effective) interviewed and observed teachers ranging from Kindergarten to Grade 6, and discussed criteria for creating effective evaluation. The result of their project was the articulation of four criteria for effective evaluation and five stages that constitute the journey educators would need to follow to implement responsive evaluation. Cambourne and Turbill propose that effective assessment should follow the following four criteria. Firstly, it must result in optimal learning for all

involved. Although this criterion is at the very least laudable, it presupposes that one can easily identify what optimal learning is. Cambourne and Turbill agree with this notion of complexity in defining optimal learning, however, they suggest that as long as educators engage in the process of making explicit their beliefs then the term should not prove to be a hindrance.

The second criterion outlined by Cambourne and Turbill (1994) is that assessment must inform, support and justify teacher decision-making. Indeed, there is little point to assessment practices that do not help teachers, learners, and parents make good decisions about the next steps in learning. Pointless assessments that do not inform stakeholders are not only wasteful of everyone's time, but also can give students the idea that assessment has no purpose to their learning, and therefore they do not need to care about it. Cambourne and Turbill suggest an example of pointless assessment is when Grade 6 students, who are moving on to secondary school, are give a diagnostic test of reading and the information is passed onto subject specialists who are unlikely to make use of the information.

Assessment practices that reflect the theories of language, learning, and literacy was the third criterion suggested by Cambourne and Turbill (1994). They believe that evaluation processes must be based in good theory to be effective. Educators need to be keenly aware of how both their teaching and evaluation connect to theory. If teachers are not clear about how theory relates to their assessment practices, and therefore their theory is not congruent with the way they teach language, learners may get mixed messages that could confuse them about how and why they are learning a certain way.

Lastly, Cambourne and Turbill (1994) suggested that the results of one's assessment must be accurate, valid, and reliable. To ensure accountability to all involved (students, parents, principals, administrators, policy makers, etc.), evaluation and assessment

techniques need to be measurement-based, objective, and highly reliable. Leaving room for subjectivity or 'softness' in evaluation opens up educators to procedural scrutiny on the terms that their evaluation may be biased, unreliable, and therefore, invalid. For optimal learning to occur, assessment and evaluation processes must be as scientific (i.e., clear objectives and procedures for collecting information, clear procedures for analyzing information) and measurement-based as possible.

The journey to becoming a responsive and effective assessor of learning is complex and involved. To provide educators with a 'big picture' of the implementation for this process Cambourne and Turbill (1994) outlined five key stages and several bridges between each stage. Although I do not provide great detail about these stages, they are important to note because they demonstrate the complexity and time that is needed for an educator to ensure quality assessment practices. The following is a list of each stage followed by the bridge (in italics): Stage 1 – Making beliefs explicit, *How to recognize beliefs in practice*; Stage 2 – Episodes (how the teaching time is divided), *How to see, how to observe learners' responses;* Stage 3 – Procedures for recording observations, *How to analyze data collected;* Stage 4 – Interpreting data, *How to negotiate evaluation, parent-teacher-child;* Stage 5 – Reporting to audiences, *How to refine beliefs.*

Cambourne and Turbill (1994) concluded that if teachers go through the processes discussed above, they are on their way to implementing a justifiable, rigorous, and scientifically respectable approach to assessment. Furthermore, this approach would be based in the theories and practices of effective language and literacy instruction. Given that RR, MA, and RMA are the focus assessment techniques of this project, at the conclusion of each section on these topics, a comparative analysis based on all of the above literature is discussed.

*Running Records*

RR are an assessment method designed by Marie Clay (1979) to analyze a student's oral reading and plan for future instruction. As suggested in Ross's (2004) study that examined the implementation of RR as a strategy for aligning literacy instruction with students' needs in a Canadian Grade 3 classroom, there is a high correlation between teachers' frequent use of RR and students' reading achievement. Furthermore, Pressley et al. (2001) listed RR as one of the teaching behaviours characteristic of the most effective teachers.

A RR provides a teacher with an indication of a student's cognitive processing strategies. RR are especially insightful for observing the reading behaviours of struggling readers. The information gleaned from a RR helps plan for future instruction and can guide the choice of books a teacher uses to further develop appropriate reading strategies. Furthermore, Clay (1993) cites the following benefits RR can provide for instructional purposes:

> The evaluation of text difficulty, the grouping of children, the acceleration of a child, monitoring the progress of a child, [and] allowing different children to move through different books at different speeds while keeping track of individual progress and observing particular difficulties in particular children (p. 23).

As described previously, a RR is recorded by using a check mark system for each word read correctly during an oral reading of a passage of 100 to 200 words in length. Unlike Goodman, Watson, and Burke's (1983) miscue analysis, RR can be taken without the use of prepared script. Clay (1979) advocates that RR can be done on any piece of paper, anytime, and anywhere because the focus is on capturing the reading behaviour in the moment. Deviations from the written text such as inserted and/or deleted words, substutions,

repetitions, self-corrections, and told words are recorded on the RR (paper) and analyzed at the end of the oral reading (this analysis is further discussed in the section on miscue analysis).

RR provide a quantitative analysis of reading performance by following specific calculations for error rate, reading accuracy, and self-correction rate. Each of these rates are norm referenced and provide teachers with data that compares a student's ability to what is expected at a particular age/grade level up to Grades 7 and 8 (level Z in Fountas and Pinnell's (2001) system). For example, accuracy rates suggest that if a child reads any given text at a rate of 95-100% accuracy, the text is considered to be 'easy' for the child. A 90-94% accuracy suggests the text is at an instructional level and anything below 90% suggests that the text is hard and/or frustrating for a child (Clay, 1979). Self correction rates, once calculated, suggest how many times a child corrects an error in reference to the amount of errors he or she makes. Self-correction rates of 1:1, 1:2 and 1:3 are considered good because they show that a child is attending to his/her reading.

Clay (1979) suggested that the reliability of RR is very high. Furthermore, she states that little to nothing is inferred based on the fact that accuracy is gauged by counting errors, "you cannot get closer to the valid measure of oral reading than to be able to say the child can read the book you want him to be reading at this or that level with this or that kind of processing behaviour" (p. 7). However, Fawson, et al., (2006) discuss issues of reliability based on interscorer reliability and the variability in passage difficulty. The contention of variability based on passages was also highlighted in Ross's (2004) study wherein he suggested that the passage of a same level text might exhibit sizable error variance when scoring a running record. Fawson et al. further suggest that the, "teacher level of

sophistication in accurately recording complex reading behaviours creates a potential threat to running record reliability" (p. 114).

The research of Fawson et al. (2006) took place in a large suburban school district in the western United States. It included 10 first-grade teachers, who had been provided with 2 to 6 hours of training on RR use, and 12 first-grade students of various ethnic and reading-performance levels. The focus of the research was to ascertain the potential sources of error variance associated with RR and scoring caused by passage difficulty and rater variability. The study results of Fawson et al. suggested that effective teacher training and the use of an average of at least three RR on separate reading passages could produce reliable results.

A key element to the reliability of RR is that they are a part of a systematic observation. According to Clay (1993), systematic observation has four key characteristics: a standard task, a standard way of setting up the task (administration), ways of knowing when we can rely on our observations and make reliable comparisons, and a task that is like a real world task. If each of these characteristics is met during an observation and administration of a RR, the validity of the observation increases. Clay's attention to the systematic administration of RR inherently suggests the need for teacher training. As with the use of any diagnostic tool, sufficient training and the opportunity to consistently implement and perform the task will only increase the reliability of results obtained.

In light of Clay's confidence in the reliability of RR, she emphasized that when making important decisions regarding a learner's reading behaviour the use of a wide range of measures or observations is essential. She stated, "no one technique is reliable on its own" (Clay, 1993, p. 7). Clay concludes that in order to decrease the risk of making errors in interpretations, one should increase the range of observations that one gathers. This suggestion coincides with the research findings of Fawson et al. (2006) who concluded that

teachers with varying experience and expertise, whom administered a minimum of three reading passages and found the average of them, could produce reliable results on the reading behaviours of students.

RR can also provide teachers with information on reading fluency and comprehension. Once a child finishes a passage the teacher can ask a selection of questions that assess the reader's comprehension of the text. It is important to note that even if a child reads a text at an instructional or easy rate of accuracy, how he performs on comprehension is as critical as the rate at which he can successfully identify words.

RR are a systematic way of observing and recording students' reading achievement. As suggested by many researchers (Clay, 1979; Fawson et al., 2006; Pressley et al., 2001; Ross, 2004), RR can provide reliable and insightful information about how a child reads and processes a text. RR are a characteristic of effective classroom teaching (Pressley et al., 2001) and enable educators to plan for successful reading instruction. Student achievement and progress is at the heart of any reading program and the instructional decisions educators make regarding students' reading abilities and progress need to be based on reliable reading assessment tools. As concluded in Ross's (2004) study, the implementation of RR as a classroom assessment system can contribute to higher achievement in reading and writing. Thus, RR prove to be an essential element to the effective reading classroom. Once a RR has been administered, the analysis of the errors/miscues must take place. The next section addresses this process.

*Analysis of Reading Errors/Miscues*

Kenneth Goodman's work in the mid 1960's included a linguistic study of students' use of cues and miscues in oral reading. The study confirmed Goodman's (1965) belief that reading is an act of comprehension not simply the decoding of words, "nothing short of

comprehension is reading" (p. 639). Goodman (1967) suggested that "reading is a psycholinguistic guessing game" (p. 127). Furthermore, he believed that reading involved the interaction between thought and language, suggesting that efficient reading does not result from precise identification of all elements, rather it is a skill of "selecting the fewest, most productive cues necessary to produce guesses which are right the first time" (p. 127).

Goodman's (1965) research was gathered on 100 first, second, and third-grade readers. The focus of the study was on the children's ability to recognize words in a word list and read the same words in stories. The study confirmed Goodman's suspicion that children could read many words in the story that they had not been able to read on the isolated word lists. Goodman reasoned that word lists were decontextualized and therefore students would not have additional cues to help support their reading/comprehension.

In 1967 Clay published her findings (subsequently published in Clay, 1982) on the reading behaviours of five-year-old children. In this longitudinal study, 100 children taught by 32 teachers from five schools were followed from their fifth to sixth birthdays. Clay examined the behaviour of these beginning readers during two phases, the preparation stage and the book reading stage. Through a linguistic analysis of reading errors collected during her study, Clay summarized three sources of cues used by children and the changes that occurred during the year. Firstly, Clay found the oral language skills and syntactical expectancies of the children a rich source of cues. Secondly, she observed that an increase in a child's oral language skill did not increase the size of correlation with reading progress. However, a limiting factor for a child's improved reading ability was correlated to a child's failure to develop flexibility in effectively using the grammatical relationships of language (i.e., syntactical information). Lastly, Clay summarized that during the first year of reading

the students' visual discrimination of letter forms developed slowly and that this slow development directly correlated to a child's reading progress.

Further conclusions from Clay's (1982) research suggested that good readers manipulate a variety of cues while effectively sorting through the cues searching for 'best-fit' solutions. This reading habit is similar to Goodman's (1967) previously mentioned attribute, wherein effective readers become skilled in selecting the fewest and most productive cues to make meaning. One critique of Clay's work is her conclusion that visual cues should, "dominate the process" (p. 28) of reading. Although no argument can be presented against the importance of visual cues, it is my personal belief that a balance between cueing systems must be obtained in order for children to become effective readers. That being said, Clay's work presented educators and the field of reading assessment with important insights and knowledge about the cueing systems children engage in during the reading process.

Goodman (1965) believed that all reading behaviour is causal, thus it is based on a student's use of cues and miscues during an interaction with a text. Goodman advocated that teachers and researchers must become, "aware of the differences and similarities between understanding oral language which uses sounds as symbol-units and written language which depends on graphic symbols" (p. 639). Goodman and Clay (1982) both emphasized the need for educators to understand how each student's individual experiences and abilities affect his/her ability to use language cues. Thus, they advocated for the analysis of the linguistic cueing systems used during reading.

Goodman (1965) developed a complex system of questions to analyze miscues. The questions reflected knowledge and theory in linguistics, psycholinguistics, and sociolinguistics. On the basis of his research in these areas, the Goodman Taxonomy of Reading Miscues was developed. The taxonomy of questions included the following 18

categories in which miscues were to be analyzed: (correction, dialect, graphic proximity, phonemic proximity, allologs, syntactic acceptability, semantic acceptability, transformation, syntactic change, semantic change, intonation, submorphemic language level, bound and combined morpheme level, word and free morpheme level, phrase, clause, grammatical category and surface structure of observed response, and observed response in visual periphery. Many viewed the taxonomy as a very thorough, although complex tool for analyzing miscues. In the years following its development, educators looked for simpler and less time consuming procedures than the taxonomy. Clay (1979) suggested that RR were better suited to the day-to-day needs of classroom teachers as they did not require a prepared script or tape recorder and could be taken in the moment a reading behaviour arose. Furthermore, Clay suggested that RR did not require the technical knowledge of complex linguistic concepts that was needed when using the taxonomy.

In the early 1970's Yetta Goodman, Dorothy Watson, and Carolyn Burke developed the reading miscue inventory (RMI) in response to Kenneth Goodman's work on miscue analysis (the taxonomy). The RMI, similar to Clay's RR (1979), was a collection of 9 questions (see Appendix A) used to analyze miscues recorded on a coding form. Regardless of the tool used to gather cues and miscues (RR, RMI) the analysis of linguistic systems includes: meaning cues (also known as semantic cues), structural cues (also known as syntactic cues) and visual cues (also known as graphophonic cues). The linguistic cueing systems listed above denote how Clay refers to them with Goodman et al.'s (1985) terms listed in brackets. As the function of each cueing system remains the same, the names for each system used in this paper, and throughout much research (Fountas & Pinnell, 2001; Moore & Gilles, 2005) are used interchangeably.

Meaning cues are at the heart of language cueing systems (Goodman, Watson, & Burke, 1987; Moore & Gilles, 2005). With the purpose of reading being comprehension, it stands to reason that semantic cues are critical to the process. As suggested by Clay (1979), if a student's oral reading, even if inaccurate, makes sense, then he/she is most likely applying his/her knowledge of the world to his/her reading. Goodman et al. (1987) wrote that meanings are strongly related to one's cultural identity and therefore the use of semantic knowledge is strongly influenced by one's cultural values and beliefs. Some researchers/teachers analyze the pragmatic cueing systems (context of situation, background knowledge, and culture) independently while others (Goodman et al.) analyze pragmatics as part of the semantic cueing system.

The use of structural cues indicates a reader's knowledge of the syntactic system of the English language. It is concerned with the interrelationships of words, sentences, and paragraphs, including word order, tense, number and gender (Goodman, Watson & Burke, 1987). Clay (1993) suggests that readers who do not attend to structural cues may have limited language skills or may be challenged by a text that has different grammatical structures than the ones he/she possess. Furthermore, if a reader is playing close attention to detail or reading word-by-word, he may not be engaging his knowledge of English syntax and therefore miss structural cues (Clay).

Visual cues refer to the relationship between the sounds (phonemes) and the written forms (graphemes) of language. This includes the conventions of spelling (orthographic) systems and sound (phonological) systems (Goodman, Watson & Burke, 1987). Clay (1993) suggests that the later two systems are refinements of the visual cueing system and therefore does not distinguish them specifically in her analysis. A child using visual cues could be attending to word length, prefixes, suffixes, rimes, initial and final letters or any other visual

cues that may assist in identifying a word. Analysis of the errors will reveal the cueing systems a reader depends on the most and provide teachers (and students) with valuable information for future instruction/learning.

Miscue analysis is a powerful procedure based on years of research (Moore & Gilles, 2005). Teachers who use miscue analysis to understand the reading behaviours of their students are more critically informed about what a child needs and how to plan for future instruction. Goodman, Flurkey, and Goodman (2007) provide a vignette of a young student who is brought to a reading clinician because his parents were informed that he was as a struggling reader with very little reading skill. After a MA was completed on the Grade 1 boy the researchers found that he possessed many skills required by effective young readers. Goodman et al. (2007) define an effective reader as, "a reader who is successful at constructing meaning within a text" (p. 6). The young boy was able to construct a meaningful text that paralleled that of the author and because of the MA performed by the researchers, they identified the boy's strengths and challenges, and further suggested that he possessed, "effective reading strategies and a sophisticated understanding of linguistic and textual cueing systems" (p. 6). The power of MA as a tool for understanding the linguistic cueing systems of readers is essential to reading instruction and assessment. Once miscues have been analyzed it is important to share the information gleaned from the analysis with the child. RMA is an effective format for this discussion.

*Retrospective Miscue Analysis (RMA)*

RMA is a reading instructional strategy that "invites readers to reflect on their own reading process" (Goodman, 1996, p. 600). During RMA readers are invited to examine their reading behaviours with the teacher (via RR and audio-tape) in hopes to evaluate, understand, and learn from it (Goodman). Readers discuss why particular miscues were

made, if they made sense, how much errors resemble the printed text, if miscues were corrected, and if miscues needed to be corrected (Martens, 1998). During RMA discussions, the reading process can become demystified for the student and he/she can start to revalue himself/herself as a reader while actively developing and regularly using strategies for constructing meaning (Goodman; Martens). Furthermore, the conversation between the child and teacher facilitates the reinforcement of effective strategies the reader uses, thus encouraging him/her to reflect on the strategies and continue to use them as his/her skills develop. Clay (1986) discussed the importance of reinforcement with early readers during the reading process, suggesting that prompt reinforcement by a teacher is important because the child "has limited control over cues and cannot cross-check his own responses" (p. 27). Goodman outlines several questions that can guide the RMA discussion with a reader (see Appendix B). Furthermore, she suggests that during RMA discussions, students discover that reading is not a mysterious process, but one in which they are in control of meaning-making based on their own investment in and control over the process. She states, "the RMA process helps readers become aware that they are better readers than they may think they are" (p. 602).

Martens (1998) studied the effects of using RMA with a third-grade boy. She met with the student two times a week throughout an entire school year. At the beginning of her work, she noted that the student was very concerned about reading the text correctly, and paid little attention to creating meaning from the text. The young boy had poor perceptions of his reading abilities and believed that good readers read without ever having difficulties. At the conclusion of Martens's case study, the young boy not only had revalued himself as a good reader, but was able to talk about miscues he made, discuss why he made them, and suggest strategies for improvement. The work of Martens highlighted how "readers' beliefs

about reading, the reading process, and themselves as readers [can] either constrain or liberate them" (p. 176).

Goodman (1996) discusses the differences between high and low-level miscues and the importance of sharing information about the different miscues during RMA sessions. High-level miscues result in syntactically and semantically acceptable sentences that make little to no difference in the meaning of a text, and low-level miscues generally change or disrupt the meaning of a text. Goodman suggests that discussions with the reader about his/her type of miscue enables the reader to "explore the reasons for the miscues and to see how knowledge of language and reading strategies can help resolve any problems encountered in a text" (p. 604).

Almazroui (2007) actively engaged in low and high-level miscue discussion with her student during a case study of a nine-year old bilingual student in the Grade 3. The ESL student (Arabic was his first language) that Almazroui worked with preferred to read in English. However, his reading performance scores demonstrated that he was reading at a level almost a full year behind where he should have been. Once Almazroui administered a reading interview and MA, she found that the student depended almost completely on 'sounding out' words he did not know and placed little emphasis on making meaning in contrast to correct decoding. Her data collection showed that 95% of the student's errors were of high graphic and sound similarity resulting in frequent loss/change of meaning. During her RMA sessions Almazroui focused on identifying the types of miscues the student made and discussing the strategies he could use to better understand the text in the future. By the end of her work the young reader was making miscues that were highly semantically and syntactically meaningful. Almazroui suggested that RMA discussions helped the reader revalue himself (Goodman, 1996) as a reader, valuing his strengths and finding ways to

overcome his challenges. Most importantly the student recognized that miscuing is highly acceptable, and rather than indicating failure, miscues reveal understandings.

In *Reading Conversations* by Moore and Gilles (2005) they discuss how a young boy gained valuable insights into his reading through RMA. The process of talking about miscues enabled the reader to gain a greater understanding of himself as a reader.

> Kirk really got into talking about his own miscues – he was in charge and there was no right or wrong answer. He was pretty fascinated by some of his own miscues – finding out what they meant about himself as a reader was a real eye-opener. (p. 3)

The power of RMA discussions benefited this boy because he realized he was in control of his reading process and that many of his miscues made sense. The insights he gained allowed him to become more metacognitive during the reading process and guided him on the path of revaluing himself as a reader.

The revaluing of one's self as a reader was a re-occurring theme in the literature on RMA (Almazroui, 2007; Goodman, 1996; Moor & Aspegren, 2001; Moore & Brantingham, 2003). Whether the student was young, as in Moore and Brantingham's (2003) case study of an 8 year-old boy in the third grade, middle school age as in Moore and Aspegren's (2001) work with a 14-year-old student who was reading four years below his grade level, or young adult ESL readers as in Wurr, Theurer, and Kim's (2009) case study of three proficient readers in their second language, all readers began to revalue themselves as readers as a result of RMA. The opportunity to discuss miscues and bring meaning to their existence in the reading process afforded each learner (and teacher) a window into the reading process (Goodman; Goodman & Paulson, 2000). RMA is not only a reading instructional strategy that enables the reader to reflect on his/her reading abilities, it also encourages the reader to monitor and evaluate how he/she uses strategies that increase reading skill and

comprehension. “Students who engage in retrospective miscue analysis become articulate about the reading process and their abilities as readers” (Clay, 1996, p. 608). When readers become reflective about their reading and the strategies they use, they become metacognitive. The ability to be a metacognitive reader/learner often results in increased reading performance (Juliebo, Malicky, & Norman, 1998).

*Metacognition*

Before discussing metacognition at length, it is important to distinguish it from cognition. As cited in Juliebo et al. (1998), “Cognition refers to the actual processes and strategies that are used by the reader and metacognition is a construction that refers, first, to what a person knows about his or her cognitions and second, to the ability to control cognitions” (p. 26).

Throughout the literature metacognition is frequently and simply referred to as, ‘thinking about thinking’ (Georghiades 2004; Jacobs & Paris, 1987; Juliebo, et al., 1998), in other words, being aware of one’s cognitive processes. However, other terms have been cited when referencing this process including, “reflective thinking,” “problem-solving skills,” and “consciousness raising” (Paris & Jacobs, 1984). Considering the multitude of terms that exists to explain the process of awareness, it is not surprising that in exploring the basic characteristics of metacognition, little consensus exists within the literature.

> Some researchers argue that metacognition refers to conscious knowledge and deliberate actions, while others suggest that metacognition can be tacit and automatic. Some argue that metacognition involves emotion and motivation, whereas others suggest that it is better conceptualized as knowledge without affect. (Jacobs & Paris, 1987, p. 258)

Flavell (1979) is often credited with introducing the term metacognition, defining the construct as a learner's ability to display "knowledge and cognition about cognitive phenomena" (p. 906). However, numerous other definitions, each offering different emphasis or understanding on the elements of metacognition followed Flavell's work. What follows, is an overview of the work on metacognition by Flavell (1979), Juliebo, Malicky and Norman (1998), and Paris and Jacobs (1987). The work by Flavell, and by Paris and Jacob show two clear models of cognition, whereas the work of Juliebo, Malicky and Norman, which is situated in Flavell's model of metacognition, is included because it directly relates the aspects of metacognition to the reading process.

Flavell's early work (1979) categorized metacognition by differentiating between two components: (a) 'metacognitive knowledge' and (b) 'metacognitive experience.' Metacognitive knowledge, seen as understanding what humans are like, is further divided into the following three sub-categories: knowledge of person variables, task variables, and strategy variables. According to Flavell, metacognitive experience is formed by experiences that can be either cognitive or affective and are related to ongoing cognitive situations.

Authors Juliebo et al. (1998) relate Flavell's components of metacognition to the processes of reading, suggesting that the 'person' variable, "includes knowledge one has about how well one can perform various aspects of reading, how well one can read in relation to other people, and what people can and cannot do when they read" (p. 26). They explain the variable of 'task' as knowledge one posses involving the information about the difficultly level, the familiarity level, and the demand of any task. In discussing the variable of 'strategy,' Juliebo et al. suggest that one needs to be aware of the knowledge concerning the strategies needed to be effective in achieving the desired goals. Furthermore, they relate

metacognitive experiences to "evaluating or monitoring ongoing cognitive processing" (p. 26).

Paris and Jacobs (1987) divided metacognition into two categories: (a) self-appraisal of cognition and (b) self-management of thinking. Self-appraisal, what people believe their ability or knowledge of the task is, is further sub-divided into declarative knowledge (understanding *what* factors affect one's learning), procedural knowledge (understanding the processes of thinking – the *how* one can do something), and conditional knowledge (understanding the conditions that affect learning – *why* and *when* to use strategies). Self-management of thinking, the act of translating knowledge into action also consists of three sub-categories: planning (the selection of strategies to reach goals), evaluation (analyzing the characteristics of a task and one's abilities that may affect performance on the task), and regulation (monitoring and revising or modifying the use of strategies based on how well they are working). A defining factor to Paris and Jacob's work on metacognition is that they believe it can be made public. They suggested, "knowledge about cognition can be demonstrated, communicated, examined and discussed" (p. 258). Although varying definitions of metacognition appear in the research, there is however, consensus about the difficulties of identifying and measuring metacognition. As stated earlier in the definitions section of the paper, Flavel's (1979) definition of metacognition will be used throughout this project. The following is a review of concerns pertaining to the process of identification and measurement of metacognition.

Juliebo et al. (1998) conducted a qualitative study examining the metacognitive behaviour displayed by young children during a reading intervention program (Reading Recovery). The study, which will be discussed in further detail in another section, consisted of two intervention sessions and two RMA sessions. The results showed consistent gains for

all the children in reading and writing. Furthermore, Juliebo et al. found that 4 of the 5 Grade 1 boys and girls participating in the study displayed twice as many instances of metacognition (21 instances for metacognitive knowledge in the intervention group compared to 135 instances of metacognitive knowledge in the RMA group) during the RMA sessions as compared to the intervention sessions. One female participant did not show greater use of metacognitive strategies in one type of session over the other. This observation prompted the researchers to suggest the importance of including more than one measure for all children when examining the extent of metacognitive awareness and control. Their findings also suggested that although the students had considerable knowledge of reading strategies, they displayed limited awareness of when and why to use them. The researchers concluded that different data gathering techniques are necessary to examine different aspects of metacognition, "Only by using multiple measures of metacognition will an accurate picture of any child's metacognition be obtained" (Juliebo et al. 1998, p. 34). Although the results of this study contribute to the literature on RMA and the use of metacognitive strategies for improved learning, the results are based on a very small sample. Moreover, the examination of metacognitive behaviors in a program that is based on one-to-one instruction, Reading Recovery (Clay, 1979), which is specifically designed to improve reading skills, presents a learning context that is not typical of most Grade 1 students.

de Jager, Jansen and Reezigt (2005) compared the growth of primary students' metacognition in varying learning environments. Data were collected from three learning environments where teachers practiced direct instruction (high levels of teacher structuring), cognitive apprenticeship (low levels of teacher structuring), and a control group of volunteer teachers. de Jager et al.'s study included 287 students whom answered questions about the use of metacognitive skills during reading on a two-part questionnaire. The researchers

acknowledged the limitations of questionnaire use, namely that they may measure a student's perception of metacognition rather than the actual use of metacognition and the tendency for questionnaires to be influenced by socially desirable responses.

Results from de Jager et al.'s research suggested that teachers whom had explicit teacher training in metacognition and paid specific attention to teaching metacognition (high level and low level structuring learning environments) fostered the development of metacognition, whereas the students in the control group (teachers who had no training in metacognitive strategies), displayed very few metacognitive behaviours. de Jager et al., concluded that even though shortcomings are evident in using questionnaires, the measurement method could still offer important insight into the use of metacognition.

Georghiades's (2004) review of literature and research examining the effects of Science instruction through 'situated metacognition' (metacognitive instruction that is blended with the subject matter) on Grade 5 students found that 11-year olds can engage in metacognition, provided it is accommodated in suitable activities and that metacognition is more effective when practiced in small groups. Georghiades also discussed the problematic nature of identifying and measuring students' metacognitive abilities and/or performance. He discussed the possibility of metacognition being detected only if the learner is able to clearly identify the use of metacognitive strategies and describe his understanding of them. Studies by Ericsson and Simon (1980), and Garner and Alexander's (1989) (as cited in Georghiades, 2004) also indicated that researchers examining metacognition need to use multiple methods for the measurement of metacognition.

Mokharti and Reichard also support the notion of multiple methods of measurement when assessing metacognition. They state that teachers should not rely on one source of information about students' reading abilities and that any tool used for measurement should

be done so in conjunction with other measures of reading ability. In light of the success of Mokharti and Reichard's (2002) 'MARSI' (Metacognitive Awareness of Reading Strategies Inventory), a tool designed to assess adolescent and adult readers' metacognitive awareness and perceived use of reading strategies, the researchers caution, "one cannot tell from the instrument alone whether students actually engage in the strategies they report using" (p. 255). Thus, educators need to be aware that although students may report using metacognitive strategies, the awareness of the strategies does not necessarily guarantee that students actually use them.

Georghiades (2004) suggested that the absence of reliable tools to measure metacognition will continue to be problematic, and any outcomes will be heavily dependent on the subjective judgments of the researchers. With no single definition of metacognition available and the concern surrounding the validity of identification and measurement, the discussion of whether it is even possible for metacognition to be practiced by young children also prevails in the literature.

Flavell's work (1979) suggested that as children grow older they are more capable of interpreting and responding to experiences. Thus, at an early age children may not know what an experience may mean or imply. Flavell and Brown (as cited in Juliebo et al., 1998) further note that young children are less likely to, "display either the knowledge or control components of metacognition than older children" (p. 27). However, Georghiades (2004) stated that, "the question at issue is not whether children have the potential to engage in metacognitive activities; rather it is one of finding the right ways and the right activities for initiating and enhancing such activity" (p. 370).

Several research studies exploring metacognition have been conducted using young children as participants (de Jager et al., 2005; Juliebo et al., 1998; Paris & Jacobs, 1984).

While the studies all have varying outcomes, each was successful in observing metacognitive behaviours in young children. Paris and Jacobs (1984) examined the effectiveness of metacognitive instruction with third-and fifth-grade students. More specifically, they questioned the relationship between children's awareness about reading strategies and their reading skills (further discussion of this study follows below). As described previously, Juliebo et al. (1998) studied the effectiveness of explicit metacognitive instruction with Grade 1 students involved in early reading intervention programs. de Jager et al. (2005) designed a study (also previously described) with children 11 years of age. The study examined the growth of student metacognition in varying learning environments, wherein two of the three environments had explicit instruction of metacognitive strategies. Lastly, Adey and Shayer's study (as cited in Georghiades, 2004) examined the affects of metacognitive instruction amongst mixed-ability older students. The study noted that the least capable 12-year-olds were operating at a metacognitive level of average 6-year-olds, indicating the potential of metacognitive awareness and understanding at a very early age. As revealed by each of the above studies, the examination of metacognition amongst young children is not only viable, but also of interest to researchers in early years education. As the focus of this project correlates to the affects of metacognition on the acquisition/development of reading skills, what follows is a review of two research studies situated in metacognition and reading.

The following studies were chosen to highlight a cross-section of age and research focus in the area of reading and metacognition. The first study involved children in Grade 1 and the second study used participants from Grades 3 and 5. Juliebo et al (1998), as previously discussed, designed a study to investigate the metacognitive behaviour displayed by Grade 1 children during an early reading intervention program 'Reading Recovery' (Clay,

1979). The five Grade 1 participants were in a school system that served both urban and rural areas. Children with difficulties in reading were invited to participate in the Reading Recovery program and subsequently the research project. During the intervention/research program, participants were involved in one-to-one tutoring on a daily basis for 30 minutes per session. The sessions continued for a period of 14 to 16 weeks.

Two techniques were used to gather evidence of the participants' metacognitive awareness and control. The first involved analysis of metacognitive responses during reading intervention sessions and RMA sessions and the second was stimulated recall. The researchers thought it was important to include stimulated recall because the children might be aware of strategies they were using but unable to verbalise their awareness, and secondly the researchers' believe that interviews with young children using questions out of context may underestimate a child's metacognition.

All sessions were recorded and subsequently transcribed. Data were analyzed, divided into two categories (A. metacognitive knowledge/awareness; B. self-management/metacognitive experiences), and several sub-categories (A. person, task, strategy/procedural, conditional; B. awareness of right or wrong, awareness why right or wrong, and regulation/self-correction). The results of the research indicated that the young at-risk readers involved in the Reading Recovery program all displayed a wide range of metacognitive behaviours. The use of metacognitive knowledge by the participants was found to be consistent with the models of cognition positioned by Flavell (1979) and Cross and Paris (1988). During intervention sessions the children engaged in considerable regulatory behaviour in showing their ability to self-correct a significant number of errors. When examining strategy/procedural knowledge during the intervention sessions, the participants of the study displayed behaviours consistent with becoming interactive readers

using both print-based and meaning-based cues. Finally, they noted that RMA sessions provided more information on metacognitive knowledge while intervention lessons provided more data on self-management. Although the authors were careful not to make any causal claims between metacognitive awareness and reading achievement, they noted that each of the children involved in the study progressed in their reading achievements.

A landmark study by Paris and Jacobs (1984) explored the use of metacognitive instruction ('Informed Strategies for Learning' - ISL) and the relation between children's awareness about reading strategies and their reading skills. The study included 783 third-graders and 801fifth-graders from 18 participating schools in the southeastern area of Michigan USA. There was a mix of boys and girls from predominately white families with about 20% of the children from Black, Middle Eastern, or Asian families.

A multiple choice Index of Reading Awareness (IRA) was initially administered to the students to provide data about the children's reading awareness and serve as a base for the effectiveness of the treatment. The IRA included 20 questions, each with three alternatives. Each alternative was given a point (0 – inappropriate response, 1 – adequate response, 2 – strategic response). Total scores for the 20 questions could produce a range from 0 to 40 points. A control group of students not receiving the ISL instruction was used for comparison.

Paris and Jacob's (1984) Informed Strategies for Learning was designed to teach children about the existence and appropriate use of comprehension strategies, including the use of both informed and self-control training. Participants in the study received whole class lessons about 30 minutes in length from a series of 20 modules. The modules were sequentially aimed at planning and preparing to read, identifying meaning, reasoning about text content, and comprehension monitoring. While there was initially teacher leadership, the

modules were designed to fade teacher support and "place more responsibility on students to recruit and apply strategies" (p. 272).

The results of the study suggested that students in both grades benefited from the ISL instruction, with data revealing significant correlations between improved reading comprehension and the use of metacognitive reading strategies. Interestingly, the data showed that fifth-graders exhibited greater reading awareness than third-graders (connecting to the aforementioned discussion on age of children who are capable of metacognitive thinking), and that girls were more aware of reading strategies than boys. The data demonstrated that a classroom-based program of metacognitive instruction could improve children's awareness and understanding of reading strategies. Although children in the control group did show improvements over the year (as expected with natural learning progression), the ISL program participants increased their reading awareness and the knowledge of cognitive skills and strategies more than those who did not receive instruction. The success of the Paris and Jacobs's (1984) study demonstrated the importance of teaching metacognitive strategies as an integral part of developing proficient young readers. Based on the above literature, what follows is a discussion on the implications for professional practice in the areas of RR, MA, and RMA.

*Discussion – Implications for Professional Practice*

Effective classroom teachers use assessment practices to inform and guide their instruction. Much research has been published (Black & Wilian, 1998; Earl, 2003; Stiggins, 2002) about the importance of formative assessment in the forms of assessment *for* learning and assessment *as* learning. Clearly, student achievement is correlated to the kinds of assessment practices that operate in the classroom. With respect to reading, teachers need to understand the cueing systems children source when reading/comprehending, and the

children's view of themselves and the skills they possess. When teachers involve students in the assessment of their learning, teachers are encouraging students to become leaders of their learning. RMA, following the administration of a RR, is one way a teacher can effectively gain insight into a student's reading process. At the same time, RMA discussions facilitate assessment *as* learning, the metacognitive aspect of assessment wherein the student is active in self-monitoring and self-correcting.

As discussed previously, metacognition refers to what a person knows about his or her cognition and the ability he or she has to control cognition (Juliebo et al., 1998). Flavell (1979) described two levels of metacognition: metacognitive knowledge (including person, task, and strategy), and metacognitive experiences (including evaluating and monitoring). RMA offers the development of metacognitive practices because it involves each of Flavell's levels of metacognition.

The person factor refers to a child's knowledge about how well he/she can perform various aspects of reading, how well he/she can read in relation to other people, and what people can and cannot do when they read (Juliebo et al., 1998). The person factor of metacognitive knowledge is facilitated during RMA conversations when readers become aware of the fact that *all* readers make mistakes and depend on linguistic cueing systems during the reading/comprehension process. Furthermore, when RMA sessions are first initiated teachers often collect some sort of reader awareness information (i.e., Burke Reading Interview, [Goodman, Watson, & Burke (1987)] and the Elementary Reading Attitude Survey, McKenna & Kear [1990]). This information helps facilitate conversations with the reader on how he/she perceives his/her abilities. The task factor involves the student's knowledge about the nature of reading and how easy or difficult the task is, if the reading is familiar, unfamiliar, redundant, and or densely organized (Juliebo et al., 1998).

During RMA sessions teachers sometimes solicit information from students about how they feel toward a task in an effort to provide useful strategies to prevent frustration. The strategy factor, which is concerned with children's knowledge about what strategies are likely to be effective in achieving various goals (Juliebo et al.), is the key component to RMA discussions. Children are informed about the cueing systems and how each operates, and they learn the strategies necessary for effective reading and comprehension. Furthermore, during RMA students are encouraged to continually monitor how they are progressing as a reader, what strategies they are using, and if the strategies are effective or not, thus they are engaging in the evaluating/monitoring factor of metacognition.

Moore and Brantingham (2003) concluded in their six-month case study of a third-grade boy who was a struggling reader, that RMA discussions resulted in the student's use of strategies that worked for him, that renewed his confidence as a reader and learner, and that developed an overall empowered feeling as a person. The opportunity for assessment *as* learning and the overwhelming positive outcomes of RR and RMA suggest that these should be one part of every literacy program.

For students to be able to improve, they must develop the capacity to monitor their work and progress. RR are an effective way of collecting information about the reading process of students and the cueing systems they utilize. RMA discussions that follow the administration of a RR can nurture students' abilities to become adaptable, flexible, and independent in their learning and decision-making. Educators who can promote student independence, provide learners the opportunity to wisely undertake their own learning. Furthermore, when children are involved in the assessment of their skills, they no longer feel that assessment is being done 'to' them, but rather with them and for them.

RR are often utilized for assessment *for* learning and assessment *of* learning. However, when RR are combined with RMA sessions, they can be an effective tool for assessment *as* learning. The *Ontario Curriculum* (Ontario Ministry of Education, 2006) requires that teachers use appropriate and varied methods for assessment. The research reviewed in this project suggests that RR and RMA are not only effective practices for the assessment of reading and comprehension, but they are also effective practices for the development of metacognitive behaviours in reading. For teachers to successfully use RR and RMA, they must first develop their understanding of how they are administered, analyzed, and organized for instruction (another requirement of the *Ontario Curriculum*; teachers must be able to identify and analyze cueing systems used during the reading process). The more opportunities teachers have to discuss and engage in the administration and use of these assessment tools, the more proficient they will become at using them.

RMA offers an opportunity for children to participate in the assessment of their learning, another element required by the *Ontario Curriculum* (Ontario Ministry of Education, 2006). The curriculum states that teachers must "support them [students] in developing the language and techniques they need to assess their own learning" (p. 7). Through RMA sessions young readers are continually supported and encouraged to be active participants in the assessment of their learning. One of the primary goals of RMA is that children will become more effective readers as they learn to self-evaluate and monitor their thinking during the reading process, thus becoming successful language learners. The *Ontario Curriculum* describes successful language learners as students who are reflective in their language learning, read effectively and with confidence, think critically, and make meaningful connections between themselves and the text (pp. 5, 33-34, 36, 39). Once again, the practice of RMA connects clearly to the curriculum expectations.

*Conclusion*

Based on the theories and literature discussed in this project, it can be concluded that RR, MA, and RMA are effective practices of assessment *as* learning. The link between metacognitive behaviours and improved reading abilities was established in several works (de Jager et al., 2005; Juliebo et al., 1998; Jacobs & Paris, 1987), suggesting that teachers who provide explicit instruction on metacognitive strategies teach students knowledge that is needed to become effective readers. Furthermore, the analysis and discussion of readers' miscues during RMA demystifies the reading process, encouraging children to become active in the monitoring and evaluating of strategies necessary for increased reading and comprehension, thus reinforcing the effectiveness of RMA.

Cambourne and Turbill (1994) suggested that effective evaluation be rooted in theory. As explored at the end of Chapter 2, RR, MA, and RMA are rooted in the foundations of several theoretical frameworks. Elements of bottom-up and top-down theories, interactive model of reading, schema theory, transactional theory, sociocultural theory, and Vygotsky's zone of proximal development are present, even if in minute ways, in each of these assessment practices. Support for the presence of several theories in instructional choices is found in the work of Pressley et al. (2001), who suggest that the most effective literacy teachers are not worried about theoretical purity, but the application of relevant theory to the learner. Furthermore, Clay (1982) discussed the danger of using one method in planning for instruction. She stated, "one danger of a method is that progress may be assessed only in terms of what that method stresses and what is happening in other areas of related behaviour may not even be noticed" (p. 12). Considering the presence of the afore mentioned theories in the practices of RR, MA, and RMA, these educators who decide to follow these practices

can feel assured that they are not only grounding their instruction in solid theory, but they are avoiding the danger of missing important behaviors because their methods are too focused.

The purpose of this review of literature was to provide a foundation to a joint action research project between Branksome Hall and University of Toronto, OISE. Due to the time constraints of the OISE study, an in-depth review of literature was not required for the project. However, the timely conclusion of my graduate degree and my personal belief that in order to gain a thorough understanding of research one must examine specific theoretical foundations and bodies of literature, created an ideal opportunity for me to initiate my graduate project and provide a through review of literature for the Branksome/OISE study.

The specific aim of the Branksome Hall action research project is to examine the use of RR, MA, and RMA as effective forms of assessment *as* learning for reading. Once the data are gathered and analyzed, the researchers, Roxanne and me, are to lead professional development sessions for the staff at Branksome Hall. As a conclusion to this project, specific implications for professional practice are outlined in Chapter 4. A series of three professional development sessions, each approximately 90 minutes in length, will be delivered to the SK – Grade 6 teacher at Branksome. The first session introduces the purpose of running records, how they are administered, and how to code the miscues. The second session reviews the coding systems and introduces the analysis of miscues, highlighting the identification of high and low miscues and the implications for instruction based on the analysis. The final session introduces RMA and outlines the discussion format for a session.

# CHAPTER IV

## Professional Development Sessions

Teachers need to be supported in their professional development. Thus, if teachers are to be effective in their classroom practices, they must be given appropriate guidance and opportunity to develop their understanding of the practices. Allington (2002) listed the expertise of teachers as one of the most important factors to effective reading instruction. He stated, "It has become clearer that investing in good teaching – whether through sound hiring decisions or planning effective professional development – is the most 'research based' strategy available" (p. 740). Clay (1993) also suggested that in order for teachers to take good RR, teachers must be well trained. Hall (2003) reported that effective literacy teachers are not only highly diagnostic in their interpretations of students' work but also "better and quicker than their validation colleagues at offering explanations as to why children read or write as they do" (p. 318). The link between effective teaching and professional development opportunities seems clear; the most effective teachers are the ones who continue to engage in and place the most value in professional development to inform their practice. To ensure that learning opportunities meet the needs of teachers, it is important to examine the characteristics of effective professional development.

### *Effective Professional Development*

A body of literature is developing concerning the characteristics of effective professional development. A study conducted by Landry, Swank, Smith, Assel, and Gunnewig (2006) on enhancing early literacy skills for preschool children followed a professional development model based on four characteristics: a) adults learn most effectively when engaged in the subject matter, b) the learning should be situated in authentic contexts, c) opportunities must exist for educators to collaborate for the purpose of problem

solving and the practice of specific skills, and d) professional development must be extended over time with opportunities for sharing and ongoing learning amongst the teachers. At the conclusion of the research project, the results demonstrated that the model was effective in preparing teachers to support student learning and make greater gains with the students compared to the teachers who did not receive the intervention.

A summary of findings on effective KS1 (years K-2) and KS2 (years 3-6) teachers of literacy by Medwell, Wray, Poulson, and Fox (1998) also highlighted the nature of professional development opportunities that involved longer periods of time. The researchers stated that the teachers in their study confirmed that the most successful professional development opportunities were those that provided teachers with guided opportunities to try out new ideas in the classroom and then engage in further discussion.

Deglau, Ward, O'Sullivan and Bush (2006) examined professional dialogue as professional development. They argued that if professional development opportunities were to improve or sustain a culture of professionalism, then teachers needed to engage in reflection and conversations about their profession. In their study on the nature of professional discourse among elementary and middle school physical education teachers, they focussed on professional conversations that followed five strategies designed to help teachers maintain focus during their discussions. The discussion protocol was: a) allow for a 15 minute social talk time at the beginning of each meeting, b) organize teachers into small discussion groups providing them with choices of what they want to discuss, c) elect a volunteer facilitator to help keep each small discussion group on-task, d) provide facilitators with focus questions for the group, and e) provide a "flag" that could be picked up by any member of the group that would indicate that the discussion needed to get back to the content at hand. Although no evidence could be provided to demonstrate teachers changed their

practice as a result of the professional development, teachers did willingly engage in professional dialogue, sharing their own practices and seeking advice from peers. The participating teachers also indicated that they no longer felt they were in marginalized positions where they could do nothing to change the culture of the school. Instead, they reached out to their peers and sought new strategies that could facilitate change within their teaching spaces.

The work of Garet, Porter, Desimone, Birman, and Yoon (2001) concurred with and elaborated on the ideas discussed in the three aforementioned research studies. Garet et al. examined what makes professional development effective by reviewing a sample of surveys collected from the Eisenhower program (a state funding program for professional development). In drawing on the experiences of 1,027 primary and secondary teachers the researchers identified three structural features and three core features of effective professional development. The first structural feature of effective professional development was the form/type of activity (i.e. study group, network, workshop, and conference). Garet et al. (2001) argued that traditional forms of professional development (workshops and conferences), although undoubtedly the most common, are the most ineffective form/type of professional development due to a lack of provision of sufficient time, activities, and content necessary for increasing teacher knowledge that would in-turn foster the most meaningful changes in classroom practice. They suggested that small study groups, mentoring and/or coaching were more effective forms of professional development because they could take place in the teacher's classroom allowing for more authentic connections with classroom practices, providing increased sustainability, and facilitating activities that were more responsive to how the teacher learns and their desired teaching goals.

With respect to the second structural feature of effective professional development, the duration of the activity (total number of contact hours and the time over which the activity takes place), Garet et al. (2001) argued that longer activities are more likely to provide opportunities for in-depth discussion and provide teachers with the chance to try out new practices in the classroom and obtain feedback. The opportunity for teachers to engage in in-depth discussions with colleagues during an extended time would support the third structural feature, collaboration. Garet et al. suggested that collaborative participation (teachers from the same school, department, and/or grade/subject level) allowed for teachers to gather more regularly to discuss concepts, thus engaging in professional dialogue that was more contextual and authentic. The collective participation of the teachers also helped the sustainability of the professional development because as teachers leave the school and new ones enter, a shared professional culture would already exist and be afforded to the new teachers.

Garet et al. (2001) further discussed three core features of professional development: a) the degree of content focus, b) opportunities for active learning, and c) coherence in professional development. When reviewing content knowledge they suggested that in order for professional practice to truly change, professional development needed to focus on both content knowledge and how the students will learn the content. In part, this suggestion was made because Garet et al. stated that "many teachers lack strong content-specific teaching skills" (p. 924). The authors viewed the degree of content focus as a "central dimension of high-quality professional development" (p. 925).

The second core feature of active learning referred to teachers' active engagement in meaningful discussion, planning, and practice. Garet et al. (2001) suggested that active learning can take place in a variety of ways including the opportunity to observe expert

teachers and to be observed by expert teachers. Moreover, they noted that opportunities to engage in reflective discussions about the goals of a lesson, the tasks followed, the teaching strategies used, and the student learning that occurred will strengthen the professional practice of the educator. They further suggested that active learning involves teachers being able to link ideas from professional development to the planning and implementation of their programs and the opportunity to collaboratively review student work. According to Garet et al. active engagement also encourages teachers to give presentations, lead discussions, and/or author their experiences/ ideas on teaching practices. Each of the aforementioned elements encourages teachers to delve more deeply into their understandings, thus improving teaching outcomes.

Lastly, Garet et al. (2001) discussed the core feature of coherence in professional development, thus ensuring that the experiences gained from the professional development are in-line with not only the curriculum standards, but also the goals of previous professional development opportunities. They discussed the importance of professional development opportunities that build on earlier activities and are followed-up with more advanced work. With consideration of the aforementioned principles of effective development, the following sections provide an outline of the three professional development sessions that will be offered to the Branksome Hall Junior School staff. Details of the information that will be shared during the sessions are also included. However before I begin, I want to acknowledge two foreseen limitations to the professional development sessions. As in so many situations, the limitation of time is an issue. Due to the demands of teaching schedules and the number of days teachers have without teaching responsibilities, the total number of sessions and the duration allotted for each, is limited. However, I believe that as part of one's own commitment to his/her practice, each individual must take responsibility for his/her learning

and ensure that he/she takes appropriate measures to fully embrace any new knowledge. If any teachers require further assistance in understanding any of the concepts shared during the professional development sessions, I, as will my colleague Roxanne, will be available to consult with them or give them any additional resources.

The second limitation to the sessions is the degree of knowledge that the participating teachers already possess in regards to RR and MA. Some teachers have used RR in the past and some have not. The teachers who do have previous knowledge about RR may find some of the information redundant. The challenge will be to make sure that the sessions are presented as effectively as possible to meet the needs of all who are participating. It is my understanding that no teachers have any previous background in the use of RMA.

*Session 1 – Introduction to Running Records (see Appendix E: Handout 1)*

The objective of the first professional development session is to familiarize teachers with RR. To facilitate this objective the session, will be divided into three parts: (a) an introduction; (b) administration and coding; and (c) scoring. Teachers will be given an opportunity to code a RR based on the recorded oral reading of a young student. They will initially work independently to code and tabulate scores and then work in small groups to compare their RR results. A question and answer period will be provided at the end.

*Introduction to Running Records*

There are several reasons for taking a RR. Clay (1993) suggested RR can inform the following instructional practices: the evaluation of text difficulty, the grouping of children, the acceleration of a child, monitoring the progress of a child, allowing different children to move through books at different speeds while keeping track of individual progress, and observing particular difficulties in particular children (i.e. the examination of cueing systems

used during the reading process). RR offer educators the opportunity to gather formative assessment that will enable them to plan for effective and differentiated instruction.

*Administration and Coding of Running Records*

As discussed previously, a RR can be taken on any text a child reads orally. A blank piece of paper or a RR form can be used in the administration process. The RR consists of a series of checks for all words read correctly and symbols that identify any errors/miscues (the coding of these symbols is discussed shortly). To Clay (1979) any deviation from the written text is called an error, whereas to Goodman (1976) these are miscues. Teachers are free to choose the term they are most comfortable with. The text a child reads from should be leveled on a text gradient (see Appendix K). If teachers do not know the level of book to use during the administration of a RR, they can look at the gradient and find a match between text level and grade. If a child begins to read and displays a lot of difficulty, the reading should be stopped (the child should not become frustrated) and an easier text should be used to collect the information. The atmosphere during the administration of the RR should be one that enables the teacher to effectively hear the child (so that no reading behaviours are missed) and presents no interruptions of the oral reading.

During the student's oral reading of a passage of at least 100 words, teachers must play close attention to any deviations a child makes and code them appropriately on the RR. What follows is a list of behaviours the teacher my encounter when coding a RR: accurate reading, substitution, multiple substitutions, self-corrections, insertions, omissions, repetition, repeated repetition, rereading, appeal, "you try it," told, spelling aloud, and sounding out. Further details of what the reader does when displaying the behaviour, examples of the symbols used to code the behaviour, and information regarding the scoring of behaviours will be provided to the teachers on a handout (Appendix J).

At this point in the sessions, teachers will have the opportunity to code a running record on their own. The will listen to a reading of "Bubbles" level G from the *Benchmark Assessment System 1* (Fountas & Pinnell, 2008). Once teachers have coded their form, they will be shown how to score the RR.

*Scoring the Running Record*

A general guideline to the scoring of miscues is that no score is given to accurate reading, repetitions, repeated repetitions, rereading, appeals, 'you try it,' spelling aloud (when followed by the correct word), and sounding out (when followed by the correct word). One error is recorded for every substitution (except in the case of proper names, if a child pronounces a proper name incorrectly, one error is recorded. Every time the child repeats the error on the proper name, no error is recorded), inserted word, omitted word, spelling aloud when an incorrect word follows, and sounding out when an incorrect word follows. Once again, teachers will have information provided to them on the scoring of errors (Appendix J).

Once a RR has been completed, teachers add all the errors together and the self-corrections together to calculate the error, accuracy and self-correction rates (Appendix E). To calculate the error rate, teachers compare the number of errors with the number of running words in the text (running words divided by number of errors). If a child is reading with one error in every five words of the text, he/she is not reading effectively. However, if a child is reading with one error in every 20 words of the text, he/she is reading effectively (i.e. the child has 6 errors on a passage of 135 words, 135/6 = 22.5, the reader is reading with one error in every 22.5 words). To calculate the accuracy rate (refers to the percentage of words in any given text read correctly) the teacher subtracts the errors from the total running words and then divides by the total running words (i.e. 135-6/135 = 95.5 or 96%). A child who reads at an accuracy rate of 95%-100% is reading at an *easy* level, 90%-94% at an

*instructional* level, and below 90% at a *hard* or *frustration* level. To calculate the self-correction rate, teachers add the number of errors to the number of self-corrections and divide by the umber of self-corrections (i.e. 15 + 5/5 = ration of 1:4). The self-correction rate suggests how many times a child corrects an error in reference to the number of errors he or she makes. Self-correction rates of 1:1, 1:2, and 1:3 can be considered positive because they suggest that the readers is aware of the message in the text, and that he/she is trying to comprehend it by using one or more of the reading cues. Furthermore, self-correcting suggests that the reader is monitoring his/her reading (metacognition) and using self-correction as a strategy to build comprehension. As discussed earlier, metacognition is an attribute of a skilled reader as opposed to an unskilled reader who does relatively little monitoring of their comprehension (Paris & Jacobs, 1984).

At this point in the session, teachers will independently score the RR on "Bubbles" (completed earlier). Once all of the teachers have independently scored their RR, they will be organized into small groups to compare and contrast both their coding and scoring. Once this activity is completed, a RR with the correct coding and scoring will be displayed on an overhead transparency or SMART board. An opportunity to further discuss any observations or questions about the RR on "Bubbles" or new learning will be facilitated. The discussion of how to analyze the miscues gathered on the RR will take place in the second session.

*Session 2 – Analyzing Running Records (see Appendix F: Handout 2)*

The objective of the second professional development session is to help teachers analyze miscues on RR for the purpose of understanding the linguistic cueing systems a student uses during the reading process. The session will be organized into three parts: (a) introduction, (b) cueing systems, and (c) application of learning. Prior to new information on MA, teachers will work through a warm-up activity. The warm-up activity will include a

review of the coding and scoring practices learned in the previous session and the coding/scoring of a new oral reading, "The Loose Tooth", level E (Fountas & Pinnell, 2008).

*Introduction to Miscue Analysis*

Previously I discussed how MA is a form of qualitative analysis that evaluates why miscues are made, assuming that all miscues derive from the language and thought a student brings to the reading process in an attempt to create meaning (Goodman et al., 1987). MA can provide an objective basis not only for determining the texts a child should be reading, but also for future instructional goals. The three structures, or language cueing systems evaluated during an analysis are semantic cues (also known as meaning cues), syntactic cues (also known as structural cues) and graphophonic cues (also known as visual cues). Each of these cueing systems is further discussed in the following section. Once teachers have identified the cueing systems used by a reader, they can evaluate whether the miscues were high or low.

High-level miscues make little to no difference in the meaning of a text. Thus, they result in syntactically and semantically acceptable sentences, whereas low-level miscues change or disrupt the meaning of a text. Skilled readers are competent in constructing meaning from a text. They often rely on selecting the fewest, most productive cues necessary to produce a correct reading (Goodman, 1967). If a child is producing high-level miscues, comprehension is not being effected and she/her can be considered an effective reader (who perhaps need a little instruction on the visual cues).

*Cueing Systems*

As discussed earlier, there are 3 cueing systems that are analyzed on a RR: meaning (semantic) cues, that demonstrate whether a child is applying his/her knowledge of the world to his reading; structural (syntactic) cues that indicates a reader's knowledge of the syntactic

system of the English language; and visual (graphophonic) cues that refer to the relationship between the sounds (phonemes) and the written forms (graphemes) of language. This includes the conventions of spelling (orthographic) systems and sound (phonological) systems (Goodman et al., 1987). It is important to caution teachers that although the study of linguistics tells us that readers use semantic, structural, and graphophonic cues during the reading process, we need to be aware that the analysis of the cueing systems a child uses during reading is a 'best guess'. As stated by Clay (1993) "notice that what you are recording is a best guess: you cannot know what cues the child uses" (p. 31). However, there are several guiding questions that can be used to help determine what cues a child is using in the reading process (Appendix A). During the instructional reading sessions, teachers can prompt children to use a variety of cues. These prompts are also useful to consider in the analysis stage (Appendix G).

*Application of Learning*

At this point in the session teachers will be invited to analyze the miscues on their earlier coded and scored RR (*The Loose Tooth*). Beside each miscue teachers will print a M, S, V and circle the corresponding letter based on the cueing system she/he believes the child was using. Once all the teachers have individually analyzed their RR, they will be invited to share/compare with two other teachers. Once this task is completed, an analysis completed by the session leader will be displayed. The floor will be open for questions about either the RR and /or MA of *The Loose Tooth* or any other new learning.

To conclude the session, teachers will work in small groups to provide a summary of the RR/MA on *The Loose Tooth*. Each group should indicate how the information gleaned from the RR/MA would inform their next steps with the child (highlighting the child's strengths and challenges). Each summary will be presented to the staff. The session leader

will also present a summary of her findings/plans for future instruction highlighting the evaluation of miscues, including which would be considered high-level and low-level.

*Session 3 – Retrospective Miscue Analysis (see Appendix F: Handout 3)*

The objective of the final session is to introduce RMA as a form of assessment *as* learning and give teachers an opportunity to view a RMA session (previously recorded between myself and a student). The previously discussed caution about using MA as a 'best guess' to understanding the cueing systems a child uses will be re-investigated through the lens of RMA, suggesting that dialogue between the reader and teacher can serve to better inform the teacher about what the child is actually doing during the reading process. The concept of metacognition and the importance of it for student learning will also be discussed. Tools such as the Burke Reading Inventory (Appendix C) and the Elementary Reading Attitude Survey (Appendix D) will be shared as ways to further understand the reader and his/her perceptions of self and the reading process. The session will be organized into three sections: (a) introduction, (b) metacognition, and (c) planning for RMA. At the conclusion of this session, teachers will be invited to a voluntary follow-up lunch meeting. The meeting will be scheduled for a date that gives all of the participants an opportunity to try RR, MA, RMA. The purpose of the follow-up meeting is to offer teachers a chance to ask for clarity on practices, ask specific questions about challenges they may have faced or scenarios they were engaged in, and provide an overall sense of support for teachers who have initiated the use RR, MA, and RMA.

*Introduction to Retrospective Miscue Analysis*

As educators we are required to engage in the process of assessment. We generally view assessment as summative (assessment *of* learning) or formative (assessment *for* learning). An extension of formative assessment is assessment *as* learning wherein students

become active, engaged, and critical about how they make sense of information, relate it to prior knowledge, and master skills involved in the task (Earl, 2003). This process of reflection and self-monitoring is often related to metacognition, one's ability to think about their thinking. One way to encourage assessment *as* learning is through RMA.

RMA is an instructional approach that engages the reader and teacher in a conversation about the reading process. RMA can heighten a reader's awareness of the reading process through conversations about the cueing systems used during reading. By engaging students in the RMA process of analyzing their own miscues, readers can become cognizant of the reading strategies they depend on, their strengths and challenges as a reader, and how they can improve their reading abilities. Through RMA readers realize that all readers make mistakes and it is often the level of the miscue (high or low) that influences the comprehension of a text.

As students become more fluent in the language of reading (the cueing systems), they become more confident in their ability to read and begin to lead RMA conversations. As suggested by Goodman and Paulson (2000), this increased confidence and control over the RMA conversations correlates to the control the reader feels during the reading process. Conclusions in the research on RMA and metacognitive reading behaviours (Almazroui, 2007; Goodman, 1996; Jacobs & Paris, 1987) suggest that students who become effective in metacognitive strategies, are able to monitor, reflect on their learning (miscues), and make changes, demonstrate improvements in their reading abilities.

*Metacognition*

In Chapter 3 I discussed how metacognition is often referred to as one's ability to think about thinking. Terms such as reflective thinking and problem solving have also been used to describe the process of metacognition. Flavell (1979) categorized metacognition by

differentiating between two components: metacognitive knowledge (person, task and strategy) and metacognitive experience (evaluating or monitoring cognitive processing). When examining the process of reading, the 'person' variable can be related to one's perception of various aspects of reading (i.e. how well one can read in relation to other people, what people can and cannot do when they read). The variable of 'task' is seen as the knowledge one posses involving the information about the level of difficulty, familiarity and the demand of the reading task is. The variable of 'strategy' suggests one's awareness of the knowledge concerning the strategies needed to be effective in achieving the desired reading goals. Metacognitive experiences relate to one's ability to evaluate and/or monitor the behaviours that occur during the reading process. Examples based on a fictional child's response are provided below.

Metacognitive Knowledge:

- Person – "I am not a very good reader because all the other kids in the class read faster than me."
- Task – "I can't read this book because the words are too long and there are not enough pictures. The book will be too hard."
- Strategy – "To help me figure out words I don't know, I sound them out."

Metacognitive Experience:

- Monitoring – "I think I have just made a mistake on this word. What I said doesn't make any sense and just doesn't sound right."
- Evaluation – "I am getting better at reading because when I come to a word I don't know, I can use many strategies to solve it. Sounding it out doesn't always work best."

When first beginning the process of RMA with students it may be helpful to use an inventory or survey to collect information on the child's perception of self and perception of reading skills. This type of information can also help facilitate metacognitive behaviors because the child is being asked to reflect on his/her thinking. The information can further serve as a record of assessment *as* learning because as the child develops his/her metacognitive reading behaviors, he/she has a baseline of where he/she began. The Burke Reading Inventory (Appendix C) and Elementary Reading Attitude Survey (Appendix D) are good options for collecting this type of information.

*Planning for RMA*

To begin this section of the professional development, a video of a RMA session will be shared with the staff. The video is a recording of a session that took place with myself, and a Grade 5 reader. It is important for the teachers to see both the structure of RMA and the prompts that are used to encourage detailed reflection and dialogue with the child. It is essential that during a RMA discussion students are encouraged to give as much detail and elaboration as possible to ensure an in-depth understanding of his/her reading behaviors. The teachers will be provided with a list of prompts that can be used during RMA (Appendix B). Once the video has been viewed, the following steps for a RMA session will be discussed.

1. Select texts to use for MA – get any necessary supplies: RR form, tape recorder (a tape recorder is always handy to have to share the oral reading with the child during RMA).
2. Make your reader comfortable and give any instructions ("don't worry about what I am doing, focus on your reading" etc).
3. Code the RR as the child reads.

4. Conduct a retelling/comprehension questions (try to get as much information as possible).
5. Prepare a RMA organizer (Appendix I).
6. Plan a program of study for your reader.

To help teachers plan for a RMA they should fill in a RMA organizer (Appendix I). The organizer highlights the miscues made, the original text, where the miscues were located in the text, the graphophonic and sound similarities between the miscue and text, the cueing systems the teacher believed the student used, the possible change of meaning, the self-correction of words. This organizer is a valuable tool in recognizing patterns in the reader's behaviors as well as serving as a tool to guide the RMA conversation. Teachers will be given the opportunity to fill in a RMA organizer using the information they gathered on any one the two previous RR (*Bubbles* or *The Lost Tooth*). At this point in time, the floor will be opened for questions.

## Conclusion

The importance of professional development when introducing a new teaching practice is paramount. Teachers need to be given opportunities to ask questions, practice, and develop skill in the new routine. RR, MA, and RMA are effective tools for classroom assessment. They offer both the teacher and student with important insights into the reading process. When students become a part of assessment, they become active in their learning and take responsibility for monitoring the strategies they need to develop as readers and learners.

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Appendix A

Oral Reading Miscue Inventory Questions
(Goodman, Watson, and Burke, 1987)

Question 1: DIALECT. Is a dialect variation involved in the miscue?

Question 2: INTONATION. Is a shift in intonation involved in the miscue?

Question 3: GRAPHIC SIMILARITY. How much does the miscue look like what was expected?

Y – A high degree of graphic similarity exists between the miscue and the text.
P – Some degree of graphic similarity exists between the miscue and the text.
N – A graphic similarity does not exist between the miscue and the text.

Question 4: SOUND SIMILARITY. How much does the miscue sound like what was expected?

Y – A high degree of sound similarity exists between the miscue and the text.
P – Some degree of sound similarity exists between the miscue and the text.
N – A sound similarity does not exist between the miscue and the text.

Question 5: GRAMMATICAL FUNCTION. Is the grammatical function of the miscue the same as the grammatical function of the word in the text?*

Y – The grammatical functions of the two are identical.
P – It is not possible to determine the grammatical function.
N – The grammatical function of the two differ.

Question 6: CORRECTION. Is the miscue corrected?

Y – The miscue is corrected.
P – There is an unsuccessful attempt at correction. Or a correct response is abandoned.
N – There has been no attempt at correction.

Question 7: GRAMMATICAL ACCEPTABILITY. Does the miscue occur in a structure that is grammatically acceptable?

Y – The miscue occurs in a sentence that is grammatically acceptable and is acceptable in relation to prior and subsequent sentences in the text.
P – The miscue occurs in a sentence that is grammatically acceptable but is not acceptable in relation to prior and subsequent sentences in the text. Or the miscue is grammatically acceptable only with the sentence portion that comes before or after it.
N – The miscue occurs in a sentence that is not grammatically acceptable.

Question 8: SEMANTIC ACCEPTABILITY. Does the miscue occur in a structure that is semantically acceptable?

Y – The miscue occurs in a sentence that is semantically acceptable and is acceptable in relation to prior and subsequent sentences in the text.
P – The miscue occurs in a sentence that is semantically acceptable but is not acceptable in relation to prior and subsequent sentences in the text. Or the miscue is semantically acceptable only with the sentence portion that comes before or after it.
N – The miscue occurs in a sentence that is not semantically acceptable.

Question 9: MEANING CHANGE. Does the miscue result in a change of meaning?

Y- An extensive change in meaning is involved.
P – A minimal change in meaning is involved.
N – No change in meaning is involved.

* If the miscue is an omission or insertion, this category is not marked. If the miscue involves more than one word, this category is not marked. If the miscue involves intonation only, this category is not marked.

Appendix B

Discussion Questions for Retrospective Miscue Analysis (Goodman, 1996):

1. Does the miscue make sense? Or sound like language?
2. Did you correct? Should it have been corrected?
3. Does the word in the text look like the word substituted? Does it sound like it?
4. Why did you make the miscue?
5. Did it affect your understanding of the story/article?
6. Why do you think so? How so you know?

Appendix C

**Burke Reading Interview**
(Goodman, Watson, & Burke, 1987)
Note: Questions 11 and 12 modifications by Moore & Gilles (2005)

Name: _____Date: _____ Teacher: _____

1. When you are reading and you come to a word you don't understand, what do you do?

2. Do you ever do anything else?

3. What do you do when you read a word or sentence correctly but don't understand what it means?

4. What do you do in your head when you read?

5. Who is a good reader you know?

6. What makes him or her a good reader?

7. Do you think that he/she ever comes to something he/she doesn't know when he/she is reading?

   If the answer is YES: When he/she does come to something he/she doesn't know, what do you think he/she does about it?

   If the answer is NO: Suppose _____ came to something he/she didn't know.

   What do you think he/she would do?

8. If you knew that someone was having difficulty reading, how would you help that person?

9. What would a/your teacher do to help that person?

10. How did you learn to read?

11. What did your teacher or someone else do to help you learn?

12. What would you like to do better as a reader?

13. Do you think you are a good reader? Why or why not?

14. What makes someone a good reader?

15. What does reading mean to you?

16. Using a scale of 5 to 1, with 5 being a very good reader, what overall rating would you give yourself as a reader? Why?

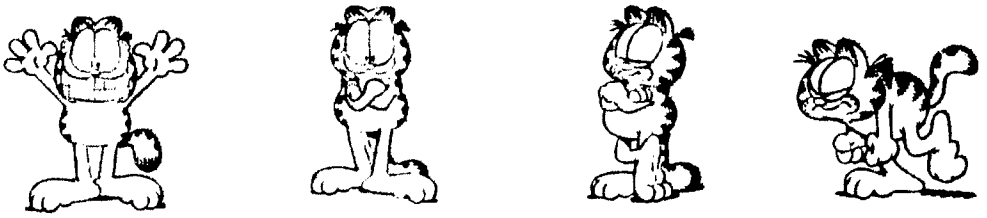
Appendix D
Elementary Reading Attitude Survey (McKenna & Kear, 1990).

# Elementary Reading Attitude Survey

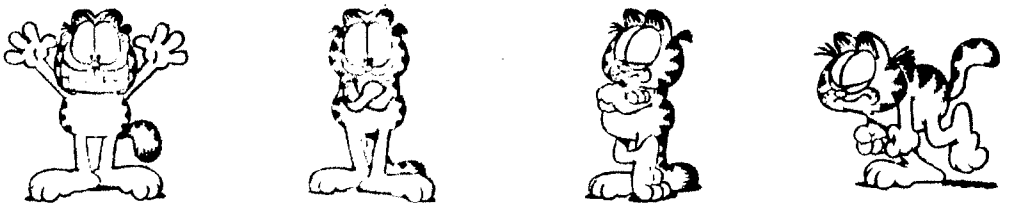
School_____ Grade_____ Name_____

Please circle the picture that describes how you feel when you read a book.

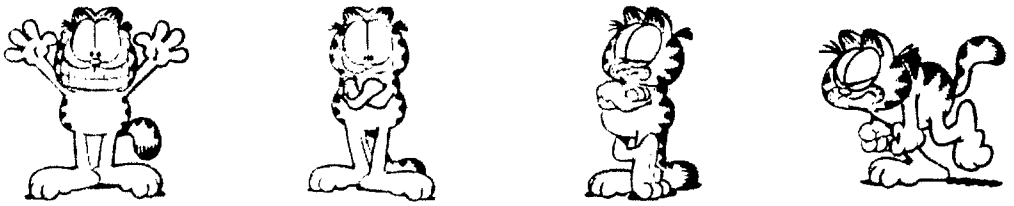
1. How do you feel when you read a book on a rainy Saturday?



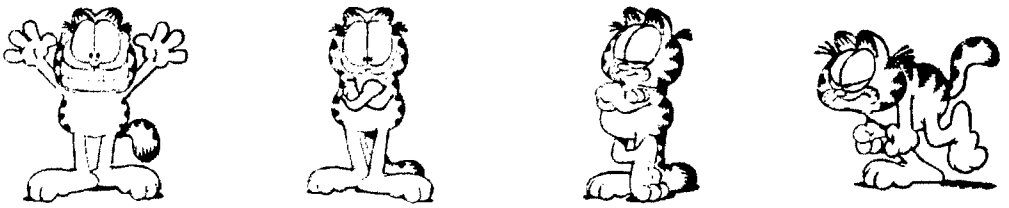
2. How do you feel when you read a book in school during free time?



3. How do you feel about reading for fun at home?

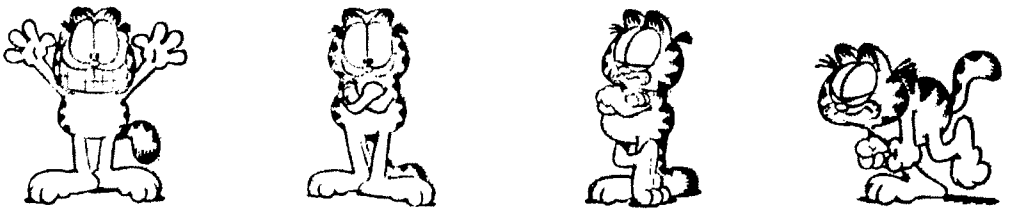


4. How do you feel about getting a book for a present?

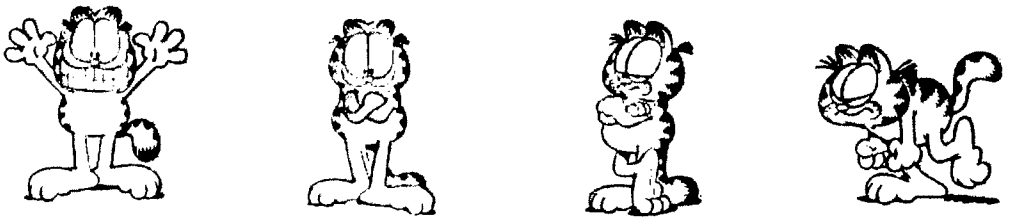


Please circle the picture that describes how you feel when you read a book.

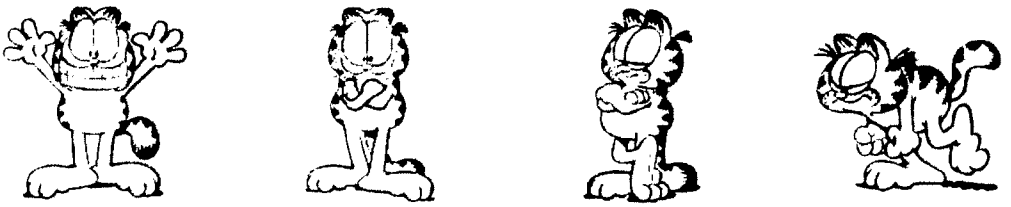
5. How do you feel about spendng free time reading a book?



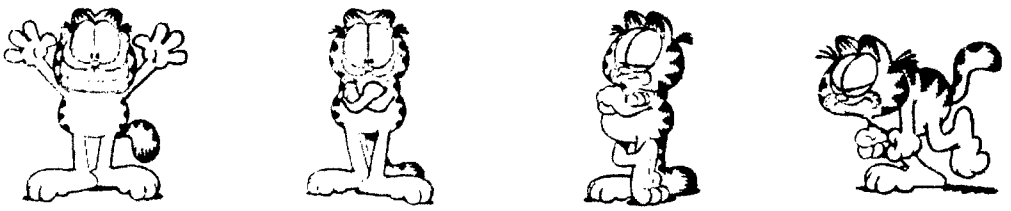
6. How do you feel about starting a new book?



7. How do you feel about reading during summer vacation?

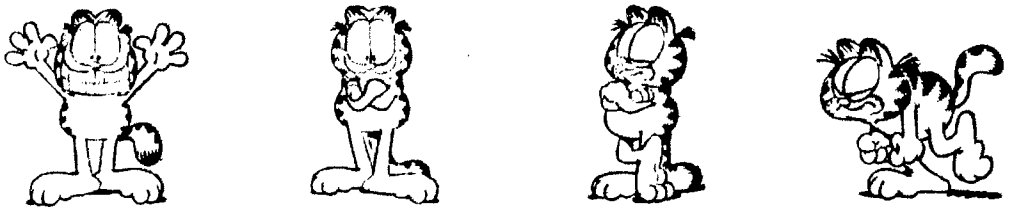


8. How do you feel about reading instead of playing?

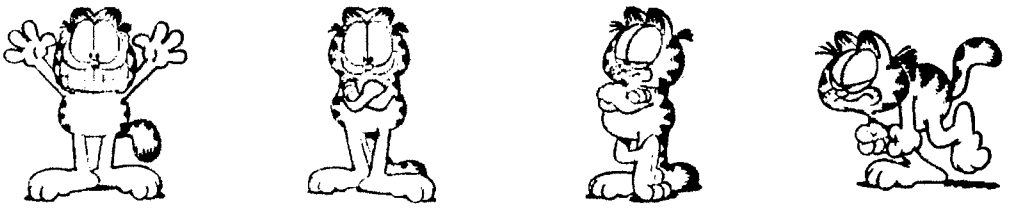


Please circle the picture that describes how you feel when you read a book.

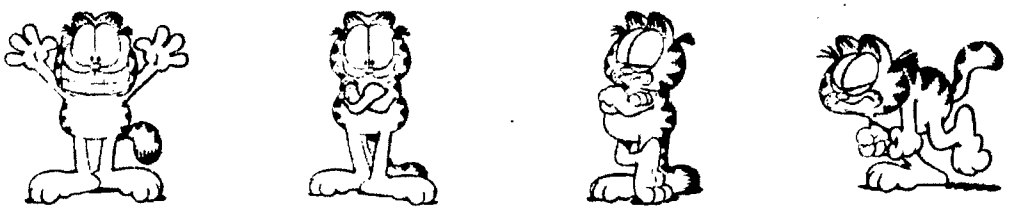
9. How do you feel about going to a bookstore?



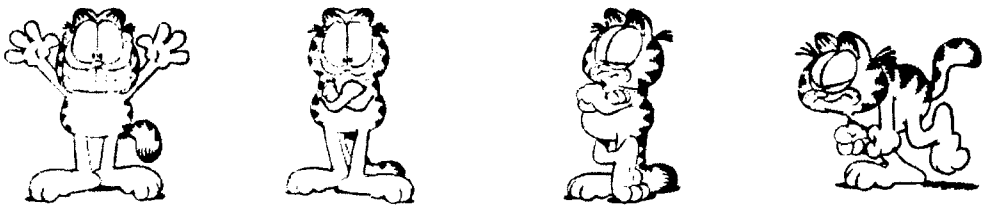
10. How do you feel about reading different kinds of books?



11. How do you feel when a teacher asks you questions about what you read?

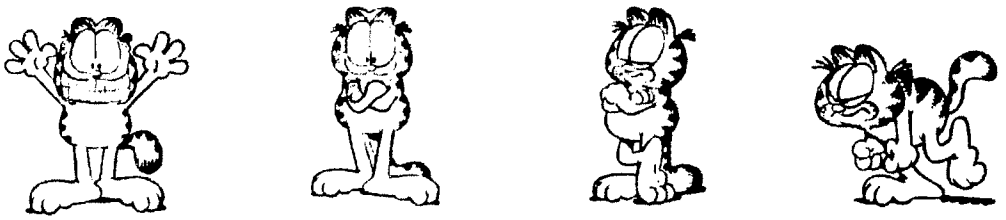


12. How do you feel about reading workbook pages and worksheets?

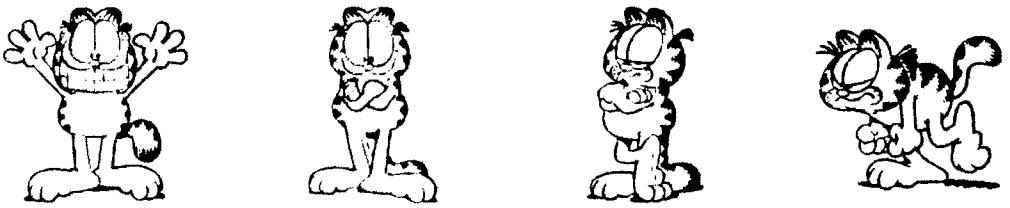


Please circle the picture that describes how you feel when you read a book.

13. How do you feel about reading in school?



14. How do you feel about reading your school books?

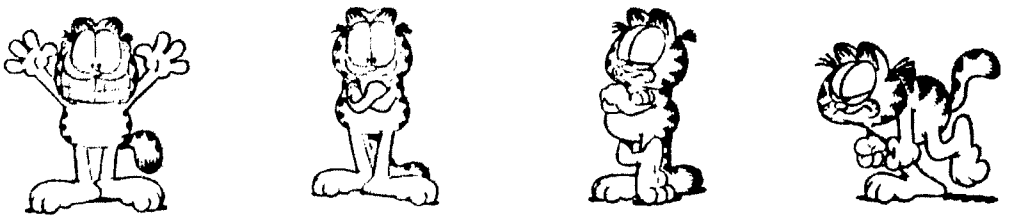


15. How do you feel about learning from a book?

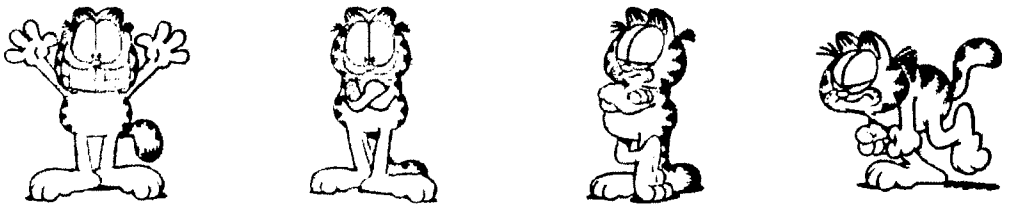
16. How do you feel when it's time for reading in class?

Please circle the picture that describes how you feel when you read a book.

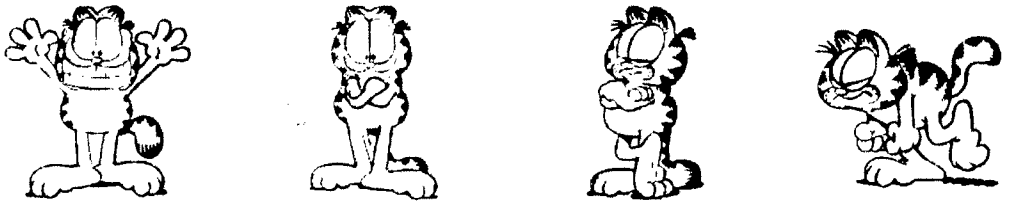
17. How do you feel about stories you read in reading class?



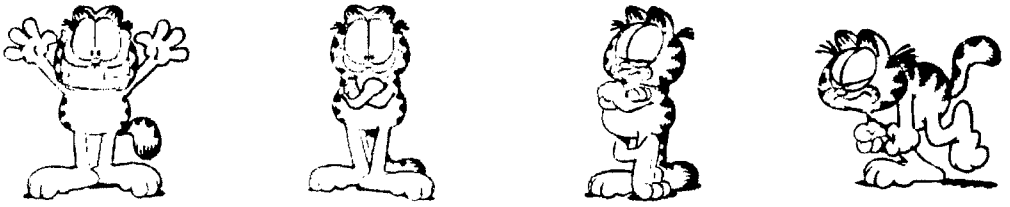
18. How do you feel when you read out loud in class?



19. How do you feel about using a dictionary?



20. How do you feel about taking a reading test?



# Elementary Reading Attitude Survey Scoring Sheet

Student Name_____

Teacher_____

Grade_____ Administration Date_____

| Scoring Guide | |
|---|---|
| 4 points | Happiest Garfield |
| 3 points | Slightly smiling Garfield |
| 2 points | Mildly upset Garfield |
| 1 point | Very upset Garfield |

| Recreational reading | | Academic reading | |
|---|---|---|---|
| 1. | ____ | 1. | ____ |
| 2. | ____ | 2. | ____ |
| 3. | ____ | 3. | ____ |
| 4. | ____ | 4. | ____ |
| 5. | ____ | 5. | ____ |
| 6. | ____ | 6. | ____ |
| 7. | ____ | 7. | ____ |
| 8. | ____ | 8. | ____ |
| 9. | ____ | 9. | ____ |
| 10. | ____ | 10. | ____ |
| Raw Score: | ____ | Raw Score: | ____ |

Full scale raw score . . . . . (Recreational + Academic): _____

Percentile ranks: . . . . . Recreational ☐

. . . . . Academic ☐

. . . . . Full scale ☐

## Appendix
## Technical Aspects of the Elementary Reading Attitude Survey

**The norming project**

To create norms for the interpretation of scores, a large-scale study was conducted in late January 1989, at which time the survey was administered to 18,138 students in Grades 1–6. A number of steps were taken to achieve a sample that was sufficiently stratified (i.e., reflective of the American population) to allow confident generalizations. Children were drawn from 95 school districts in 38 U.S. states. The number of girls exceeded by only 5 the number of boys. Ethnic distribution of the sample was also close to that of the U.S. population (*Statistical abstract of the United States*, 1989). The proportion of blacks (9.5%) was within 3% of the national proportion, while the proportion of Hispanics (6.2%) was within 2%.

Percentile ranks at each grade for both subscales and the full scale are presented in Table 1. These data can be used to compare individual students' scores with the national sample and they can be interpreted like achievement-test percentile ranks.

### Table 1
### Mid-year percentile ranks by grade and scale

| Raw Scr | Grade 1 Rec | Grade 1 Aca | Grade 1 Tot | Grade 2 Rec | Grade 2 Aca | Grade 2 Tot | Grade 3 Rec | Grade 3 Aca | Grade 3 Tot | Grade 4 Rec | Grade 4 Aca | Grade 4 Tot | Grade 5 Rec | Grade 5 Aca | Grade 5 Tot | Grade 6 Rec | Grade 6 Aca | Grade 6 Tot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | 99 | 99 | | 99 | 99 | | 99 | 99 | | 99 | 99 | | 99 | 99 | | 99 | 99 |
| 79 | | 95 | 96 | | 98 | 99 | | 98 | 99 | | 99 | 99 | | 99 | 99 | | 99 | 99 |
| 78 | | 93 | 95 | | 97 | 98 | | 97 | 98 | | 98 | 99 | | 99 | 99 | | 99 | 99 |
| 77 | | 92 | 94 | | 97 | 98 | | 97 | 98 | | 98 | 99 | | 99 | 99 | | 99 | 99 |
| 76 | | 90 | 93 | | 96 | 97 | | 96 | 97 | | 97 | 98 | | 98 | 99 | | 99 | 99 |
| 75 | | 88 | 92 | | 95 | 96 | | 95 | 96 | | 96 | 98 | | 98 | 99 | | 99 | 99 |
| 74 | | 86 | 90 | | 94 | 95 | | 94 | 95 | | 95 | 97 | | 97 | 99 | | 99 | 99 |
| 73 | | 84 | 88 | | 92 | 94 | | 92 | 94 | | 94 | 96 | | 97 | 98 | | 98 | 99 |
| 72 | | 82 | 86 | | 91 | 93 | | 91 | 93 | | 93 | 95 | | 96 | 98 | | 98 | 99 |
| 71 | | 80 | 84 | | 89 | 91 | | 89 | 91 | | 91 | 94 | | 95 | 97 | | 97 | 99 |
| 70 | | 78 | 82 | | 86 | 89 | | 86 | 89 | | 89 | 92 | | 94 | 96 | | 96 | 98 |
| 69 | | 75 | 79 | | 84 | 87 | | 84 | 88 | | 88 | 91 | | 92 | 95 | | 95 | 97 |
| 68 | | 72 | 77 | | 81 | 85 | | 81 | 86 | | 86 | 89 | | 91 | 93 | | 93 | 96 |
| 67 | | 69 | 74 | | 79 | 82 | | 79 | 83 | | 83 | 86 | | 89 | 92 | | 92 | 94 |
| 66 | | 66 | 71 | | 76 | 80 | | 76 | 80 | | 80 | 83 | | 87 | 90 | | 90 | 93 |
| 65 | | 62 | 69 | | 73 | 78 | | 73 | 78 | | 78 | 81 | | 84 | 88 | | 88 | 91 |
| 64 | | 59 | 66 | | 70 | 75 | | 70 | 75 | | 75 | 79 | | 82 | 86 | | 86 | 89 |
| 63 | | 55 | 63 | | 67 | 72 | | 67 | 72 | | 72 | 76 | | 79 | 84 | | 84 | 87 |
| 62 | | 52 | 60 | | 64 | 69 | | 64 | 69 | | 69 | 73 | | 76 | 82 | | 82 | 85 |
| 61 | | 49 | 57 | | 61 | 66 | | 61 | 66 | | 66 | 70 | | 73 | 79 | | 79 | 82 |
| 60 | | 46 | 54 | | 58 | 63 | | 58 | 63 | | 63 | 67 | | 70 | 76 | | 76 | 80 |
| 59 | | 43 | 51 | | 55 | 60 | | 55 | 60 | | 60 | 64 | | 67 | 73 | | 73 | 77 |
| 58 | | 40 | 47 | | 51 | 56 | | 51 | 56 | | 56 | 61 | | 64 | 70 | | 70 | 74 |
| 57 | | 37 | 45 | | 48 | 53 | | 48 | 53 | | 53 | 58 | | 61 | 67 | | 67 | 71 |
| 56 | | 34 | 41 | | 44 | 50 | | 44 | 50 | | 50 | 55 | | 57 | 64 | | 64 | 68 |
| 55 | | 31 | 38 | | 41 | 47 | | 41 | 47 | | 47 | 52 | | 53 | 61 | | 61 | 65 |
| 54 | | 28 | 35 | | 38 | 44 | | 38 | 44 | | 44 | 49 | | 50 | 58 | | 58 | 62 |

## Table 1
### Mid-year percentile ranks by grade and scale (continued)

| Raw Scr | Grade 1 | | | Grade 2 | | | Grade 3 | | | Grade 4 | | | Grade 5 | | | Grade 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rec | Aca | Tot | Rec | Aca | Tot | Rec | Aca | Tot | Rec | Aca | Tot | Rec | Aca | Tot | Rec | Aca | Tot |
| 53 | | | 25 | | | 42 | | | 34 | | | 38 | | | 46 | | | 52 |
| 52 | | | 22 | | | 29 | | | 31 | | | 35 | | | 42 | | | 48 |
| 51 | | | 20 | | | 26 | | | 28 | | | 32 | | | 39 | | | 44 |
| 50 | | | 18 | | | 23 | | | 25 | | | 28 | | | 36 | | | 40 |
| 49 | | | 15 | | | 20 | | | 23 | | | 26 | | | 33 | | | 37 |
| 48 | | | 13 | | | 18 | | | 20 | | | 23 | | | 29 | | | 33 |
| 47 | | | 12 | | | 15 | | | 17 | | | 20 | | | 26 | | | 30 |
| 46 | | | 10 | | | 13 | | | 15 | | | 18 | | | 23 | | | 27 |
| 45 | | | 8 | | | 11 | | | 13 | | | 16 | | | 20 | | | 25 |
| 44 | | | 7 | | | 9 | | | 11 | | | 13 | | | 17 | | | 22 |
| 43 | | | 6 | | | 8 | | | 9 | | | 12 | | | 15 | | | 20 |
| 42 | | | 5 | | | 7 | | | 8 | | | 10 | | | 13 | | | 17 |
| 41 | | | 5 | | | 6 | | | 7 | | | 9 | | | 12 | | | 15 |
| 40 | 99 | 99 | 4 | 99 | 99 | 5 | 99 | 99 | 6 | 99 | 99 | 7 | 99 | 99 | 10 | 99 | 99 | 13 |
| 39 | 92 | 91 | 3 | 94 | 94 | 4 | 96 | 97 | 5 | 97 | 98 | 6 | 98 | 99 | 9 | 99 | 99 | 12 |
| 38 | 89 | 88 | 3 | 92 | 92 | 3 | 94 | 95 | 4 | 95 | 97 | 5 | 96 | 98 | 8 | 97 | 99 | 10 |
| 37 | 86 | 85 | 2 | 88 | 89 | 2 | 90 | 93 | 3 | 92 | 95 | 4 | 94 | 98 | 7 | 95 | 99 | 8 |
| 36 | 81 | 79 | 2 | 84 | 85 | 2 | 87 | 91 | 2 | 88 | 93 | 3 | 91 | 96 | 6 | 92 | 98 | 7 |
| 35 | 77 | 75 | 1 | 79 | 81 | 1 | 81 | 88 | 2 | 84 | 90 | 3 | 87 | 95 | 4 | 88 | 97 | 6 |
| 34 | 72 | 69 | 1 | 74 | 78 | 1 | 75 | 83 | 2 | 78 | 87 | 2 | 82 | 93 | 4 | 83 | 95 | 5 |
| 33 | 65 | 63 | 1 | 68 | 73 | 1 | 69 | 79 | 1 | 72 | 83 | 2 | 77 | 90 | 3 | 79 | 93 | 4 |
| 32 | 58 | 58 | 1 | 62 | 67 | 1 | 63 | 74 | 1 | 66 | 79 | 1 | 71 | 86 | 3 | 74 | 91 | 3 |
| 31 | 52 | 53 | 1 | 56 | 62 | 1 | 57 | 69 | 0 | 60 | 75 | 1 | 65 | 82 | 2 | 69 | 87 | 2 |
| 30 | 44 | 49 | 1 | 50 | 57 | 0 | 51 | 63 | 0 | 54 | 70 | 1 | 59 | 77 | 1 | 64 | 82 | 2 |
| 29 | 38 | 44 | 0 | 44 | 51 | 0 | 45 | 58 | 0 | 47 | 64 | 1 | 53 | 71 | 1 | 58 | 78 | 1 |
| 28 | 32 | 39 | 0 | 37 | 46 | 0 | 38 | 52 | 0 | 41 | 58 | 1 | 48 | 66 | 1 | 51 | 73 | 1 |
| 27 | 26 | 34 | 0 | 31 | 41 | 0 | 33 | 47 | 0 | 35 | 52 | 1 | 42 | 60 | 1 | 46 | 67 | 1 |
| 26 | 21 | 30 | 0 | 25 | 37 | 0 | 26 | 41 | 0 | 29 | 46 | 0 | 36 | 54 | 0 | 39 | 60 | 1 |
| 25 | 17 | 25 | 0 | 20 | 32 | 0 | 21 | 36 | 0 | 23 | 40 | 0 | 30 | 49 | 0 | 34 | 54 | 0 |
| 24 | 12 | 21 | 0 | 15 | 27 | 0 | 17 | 31 | 0 | 19 | 35 | 0 | 25 | 42 | 0 | 29 | 49 | 0 |
| 23 | 9 | 18 | 0 | 11 | 23 | 0 | 13 | 26 | 0 | 14 | 29 | 0 | 20 | 37 | 0 | 24 | 42 | 0 |
| 22 | 7 | 14 | 0 | 8 | 18 | 0 | 9 | 22 | 0 | 11 | 25 | 0 | 16 | 31 | 0 | 19 | 36 | 0 |
| 21 | 5 | 11 | 0 | 6 | 15 | 0 | 6 | 18 | 0 | 9 | 20 | 0 | 13 | 26 | 0 | 15 | 30 | 0 |
| 20 | 4 | 9 | 0 | 4 | 11 | 0 | 5 | 14 | 0 | 6 | 16 | 0 | 10 | 21 | 0 | 12 | 24 | 0 |
| 19 | 2 | 7 | | 2 | 8 | | 3 | 11 | | 5 | 13 | | 7 | 17 | | 10 | 20 | |
| 18 | 2 | 5 | | 2 | 6 | | 2 | 8 | | 3 | 9 | | 5 | 13 | | 5 | 18 | |
| 17 | 1 | 4 | | 1 | 5 | | 1 | 5 | | 2 | 7 | | 4 | 9 | | 3 | 11 | |
| 16 | 1 | 3 | | 1 | 3 | | 1 | 4 | | 2 | 5 | | 3 | 6 | | 4 | 8 | |
| 15 | 0 | 2 | | 0 | 2 | | 0 | 3 | | 1 | 3 | | 2 | 4 | | 3 | 6 | |
| 14 | 0 | 2 | | 0 | 1 | | 0 | 1 | | 1 | 2 | | 1 | 2 | | 1 | 3 | |
| 13 | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 | 2 | | 2 | 2 | |
| 12 | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 | 1 | |
| 11 | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| 10 | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |

## Appendix
## Technical Aspects of the Elementary Reading Attitude Survey (continued)

### Reliability

Cronbach's alpha, a statistic developed primarily to measure the internal consistency of attitude scales (Cronbach, 1951), was calculated at each grade level for both subscales and for the composite score. These coefficients ranged from .74 to .89 and are presented in Table 2.

It is interesting that with only two exceptions, coefficients were .80 or higher. These were for the recreational subscale at Grades 1 and 2. It is possible that the stability of young children's attitudes toward leisure reading grows with their decoding ability and familiarity with reading as a pastime.

### Table 2
### Descriptive statistics and internal consistency measures

| | | Recreational Subscale | | | | Academic Subscale | | | | Full Scale (Total) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | N | M | SD | S.M | Alpha* | M | SD | S.M | Alpha | M | SD | S.M | Alpha |
| 1 | 2,518 | 31.0 | 5.7 | 2.9 | .74 | 30.1 | 6.8 | 3.0 | .81 | 61.0 | 11.4 | 4.1 | .87 |
| 2 | 2,974 | 30.3 | 5.7 | 2.7 | .78 | 28.8 | 6.7 | 2.9 | .81 | 59.1 | 11.4 | 3.9 | .88 |
| 3 | 3,151 | 30.0 | 5.6 | 2.5 | .80 | 27.8 | 6.4 | 2.8 | .81 | 57.8 | 10.9 | 3.8 | .88 |
| 4 | 3,679 | 29.5 | 5.8 | 2.4 | .83 | 26.9 | 6.3 | 2.6 | .83 | 56.5 | 11.0 | 3.6 | .89 |
| 5 | 3,374 | 28.5 | 6.1 | 2.3 | .86 | 25.6 | 6.0 | 2.5 | .82 | 54.1 | 10.8 | 3.6 | .89 |
| 6 | 2,442 | 27.9 | 6.2 | 2.2 | .87 | 24.7 | 5.8 | 2.5 | .81 | 52.5 | 10.6 | 3.5 | .89 |
| All | 18,138 | 29.5 | 5.9 | 2.5 | .82 | 27.3 | 6.6 | 2.7 | .83 | 56.8 | 11.3 | 3.7 | .89 |

*Cronbach's alpha (Cronbach, 1951).

### Validity

Evidence of construct validity was gathered by several means. For the recreational subscale, students in the national norming group were asked (a) whether a public library was available to them and (b) whether they currently had a library card. Those to whom libraries were available were separated into two groups (those with and without cards) and their recreational scores were compared. Cardholders had significantly higher ($p < .001$) recreational scores ($M = 30.0$) than noncardholders ($M = 28.9$), evidence of the subscale's validity in that scores varied predictably with an outside criterion.

A second test compared students who presently had books checked out from their school library versus students who did not. The comparison was limited to children whose teachers reported not requiring them to check out books. The means of the two groups varied significantly ($p < .001$), and children with books checked out scored higher ($M = 29.2$) than those who had no books checked out ($M = 27.3$).

A further test of the recreational subscale compared students who reported watching an average of less than 1 hour of television per night with students who reported watching more than 2 hours per night. The recreational mean for the low televiewing group (31.5) significantly exceeded ($p < .001$) the mean of the heavy televiewing group (28.6). Thus, the amount of television watched varied inversely with children's attitudes toward recreational reading.

The validity of the academic subscale was tested by examining the relationship of scores to reading ability. Teachers categorized norm-group children as having low, average, or high overall reading ability. Mean subscale scores of the high-ability readers ($M = 27.7$) significantly exceeded the mean of

## Appendix
## Technical Aspects of the Elementary Reading Attitude Survey (continued)

low-ability readers ($M = 27.0$, $p < .001$), evidence that scores were reflective of how the students truly felt about reading for academic purposes.

The relationship between the subscales was also investigated. It was hypothesized that children's attitudes toward recreational and academic reading would be moderately but not highly correlated. Facility with reading is likely to affect these two areas similarly, resulting in similar attitude scores. Nevertheless, it is easy to imagine children prone to read for pleasure but disenchanted with assigned reading and children academically engaged but without interest in reading outside of school. The inter-subscale correlation coefficient was .64, which meant that just 41% of the variance in one set of scores could be accounted for by the other. It is reasonable to suggest that the two subscales, while related, also reflect dissimilar factors—a desired outcome.

To tell more precisely whether the traits measured by the survey corresponded to the two subscales, factor analyses were conducted. Both used the unweighted least squares method of extraction and a varimax rotation. The first analysis permitted factors to be identified liberally (using a limit equal to the smallest eigenvalue greater than 1). Three factors were identified. Of the 10 items comprising the academic subscale, 9 loaded predominantly on a single factor while the 10th (item 13) loaded nearly equally on all three factors. A second factor was dominated by 7 items of the recreational subscale, while 3 of the recreational items (6, 9, and 10) loaded principally on a third factor. These items did, however, load more heavily on the second (recreational) factor than on the first (academic). A second analysis constrained the identification of factors to two. This time, with one exception, all items loaded cleanly on factors associated with the two subscales. The exception was item 13, which could have been interpreted as a recreational item and thus apparently involved a slight ambiguity. Taken together, the factor analyses produced evidence extremely supportive of the claim that the survey's two subscales reflect discrete aspects of reading attitude.

Appendix E

Professional Development Session 1: Handout

**Purpose of Running Records**

- Provide teachers with insights into the linguistic cueing systems students use during the reading process
- Provide a method of analyzing the reading behaviours enabling teachers to plan for future instruction based on systematic observation
- Provide teachers with information about a child's reading proficiency at a certain reading level. This information can be used to choose reading materials (i.e., the initial selection of a text that is at an appropriate reading level), group students on ability, and plan instruction.

**Helpful Hints**

- If a child becomes frustrated and makes a lot of consecutive errors, STOP the running record. This frustration is an indication that the text is too hard and the teacher should try a text one level below.

- When considering the information gathered from a running record, always look that the student is successful in all areas (word identification, comprehension, fluency) BEFORE moving them to the next level text.

**Scoring Running Records**

**Accuracy – refers to the percentage of words in any given text read correctly**

| | |
|---|---|
| Easy | 95% - 100% |
| Instructional | 90% - 94% |
| Hard | Below 90% |

**Error Rate – to calculate, divide the total number of words (running words) by the total number of errors made by the child in any given text.**

$$\text{Error rate} = \frac{\text{Running Words}}{\text{Errors}} \quad \text{or} \quad \frac{RW}{E}$$

**Self-correction Rate – To calculate, add the number of errors to the number of self-corrections and divide by the number of self-corrections.**

$$\text{Self-correction rate} = \frac{\text{Errors + self-corrections}}{\text{Self-corrections}} \quad \textbf{or} \quad \frac{E + SC}{SC}$$

Example: If a child has 4 errors and 2 self–corrections $SC = \frac{4+2}{2} = 3 = 1:3$

Therefore, for every 3 errors the child made, he self-corrected 1.

Note: self-correction rates of 1:1, 1:2, 1:3 are good scores because they show that the child is attending to his reading.

Please see attached handout (Appendix J), 'Coding and Scoring Errors at-a-Glance' (Fountas & Pinnell, 2008) for further information of the coding and scoring process of RR.

Appendix F

Professional Development Session 2: Handout

## Analyzing the Running Record

**What kinds of information does the child use (linguistic cueing systems)?**

To work out whether the child is responding to the different sources of information in print (and the different kinds of cues that could be used) you need to look at every error that the child makes and ask yourself, **"What led the child to do (or say) that?"** Try to work out whether the child was using information from:

- The **meaning** of the message
- The **structure** of the sentence
- Something from the **visual** cues

**Meaning (Semantic) Cues**
Does the child use (M)? If what he reads makes sense, even though it is inaccurate, then he is probably applying his knowledge of the world to his reading.

Example:

Mary had a little *lamb.*

Mary had a little *lamb*, mint sauce, and gravy.

Mary had a little *lamb*, its fleece was white as snow

**Structure (Syntactic) Cues**
Is what he said possible in an English sentence (S for syntactically appropriate)? If it is, his oral language is probably influencing his responding. If it is not, there may be two reasons. Perhaps his language skill is limited and his personal 'grammar' does not contain the structures used in his reading book. Or, if he is paying close attention to detail, or to word-by-word reading, he may not be using his control over English syntax to influence his choices.

Example:

Text: The cat is playing with the red ball of yarn.

Reading: The cat is played with the red ball of yarn.

(The verb *playing* is replaced with *played* changing the tense and grammatical structure of the sentence.)

**Visual (Graphophonic) Cues**

Does he use visual information (V) from the letters and words or the layout of print? Readers identify words by relating speech sounds to letters and clusters. Graphic cues generally include letters, letter clusters, words and parts of word. When analyzing graphic similarity, teachers are encouraged to look at the beginning, middle, and end of the miscue to find common characteristics with the printed text.

Example:

Text: Let's go for a ride on the train.

Reader: Let's go for a ride on the tain.

(The word *train* has been substituted for the invented word *tain*. The beginning of each word starts with 't' and the rime is the same, therefore once could suggest that the reader was using visual information.)

**Further analyzing of miscues**

- To explain the "error/miscue" consider the behaviour up to the point of the error
- To explain the "self-correction" consider what behaviour led the child to spontaneously correct the error.
- Refer to attached handout, "Oral Reading Miscue Inventory Questions" (Appendix H)

**Vocabulary Review**

**Configuration Cues** – a shape or outline that aids in word identification; especially, the pattern the letters make above and below the main body of the word. Configuration cues are associated with visual cues.

**Example: horse and house**

- They have similar external shape
- Internal shape changes at the 'r" and 'u'
- Visual memory of the shapes of the letters and the word, enable children to fill in the blanks.

**Phonetics** – the study of speech sounds, generally conducted within one of three branches of investigation: acoustic phonetics, articulatory phonetics, and auditory phonetics.

**Phonics** – a way of teaching reading and spelling that stresses the symbol-sound relationship in beginning instruction.

**Phonological Awareness** – the ability to segment the language sounds, including words, syllables, and phonemes. Phonological awareness means hearing sounds (phonemes) that make up spoken words.

**Phonic Analysis** – in teaching practice the identification of words by their sounds (c + a + t = cat).

**Structural Analysis** – the identification of word-meaning elements, to help understand the meaning of a word as a whole. Structural analysis commonly involves the identification of roots, affixes, compounds, hyphenated forms, inflected and derived endings, contractions, and in some cases syllabication.

**Identifying High-level and Low-level Miscues**

- High-level miscues result in syntactically and semantically acceptable sentences that make *little to no difference* in the meaning of a text.
- Low-level miscues generally *change or disrupt* the meaning of a text.

Example:

***Text:*** When you go into the store, make sure you look for the sale items.

***Student miscue***: to seal

Because the miscue **'to'** does not change the meaning considerably, it can be called a high-level miscue. However, the miscue **'seal'** would be considered low-level because the meaning of the text is interrupted.

References

Clay, M. (1993). *An observation survey of early literacy achievement.* Portsmouth, NH: Heinemann.

Goodman, Y., Watson, D., & Burke, C. (1987). *Reading miscue inventory.* New York: Richard C. Owen.

Harris, T., & Hodges, R. (Eds.). (1995). *The literacy dictionary.* Newark, DE: International Reading Association.

Appendix G

Professional Development Session 3: Handout

**Retrospective Miscue Analysis**

*What is it?*

- RMA is a discussion between a reader and teacher that aims to heighten a reader's awareness of the reading process
- RMA discussions enable readers to understand the linguistic cueing systems they use during the reading process
- RMA discussions can develop metacognitive knowledge and experiences that can help improve a child's reading

*Defining Metacognition*

- The ability to think about one's thinking
- What a person knows about his or her cognition and the ability to control the cognition (Flavell, 1979)
- Dimensions of metacognition (Flavell, 1979): metacognitive Knowledge (person, task, strategy) and metacognitive experiences (evaluating and monitoring)

Examples:

Metacognitive Knowledge:

- Person – "I am not a very good reader because all the other kids in the class read faster than me."
- Task – "I can't read this book because the words are too long and there are not enough pictures. The book will be too hard."
- Strategy – "To help me figure out words I don't know, I sound them out."

Metacognitive Experience:

- Monitoring – "I think I have just made a mistake on this word. What I said doesn't make any sense and just doesn't sound right."
- Evaluation – "I am getting better at reading because when I come to a word I don't know, I can use many strategies to solve it. Sounding it out doesn't always work best."

*What are the benefits of RMA?*

- Students discover that their miscues have meaning
- Students realize that reading is not simply about pronouncing words correctly; it is the construction of meaning based on the integration of the author's text with their own background knowledge and experiences
- Students begin to revalue themselves as readers – helps readers become aware that they are better readers than they think they are
- Readers feel empowered as they gain control of their reading
- Teachers are able to gain valuable insights into how readers use their knowledge of language to construct meaning as they read (Moore & Giles, 2005)

**Helpful Tools for RMA**

- Understanding how the child views herself as a reader is important to understanding her reading processing abilities (metacognitive knowledge – person). The Burke Reading Inventory and the Elementary Reading Attitude Survey are good tools to help an educator understand a child's perception of her skills and attitudes
- To assist in the analysis of miscues, Goodman, Watson and Burke's (1987) Oral Reading Miscue Questions are helpful
- To organize miscue information prior to RMA, use an RMA Organizer

References

Flavell, J. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist, 34*(10), 906-911.

Goodman, Y., Watson, D., & Burke, C. (1987). *Reading miscue inventory.* New York: Richard C. Owen.

Appendix H

**Useful Strategy Prompts**

**Visual (Graphophonic) Prompts:**

- What sound/letter does the word start with?
- Does it look right?
- What would you expect to see at the beginning, middle, and end of the word?
- Point to the words.
- Did that match?
- Can you point to _____?
- Can you find _____?

**Structural (Syntactic) Prompts:**

- Can you re-read that?
- Did that sound right?
- What is a different word that might fit there?
- Could you say that another way?

**Meaning (Semantic) Prompts:**

- Look at the illustrations.
- What do you think it might be?
- Do you think that makes sense?
- Could you re-read that?
- What happened in the story when…?

Appendix I

RMA Organizer
(Adapted from Moore and Gilles, 2005)

Reader: _____
Date: _____
Text: _____ Level _____

Directions: Write the line of the text in which the miscue occurred. Write the text as written. Write the miscue as read. Under "Graphophonic" and "Sound" indicate with *b*, *m*, or *e* whether the miscue is similar to the text at the beginning, middle, or end. Put a Y or N in the next columns. **Look for patterns of response in your coding.**

| Line of text | Text | Miscue as read | Grapho-phonic *b m e* | Sound *b m e* | Syntactic: Sound like language? | Semantic: Make sense? | Meaning change? | C: Self corrected? |
|---|---|---|---|---|---|---|---|---|
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Questions to think about:

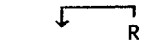
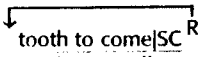
- Does the miscue sound like language?
- Does it make sense?
- Does it change the meaning of the sentence?
- Did the reader self-correct?
- Why do you think the reader miscued?
- What connections to other text or life experience did the reader make in the retelling?

Some topics for RMA conversation:

_____
_____
_____
_____
_____

Appendix J
Coding and Scoring Errors at-a-Glance
Fountas and Pinnell (2008).

| Behavior | What the Reader Does | How to Code | Example | How to Score | |
|---|---|---|---|---|---|
| Accurate Reading | Reads words correctly | Do not mark or place check (✓) above word. | no mark or ✓ / Kate | | No error |
| Substitution | Gives an incorrect response. | Write the substituted word above the word. | her / Kate's | Substitution, not corrected | 1 error |
| | | | | Substitution, self-corrected (SC) | No error; 1 SC |
| Multiple Substitutions | Makes several attempts at a word | Write each of the substitutions in sequence above the word. | little\|some\|him / his | Multiple substitutions, not corrected | 1 error for each incorrect word in text |
| | | | touch\|teeth\|SC / tooth | Multiple substitutions, self-corrected (SC) | No error; 1 SC |
| | | | to\|touch\|teeth / tooth | Multiple misreadings of the same word not corrected | 1 error for each word in text |
| | | | Kathy\|Kelly / Kate | Multiple misreadings of names and proper nouns | 1 error first time missed; no errors after that |
| | | | It's / It is  Do not / Don't | Misreading contractions (reads contraction as two words or two words as contraction) | 1 error each time |
| Self-correction | Corrects a previous error | Write the error over the word, followed by SC. | teeth\|SC / tooth | | No error; 1 SC |
| Insertion | Adds a word that is not in the text | Write in the inserted word using a carat (^). | loose ^ | | 1 error per word inserted |
| Omission | Gives no response to a word | Place a dash (–) above the word. | – / Very | Skipping a word | 1 error per word |
| | | | | Skipping a line | 1 error per word |
| Repetition | Reads the same word again | Write R above the word. | R | | No error |

| Behavior | What the Reader Does | How to Code | Example | How to Score | |
|---|---|---|---|---|---|
| Repeated Repetitions | Reads the same word more than once | Write R above the word for the first repetition and then write a number for the additional repetitions. | $\frac{R_2\ R_3}{}$ | | No error |
| Rereading | Returns to the beginning of sentence or phrase to read again | Write R with an arrow back to the place where rereading began. |  | | No error |
| | Rereads and self-corrects | Write R with an arrow back to the place where rereading began and SC at point of self-correction |  tooth to come\|SC R<br>tooth to fall | | No error; 1 SC |
| Appeal | Verbally asks for help | Write A above the word. | $\frac{A}{very}$ | Follow up with "You try it." | No error |
| "You Try It" | The child appeals, the teacher responds with "You try it." | Write Y after the word. | $\frac{A}{very \mid Y}$ | "You try it" followed by correct word | No error |
| | | | | "You try it" followed by omission, incorrect word, or Told | 1 error |
| Told | Child doesn't attempt word even after "You try it." | Write T after the word or the Y. | $\frac{A}{very \mid Y \mid T}$ $\frac{A}{very \mid T}$ | | 1 error |
| Spelling Aloud | The child spells the word by saying the names of letters. | Write the letters in all capital letters. | $\frac{B\text{-}U\text{-}T}{But}$ | Spelling followed by correct word | No error |
| | | | | Spelling followed by incorrect word | 1 error |
| Sounding Out | The child makes the sounds associated with the letters in the word. | Write the letters in lowercase with hyphens between them. | $\frac{n\text{-}o\text{-}t}{not}$ | "Sounding out" followed by correct word | No error; no SC |
| | | | $\frac{l\text{-}o\text{-}s \mid lose}{loose}$ | "Sounding out" followed by incorrect word | 1 error |
| | | | $\frac{f\text{-} \mid SC}{come}$ | Sounding the first letter incorrectly and then saying the word correctly | No error; 1 SC |

Appendix K – Text Gradient
Fountas and Pinnell (2001).