

LESSONS LEARNED: AN AISI JOURNEY

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I dedicate this work to

Bruce Joyce

and

Marilyn Hrycauk

...thank you for inspiring me to recognize

the tremendous potential

that lies within each of us.

Abstract

This inquiry is one teacher's attempt to capture the story of AISI (The Alberta Initiative for School Improvement) in a northern school division. A review of the literature in the areas of literacy and professional development sets the stage for looking at the multidimensional literacy program that is the focus of this study. Related AISI projects are analyzed and discussed to uncover themes that have arisen out of the search for 'best practice' in curriculum, instruction and professional development. Study findings show that student achievement rose significantly in all initiatives, and that teacher efficacy and leadership improved as a result of the professional development opportunities structured by the division. Administrative support, teacher training in the new program, and program implementation were found to be factors affecting student achievement in this study. Further study is needed to determine the impact of these changes in practice and expectation on teacher engagement over time. In addition, more study needs to be done to make more explicit the relationship of alphabet letter recognition and at-home reading to student scores on both internal and external measures of literacy development.

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Chapter 1: Background and Research Question

Introduction

Student achievement! This term has come to represent a critical focal point for parents, school districts and government agencies across our country and, in response to its influence, educators have found themselves immersed in a flurry of professional development opportunities designed to accommodate the increasing demands of accountability, reporting and testing that have been placed on the education system. As educators, each one of us has likely felt the increased pressure to respond to these demands, with our efforts to improve student achievement and our own teaching practices becoming an almost-daily balancing act. We are caught in the middle of ‘doing what’s best for kids’ and not knowing what, exactly, ‘the best’ is. Although there are professional development structures and processes that can help make this balancing act productive, effective, and rewarding for all those involved, many educators do not have access to training experiences that are drawn from what ‘state-of-the-art’ research says about improving teaching and, therefore, student learning.

I have been fortunate to have participated in staff development opportunities, connected with the Alberta Initiative for School Improvement (AISI) projects, that have increased not only student achievement throughout my division, but teacher efficacy as well (Northern Lights School Division, 2003a). What we are continuing to learn from our experiences and practices over the past five years may serve as a starting point in guiding others towards envisioning what ‘doing what’s best for kids’ might look like within their own contexts.

Purpose

Through this project, I will attempt to tell part of the story of AISI in my district. I will present quantitative data with measures of central tendency and percentages to show comparisons of student scores over a period of time. I will review and compare the data that have been collected over time through the AISI projects in the areas of reading comprehension and vocabulary development to determine what the rates of student success are on these measures, in response to the various experimental treatments that have been implemented.

Research Question

In what ways does the Northern Lights School Division's (NLSD) 'best practice' curriculum influence student achievement over time?

Sub-questions. What was the impact, if any, of curricular structures on kindergarten student achievement in the area of literacy?

What was the impact, if any, of curricular structures on grade one student achievement in the area of literacy?

What was the impact, if any, of curricular structures on *Read to Succeed* student achievement in the area of literacy?

What themes arose, and what lessons were learned, in developing a curriculum for beginning readers?

Definition of Terms

Inquiry: the act of seeking information, knowledge, etc; research; an investigation (Paikeday, T., 1979).

AISI: Alberta Initiative for School Improvement

The *goal* of the Alberta Initiative for School Improvement (AISI) is to improve student learning and performance by fostering initiatives that reflect the unique needs and circumstances within school jurisdictions. Through AISI, the Government of Alberta provided \$66 million to public school authorities over each of three years, beginning September 2000.... and honored its promise of another three years' funding for the second phase which began September 2003. (Alberta Government, 2004)

Site-based management: Is a process of governing that enhances decision making at individual schools or sites. It moves the process of creating solutions from the board room and Division office to personnel in the local school. This method of governance is a combination of centralized and decentralized decision-making which strives to promote effectiveness and efficiency by focusing on goals for teaching, learning strategies for achieving those goals, and measures for success. (Northern Lights School Division, 2003b).

Efficacy: The power to produce an effect. (Joyce, Hrycauk, Mueller, & Hrycauk, 2004).

Best Practice: Models of teaching that have a researched, proven effect of raising student achievement (Joyce, 2001, 2002).

Chapter 2: Review of the Literature

Three main areas of the literature have been reviewed for this project:

- 1.) Narrative Inquiry
- 2.) Effective Literacy Curriculum Components
- 3.) Professional Development Structures

Narrative Inquiry

In using a narrative approach, I have “consider(ed) what we know, how we know, and what and whom we care about” (Witherell & Noddings, 1991, p.13) in the area of literacy curricula and staff development training. Curricular and staff development change, and criteria for improvement (Robinson, 1993) are pivotal to the success of Northern Lights School Division’s (NLSD) AISI project, which involves many people, contexts, situations and understandings. Through the use of story, I have tried to make “connections between cause and consequence, continuity and change” (Makler, 1991, p. 46), and to enlighten and unravel the complexity of this change process in our division. My story reflects an inquiry into student learning which, in turn, drives teaching and influences personal growth and curriculum development (Patterson, 1996); my story also reflects an “inquiry into the beliefs, values and images that guide teachers’ work” (Schubert, 1991, p. 207).

The method includes aspects of ethnographic research, as through this process, “the richness and variety of group life can be expressed as it is learned from direct involvement with the group itself” (Agar, 1980, p. 11). According to Woods (1986), both teaching and ethnography are concerned with telling a story: I have used documents such as field notes, school records, photographs, and exam papers (p. 90) to help tell the story.

My personal involvement in the setting of the research “provides a resource for understanding the social world that is relatively unavailable to other researchers” (Grills, 1998, p. 14) yet, in telling this story, I have been careful to protect the subjects from embarrassment or harm (Bogdan & Biklen, 1992).

In 1996, Marian M. Mohr identified ‘wild dreams’ for the future of teacher research:

Teachers at all grade levels and in all different kinds of teaching situations will be conducting research and presenting their ideas to their colleagues...Teacher-researchers will contribute to new definitions of what it means to teach....Teacher research will contribute to the knowledge base of the profession, and teacher researchers will participate as equal partners in the discourse of the profession....Teacher research, by its rethinking of the basic questions of education, will reshape the understanding of how children learn and will transform our schools into learning communities. (p. 117-121)

Through telling the story of AISI in my division, I hope to show the extent to which Mohr’s ‘wild dreams’ can, and have, come true in some educational settings.

Effective Literacy Curriculum Components

A review of the literature surrounding effective literacy curricula is critical to my own and my readers’ understanding of what is occurring in Northern Lights School Division’s AISI projects. This study encompasses a detailed overview of what the research shows are critical elements of effective literacy programs, and makes links to how our own curriculum was developed based on these elements.

Despite the enormous scope of research available on the teaching of literacy, controversy remains as to how an effective reading curriculum for young children should be structured. There is agreement within the field that having a large sight word vocabulary is a critical dimension and predictor of successful acquisition of reading skill (Anderson & Nagy, 1992; Blum & Taylor, 1983; Brynildssen, 2000; Calhoun, 1999a, 1999b; Ceprano, 1981; Heibert, Colt, Catto, & Gury, 1992; Johnston, 1998; Joyce & Calhoun, 1998; King, 1984; Rupley, Logan & Nichols, 1999; Snow, Burns, & Griffin, 1998; Stahl, 1999). However, educators must sift through the available research and proceed with programmatic decisions based on the guidance of common themes that emerge from the literature. Schools cannot wait for the controversy to be debated and resolved when approximately one third of students leaving the third grade have not reached a level of literacy that will enable them to be successful in following school years (Calhoun, 1998). Decisions about curriculum must be made, knowing that perfection has not yet been reached.

A brief review of the literature shows there is no simple formula that, when applied to instruction, will create flawless readers of all students. Nevertheless, many developmental theories of how children learn to read are often interpreted as implying that there is only one learning pathway to the same level of reading attainment. Such interpretation can give rise to educational recommendations based on a supposed “right” way to learn to read (Johnston, 1998).

Neuro-psychological research explains why some teaching models are so powerful and why others do not work so well, providing educators with direction in formulating classroom instruction that connects powerfully with the brain’s natural

strengths and tendencies. Brain research indicates that the potential of the brain is enormous, allowing virtually all students to succeed when immersed in environments that are safe, supportive and enriched (Hrycauk, 2002; Wolfe, 2004). The brain's capacity for storing knowledge and for learning is phenomenal: an estimated 100 trillion bits of information, with over one quadrillion connections between neurons made within a lifetime (Hrycauk, 1997; Kotulak, 1996; Wolfe, 2004). Dendrite networks form within the brain when individuals are actively involved in tasks and when challenge and complexity are encountered, with the brain making connections to what it already knows (Diamond & Hopson, 1998; Hrycauk, 1997; Sylwester, 1995; Wolfe, 2004).

Such findings are important for educators to consider when planning curriculum for students. They imply that, as educators, we must have high expectations for a challenging, meaningful curriculum and have high expectations for student achievement. They also imply that multidimensional approaches, where students are studying several strands of curriculum simultaneously, rather than piece by piece, where students are immersed in challenging, problem solving situations, and where students must derive parts from the whole, would fit with how the brain naturally functions (Joyce, Weil, & Calhoun, 2000).

The question of what such a curriculum would look like in the classroom has been proposed in thorough reviews of the educational literature by scholars such as Calhoun (1998), Joyce, Weil and Calhoun (2000) and members of the National Research Council (Snow et al., 1998). These reviews indicate support for the use of multidimensional literacy approaches based on educational research that concurrently reflects what we know about how the brain works best. Through a synthesis of this research, focusing on

ideas that influence programmatic decisions and student achievement, a multidimensional literacy curriculum has been developed and implemented in the Northern Lights School Division (2003a), with the Picture Word Inductive Model (Calhoun, 1999a) as its centerpiece.

The Picture Word Inductive Model (PWIM) attempts to solve some of the challenges of current educational practice, to help reduce the numbers of students unable to meet the demands of an increasingly competitive work force, driven by rising demands for literacy (Diamond & Hopson, 1998; Eastin, 1999; Hrycauk, 2002; Snow et al., 1998). It is the cornerstone of the curriculum developed within Northern Lights School Division, with its roots steeped in the tradition of the language experience frame of reference, with the addition of concept formation and attainment models of teaching (Joyce, 2002).

The PWIM is an inquiry-orientated language arts strategy that uses pictures containing familiar objects and actions to elicit words from children's listening and speaking vocabularies. Teachers use the PWIM with classes, small groups, and individuals to lead them into inquiring about words, adding words to their sight-reading and writing vocabularies, discovering phonetic and structural principles, and using observation and analysis in their study of reading, writing, comprehending and composing. (Calhoun, 1999b, p. 21)

According to Calhoun (1998), these dimensions fit with the following common themes that have emerged from the literature:

Vocabulary Development and Word Recognition Concepts and Skills

Extensive Reading and Writing

Developing Comprehension

Explicit Instruction

Enriched Learning Environments

Continuous Assessment

As normative practice reveals school and district variances ranging from 15 to 60% of students left imperiled because they do not read well enough, quickly enough, or easily enough to meet the demands of middle school and beyond (Joyce, 2002; Snow et al., 1998), it is not an exaggeration to say that the prevention of reading difficulties is a matter of survival for many children (Whitehurst & Lonigan, 2001).

The NLSD's Multidimensional Literacy Program

The NLSD's Literacy Program is not one that can be purchased or packaged for sale: the focus is on a curriculum that is powerful enough to generate accelerated learning rates, within the context of an investment in intensive professional development for teachers. Ultimately, as teachers get better, so do their students. The following is an overview of NLSD's Multidimensional Literacy Program.

Vocabulary development. The Picture Word Inductive Model's main purpose is to build a sight word vocabulary quickly and meaningfully for children, based on their natural listening and speaking vocabularies. Programs that introduce words at a more rapid pace have been found to produce students with superior word recognition abilities at the end of the first grade (Bond & Dykstra, 1997). This sight vocabulary becomes the base for reading and writing, and for learning phonics and spelling generalizations.

Teachers select an enlarged, poster-sized photograph of a scene that contains familiar things that can be identified either from their own community, or from a foreign location. Careful consideration of what kind of words the children might "shake out" of

the picture occurs during the selection process – does the picture contain common, identifiable objects and ideas? Does the picture lend itself to generating words that the children will likely encounter frequently during independent reading? With these questions in mind, the teacher mounts the selected photograph on a background of chart paper that is much larger than the photograph.

The children are then asked to carefully study this picture and to identify objects, actions or qualities that they recognize for the class to study. These words are already familiar in their listening speaking vocabularies, and the teacher makes the connection to written print by drawing a line from the object in the picture to the surrounding paper and writing the word or phrase. Students watch as the teacher first spells the word aloud as it is written, and then they join in a repeated spelling of the word aloud. Connections are made between the word and something in the picture, as students watch the word appear as letters. Both the process (moves) and the structure of the model respect children's language development and enable them to begin reading by using their language in conjunction with pictures; the model enables students to be immediately successful as language learners in the formal school setting and immerses them in how language works (Calhoun, 1999b).

Each student is responsible for generating at least one word from the picture, until about 20-30 words have been written horizontally on the chart. During this process, the teacher focuses the students' attention towards carefully studying the attributes of these words, through spelling aloud, and through asking questions such as, "What do you notice that is special about the word _____". Students identify the phonetic and structural characteristics of words, as well as how some words are contextually similar to

others. This first step of the PWIM involves building this visual, picture dictionary that will remain posted in the classroom for the remainder of the school year, supporting students' reading and writing, and their independence as learners.

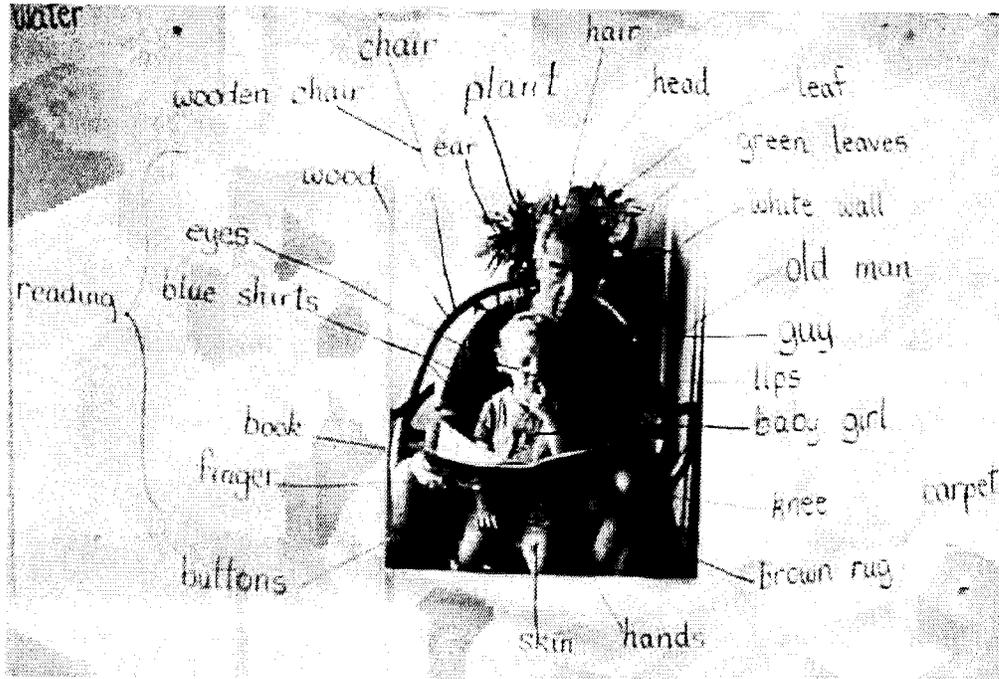


Figure 1. Photograph of a PWIM chart from author's classroom.

As immediately as possible, usually the next day, students are given their own individual set of word cards that contain the words derived from the picture. When children have their own copies of the text (word cards), it is more likely that they will be examining the print carefully for themselves (Johnston, 1998). Students are given time to practice reading and spelling these words by matching them to the picture. If a student is unsure of a word once matched, the line is followed back to the object in the picture, giving a visual cue as to what the word is, while fostering independent work and learning skills at the same time. The teacher also spends some time each day reviewing the words

on the picture chart with the whole class, using a “see, say, spell” approach. The repeated instructional pattern as words are added to the chart and reviewed – see the item, say the word, listen as the teacher spells the word, read the word as a group, spell it together, read the word again – teaches and reinforces letter recognition, as well as the pronunciation of the words, while repeated attention to the words and spelling helps to build students’ reading and writing vocabularies (Calhoun, 1999b).

The word cards are also used to facilitate additional word study through classification activities. Initially, with students’ first experiences with the model, concrete objects are used to introduce the concept of classification. Many examples are given and studied. Once comfortable with the concept of classification, students are then asked to sort their cards into multiple attribute categories, based on the phonetic, structural or contextual analysis they have completed. For example, students might classify the words based on sounds they hear in the words, phonetic spelling patterns, number of syllables, inflected endings, or words that share a similar contextual attribute.

Students are given ample time and opportunity to classify and reclassify their word cards throughout the PWIM cycle. Encounters with words should be playful, so as to provoke curiosity and an interest in word study; figuring out an unknown word should be treated as an exercise in problem solving, so as to promote independence in word analysis (Anderson & Nagy, 1992).

Table 1: Sample Word Classification

Words	Attributes used to classify
skin, knee, hand, eyes, head, hair	all are found on a human body, all are 4 letter words, all are 1 syllable words
green, white, blue	all have an “e”, all are color words, all are 1 syllable words
wall, green, wood, book	all have double letters side by side, all are 1 syllable words

The teacher carefully monitors student growth in categorization ability, noticing which concepts have been identified and learned through individual classification work. Examples are then selected for instructional emphasis, and placed in a pocket chart for the entire class to study, ensuring that these selected phonetic and structural attributes of words are noticed and studied by all students. Teachers can thus target the specific phonics skills that they want to ensure their students learn throughout the year. If students have not noticed a concept or skill that is deemed essential and important by the teacher, then the teacher creates a category and presents it for the students to study. This process helps children to focus their attention on the relations that matter, because, “that which one learns depends on that to which one attends” (Joyce, 2002).

For lessons in phonetic analysis, teachers can look to the word lists generated through the PWIM and build on simple rhyming patterns for three interrelated reasons: they are easy to learn; they can be used to build reading and writing vocabulary rapidly, providing a base for practicing word recognition skills being acquired and common spelling patterns and letter order; and students tend to perceive language patterns easily (Calhoun, 1999b). Teachers may explicitly present various onset and rime categories (Goswami, 2001; Goswami & Mead, 1992) and then combine them in unfamiliar sight words for the students to decode, immediately having the students apply their decoding knowledge. Word families are also developed through the use of onsets and rimes, with students inductively learning that phonics generalizations and rules only unlock about half of our English text (Joyce, 2002).

Teachers also use the Concept Attainment Model for presenting new concepts for students to acquire. Concept attainment requires a student to determine the attributes of a category that is already formed in another person's mind by comparing and contrasting examples (called exemplars) that contain the characteristics (called attributes) of the concept with examples that do not contain those attributes (Joyce, Weil, & Calhoun, 2000). The set of examples, or data set, is created so that the best, most clear examples of the attribute appear first, with more ambiguous ones appearing after the concept has been well established.

Table 2: Sample Word Family List Generated From a Picture Word

Word PWIM picture	Word family list
old	bold, cold, fold, gold, hold, mold, sold, told
man	ban, can, Dan, fan, pan, ran, tan, van, than, plan (Additional words with 'an': band, stand, grand, ant, pant, etc.)
skin	bin, fin, kin, pin, sin, tin, win (Additional words with 'in': wind, windy, window, dinner, ginger, inside, into, insect, winter, etc.)

Positive and negative exemplars of the attribute are provided pair by pair, drawing the students toward holistic, multiple-attribute strategies. Generally, at least 21 exemplar pairs are presented to students in order for a concept to be formed to the level that it can be applied as a skill: the first seven examples develop awareness, the next seven examples consolidate the concept, with the remaining seven examples transferring the concept knowledge to a skill level where it can be applied in other settings (Joyce, 2001).

Research shows that when students learn concepts through the Concept Attainment Model they develop a clearer understanding of these concepts, with longer retention. Although useful for helping present phonics concepts not yet understood, this model is a powerful strategy that can also be used across literacy dimensions and across curricula. An important study that showed the effectiveness of the Concept Attainment

Model was completed in India in the late 1980's (Joyce, Weil, & Calhoun, 2000; Joyce, 2001). Grade 10 students, engaged in a unit of botany study on plant structures, were divided into two groups for the study: one taught with textbooks and tutorial help (presentation-illustration group), and one taught through Concept Attainment and Concept Formation models (inductive group). After two weeks, students were tested over the content of the unit. Results showed that the inductive group gained twice as much on the test of knowledge, and could correctly identify the structure of eight times more specimens than the presentation-illustration group. More significantly, when these same students were tested months later on retention of information, the two groups' results, when correlated on a distribution of scores, did not touch. The lowest performer in the inductive group did better than the highest performer of the presentation-illustration group.

The use of such a powerful teaching model within our multidimensional literacy program is seen to positively influence student attainment and retention of concepts, including sight vocabulary. Understanding the process of concept attainment, or how we acquire knowledge of new words, helps us realize why traditional approaches to vocabulary development are relatively ineffective (O'Donnell, 1999).

Reading and writing extensively. After shaking out the words on the picture, students are asked to generate titles and sentences for the picture chart. Initially, students are given much exposure to and examples of titles through concept formation or concept attainment activities, where the teacher is explicitly drawing their attention to the purpose of titles being "promises to the reader" about content. The teacher leads meta-cognitive discussions on choosing titles and talks to the students about which title is most

comprehensive, which title might be most interesting to one audience or another, which sentences go with one title, which with another (Calhoun, 1999b).

Students are asked to examine the picture with an informational perspective, so that first writing experiences are based on evidence in the picture, rather than inferred or imagined content. Through this process, fundamental, basic research skills are being applied to the PWIM. If a student learns early and becomes increasingly skillful at gathering information from current knowledge, observations, and external resources, organizing this information, and determining the main ideas to present to readers in prose (author-based meaning and intent), that student is not only a good writer of informational prose, but gains an advantage that is maintained throughout school and in many jobs and professions (Calhoun, 1999b).

Students think about what the picture would promise a reader if it were the cover of a book, and dictate titles for the teacher to record on chart paper. Sentences are also generated, dictated and posted on chart paper beside the picture. Students watch as their ideas are transferred into print. Both titles and sentences are reviewed and studied by the class daily throughout the remainder of the picture cycle.

When these titles and sentences are studied, new words for learning are identified and added on individual cards to the students' word packs for study. These new words include the most frequently occurring little words that make up 90% of running text, as well as more arcane, specific vocabulary that is related to the picture content. These words are classified and reclassified out of context, just as the picture words were, looking at phonetic, structural and contextual attributes. Students are given the titles and sentences on cards or paper strips, and these, too, are classified and studied.

Through the classification of sentences, students often identify those that have similar content. Teachers use these content category sentences to model the generation of paragraphs, sharing with the students the thinking processes involved in writing a longer piece. Students see their ideas transformed into cohesive, well-structured paragraphs, and after many examples, are asked to apply this knowledge in their own writing (Figure 2).

Components of the Picture Word Inductive Model

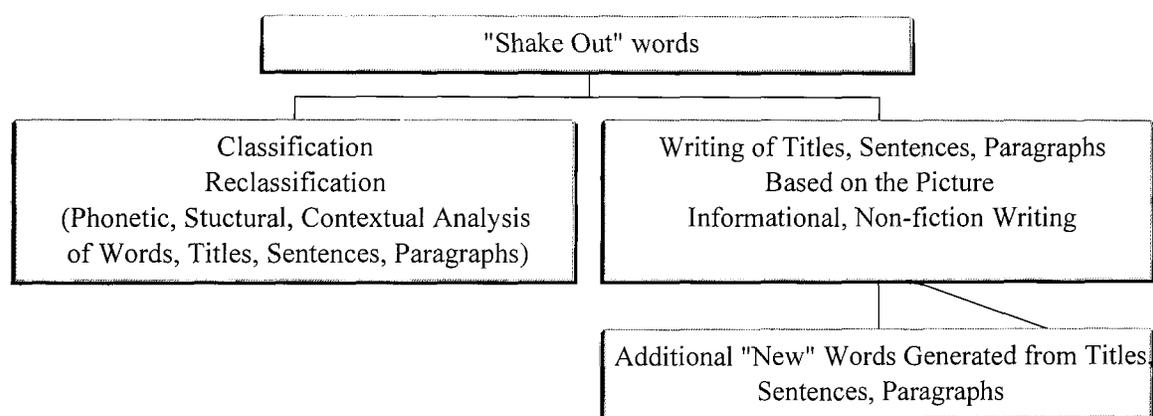


Figure 2: Overview of the components of the Picture Word Inductive Model.

Students are also asked to write independently several times daily, according to various stimuli: sometimes, students write additional titles, sentences or paragraphs based upon the picture; at other times, students are asked to generate writing based on listening or viewing experiences. Students are initially encouraged to use invented spelling, with the expectation that correct spellings are required for any words that can be found on the picture dictionary charts. Writing is used as a major method of applying the concepts, principles and hypotheses about how language works, with intensive practice in writing

being incorporated as a curriculum component to promote skill in written communication: time for practice is essential for rapid growth (Calhoun, 1998).

Well-written texts and trade books are also used in studying the craft of writing. Using an inductive approach, such as concept formation or concept attainment, teachers generate and present data sets of exemplars based on a particular literacy concept or skill. These data sets focus on structure and/or meaning: for example, teachers may select exemplars of various ways that authors connect titles and first lines in books, structure paragraphs, use particular sentence structures such as listing or comparison/contrast, or introduce and develop characters in fictional writing. Students are given the data set of exemplars to classify, thereby inductively determining attributes and strategies that authors use when writing. Through this process, the concept becomes secure, and students are asked to find additional exemplars in trade books and to generate their own examples, using the attribute or concept determined.

Student growth in writing structures can be increased substantially using this model of teaching, as seen in a study completed in Georgia (Lang, 1990; Joyce, 2001). In this study, a group of Grade 4 teachers had their students examine expert authors' work, presented through inductive lessons that focused on using data sets. Year-end data indicated that the writing achievement mean of the Grade 4 students was within the norms for the Grade 8 students in that school (Joyce, 2001). The study of expert authors' writing in this manner is one of the dimensions of the multidimensional literacy curriculum used in this study.

Extensive reading of well-written text is also highly encouraged within this multidimensional literacy curriculum. Students are encouraged to read substantially,

right from the beginning, in developmentally appropriate books. Students find an independent reading book, using the guideline of not needing to decode more than about 3 words per page. It is important that students regularly silent read in order to apply the words, skills and concepts learned throughout the PWIM. Once students know about 100 words, simple books are within reach, while knowing about 450 words brings students to the stage in which many picture storybooks are available to them (Calhoun, 1999b). The PWIM quickly helps to build this critical sight word base that enables the real reading of quality books to occur. PWIM classrooms are filled with a wide variety and range of well-written fiction and non-fiction books.

Students in this multidimensional literacy program are also involved in *Just Read*, a home reading program developed by Wolf (1999a). It is well recognized that extensive reading is a critical dimension in learning to read, and this program encourages students to record the number and kinds of books that they read at home throughout the week. At the end of each week, teachers collect the student home reading logs and study their students' growth. This reading growth can be charted for the class or individually for students.

Students work toward reaching pre-determined reading goals and celebrations in the *Just Read* program. Celebrations for reaching goals are usually set cooperatively between the teacher and the students, and include many creative and fun reading activities, such as Book Parades, Author Visits, or Pajama Reading Parties for younger students. Ideally, this program is implemented school-wide, with schools and classrooms both setting target goals and celebrations. Teachers carefully monitor the home reading logs, looking at such things as the number of students who are and are not reaching a

targeted number of books per week (usually 10 for beginning readers), the number of books read by boys and girls, and the kinds of books that the students are reading. Discrepancies help teachers identify and focus on problem areas in an effort to influence growth in home reading for all students. Research on *Just Read* illustrated the effects of practice, as gains in measures of comprehension, were nearly doubled in schools that established an at-home reading habit as compared with schools that increased amounts of reading to a lesser extent (Calhoun, 1998).

Developing comprehension. Both the PWIM and wide reading help students develop the automaticity required during reading that allows attention to be focused more fully on comprehension. Within the framework of this multidimensional literacy curriculum, comprehension is explicitly taught through the use of teacher modeling and demonstration of the reading comprehension process. Teachers use ‘*read alouds*’, ‘*talk alouds*’ and ‘*think alouds*’ with their students in an effort to unlock the comprehension process, and to allow students to hear what good readers think while they read. All three techniques involve having students listen and think while the teacher reads, but do not involve discussion or questioning during the reading process. According to Calhoun (1998), reading comprehension is not taught best by testing kids with questions after reading, as skills do not improve this way: most daily lessons in reading comprehension instruction assess students understanding of the text (for example, the teacher asks, “What is the main idea?” or “What do you think will happen next?”), but do not teach students how to comprehend text. *Read, talk* and *think alouds* help teach students how to comprehend.

Although fiction is regularly read to students, non-fiction books are most frequently emphasized for use in this curriculum, as informational material is what students will need to be able to comprehend effectively in order to successfully manage their textbooks and manuals in further schooling, and in the workplace. Passages are selected that capture powerful or useful concepts.

In a *read aloud*, the teacher simply reads aloud to the students from well-written text, in an effort to convey content curricular material that may be above the students' independent reading ability. *Read alouds* are also used to encourage reading and to model the enjoyment, rhythm and flow of reading. Students who are read to more, either by parents or teachers, tend to read more on their own (Calhoun, 1998).

During a *talk aloud*, the teacher is reading aloud, as well as addressing something that the author did a particularly good job with - something that was noticed and appreciated about how the author and illustrator presented the message. The teacher tells the students what he or she noticed and liked as a reader, sharing the intentionality of the author, who likely did whatever was noticed in an attempt to communicate as clearly as possible. After the teacher models *talk alouds* several times, students participate in application activities that lead them to notice what the author is doing to help them get the message. In *talk alouds*, teachers share what they personally noticed and appreciated as readers, thus articulating the reading/writing connection. Eventually, students demonstrate their comprehension by doing their own *talk alouds*.

A *think aloud* provides an opportunity for the teacher to explicitly model a comprehension processing strategy that the students need to use or use more powerfully. This could include modeling main idea, determining the main message by using text

structures that are provided, making and confirming predictions, using context clues to determine word meaning, or using multiple sources of information to create a big picture idea (Calhoun, 2001). Attention is paid to the structure of the writing, and how that structure helped the reader to comprehend. Students are thereby made “insiders” to their own cognitive process and can intentionally direct their efforts towards knowledge and performance goals (Calhoun, 1998). Text structures influence learning even if the learner is unaware of their effect - a reader can optimize learning by becoming aware of text structures and the resultant effect they have on learning; knowledge of text structure is critical for reading to learn, and teachers need to instruct students to use text structure to enhance learning (Collins, 1994).

Each comprehension strategy is modeled, practiced and applied to the whole comprehension/composing task with there being no single best way to apply a particular strategy; strategies, and the modeling of strategies, are applied across a range of materials and tasks (Calhoun, 1998). Students engage in cooperative tasks in which they practice the strategies, eventually becoming more independent in their application.

Reading comprehension – figuring out the meaning of words, sentences, paragraphs and the entirety of pieces; thinking about the author’s purpose, one’s own experiences, and what one takes away from the interaction with this author and this prose- needs to be modeled by the teacher, taught explicitly and inductively, and one’s own comprehension processes studied and articulated.

(Calhoun, 1998, p. 35-36)

Explicit instruction. Within this multidimensional curriculum, the opportunity for explicit instruction occurs regularly across dimensions during vocabulary development,

word study, comprehension, and writing. A balance of inductive and explicit instruction appears within this curriculum.

Enriched learning environments. Part of an enriched learning environment is providing enough time to allow learners to master concepts and skills. Throughout the elementary school years, an uninterrupted block of at least 90 minutes daily needs to be allocated to the literacy curriculum, in addition to attention to literacy within all the other curriculum areas (Calhoun, 1999a; Joyce, 2001; Wolf, 1999b). Ninety minutes of productive inquiry into literacy for all students is the goal of the multidimensional curriculum used in this study. Teachers using this curriculum have high expectations for student achievement, as students study several strands of curriculum simultaneously in a rich, literate environment that respects and utilizes the skills and language that students bring to class. Students are introduced to a large number of words and strategies to facilitate reading growth.

Continuous assessment. This multidimensional curriculum was designed and implemented, with the implementation and study of student learning being carried out as a formal inquiry – an action research experience (Joyce, Calhoun, & Hopkins, 1999). Throughout the PWIM, student growth in vocabulary, word study skills and concepts, comprehension, reading and writing is continually being evaluated and assessed. Teachers continuously reflect on the effectiveness and implementation of lessons, and keep detailed action research logs on student growth. Particular to this study, vocabulary growth and retention was addressed.

Professional development structures. The necessity and benefit of professional development opportunities for teachers is widely supported throughout the literature.

However, the question of what constitutes an effective, ‘best practice’ professional development structure remains. Many ideas, models and strategies are available, and educators must determine which elements contribute to the transfer of new skills into teachers’ repertoires, ultimately leading to gains in student learning. Teachers, schools, districts, provinces and nations have discovered that teacher improvement is essential to school improvement (Acheson & Gall, 1997; Alberta Learning, 2001; DuFour, 2001; Guskey & Sparks, 1996; Hirsh, 2002; Hirsh & Sparks, 2000; Joyce & Showers, 1983, 1988; Joyce, Hersh, & McKibbin, 1983; Lewis, 2002; National Staff Development Council, 2002; Sparks, 1999, 2000).

It is clear that professional development is necessary, as very little implementation will take place, even in positive environments with highly motivated people, unless training is provided (Alberta Learning, 2001; Joyce et al., 1983).

Traditional models of staff development, involving one-shot strategy sessions, district-developed conferences of disconnected classes, or the multiple activities typical of a ‘PD day’, are out of sync with modern schools’ reform agendas (Archer, 2001; DuFour, 2001; Ferguson, 2002; Lewis, 2002; Sparks, 1999). The effectiveness of such staff development programs is frequently measured by how much people “like” them, rather than by their impact on student results (Hirsh & Sparks, 2000).

Studies have shown that successful professional development opportunities have specific attributes. In an analysis of ninety-seven inservice studies completed by Harris (1980), programs that differentiate training experiences, that offer teachers opportunities to choose goals and activities, and that link individual activities to a larger organizational effort are most effective. Reflection and dialogue occurring within a collaborative

learning setting also contribute to effective professional development (American Educational Research Association, 2002; DuFour, 2001; Hirsh, 2002; Hirsh & Sparks, 2000; Moore, 2000; National Staff Development Council, 2002; Professional Development, 2002; Sparks, 2000). According to DuFour (2001), “collaboration by invitation never works” (para. 9), but must be embedded into the structure and culture of the school.

Studies of effective urban schools demonstrate that a key factor for success is the presence of a skilled principal who helps create a sense of shared mission around improving teaching and learning (NSDC, 2000). With principals sending cultural messages to staff and students with every decision (Richardson, 2001), it is critical that principals themselves are involved in the process of learning to lead and learning to learn (NSDC, 2002). Ultimately, school leaders must see themselves not only as leaders of learning communities, but as designers of structures that support high levels of learning for students and staff (DuFour, 2001; Hirsh, 2002; Sparks, 1999).

In an interview with Sparks (1999), Emily Calhoun states that one can almost map a school’s level of implementation by how engaged the principal is in modeling what is happening. Principals need to create appropriate contexts (programs, procedures, beliefs, habits, expectations) for adult learning, as creating this collaborative culture is one of the most promising strategies for sustained, substantive school improvement (DuFour, 2001; DuFour & DuFour, 2003). According to Hirsh (2002), when leaders make clear and explicit the results they seek and the actions they want, they significantly improve the chances that their goals will be achieved. Leaders must not always wait for organizational buy-in, but rather work from the premise that commitment follows competence (Sparks,

1999). Without such purposeful efforts, reforms would likely never come to fruition as too many forces are at work seeking to return schools or districts to their former culture (Richardson, 2002).

Numerous structures for progressive staff development approaches emphasize job-embedded, school-based identification of needs, coaching partnerships and team/group development through systematic training and follow up (Alberta Learning, 2001). Such job-embedded professional development involves learning by doing, reflecting on the experience, and then generating and sharing new insights and learning with oneself and others (Joyce & Showers, 1988; Moore, 2000; Wood & McQuarrie, 1999). Such learning changes educators' thinking about work from completing tasks to viewing daily experiences as opportunities to learn (Wood & McQuarrie, 1999).

Joyce and Showers (2002) have identified the effect of specific staff development training components on enhancing teacher repertoire and learning. Large and dramatic increases in the transfer of training are more likely to occur when peer coaching is added to initial training experiences made up of theory explanation, demonstration, and practice with feedback. Adding a coaching component can generate an effect size of 1.68, with teachers demonstrating solid knowledge, good skills, and consistent implementation with new and fairly complex repertoire (Joyce & Showers, 1988; 2002). For a transfer of teaching skills into repertoire to occur, participants must have sufficient opportunity to develop skills in situations that are more extensive and intricate than exist in most professional training environments, and must include follow-up experiences in the workplace (AERA, 2002; Joyce & Showers, 1988; Joyce et al., 1983; Sparks, 1999; 2000). It is important to note that implementation is heavily influenced by the teaching

contexts teachers find themselves immersed within, as “the energy and interest of the schools and teachers amplify or diminish the effects of training events” (Joyce & Showers, 2002, p. 114).

Table 3 (Joyce & Showers, 2002, p. 78) provides a rough ‘rule of thumb’ for estimating the product of training by looking at the relationships between the types of training components and degrees of implementation.

Table 3: Estimate Training and Attainment of Outcomes in Terms of Percent of Participant

Components	Outcomes		
	Knowledge	Skill (Strong)	Transfer (Executive implementation)
Study of Theory	10	5	0
Demonstrations	30	20	0
Practice	60	60	5
Peer Coaching	95	95	95

The study of theory facilitates skill acquisition by increasing “understanding of demonstrations, by providing a mental image to guide practice and clarify feedback, and by promoting the attainment of executive control” (Joyce & Showers, 2002, p. 73).

Practice of these new teaching models requires “20 or 25 trials in the classroom over a period of about 8 –10 weeks.... (The more) closely the training setting approximates the workplace, the more transfer is facilitated” (p. 74). Teachers are most effective when they

“understand the need for and expend the extra effort to identify where the new behaviors fit” (p. 80) within their existing repertoires, skill sets and contexts.

When student learning is desired, transfer is necessary. And that means both organizing the peer coaching process and developing the multidimensional training that provides skills that can be transferred into instructional settings in the form of changes in student learning environments. (p. 78)

In 2001, Alberta Learning studied and classified options for staff development and teacher growth to help schools implement their Alberta Initiative for School Improvement (AIS) projects. Five models of professional development were recommended (Alberta Learning, 2001; Alberta Teachers' Association, 2001) based on the work of Dennis Sparks and Susan Loucks-Horsley: individually guided professional development, observation/assessment, development/improvement process, instruction/workshops, and inquiry.

Individually guided professional development entails learning designed by the teacher: the teacher determines his or her own goals and chooses activities that will result in the achievement of those goals. Such professional development opportunities empower teachers to address their own problems, create a sense of professionalism, and provide intellectual stimulation. Examples of individually guided professional development include reading professional journals, providing documentation for inclusion in professional portfolios, or completing reflective logs (Alberta Learning, 2001, p. 2).

Observation/Assessment professional development involves teachers objectively observing and analyzing colleagues, with improvement resulting from feedback on

performance. “Peer observations help the teacher to identify positive results of new strategies” (Alberta Learning, 2001, p. 2) through the process of peer-coaching. Alberta Learning (2001) references the research of Joyce and Showers, demonstrating that “significant improvements have been made to student learning when training of teachers in effective instructional practices is followed by observation and coaching in their classrooms” (p. 3). Such observation and assessment is particularly beneficial when combined with study groups and instruction or workshops (Alberta Learning, 2001, p. 3).

Development/Improvement Process professional development requires teachers to acquire specific knowledge or skills related to a project initiated to improve or adapt curriculum. A team undertakes projects and processes after the identification of a problem or a need at a provincial, district, or school level. Many Alberta Initiative for School Improvement projects include such professional development activities as study groups, collaborative project teams and goal teams (Alberta Learning, 2001). When the resources and supports of “adequate, quality time to work on the project, access to information or staff expertise and leadership that provides vision, direction and guidance [is available, the] desired outcomes of professional growth are achieved” (Alberta Learning, 2001, p. 4).

Instruction/Workshop professional development generally focuses on awareness, knowledge or skill development. Presenters may be expert leaders or peers: both are effective if they have a clear understanding of the classroom context; however, peer-led workshops often generate a more comfortable exchange of practical ideas and more active participation. “Research on this professional development model ascertained that the most successful activities were those which include a series of components such as

exploration of theory, demonstration or modeling of skill, practice of skill and feedback on performance and coaching” (Alberta Learning, 2001, p. 5).

Inquiry professional development may take on many forms (individual, small group, or school teams) and “reflects a basic belief in the teachers’ ability to formulate valid questions about their own practice and to pursue objective answers to questions” (Alberta Learning, 2001, p. 5). Inquiry professional development is multi-faceted, but may involve investigating research on the effectiveness of various teaching strategies, or addressing important school problems collaboratively. This model of staff development often includes an action research component, with teachers making “more informed decisions about when and how to apply the research findings of others” (p. 6), while experiencing more supportive and collegial relationships (Alberta Learning, 2001, p. 5).

Each of the five professional development models recommended by Alberta Learning (2001) and the Alberta Teachers’ Association (2001) enable teachers to engage in professional development programs, with elements from the different models being emphasized to “provide a variety of activities that link together to form an ongoing program” (Alberta Learning, 2001, p. 6).

Alberta Learning (2001) recommendations also state that effective professional development must be supported by schools that: (1) support collegiality and experimentation; (2) provide district and administrative support in clarifying goals and supporting teacher efforts to change instructional practice; (3) focus on changes in repertoire that improve student learning and (4) provide adequate, appropriate professional development experiences with follow-up assistance that continues to encourage improved professional practice (Alberta Learning, 2001, p. 6).

As a result of the Alberta Initiative for School Improvement, over 700 projects across Alberta have focused on improving school achievement through research-based, action-research practice. Alberta Learning recognizes that to make “significant changes in education takes a long time” (Earl, 2000, p. 63) and that to do so, teachers need “professional development; they need time to work together; [and] they need challenging opportunities” (p. 63). Emphasis in professional development in Alberta has shifted from finding the right trainers or speakers, to creating opportunities for staff members to work together, so they can engage in collective inquiry and learn from one another (DuFour, 2001).

Although it is impossible to prescribe precisely how staff development should be organized in any given environment (Vinther, 2001), staff development that improves the learning of all students appears to include context, process and content standards (Hirsh & Sparks, 2000; NSDC, 2002). Staff development that is results-driven, standards-based, and research-based, and demonstrates high expectations for the learning and performance of students and staff alike can also positively influence accomplishment (Hirsh, 2002; Sparks, 1999). School cultures need to value the power of inquiry, find ways to support the risk-taker, and demonstrate the value placed on collegial sharing and inquiry in the school (Hirsh & Sparks, 2000), thereby ensuring high levels of learning and performance both by students and staff (Hirsh, 2002).

If professionals should study together, implement new ideas and learning, and then reflect upon those experiences within a context of inquiry, the structure of these ‘study’ (professional development) sessions should reflect training designed to allow people to learn more effectively.

School districts and administrations play key roles in creating overall structures that allow for this type of staff development to take place, such as embedding professional development within teachers' work day, providing resources, and allocating funds and release time for teachers to meet and study together.

Advocating autonomy for individual teachers and schools should not extend to ignoring what we know about what works when it comes to student learning.

School leaders who align the workings of their schools and classrooms with the knowledge base regarding best practice enhance their profession. (DuFour & DuFour, 2003, p.1)

“There is no magic bullet; research can give us promising lines of thinking, but never a complete answer. Each group, to a certain extent, must build its own model and develop local ownership through its own process” (Fullan, n.d.). These learning communities, according to Fullan (Sparks, 2003), must be infused with high-quality curriculum materials and assessment information about student learning, in order for teachers to work together to innovate and improve their teaching practice. To the benefit of teachers and students alike, educational leaders in Alberta have understood this fundamental principle and transformed it into enabling practice through AISI.

Chapter 3: Methodology

As a ‘participant observer’ (Bogdan & Biklen, 1992) in the AISI projects, I have attempted to explain the setting of our project within the historical context of the district, and construct a picture, or “thick description” (p. 39) through the collection and examination of all the data gathered. Such thick description “provides the information necessary to make informed judgments about the degree and extent of the ‘fit’ ” (Schofield, 1990, p. 211) of such change efforts into other settings and situations.

The Northern Lights School Division as a case study should provide readers with an opportunity to visit a setting where educational innovations are being attempted; however, “the role of the research is not primarily to find the correct interpretation. Indeed, the search for the correct interpretation may well be a search for a Holy Grail” (Donmoyer, 1990, p. 194). Accordingly, I have attempted to study “what could be” (p. 217) from selecting the case study site based on the outcomes achieved and on the conditions there that might allow for some generalization to other settings.

“Ideally, one both borrows from, and contributes towards, knowledge in the field” (Woods, 1986, p. 131), as I hope to do through this project. I have concentrated on NLSD’s efforts to improve student achievement, tracing both curricular and staff development: how they came into being, what their first year was like, and what they are like today (Bogdan & Biklen, 1992, p. 62).

The Northern Lights School Division’s AISI projects fit within the scientific branch of action research, as “this form (of action research) is experimentalist, and typically involves external experts working with internal partners” (McKernan, 1991, p. 309). Although an external researcher was brought in to assist with staff development

training, all AISI activities resulted from a grassroots call for assistance in the area of literacy from the schools themselves. Throughout the AISI projects, action research was used “as an organizing strategy to get people involved and active around (the area of literacy)” (Bogdan & Biklen, 1992, p. 228), helping teachers develop confidence as they collected data that served to redefine or support pedagogical beliefs and programs.

Both qualitative and quantitative data were analyzed in an attempt to describe the educational events that marked these projects. Both methods are recognized as useful in action research (Bogdan & Biklen, 1992, p. 223). Using such data helped me to describe and explain “a given culture at a particular point in time” (Janesick, 1991, p. 101), with an ethnographic dimension to my research having the “potential to capture the complex and dynamic nature of action research in a school setting” (Babiuk, 2000).

Although “not all faculty are willing to reflect on their beliefs and practices....When teaching improvement is the goal, we should provide resources that facilitate natural feedback-seeking” (Menges, 1991, p. 26, 34). The AISI project structures allowed for teachers to meet regularly and collaboratively to reflect upon the research and their own teaching repertoires, honing new skills and strategies in a safe and supportive environment. “Practices developed in collaborative action research tend to be pragmatic in nature, being both workable in real-world contexts and meeting teachers’ more immediate needs....(and) are ‘user friendly’ in that the language involved makes sense to teachers” (Bryant, 1995, p. 5). My story highlights how these collaborative structures enabled teachers to “not only examine the past and present, but...provide constructive alternatives for the future” (Bryant, 1995, p. 5), while attempting to

determine in what ways the NLSD's 'best practice' curriculum influenced student achievement over time.

There are three contexts in which this curriculum was implemented: kindergarten, grade one, and *Read to Succeed* settings. In each context the process of inquiry was guided by similar, but slightly varying sub-questions, as set by the division, in order to gather information most pertinent to each setting. Using document analysis, I organized and analyzed the teacher action research logs, questionnaires, and student achievement results that the division collected as part of their AISI projects. I also gathered information from personal, direct observation of monthly meetings, informal interviews, and classroom experience in an attempt to determine ways in which the Northern Lights School Division's (NLSD) 'best practice' curriculum influenced student achievement over time. I also reflected on what themes arose, and what lessons were learned, in developing a curriculum for beginning readers.

The History of NLSD

The Northern Lights School Division No. 69 covers an area of 5714 km, in the North-eastern corner of Alberta, and includes the communities of Cold Lake, Bonnyville and Lac La Biche and their surrounding areas. Within the division's boundaries lies one of Canada's largest military bases, oil patch and related services, forestry and agricultural industries, two Metis settlements, several nearby First Nation reserves, and a number of Arabic and White Russian (Old Believers) communities. Diversity and transience characterize this jurisdiction of about 6300 students.

Grade configuration varies among schools in the division, depending upon the needs of and resources available to each community. As well, there are Youth

Assessment Centers and an Outreach school that provide services to various grade levels. Each school, as well as the board and divisional office, operates under a site-based management system. Social service statistics indicate that families in several regions of the jurisdiction fall well below the poverty line, while economic growth in other areas results in above-average income for those communities (Northern Lights School Division, 2001).

The NLSD's Decision to Improve Student Literacy. In 1995, educational leaders in NLSD recognized the need to connect teachers with state-of-the-art research and development in an effort to improve student achievement. They began to allocate funds for teachers and administrators to attend international conferences where they would be exposed to current research in the fields of curriculum, instruction, staff development, and school renewal. As staff attended these conferences, they returned and began to use what they had learned. These efforts, however, were mostly unorganized and informal, yet set a precedent for a culture of inquiry and the formation of learning communities (DuFour, 2001) within the division.

Director of Instruction for NLSD, Marilyn Hrycauk, whose mandate was to improve student achievement across the division, attended such conferences and read research to determine what 'state of the art' practice looked like. Fascinated with the advances in neuro-scientific research, Hrycauk organized a learning community named "Brainwaves", and invited staff from across the division to come together and meet on a regular basis, to study such research and its implications for the classroom. This is where I first met Marilyn, and began to experience a new type of professional development, one

where teachers met, studied, discussed, practiced, and refined their teaching in relation to what research was telling us.

A needs assessment was conducted by the division in 1998, confirming previous Provincial Achievement Test results, that approximately one third of NLSD's students were not reading and writing at the 'acceptable level'. During this time, Hrycauk continued her quest to find innovative interventions to address the literacy deficits experienced by NLSD's students. Recognizing that literacy skills are essential to student success in many areas of schooling and indeed life, Hrycauk received support from Central Office and Trustees, to develop a tutorial 'safety-net' program for struggling Grade 2 readers and writers.

As she became aware that additional programs would be needed to target the literacy deficit, Hrycauk continued to inquire into 'best practice' research, and repeatedly came across the name of Dr. Bruce Joyce. After hearing him speak at a provincial conference, Hrycauk recognized the expertise and results that he generated amongst districts with which he worked, and made contact with Dr. Joyce to discuss her vision for NLSD. After several months of planning, Dr. Joyce was hired as a consultant to assist NLSD for a period of three years. Under the plan that was soon developed, a Cadre of teachers and administrators voluntarily studied new models of teaching and learning as reflective practice (Smith, 2001). This Cadre was then expected to facilitate the goals of self-sufficiency and sustainable student achievement by building leadership capacity simultaneously as teachers' increased effective practices.

Dr. Joyce first started training Cadre members in January, 1999. I joined this group from its onset, and met regularly with Dr. Joyce every month for the remainder of

the school year, and the two years that followed. A multidimensional literacy curriculum was selected by NLSD and Dr. Joyce as the focus of our training. We studied models of teaching that had well-researched and proven effects on raising and accelerating student achievement – the ‘best practice’ curriculum adopted by our division. Our goal was not only to teach students to read and write effectively, but to also teach them to think and learn effectively. In addition, we were learning about effective structures and designs for staff development, as we would play a key role in providing training to other staff in the district.

Dr. Joyce and Hrycauk designed and organized four literacy initiatives within the division: an additional ‘safety-net’ program for overage struggling readers (Read to Succeed), a general Kindergarten Literacy Initiative, a Primary Grade Literacy Initiative for Grades One and Two, and a district-wide home reading program entitled *Just Read*. In response to requests from schools across the district, NLSD linked their literacy initiatives to the Alberta Initiative for School Improvement (AIS) projects, and offered extensive staff development training sessions in the multidimensional literacy curriculum designed to address the deficits in student literacy skills.

The Grade One Initiative

The rationale for implementing the curriculum was to strengthen the K-2 programs offered in NLSD, with the intent of reducing the future need for interventions and safety net programs, while, just as importantly, advancing the learning of all students (NLSD, 2001).

Twenty-nine teachers from five schools sites volunteered their participation in this study. Over the course of a school year, they underwent staff development sessions that

were organized and scheduled about one day a month and included demonstrations, the study of research on literacy, and the study of student learning. These teachers functioned as a professional learning community, carrying out action research (Bryant, 1995) as they implemented the new curriculum. “The first year was to establish a baseline of student learning and a community whose members could make a concerted effort to increase student learning substantially the following year” (NLSD, 2001, p. 2).

My participation in this AISI project started in 2000. I worked as a full-time grade one teacher, as well as a Cadre member providing training to the staff of NLSD. For the purposes of data collection in the 2002-2003 school year, the Grade 1 teachers were asked to use purposive sampling, and selected a random sample of six students from each of their classes. The random sample was chosen in a systematic way: a number between one and five was selected from a hat at the first Grade 1 meeting. Teachers counted down by that number on an alphabetized class list, and selected that student as the first student in their random sample. Then, continuing down the list, every fifth student was selected until a random sample of six students was obtained. If teachers were not able to select six students by the time they reached the bottom of their list, they continued counting at the beginning once again, looping the list and skipping over students already selected until a random sample of six was obtained.

Five elementary schools across the division were involved in the study as part of an AISI commitment. Throughout the school year, teachers collected data through division developed action research logs (Appendix A), recording samples of student work and achievement for each picture cycle completed, as well as the number of books read at home weekly. Teachers monitored when students acquired full recognition of all of their

alphabet letter names, and in November of 2002, teachers administered the Emergent Literacy Survey to their random sample of students. The thirteen teachers involved in the study were at various levels of implementation of the NLSD's literacy models: some were in their first year implementing the program, while others had several years of experience.

At the end of the school year, student reading achievement was measured through the administration of the GORT-4 (Wiederholt & Bryant, 2001). Each student from the random samples was tested individually by either the division consultant (Dr. Bruce Joyce) or a member of the division Cadre, trained in administering the GORT-4.

“Currently, the Gray Oral Reading Tests are the only ones that measure accuracy, rate, and comprehension as someone reads passages aloud. This provides a valuable index of fluency” (Shaywitz, 2003, p.134).

The purpose of the study of grade one students across NLSD was to determine reading achievement levels obtained by students, in response to the literacy AISI projects implemented across the division.

Teacher action research logs, student assessments, informal document analysis, and statistical analysis completed by the division's external consultants were analyzed by this researcher to answer the following sub- questions of this study:

- What are the exiting reading comprehension scores obtained by Grade 1 children who have completed the NLSD full-time kindergarten program?
- Are there gender differences in student achievement?
- What is the average number of words boys and girls were able to master at the end of the first picture cycle? The last picture cycle? Throughout all the cycles?

- Do students obtain control of phonemic awareness skills throughout their Grade 1 year within the context of the NLSD literacy model?
- How many books did students read at home throughout the year? Is there a relationship between number of home reading books and reading comprehension scores?
- Is there a relationship between alphabet name recognition and the ability of students to learn sight words? Year end comprehension scores?
- How do reading comprehension scores relate to scores for rate and accuracy (fluency), as measured by the GORT-4?

The Read to Succeed Initiative

The *Read to Succeed* program was developed in NLSD in order to provide reading instruction to students in Grades 4-12 who were performing significantly behind their grade level peers. As few schools have successfully addressed the needs of ‘overage beginning readers/writers’ with programs that can be emulated, (Hrycauk & Joyce, 2001, p. 3) NLSD developed the multidimensional literacy curriculum described earlier, and invited schools to designate 90 minutes of additional literacy instruction for these students. Students were recommended to the program by teacher referral, and were not excluded from their regular classroom literacy instructional time.

Length of enrollment in *Read to Succeed* varied considerably depending upon the student: exit from the program occurred when the student was competent at an end-of-Grade 6 level, for “at that point, most appear to be able to handle middle and high school learning resources, provided that they apply themselves” (Joyce, Weil, & Calhoun, 2004, p. 373). Teachers studied their students using a variety of measures, including

standardized tests such as the Canadian Test of Basic Skills Gates-McGinnitie, or the GORT-4, when students were entering and exiting the program.

In all years of the initiative, grade level equivalents were used to report student achievement. Grade level equivalents are not equal-interval measures, and “in the case of reading, gain-score in GLE terms for the lower grades generally represents more growth than does difference at upper grade levels. In other words, the difference between a GLE of 2.0 and 3.0 represents more actual gain than does the difference between 8.0 and 9.0” (Hrycauk & Joyce, 2002, p. 3).

1999-2000 School Year

Twelve sections of *Read to Succeed* were organized in the 1999-2000 school year. Two-thirds of the students were males. Seventy percent of the students were coded as having special needs in the areas of communication problems or mild/moderate learning disabilities. Upon their entering the program, Joyce, Weil and Calhoun (2004) found that [f]orty-six percent of the elementary grade students tested at or below the average for graduating grade-two students. For those who were fifth-grade students the gain through their four or more years of schooling was about a quarter the gain of the average student (in GLE terms). A similar picture appeared for the entering middle school students. (p. 376)

Read to Succeed teachers received 10 to 15 days of staff development to provide service to 250 students within the 12 sections.

Approximately 300 students were enrolled in the *Read to Succeed* programs offered in NLS D in the 2000-2001 school year. Nine sections of *Read to Succeed* classrooms obtained pre- and post-testing data on 195 students, administering whatever

standardized testing option was normally used in that school, and reporting achievement in terms of Grade Level Equivalency. In 2000-2001, the Gray Oral Reading Test (Wiederholt & Bryant, 2001) was also used with a sample of students in all sections. Some students were involved in their second year of the program. Approximately 75% of the students in the *Read to Succeed* program had special needs coding, and 25% of the students were female. Provincial Achievement Test (PAT) results were also available for three schools with Read to Succeed programs.

2001-2002 School Year (Hrycauk, Orr, Bischke, Pierce & Mc Millan, 2002)

During the 2001-2002 school year, 305 students were enrolled in 17 sections of *Read to Succeed* taught by 14 different teachers. The students enrolled were in grades 3-12. Data were collected for a random sample of 105 students. Fifty-six percent of the students were boys and 44 percent of the students were girls. Fifty percent were coded special education students.

Students' reading comprehension skills were assessed using the Gray Oral Reading Test in October and again in May or at the end of the program. Growth was tracked for these students in 'grade level equivalents', as in previous years. *Similar enrollment and numbers of Read to Succeed sections continued in the 2002-2003 school year.*

Teacher action research logs, student assessments, informal document analysis, and statistical analysis completed by the division's external consultants were analyzed by this researcher to answer the following sub- questions of this study:

- What gains in reading comprehension and vocabulary scores can be obtained by students enrolled in the *Read to Succeed* program?

- Are there gender differences in student achievement?
- Are scores upon entry a factor in student achievement?
- Are special needs codes factors in student achievement?
- Is socioeconomic status a factor in student achievement?

The Kindergarten Initiative

The Kindergarten Initiative in NLSD consisted of extending instructional time to full-days, four days a week. Each day, students were given the regular Kindergarten program as outlined by Alberta Curriculum, as well as an additional half-day instruction in literacy, using the NLSD Multidimensional Literacy Program. The goal of this initiative was to teach Kindergarten students to read, at a minimum standard, simple picture storybooks requiring some sight word skill.

Three hundred twenty-nine students (approximately 70% of the Kindergarten students in NLSD) took part in this full-time Kindergarten program in the 2001-2002 school year (Hrycauk & Kruger, 2002). Twenty-four percent of these students had special education codes. Two-thirds of the students were boys. Twenty-eight percent of the population was Aboriginal.

Throughout the year, data were gathered tracking the number of sight words acquired through the PWIM. Phonemic awareness skills were also assessed in the fall, and again at the end of the year to determine student growth and their exiting skill levels. At-home reading was monitored, with the goal being that all students would read a minimum of 50 books throughout the year.

Parents were involved in orientation meetings at which the NLSD's Literacy Program and rationale were explained, and results were shared. A common Kindergarten

newsletter was developed for parents to explain key elements of the program, and ways for parents to support their children at home. At the end of the year, surveys were sent to the parents asking for feedback about how they felt their children were progressing and asking for suggestions for improvement. Similar enrollment and programming continued in the 2002-2003 school year.

Teacher action research logs, student assessments, informal document analysis, and statistical analysis completed by the division's external consultants were analyzed by this researcher to answer the following sub- questions of this study:

- What are the exiting reading levels obtained by Kindergarten-aged children who have completed the NLSD full-time kindergarten program, as measured by Gunning (1998)?
- Are there gender differences in student achievement?
- What is the average number of words boys and girls were able to learn at the end of the first picture cycle? The last picture cycle? Throughout all the cycles?
- Do students obtain control of phonemic awareness skills throughout their Kindergarten year within the context of the NLSD literacy model?
- How many books did students read at home throughout the year? Is there a relationship between number of home reading books and reading comprehension scores?
- Is there a relationship between alphabet name recognition and the ability of students to learn sight words? Year end reading levels?

The Professional Development Component

Teachers were invited to participate in professional development training sessions on a monthly basis. Those teachers involved in AISI projects attended full-day training sessions as part of their project commitment, while other staff voluntarily attended sessions that were most relevant to their teaching positions. Staff were organized into cooperative communities (Read to Succeed, Primary Grade Initiative, Kindergarten Initiative, or Cadre) to study new curriculum, their implementation of such curriculum, and the resulting effects on student learning, in staff development opportunities structured for the development of 'executive control' over the new curriculum models.

Cadre members played a key role in facilitating or co-facilitating these training sessions, while continuing to study and learn together on a regular basis themselves. All Cadre members held regular teaching or administrative positions, and would leave their own classrooms or positions to help facilitate training sessions, being out of their classrooms, on average, twice a month: once for their own session, and once to help provide training for the district.

As a Cadre member, I worked with staffs across the district and across initiatives, as well as functioning as an 'in-house' support for the school where I taught. Throughout the 2002-2003 school year, I co-planned and presented five day-long sessions for Grade 1 teachers involved in NLSD's AISI Literacy Project. This was my third year in helping to provide training to staff across NLSD. Many of the teachers at these sessions also belonged to my own school staff.

Chapter 4: Findings

The Grade One Initiative

Each year, Northern Lights School Division central office staff compiled an annual education results report for each ASIS project in the district. Table 4 highlights year-end (May) findings derived from document analysis of the 2000-2001, 2001-2002, and 2002-2003 Northern Lights School Division's annual reports.

Table 4: 2000-2003 Grade One Findings Highlights

Finding	Year reported		
	2000-2001	2001-2002	2002-2003
Phonemic awareness skills	no difficulty	no difficulty	no difficulty
Sight vocabulary gain	95-100%	96%	97%
Average number of words	N/A	480	467
Reading comprehension	N/A	3.6 GLE	3.2 GLE
Teacher implementation	factor	factor	factor
Gender	not a factor	not a factor	not a factor

In all three years, phonemic awareness testing at the start and the end of grade one indicated no significant problems were evident. For example, in the 2002-2003 school year, students averaged scores of 75% in November, and 95% in May, as measured by the Emergent Literacy Survey (Pikulski & Taylor, 1997).

Reading comprehension scores, as measured by the Gray Oral Reading Test, indicated averages of 3.5 GLE and 3.2 GLE for the 2001-2002, and 2002-2003 school years. Results for the 2000-2001 school year were not available, as the Gray Oral

Reading Test was not available in a format applicable to Grade 1-aged students at that time. Students exiting grade one were 1.2-1.5 GLE ahead of their normative age groups.

Students were also able to learn, on average, virtually all words introduced through the PWIM cycles in May. These last cycles introduced an average of about 95 new words for study, with a mean number of words introduced in the high 400s for the year. Number of words introduced in a year ranged by classroom, from 303-955 in 2002-2003, for example, with the median being 432 words. Gender was not a factor in determining student achievement, but teacher implementation of the literacy program was a factor in all three years. 2000-2001 results highlight as an example this factor, for in “low implementing classrooms, only about 10 percent of the students were at the average of high-implementing classrooms” (NLSD, 2001, p. 5).

In addition to the extremely positive results presented in Table 4, there were other statistically significant results throughout the three years. Alphabet recognition skills were acquired by most students in grade one by December of the 2002-2003 school year, as compared to May in the 2000-2001 school year. Those students who struggled to learn letter names in most cases learned fewer sight words than average, and also scored lower than average on the GORT-4. Table 5, derived from document analysis of district reports, provides a comparison of alphabet recognition, sight words learned and final comprehension scores for students with initially low letter recognition and/or low final comprehension scores.

Table 5: Alphabet Recognition, Sight Words Learned, And Final Comprehension Scores for Students With Initially Low Letter Recognition And/Or Final Comprehension Scores

Student male (M) female (F)	Number of letters identified in October	When all letter names learned	Number of sight words learned	Comprehension scores on GORT-4
M	45	February	489	1.9
M	13	December	245	1.0
M	47	November	348	1.4
M	41	December	332	1.0
M	40	December	223	1.0
M	46	n/a	226	1.0
M	44	n/a	425	3.2
M	51	October	302	1.0
M	52	October	291	1.2
M	52	October	407	1.0
Student male (M) female (F)	Number of letters identified in October	When all letter names learned	Number of sight words learned	Comprehension scores on GORT-4
F	52	October	239	1.0
F	52	September	443	1.2

F	52	September	114	untestable
F	52	September	255	1.0
F	48	December	181	1.4

Most students who acquired approximately 100-300 words did not seem to reach GLE on the GORT-4. Some of these same students did not acquire alphabet recognition until December. Others who knew their letters in September also did not reach GLE. With the exception of one student, who knew only 13 letters in October, most students knew most of the letter names soon after entering grade one.

Reading scores on the GORT-4 for all sample students in the 2002-2003 Grade One Initiative were analyzed more closely in Table 6 for both males and females, looking at rate, accuracy, fluency and comprehension.

Table 6: 2002-2003 Grade One Male and Female GORT-4 Result Averages

	Males	Females
Rate	2.14	2.27
Accuracy	2.43	2.81
Fluency	2.23	2.43
Comprehension	3.06	3.36

Reading comprehension scores were generally higher than scores for rate and accuracy (fluency), as measured by the GORT-4. This was true for both boys and girls.

Rate and accuracy scores (fluency) were slightly to somewhat above grade level for exiting grade one students, whereas comprehension was slightly above one grade level equivalent. These results indicate that both males and females achieved similar gains. Students were above expected norms in all categories, with comprehension showing the greatest gains.

The Read to Succeed Initiative

Much of the data reported in the following section of the study were first presented by Hrycauk and Joyce (2002) and used to inform and direct the progress of the project in subsequent years. Table 7 highlights year-end results derived from document analysis of the 1999-2000, 2000-2001, 2001-2002, and 2002-2003 Northern Lights School Division's reports.

Table 7: 1999-2003 Read to Succeed Factors Highlights

Factors	Year reported			
	1999-2000	2000-2001	2001-2002	2002-2003
Initial Entry Score	not a factor	not a factor	not a factor	not a factor
Special Needs Coding	not a factor	not a factor	not a factor	not a factor
Socioeconomic Status	not a factor	not a factor	not a factor	not a factor
Implementation	factor	factor	factor	factor
Gender	not a factor	not a factor	not a factor	not a factor

Standard test scores on entry indicated very slow progress prior to enrollment; averages per section ranged from 0.25 GLE per annum to about 0.4 GLE per annum. Pre- and post- scores for both vocabulary and comprehension were available for most sections. Standard test scores on entry showed that approximately 45% of the elementary students tested at or below the average for graduating grade two students; middle school students showed average annual gains between one half to one third the gain of average students.

Post-testing indicated that three quarters of the students were able to reach the goal of progressing at at least the rate of average students, without falling behind further. Approximately fifty-five percent of these students gained between one-and-a-half to three times the gains of their 'average student' age-mates. Another almost twenty percent gained as much or more than the average student gains each year.

Almost identical progress was made by both males and females. Entry scores were not a factor, as gains were similar for students beginning at 2.0, 3.0, 4.0, and so on. Students with and without special needs coding progressed identically across all grades, and socio-economic status was not a factor with respect to progress.

Teacher implementation of the program was a factor in student achievement. In locations where 90 minutes were allocated and where full use of the dimensions of the program occurred, ninety percent or better of the students made large gains. Where these conditions did not prevail, fewer students reached the goal of making average to above average gains; however, most students in these classrooms still made substantial progress. "The effect size between the lowest and highest implementing sections was 2.5,

despite the considerable gains made by the low-implementing cohorts” (Hrycauk & Joyce, 2001, p. 4).

In all four years reported, results for the *Read to Succeed* program have been very similar. Table 8 provides an example of the type of progress seen in student achievement per section.

Table 8: Read to Succeed Gains in Student Achievement per Section for the 2000-2001 School Year

Section	Time in Program	Vocabulary Gain (GLE)	Comprehension Gain (GLE)
A	September – January	1.8	1.2
B	September – June	1.2	2.2
C	September – June	1.7	1.7
D	September – January	1.0	0.8

An analysis of student progress based on time in program also was completed. Table 9 shows progress made by students participating in the program for one year and for two years. Students participating in the program for a second year achieved as much as did students in their first year.

Table 9: Gains Made by Read to Succeed Students in Program One and Two Years

	Vocabulary (GLE)	Comprehension (GLE)
Gains By All Students	1.1	1.1
Gains By 2 nd Year Students	1.1	1.1

Provincial Achievement Test results were also available for three schools.

Read to Succeed was not the only initiative in these schools, but its implementation coincides with the period and was part of a general effort in the area of literacy. *Just Read* was operating as well, as were school-developed initiatives. Thus the picture of gain that emerges is not solely attributable to *Read to Succeed*. (Hrycauk & Joyce, 2002, p. 7)

Table 10 highlights the percent of students reaching acceptable levels on Provincial Tests of Reading as compared with students across the province. Schools with *Read to Succeed* programs showed significant gains. “These gains are substantial, particularly with the comparisons to students across the province, where such sustained effort has been and is being made to improve literacy” (Hrycauk & Joyce, 2002, p. 8).

Table 10: Percentage of Students Reaching Acceptable Level on Provincial Tests of Reading Compared with Students Across the Province

	School A, Gr. 9		School B, Gr. 6		School C, Gr. 6	
	% of Prov. Students	% of School Students	% of Prov. Students	% of School Students	% of Prov. Students	% of School Students
Year 1	83.9	78.9	81.3	70.1	81.3	77.1
Year 2	84.5	85.7	82.6	80.6	82.6	80.6
Year 3	85.5	95.2	83.2	82.8	83.2	87.5
Gain	1.6	16.3	1.9	11.7	1.9	10.4

The *Read to Succeed* Initiative appears to contribute to making a significant difference in student achievement for previously struggling readers.

The Kindergarten Initiative

In all three years of the Kindergarten Initiative, 2000-2003, the following findings were derived from document analysis of the 2000-2001, 2001-2002 and 2002-2003 Northern Lights School Division's annual education results reports. These results reflect the full-time, four-days-a-week Kindergarten program that implemented the literacy program used in NLSD.

Students who attended full-time Kindergarten learned to read, with comprehension, simple picture-level storybooks. Eighty percent of the students were able to read at higher levels that demanded increasingly more complex sight vocabulary.

Few students entered Kindergarten recognizing all the letters of the alphabet. Over 75% recognized all the letters by December, with 90% recognizing them by the end of the year. Virtually all students learned 50 or more sight words. On average, students learned 174 words (88% of words introduced). The rate of acquisition increased as the year progressed, from learning an average of 50% of 22 words introduced in the first PWIM cycle, to 82% of the 62 words introduced in the last cycle.

Eighty-five percent of students did well on basic and more advanced phonemic awareness skills. Of the 15% having difficulty, 50% read above the target level. A gender difference was noted in students' skills entering Kindergarten with the boys, on average, having lower basic phonemic awareness. By the end of the year, no such difference was obvious. Of the 15% experiencing difficulty, half were girls. No gender difference was evident in the percentage of these students who reached or exceeded the reading target.

At-home reading data indicate an average of 283 books read to or read by the students in Kindergarten, with 98% of the students reading 50 books or more during the course of the year. Grade one teachers receiving these students noticed the students' improved power as learners and indicated few students not recognizing the letters of the alphabet. Fourteen percent of the grade one students were identified as needing assistance to meet or exceed grade one goals. After excluding new students to the schools, only 9% of the students from full-time Kindergarten were identified as needing a safety-net

program. There was a great deal of consistency among schools. Ninety-eight percent of parents indicated satisfaction with the program.

In June of 2003, students who were initially in the Kindergarten Initiative wrote the Grade Three Provincial Achievement Tests. Of the 123 students writing the exam, 60% were part of the AISI project. Table 11, obtained from a recent district report (Hrycauk, 2004), provides a comparison of the results obtained by students who were part of the Kindergarten Initiative and those who were not.

Table 11: Comparison of Grade 3 PAT Results For Students Part of and Not Part of The Kindergarten Initiative

Subject Area	Percentage of Students	
	Part of Kg Initiative	Not Part of Kg Initiative
Reading		
Acceptable Level	83	82
Excellence Level	38	18
Writing		
Acceptable Level	89	83
Excellence Level	15	09
Skills		
Acceptable Level	88	82
Excellence Level	38	22

In all areas, students who participated in the Kindergarten Initiative on average outperformed students who did not, with a larger percentage of them reaching the excellence level in achievement. These same students from the Kindergarten Initiative were also given the GORT-4 exiting Grade 3. Eighty-five percent achieved exiting scores of 4.0 GLE, with 55% of them scoring 5.0 GLE or better.

The Professional Development Component

Co-planning training sessions. Working with members of my Cadre, I felt a strong sense of commitment to student learning and teacher improvement. We formed a true Professional Learning Community (DuFour & DuFour, 2003), where data and research were used to inform our teaching practice and curriculum development.

Team planning for training was a feature of our Cadre, with each individual taking responsibility for carrying various aspects of the training. Work was divided equally, and commitment was high.

Presenting sessions. Although I was helping train teachers involved in AISI projects, some of the participants in our sessions did not want to be there. An almost ‘top down’ mandate for using the NLSA’s Literacy Program within the context of the AISI projects resulted, in part, from miscommunications and misunderstandings that occurred at the very beginning of the projects. Thus, participant response to training varied – most demonstrated a willingness to learn, some were hesitant, and some were obviously unwilling. I formed these opinions from a variety of participant factors: body language, comments made during training sessions, comments made to me and others in my school building, and the level of participation in completing the required tasks before each new

session (such as filling out logs, or preparing particular types of lessons, trying them and then reporting back on what was observed).

Unanticipated Outcomes. Upon first joining the Cadre, my priority was to become a better teacher. My focus was on learning the new models of teaching and becoming skilled at modifying my instruction as I continually inquired into my students' progress. My plans and programs developed as I observed and watched my students – I no longer looked for or used pre-prepared, sequenced sets of lessons that I could pick off the shelf. I became immersed in the study of my students and in how to adjust my instruction to most effectively meet their needs.

At the same time that I was learning the intricacies of teaching in this manner, I was also becoming a staff trainer, showcasing my own teaching, including its trials and successes, as I trained. My classroom became the proverbial 'fishbowl' that others looked to, either to discredit my wefforts or to validate their own attempts, depending on their level of willingness to try what was being asked of them within their own classroom settings. Neither I nor my Cadre colleagues had anticipated the negative reactions we observed in some of our peers.

A second, unanticipated outcome that I, and many other teachers experienced, was an increased sense of efficacy. In setting up the NLSA's professional development structures, such gains were not left up to chance, but planned for from the onset of the projects (Joyce et al., 2004). According to Joyce, "organizations that elevate efficacious behavior become more vital and better able to nurture the confidence, competence, and aspirations of their members [while]...organizations that depress efficacy and self-worth take the wind from beneath their own wings" (Joyce et al., 2004, p. 1). Joyce recognized

the importance of developing teacher leadership by capitalizing on and enhancing efficacy through building competence, aspiration and confidence. An environment to support such teacher growth was developed around three key factors. One was to build a supportive community that would help teachers maintain energy as staff development and leadership roles were learned. Second was the use of group investigation – a cooperative, inquiry-oriented model, as the method for providing support and training to the cadre community (Joyce, Calhoun, & Weil, 2004).

Third was the content of the literacy program and the nature of what had to be studied to implement it. These teachers were asked to explore research on literacy, new models of teaching, ways of examining student learning, the process of professional development, and the development of communities of teachers, who, in their turn, would be inquiring communities, attempting to increase the literacy learning of their students. (Joyce et al., 2004, p. 4-5)

The following are excerpts from reflections made by participants, commenting on how their experience impacted their professional lives.

- *What happened was inside me. I had always put maximum energy into teaching my first grade kids to read. I did the best I knew. Most of them learned to read and liked reading. The special education folks gave me a bunch of reasons why the others didn't quite get over the hump. Now I walk into that classroom and I KNOW I can teach all of them to read and read well. Even the ones who struggle most know a couple of hundred sight words, can read picture-story books, and have some strategies to use when they encounter an unfamiliar word. That inside thing for me was that I know what I can do. (First Grade Teacher)*

- *When I first volunteered to teach reading to middle school kids who read like average third graders or worse, I thought that maybe I could get them reading a bit and help them feel a little better about themselves. Then I found out that these people – these trainers – were SERIOUS and believed they knew how those kids could actually learn enough that they would graduate from high school. A strange thing happened – those hopeless kids started to learn more. Something happened to me: I learned I could make that happen. When I started to train other teachers, I found that they didn't believe anyone could teach those kids. If you don't think you can, then how can you? But I couldn't change the adults' views until they learned they could make a bigger difference than they thought. (Middle School Teacher)*
- *At the school ensuring that all students learn to learn has become the real focus and action research has become a day- to-day way of working. (Cadre Member)*
- *After ten years of workshops and university courses, my aspiration was not fulfilled – I truly did not know how to teach kids how to read. Now I do. I am confident that I can teach all kids to read – all kids. This work has changed my teaching forever. I now see myself as an inquiry teacher, inquiring into student learning, into the research behind what I do, into research-based practice in my class. (author's personal journal entry)*

Participant Comments on Training Sessions. The twenty-three teachers involved in the Grade 1 AISI Literacy Training sessions were given a written survey to complete at the end of the 2002-2003 school year. Four questions were asked:

- 1.) What has worked well in your literacy project this year?
- 2.) What challenges have you experienced in implementing the literacy model?
- 3.) Do you have any suggestions for program improvement?
- 4.) Please rate your level of implementation of the literacy model as low, medium or high.

In an analysis of the teachers' responses, it was apparent that virtually all teachers (22/23) felt that their students had benefited from the literacy models and that the continuous professional development training sessions allowed for collaboration and refinement of their own teaching skills. The following is a summary of teacher responses in relation to the four questions asked on the survey.

Table 12 shows teachers' frequency of responses to those things they thought worked well. Teachers wrote most frequently about how the literacy project enabled their students to increase sight word reading vocabularies in a meaningful manner. Responses indicated that "...using a picture as a vocabulary source has been a great reference", and included comments such as, "This is an excellent way to teach sight vocabulary," and "PWIM and its dimensions have once again enabled virtually all my students to flourish!"

Table 12: Teacher Responses To What Has Worked Well

Observed increases in	Number of responses
student learning: sight vocabulary	14
student learning: writing	12
teacher skill level through collaboration	12
student confidence, independence, group work skills	10
student learning: phonics	10
student learning: reading	9

Teachers working with English as a Second Language (ESL) students also indicated the noticeable improvement that their students made. One teacher commented, “The picture was great to work from as I have a high number of ESL students and I have noticed an improvement in their speaking and reading vocabulary.” Another teacher found, “For ESL children, pulling words out of a picture to boost their vocabulary worked extremely well, especially using pictures of unfamiliar things.”

Teachers of multi-age classroom settings showed mixed responses to using the literacy models within their teaching contexts. One teacher who taught a multi-aged group of students “...found this year to be somewhat frustrating trying to combine the K-2 class, (as the) Ks were only 2 days a week so they were always behind. The 4 day Kindergarten will hopefully help this”. This teacher appeared frustrated with the challenge of the structures that were put in place, rather than the model itself. Another

teacher, who taught a Grade 1/2 split "...really enjoyed implementing PWIM in a multi-grade classroom. It has been easy to modify for individual strengths and needs."

The next most frequent comments about what went well in the AISI literacy projects focused on increases in student writing abilities and increases in teacher skill level. Increasing teacher skill in the areas of writing and comprehension was one of the primary focuses of the literacy training sessions for the 2002-2003 school year. Teachers' survey responses indicate many felt that as they themselves gained more skill in the area of improving student writing, their students then demonstrated more skill in writing. Many of them appear to concur with the teacher who "...found that patience, perseverance and working as team players made the literacy project more successful."

Many teachers commented on their students' ability to use the sight vocabulary they were learning through the PWIM and transfer that "...to their writing". One teacher noted that "...posting titles and sentences has also helped students with their writing." Another felt that she herself had learnt "...the different kinds of sentence writing" through the training sessions. One teacher commented on being "...able to challenge the higher-end students with words and writing activities."

The collaborative training sessions appear to have enabled teachers to be more skillful, confident and purposeful in their instruction. "Being able to go with the flow and try different activities/approaches" was a benefit cited by one teacher, and echoed by another teacher who felt she was able to "...present and implement with greater ease and comfort (as well as) having the skills to make it [the literacy models] more interesting and engaging for my students." Several teachers echoed the sentiment that "...the ongoing inservices (gave them) the opportunity to become very familiar and comfortable

with the strategies necessary to implement the program.” Many other teachers commented on enjoying the opportunity to meet (monthly) with other Grade 1 teachers and share ideas and many felt that this “...was the best part of it all!” Several also recognized the importance of “modeling” skills to students through explicit instruction.

Increases in students’ reading, phonetic, and independent working skills were also mentioned frequently on the teacher surveys. Students learned to “...apply phonetic and structural concepts” to the words that they were learning through the PWIM model, learning “...a variety of decoding strategies which help(ed) them become effective readers.” Children also “...seem(ed) to be very aware of ‘words’ and all the components of them” and in “...looking for attributes in each word, [they] learned how to totally dissect a word!” Teachers also commented on students’ “...willing(ness) to help one another, working in unity” and that the models enabled students to use the PWIM charts and pictures to find words that they needed or wanted to spell and read. Increases in independent working skills were noticed, as well as the influence of having the students from the full-day Kindergarten program come to Grade 1 with “...their experience with PWIM (being) fantastic in September.”

In response to the fourth survey question, teachers were given the opportunity to rate themselves as low, medium or high implementers, based on their own skill level perception. Table 13 shows teachers’ perceptions of the challenges in implementation in comparison with their own ratings of their levels of implementation. Teachers more familiar with the literacy models had fewer concerns about student engagement, and were more reflective in recognizing their own need for continued training in the areas of teaching comprehension and writing, and in extending learning for those students who

responded more quickly to instruction. Teachers who rated their level of implementation as low or medium were more focused on the techniques of the models, including student engagement and finding enough time to implement the models within their daily teaching.

Table 13: Relationship Of Implementation To Areas Of Challenge

Areas of challenge	Implementation rates		
	High (6 teachers)	Medium (15 teachers)	Low (2 teachers)
Differences in student achievement	2	3	1
Student engagement in literacy model	1	3	1
Further teacher training to develop skills	3	8	0
Student attendance	1	0	0
Need more resources/time to develop resources	2	3	0
Enough time (90 minutes) to devote to Literacy Model	0	4	2

Teachers at all levels of implementation had concerns about meeting the needs of all their students. Two high implementing teachers in this category indicated the need to continue researching additional strategies for students with severe disabilities (such as dyslexia), as well as refining their current teaching practices in order "...to keep the top

end flying and the more ‘average’ learners feeling successful when they see these other kids absorb everything virtually immediately.”

Of the teachers who rated themselves in the medium implementation category, one commented about the “...gap between the students who are reading well beyond their grade level and those who had minimal reading readiness skills.” Two others commented on extending instruction with enrichment activities for students who were either older (higher grade level in a multi-aged classroom) or within the regular classroom setting. Another teacher indicated concerns with the differences in student achievement, in that her “...lowest kids (were) still experiencing great difficulty.”

Many comments referring to student engagement with the literacy models came from teachers who also expressed concern about their own levels of implementation. These teachers commented on aspects such as “...getting the children to sit still and participate for the required time.” One noted that “...once you remove the behavior the child is better able to learn.” Another teacher felt that she had “...a very weak group of students with attention deficit issues (and) it took a long time for them to settle into the routine (with) some students still finding it impossible to focus on the picture and words for any amount of time.” One medium implementing teacher felt that the “...repetition [involved with aspects of the literacy model] is needed but it can become tedious” and one high implementing teacher felt that “...keeping them totally engaged for the 90 minutes” was challenging.

Further training was recorded most frequently as a need of the teachers of medium implementation. These teachers indicated the challenge of learning the teaching models, in particular, in the areas of teaching reading comprehension and writing. Some

of these teachers also indicated that they felt that they were improving in their ability to “...use (their) time well, and (to use) strategies to collect data on all students.” High implementing teachers echoed the desire to learn more about teaching comprehension and writing, recognizing the need to build more comprehension and writing activities into their programming. One teacher felt that she would “...need to work on more categorization of sentences to aid in paragraph formation – next year’s goal!” Most high implementing teachers saw a direct link to increasing their own skill level, classroom instruction, and student achievement. Another teacher, less confident in implementation, felt that she needed further training, recognizing that “...since this was my first year, it became a little overwhelming!”

Time to develop more resources was another challenge echoed by most respondents, as they indicated the need for more “...time to collect and organize resources for good modeling,” particularly in the area of creating writing data sets and “...having them ready to go.” Only one teacher suggested that her school had a serious “...lack of library resources throughout the year” which hampered her efforts to implement a literacy program.

Needing time to implement the literacy program was a concern for several participants. One teacher wrote, “Time. Time to implement each aspect, especially the ones I was previously unfamiliar with. Time to give each aspect of the program its full worth each day.” Two teachers felt that they did not have enough time to effectively use the model along with other learning strategies that they knew to be effective for learning to read, indicating their desire to better understand how to integrate past repertoire with new. Two teachers had difficulty securing a 90-minute block of uninterrupted literacy

instructional time within their teaching contexts. None of the high implementers indicated they had difficulty finding enough time to implement the literacy model into their teaching days.

Table 14 shows the range and frequency of challenges teachers indicated they faced when implementing the literacy model. The most frequently occurring challenge for teachers was the need for continued training opportunities to develop their own skill levels with the new repertoire. Finding enough time to devote to the Literacy Models and accommodating for differences in student achievement also were concerns.

Table 14: Summary Of Challenges Faced By Teachers Implementing Literacy Model

Challenges	Number of responses
Further training to develop skills	11
Differences in student achievement levels	6
Enough time (90 minutes) to devote to Literacy Models	6
Student engagement in literacy model	5
Need more resources/time to develop resources	5
Student attendance	1

Table 15 shows the three main areas participants suggested for program improvement. Teachers most frequently wanted the opportunity to continue to meet together to share ideas and receive training, and requested that continued study of the models be conducted in these sessions.

Table 15: Suggestions For Program Improvement

Areas of challenge	Implementation rates		
	High	Medium	Low
Continue study/research into the models	3	12	0
Continue meeting to share ideas/study together	1	6	1
Improved communications	0	1	0
No suggestions	1	1	0

Teachers clearly wanted the opportunity to continue studying together, as the “...sharing of ideas is most valuable and support is essential [and]...invaluable”. Teachers felt that “...the training needs to be continued so experience and knowledge can continue to develop”, and that new teachers need “...more training before-hand...to understand and practice concepts” before beginning with students. Two participants felt that the training should continue, but that perhaps “...every second month would be sufficient”.

Chapter 5: Discussion

The Grade One Initiative

The multidimensional literacy program used by the Northern Lights School Division (NLSD) has generated some significant improvements in student achievement across the division. These students, having benefited from participation in a full-day, four-day kindergarten program that devotes half of its time to the literacy project, received an additional year of programming in the following year, and exited Grade 1 with the average reading comprehension abilities of beginning Grade 3 students. More importantly, there does not appear to be a significant difference in the overall achievement scores of males and females.

Taken in the context of past performance, where approximately one third to one half of the students exiting Grade 1 were recommended for special education services or intervention, these gains are significant and real. Students are reading and comprehending better.

As students progressed through the year and the PWIM cycles, both males and females were able to learn a higher percentage of the words introduced from the PWIM pictures as well as from additional words added. Most students were exposed to many more words in the later cycles than the first, indicating that not only did students learn a higher percentage of the words introduced, they were also dealing with a higher quantity of words to learn. Males initially were somewhat weaker in their ability to learn sight words at the beginning of the year; however, by the last PWIM cycle, they were as strong as the females in their ability to learn new words. These data suggest that all students became more powerful sight word learners as the year progressed.

The number of words teachers introduced to their students throughout the year varied from teacher to teacher, although most teachers introduced between 300 and 500 words. The range was 200 - 955 words. It is possible that teachers with more experience and training in using the literacy model were able to implement the program to a higher degree than teachers still learning the model, and were more confident and aware in drawing out many more words for students to study. Some teachers may have modified or reduced the number of words individual students received to ensure success, depending upon individual student learning needs, while some teachers may have underestimated the number of words their students would be able to acquire. It is also possible that teachers may not have assessed and included on their reporting logs all of the additional words that they introduced to students, thereby reducing the apparent number of words that students had an opportunity to learn.

There also appears to be a relationship between alphabet letter name recognition, the ability of students to learn sight words, and their year-end comprehension scores. From working closely with students at the Grade 1 level over the past four years, I have noticed the following trend, although it is admittedly not true for all students: those who struggle to learn the names of the letters generally struggle with learning their sight words and, as a result, have a lower reading comprehension score by May than students who knew their letter names and were able to acquire sight words at a quicker pace. However, there were also students who knew the letter names by October, but did not acquire many sight words throughout the school year. Further study of this occurrence is clearly required.

Both males and females read similar numbers of books at home throughout the year, and both obtained control of phonemic awareness skills, as measured by the Emergent Literacy Survey. There does not appear to be a relationship between number of home reading books read and reading comprehension scores. Some students read higher than the average number of books, and yet were not able to comprehend at grade level, as measured by the GORT-4. Conversely, some students read significantly lower than the average number of books, and yet read at or above grade level, as measured by the GORT-4. This is another finding that requires further examination.

Reading comprehension scores indicate that exiting Grade 1 students were reading and comprehending material, on average, at a beginning Grade 3 level – one year higher than what would be normally expected. Rate and Accuracy scores reflected more typical, end-of-Grade 1 ability. In administering the GORT-4 to end-of-Grade 1 students across the division, I noted that the majority of these six and seven year old students were able to approach a formalized reading assessment with confidence, although the GORT-4 does not have any supporting cues, such as pictures, to help students derive meaning from the text. In circumstance where students were reading beyond their Grade level equivalents, many were able to read or decode very challenging words, but lacked the experiential background knowledge to understand what those words meant.

The Kindergarten Initiative

Teachers were continually engaged in the study of their students, allowing for insight into the direction required for future instruction. With the Kindergarten Initiative, teachers recognized “which alphabet letters to focus on, which words to study in more depth, what kinds of titles to introduce, which words (would) be most needed in future

reading endeavors, and which students need(ed) some specific assistance” (Hrycauk & Kruger, 2002, p. 3). The focus of continuous improvement for both staff and students remained central to all staff development sessions, with teachers becoming ever more aware of “the tremendous learning capacities of students and how powerful this capacity becomes when we nurture it” (p. 3).

As the full-time Kindergarten Initiative was funded through AISI, NLS D needed to determine how this successful project could be sustained when AISI funding disappeared. The schools, parents and students involved in the project recognized the significant impact the initiative was having in attending to the need for “far greater literacy skills, problem solving abilities and creativity...(needed) to meet the demands of the twenty-first century” (p. 3). Preliminary findings suggested that the additional costs of full-time Kindergarten might be offset to some extent by future savings, as the need for support or remedial programs declined from 24% percent to 9% within one year.

As the student population in NLS D consists of a rich, culturally diverse group of children (including second language, aboriginal, special needs), the findings of the Kindergarten Initiative “are relevant for a wide range of students” (Hrycauk & Kruger, 2002, p. 4). Findings from this initiative have been shared in Phi Delta Kappan (Joyce, Hrycauk, & Calhoun, 2003), as well as in the latest ASCD publications of Models of Teaching (Joyce, Showers, & Weil, 2004) and Student Achievement Through Staff Development (Joyce & Showers, 2002). The results from this project were also highlighted as showcase presentations at the 2002 and 2003 annual AISI conferences, and helped NLS D earn the Premier’s Award for School Board Excellence in 2001. Student progress “equals the progress of students in average first-grade classrooms and surpasses

it in one very important way: these children did not fail whereas one-third of the students in average first grades do” (Joyce, Showers, & Weil, 2004, p. 386).

The program remains under close scrutiny, as these Kindergarten students are closely followed through their subsequent grades. Staffs continue to engage in professional learning communities where they are supported in their efforts for continuous growth and learning. Overall, the Kindergarten Initiative has shown some very positive results, with a particularly beneficial impact felt at the Grade One level.

The Read to Succeed Initiative

Overall, the *Read to Succeed* program continues to have a positive effect on the learning rates of over-age beginning readers and writers, whether they are coded as special needs students or not. Students also appear to continue similar rates of growth in their second year of the program, indicating that most students would be able to catch-up to their age-mates’ abilities within two years or less of participation in the program.

Implementation and teacher training continue to be factors affecting student achievement in this program. “Strong implementation with trained staff appears to support more substantial (double or better) gains with fewer students demonstrating little or no gain” (Hrycauk et al., 2002, p. 2).

Read to Succeed has made a huge impact in the lives of many students who had previously escaped learning to read in their former years of schooling. In the last four years, NLSD has witnessed over 48 sections replicating the type of success outlined earlier: in all, about 900 students have been enrolled and most have made considerable progress, often progressing at a pace that enabled them to catch up to their age-mates’ abilities. This kind of impact on older students is worthy of note.

The Professional Development Component

Critical to the success of professional development in the NLSD was the embedding of collaboration time within the structure and culture of the schools and division (DuFour, 2001; Joyce & Showers, 2002). For the majority of the time, teachers were released from classroom duties to attend training sessions, with substitute teachers being paid out of the AISI grant. Such job-embedded professional development involved learning by doing, reflecting on experiences, and generating and sharing new insights and learning with others (Joyce & Showers, 2002; Moore, 2000; Wood & McQuarrie, 1999).

The time set aside each month for teachers to come together to collaborate, reflect and study their practice was invaluable. These day-long sessions provided participants time to review the theory and rationale behind the new models of teaching that they were learning, and to revisit and hone their own understanding of the research and processes involved. Teachers read, discussed, listened to the ‘experts’, and witnessed many demonstrations and models within a climate of inquiry into their own learning, as well as that of their students.

Time was provided for teachers to practice the skills they were learning with their colleagues, simulating actual workplace settings, before they tried the new repertoire within their own classrooms. Although I personally understood the rationale and processes of the new models during the practice sessions, once in the classroom, it was often necessary to push myself through the awkward first trials of learning a new skill. My students also felt awkward with the new tasks and skills I was requiring of them, and I had to persist in not conforming to my students’ pressure to return back to familiar teaching strategies, behaviors and expectations.

It took about 20 trials within the classroom before I felt that I had theoretical and practical control of the new models, and that I had a true integration of the model into my repertoire. My understanding and explanation of the rationale behind what I was doing throughout each step of the process was critical in allowing both my students and me to more effectively integrate new skills into existing repertoire and skill sets.

As teachers, we worked together to clarify purpose and priorities, to participate in continuous improvement cycles of gathering data on student achievement, and to support each other as we implemented new strategies. Many teachers displayed relentlessness in their efforts to improve achievement for all students, a characteristic seen as valuable in the school improvement process (DuFour & DuFour, 2003).

These training sessions highlighted reflection and dialogue within a collaborative learning setting, elements that have been shown to contribute to effective professional development (AERA, 2002; DuFour, 2001; Hirsh, 2002; Hirsh & Sparks, 2000; Moore, 2000; NSCD, 2002; Professional Development, 2002; Sparks, 2000). Our monthly training sessions allowed us to study, practice, and then come back together again to reflect on our learning. This ‘peer coaching’ component was essential, as it enabled us, on a regular basis, to solve many of the problems and questions that arose during implementation.

Throughout these sessions, teachers became each other’s support network, as some schools were less receptive than others to the changes that we were beginning to make within our classrooms. We continually revisited the theory and processes, and became action researchers within our own classrooms, studying the impact of what we

were doing on student achievement, in order to determine if we were, indeed, doing ‘what’s best’ for our students.

The survey results indicate that the literacy training sessions were effective in allowing teachers to study, refine, and implement new teaching strategies. The training appeared to encourage participants to inquire and search for ways of improving areas of their own teaching that they perceived to be lacking, such as teaching reading comprehension and writing. Many teachers indicated the benefit of studying and learning together, and expressed a desire for such opportunities to continue in the following year.

High implementing teachers were most concerned with furthering their own skills in order to better meet the diverse needs of their students. These teachers were confident in using the literacy model and were looking for extensions and cross-curricular ties to develop stronger and even more effective programming for students. These teachers displayed a continual, reflective, and engaged attitude towards their students’ learning, and their own.

Teachers who rated themselves as medium implementers were most concerned with perfecting the techniques of the models and understanding how these models could be integrated with other teaching strategies. Many of these teachers recognized their own need for further training, and requested more time to do so in the following school year.

Teachers experiencing difficulty implementing the models were most concerned with the difficulties that they experienced when students did not respond to instruction as they hoped they would. Some of these teachers did not see the direct connection to their own skill level and the results that they were seeing in their students’ achievement, and did not appear to see the need for intensive study and continued reflection. One teacher

felt that "...to merely say (students being restless) is a classroom management issue is not appropriate. It's how the program is set up (and) this issue should be addressed."

Another teacher felt that a "...controlled phonics component (should be added) into the process, not hit and miss as with what is shown on pictures." As trainers, perhaps we needed to reinforce and clarify the inquiry process underlying the AISI literacy projects in the division, and provide more demonstrations and examples of the ways the models could be used to address all areas of literacy, including phonics.

Other teachers attributed their newness to the teaching profession, as well as the models, for the difficulties that they were experiencing, but were positive about continuing to meet and learn, for "...if you have something good, keep it going!"

I believe that there is a direct relationship between the teachers' desire for further training and skill development, and the ability of those teachers to accommodate for differences in student achievement levels and to find time to devote to the new models. It seems that when teachers were reflective about their own practice and skill level, they also were more reflective about how to prepare for student differences and find ways to integrate old repertoire with new. Most teachers desired time to develop the resources that they needed to enhance their delivery of the new repertoire and, ultimately, their confidence.

Three teachers who indicated they were *medium implementers* on the survey, more likely would have fallen into the *low implementers* category were they assessed by an external rater. I personally collected, reviewed, analyzed and discussed the action research logs of these teachers throughout the 2002-2003 school year; furthermore, I engaged these teachers in discussions during training sessions regarding how they felt

they were doing with the models, and consistently identified a lack of implementation. I wonder if these teachers truly saw themselves as people who were attempting to learn and use the new repertoire, or if they had other reasons for not indicating that they were having difficulty implementing.

Did administration or central office unwittingly place pressure on these teachers to conform? Did training sessions not provide enough support for these teachers once they went back to their classrooms? Did these teachers feel they were competent teachers prior to the initiative, and did not see a valid reason for changing how they taught? Were these teachers naturally resistant to change, or were they conforming to peer pressure within their teaching contexts? At this stage, I can only speculate as to why some teachers effectively implemented and others did not.

NLSD's goal was to be able to continue the initiatives without outside help after the three-year contract for the external consultant had expired. The Cadre played a significant role in this drive towards sustainability. As Cadre members developed skill in 'best practice' models of teaching, we began to develop skills in presenting, and were key in the training our colleagues.

Perhaps I was naïve, as I excitedly steamrolled forward in my enthusiasm, extolling the value and success that I attributed to the new program. Perhaps I was blind to the complicated school politics that change seems to generate. Perhaps I was blind to the fear that gripped many teachers who were not accustomed to having their teaching become 'public' and accountable. Certainly the school improvement initiatives challenged some long-standing beliefs, particularly that family background and learning

disabilities were the cause of poor performance, rather than performance being a function of curriculum and instruction (Joyce et al., 2004).

Whatever the reason, I experienced a dramatic unanticipated outcome as I ventured into this dual role of classroom teacher and staff leader. Initially, I was surprised to be bombarded with what many would consider unprofessional conduct from other staff members as I attempted to deliver training; I had doors slammed in my face; training sessions were interrupted by what I would call “distractionary” tactics (such as throwing candy, making noises, and loud side-conversations that were off-topic); and there was a blatant disregard for start and break times, as well as many other behaviors that indicated disengagement and disinterest (such as doing marking during sessions, and refusing to participate). I had not anticipated this attitude from my peers. I went home wondering, many a night, if being a trainer was worth being socially ostracized by many of my peers but, ultimately, I knew in my heart that the potential benefit for students outweighed the personal hurts inflicted through the process – I learned to grow a thicker skin.

In talking with other Cadre members, I found that they, too, had experienced similar situations. For some, their training position created a social barrier of sorts within their own buildings: administration did not trust them, and they now had polite, but more distant working relationships with most of the people on their staff. The end result was that many Cadre members were left feeling socially isolated from the culture of their schools.

We agreed the biggest determinant of how isolated Cadre members felt seemed to lie with the strength of each individual school administration: in schools where administrators were publicly supportive and encouraging to those trying the new models,

and intolerant of behaviors that would impede such innovation, trainers became highly valued and respected amongst staff as people who could provide help and support – they were not feared. The opposite occurred with administrators who did not back up with actions and words their commitment to the NLSD’s literacy initiatives.

Even within schools where administrative support was lacking, core groups of teachers began to really study student achievement from the perspective of their own teaching skill levels, and more have ‘bought into’ the idea of inquiry and professional learning communities in the area of literacy. Cadre members have had a positive impact in facilitating and fostering this teacher growth and the subsequent positive shifts that are slowly reshaping school cultures. The tide is shifting, so to speak, toward active, inquiring communities of teachers that work towards data-based and research-driven practice.

For the most part, teachers’ sense of greater efficacy was anchored in their clinical work with children, and the satisfaction in the progress of the schools they worked in. I know that I am a different teacher today than I was six years ago. Six years ago, had someone told me I would be training other teachers, and presenting at international conferences to large groups of people, I would have likely laughed self-consciously, and brushed the comment aside. I thought that I was a good teacher before my experiences with the Cadre, and I was. But now, I can talk about the results that I can achieve with my students, and the research behind my practice, and have the confidence to know that what I am saying is indeed a reflection of our current knowledge about what best-practice looks like. I also recognize that I have only seen the ‘tip of the iceberg’, and that I have much more to learn. I am only beginning.

Chapter 6: Recommendations

It appears that the Northern Lights School Division's (NLSD) multidimensional literacy model, in combination with a full-day, four-day kindergarten program that emphasizes literacy, has enabled the students in this district to far surpass past achievement levels of success in reading. It will be an interesting inquiry to follow these students in the upcoming years, to track the influences that this initial 'boost' may have provided in their educational careers and beyond. Clearly, the Grade One initiative has shown some remarkable success. Most importantly, the main factor hindering student achievement across all of the initiatives appears to be teacher implementation: the better we get at teaching teachers, the better our students will do.

Personally, learning how to teach children how to read, and read well, has been the most powerful experience in my eleven years of teaching. I am thankful for the research that has been done in the area of literacy, and for the synthesis of such work into a multidimensional program that has worked for virtually all of my students. Yes, I have experienced challenges in first developing my own skill level, and learning how to respond to the needs of the students in my classroom in effective and powerful ways. Yes, I have experienced challenges as a trainer of staff.

Ultimately, however, I have seen the positive difference in teacher attitude and student achievement that has occurred as a result of the ongoing, formative staff development opportunities provided by NLSD. The keys to success appear to be strong, effective curriculum paired with strong, effective staff development structures. Including or perhaps even insisting on having administrators actively involved in training and

learning new repertoire alongside teachers may strengthen the sustainability and impact of such initiatives.

Refining the collection of teacher concerns and successes through a wider range of survey and response formats would also provide greater insight into teachers' thinking and feelings surrounding the initiatives. I wonder how many teachers shared similar concerns and frustrations, such as with student attendance, but just did not think to include them on the open-ended NLSD survey. I wonder also about the teachers who did not implement, and wonder if a follow-up questionnaire might help inform NLSD as to why some teachers engaged so willingly, and others did not.

Will there always be some teachers who do not want to engage in change? Most likely, for to some extent, I believe that is part of human nature. A more important question might be, "How do we as trainers help such teachers re-evaluate student achievement in relation to their own skills as teachers, while at the same time, allowing them to preserve their dignity and acquire a greater sense of efficacy?"

Difficulties arose when the group sizes for meetings were limited, or when trainers allowed those teachers who were struggling with the models or change to gain a public stand on their opinions. One of the biggest challenges I faced as a trainer was to learn how to facilitate group dynamics in positive ways, minimizing opportunities for negativism to spread, all the while maintaining group focus on the learning of new teaching models.

Sustainability appears to hinge on the ability of administrators, staffs and trainers to develop affirmative school climates, where risk-taking is supported and negative energy redirected in more positive ways. Difficulties abound when administrators are

influenced by the most vocal group within their buildings. I believe there must be relentlessness on the part of districts to ensure that school administrations are made up of positive, encouraging and strong leaders, who will support teachers seeking innovation and excellence. I believe these leaders, in turn, must demonstrate relentlessness towards helping all students within their care reach high levels of success.

After four years of receiving and providing training to others, I have seen the tide shift in our division toward teachers who really study student learning and try to determine a research based, state-of-the-art program to meet their needs. Sustainability of NLSD's Literacy Programs across schools will likely depend on the strength of leadership, as well as the professional development structures Central Office continues to promote.

Our external consultant, Dr. Joyce, is no longer needed. We have the skill set among our own staff to create powerful learning communities that study, refine and inquire into student learning. We have the skill set to know, to the best of our knowledge at this time, how to teach beginning readers of all ages to succeed and continue to excel as they progress through their school years. We continue to inquire as a way of doing business, looking for the 'best' in instructional and program design.

I do not regret my decision to train teachers in NLSD. I have seen the evidence of improved student achievement, and the beginnings of a 'new movement' within the culture of our schools: many teachers are starting to see the tremendous potential that students have and how their teaching strategies and models directly influence student achievement. As teachers have experienced for themselves the power of their teaching when they use state-of-the-art models, their belief in themselves as teachers and in their

students' potential also has risen. Ian Jukes (2003) speaks of needing a critical mass of people, around 20%, to influence the direction of an entire group. I believe that such a turning point has been reached at many of the schools, and I am proud that I have been a catalyst in this movement.

I am encouraged by the obvious success of our literacy programs, and by the positive changes that I see happening at the school level. I believe that Mohr's (1996) "wild dreams" have begun to come true in our district. Will the NLSD's Literacy Programs continue in the future? My hope is that they will, but that they will look different from their original inception – for as we learn and study more together, we will need to modify our existing programs to reflect the best of what we know.

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Attributes selected by you for instructional emphasis.

PWIM WORDS			WRITING			
	Examples	Student Work	Concept Attainment	Examples	Student Work	Concept Attainment
Phonetic Analysis (ie. Sounds)						
Structural Analysis (ie. Root words, prefixes, suffixes, etc.)						
Content Analysis (ie. Connections by meaning, similarities, themes, etc.)						
Multiple Attributes						

Reflection Questions:

- Which attributes are students not attending to in their classification? Have I addressed some for instructional emphasis?
- How frequently am I modeling multiple attribute categories?
- What teaching strategies am I using most frequently? The least? Which strategies seem to be most effective?

Writing

List of posted titles, sentences, and paragraphs generated by students:

Assessment Summary

PWIM Words Learned Summary	Week 1		Week 2		Later... (ie. end of cycle)		Difference (+) or (-) %
	Raw	%	Raw	%	Raw	%	
Total # of Words:							-----
S1:							
S2:							
S3:							
S4:							
S5:							
S6:							

Additional Words Learned Summary	Week 1		Week 2		Later...		Difference (+) or (-)
	Raw	%	Raw	%	Raw	%	
Total # of Words:							-----
S1:							
S2:							
S3:							
S4:							
S5:							
S6:							

TOTAL CYCLE: # of Words Learned	Total # of Words:		Just Read: Total Number of Books Read For Cycle
	Raw	%	
-----			-----
S1:			
S2:			
S3:			
S4:			
S5:			
S6:			

- Assessment Reflection Questions:**
- Are there significant gains in student vocabulary growth across the cycle? Between cycles?
 - What are the similarities or differences in the percentage of words learned through the PWIM chart in comparison to the percentage of words learned through additional work?
 - What is the correlation with alphabet recognition and sight word acquisition?

*Sample: Completed Researcher's NLS Action Research Log***Implementation Log for the Picture Word Inductive Model**

Date	September 3, 2002 -October 15, 2002
Name	Lisa Mueller
School	
Beginning Date	September 3, 2002
Ending Date	October 15, 2002
# of Sessions in Cycle	24 sessions
Description of Class	
Description of Picture	3 children standing at the beach in LLB in the Fall (See attached picture)

List of words shaken out from picture: 24

bushes	face	pencil	paper
words	lake	water	jacket
white	pants	cardboard	red
clothes	sand	purple	coat
rocks	pink	trees	clouds
hair	children	sky	teeth

From Additional Work with Word Families, etc: 15

Jake	rake	make	panda
take	earthquake	band	stand
wake	bake	land	
cake	cupcake	hand	

List of new words from titles and sentences: 38

Kids	a	are	very
At	Fieldtrip	wearing	one
at	Holding	jackets	dark
The	holding	girls	blue
the	pencils	all	smiling
beach	Pencils	by	smile
Beach	Standing	their	has
Going	standing	work	her
On	And	up	
on	and	in	

Additional words for some kids:

clock	stink
hockey	wrinkles
block	sprinkles
dock	sprinkler
flock	shrink
mock	rink
knock	lynx
lock	jinx
unlock	
locker	
pocket	
rocket	
sock	
tick-tock	
shock	
hawk	
Bach	
walk	
talk	
chalk	
fox	
chicken	
pox	
box	
headache	
shake	
milkshake	
candy	
candle	
handle	
jock	
jockey	
ink	
think	
tinker	
tinkle	
wink	
chink	
clink	
drink	
pinky	
blink	
link	
mink	
sink	

**TOTAL NUMBER OF WORDS FROM THIS
PICTURE CYCLE: 77 for all
153 for some**

Titles Generated:

Kids At The Lake

Kids At The Beach
 Kids Going On A Fieldtrip
 Kids At The Beach Holding Cardboard
 Kids At The Beach Holding Pencils
 Kids Standing On The Sand
 Kids And Rocks On The Sand

Sentences Generated:

The children are at the beach.
 All the children are wearing jackets.
 The girls are standing on the beach by the lake.
 The girls are standing on the beach holding cardboard and pencils.
 The girls are standing holding cardboard, pencils and paper.

Additional sentences added later on in cycle:

The girls are holding their work up.
 The clouds are in the sky.
 The clouds are up in the sky.
 The very white clouds are up in the sky.
 One girl is wearing dark blue pants.
 The girls are smiling.
 The girl has a smile on her face.

Reflections and Notes:

- students are much more familiar with the routine of the PWIM cycle- they are able to follow the see, say, spell, and knew how to practice their cards and how to classify them
- student attention is about the same as other years- they still find it hard to concentrate for more than about 10 minutes; by the end of the cycle, this had changed dramatically!
- writing is very hesitant- many want a "sentence structure" to be given to them to complete, when they are writing a response to something that they have heard- they do not know really how to write about what they heard,

rather, they will try to write something they already know, such as I love school.

- Over the 6 weeks of this cycle, it is phenomenal what these kids accomplished: most are learning their words at a tremendous pace; most are more confident and capable of writing their ideas down independently with good sound-symbol correlation; most have learned their alphabet; most are displaying independent work skills to practice and learn their words.

Student Categories

Student	<i>Classification Examples</i>
1	a, e- face, lake, paper, jacket c, o, a - coat, cardboard
2	p- paper, purple, pencil, pants, pink p w,e- white, water s e- trees, face, teeth c- coat, cardboard, clouds, children ake and
3	e o a
4	
5	r
6	r- red, hair, rocks d- red, clouds, children... e, r, 2p- purple, paper w l - holding, Holding
7	t, ee- teeth, trees r, e, 2p- purple, paper d, a- sand, cardboard p, n- pants, pencil
8	s c w p e
9	a e- red, clothes, trees, teeth
10	s a and

	ake short a sound- a, at, panda "aw" sound- all, are, on	
11	e d r p a - lake, face s t- trees, teeth, jacket c- coat, cardboard w	1 syllable 2 syllable ake
12	a c e	
13	t- trees, coat il- pencil, children ake 2 letter words	
14	e, r- paper, trees h, I, r- hair, children k s, o, r- rocks, words e c, o- coat, clouds, cardboard, clothes e, t- teeth, jacket, white at- At, at e, i - pencil, fieldtrip ake	
15	s at end p e a r I,n- children, pencil, pink o,r a,e u, e- bushes, purple	1 syllable 2 syllable s- sky, clouds an
16	s t, ee- teeth, trees e, 2p- purple, paper ing ake and	

17	c t I r d p e
18	e, r, 2p- purple, paper r, d- red, words I, e- white, pencil l, e- pencil, clothes, children, clouds 1 syllable and ake clo, s at end- clothes, clouds 1 syllable 2 syllable s, r
19	having difficulty classifying- keeps "practicing" the cards at the picture with see, say, spell
20	s e e, i - pencil, white 2 of same letters- bushes, teeth, trees, purple, paper
21	w e t
22	s at end e, r- paper, trees, children ing and

Examples of Categories for instructional emphasis:

September 5, 2002: first experience with categories: concrete objects

- objects: green, have a hole in them, have a circle shape on them, can be used for building things
- pens/markers: green on tip, are markers, are used to color with, have green ink in them, are a cylinder shape, can roll, have a lid, have writing on them

September 6, 2002:

- purple, paper: 2p, e, r
- clothes, teeth: th, e, 1 syllable

September 9, 2002:

- purple, white, red: colors, e
- paper, pencil: p, e, 2 syllables, used in writing
- clothes, coat, pants, jacket: t, things you wear

September 11, 2002

- pants, pencil: p at beginning, n
- white, water: w at beginning, e, t, 5 letters, te together
- coat, cardboard: c, o, a, oa together

September 13, 2002

- sky, clouds, trees, lake, water, bushes: found outside, have water in them
- cardboard, paper: float, can run over them, a, r, break, made out of trees, can write on them

September 24, 2002

- bushes, trees: 2 of same letter, es, end with s (means more than one), plants/living things, found outside, have roots, are green, need water and sun, have brown on them, grow from seeds, are plants, have stems, have branches, have leaves, have wood

September 25, 2002

- clouds, trees, rocks, sand, lake: can touch them, found in nature, 1 syllable words, are on the ground, can be big, can get wet, can be heavy, there are lots of them in the world

September 30, 2002

- clouds, rocks, bushes, words, clothes, pants: s at end, means more than one
- lake, water: e, a as 2nd letter, moves, found in nature, can swim in them

Attributes selected by you for instructional emphasis.

PWIM WORDS

	Examples	Concept Formation	Concept Attainment
Phonetic Analysis (ie. Sounds)			
Structural Analysis (ie. Root words, prefixes suffixes, etc.)			

Typefaces, or fonts, are different styles of writing that authors choose when communicating. Some fonts look fancy, some look scary, and some look very professional. New fonts are constantly being invented.

September 25, 2002

Punctuation

We use punctuation when we write to tell our readers when to stop (.), take a breath (,), or to use expression (!?).

September 30, 2002

Pictograms

We still use pictograms today to give us information. Some examples of pictograms are:

- walk/stop flashing crosswalk
- boys/girls bathroom
- slippery when wet
- no smoking

October 10, 2002

Sounds

There are many different kinds of sounds. Some sounds are high. Some sounds are low. Other sounds are loud or soft.

October 15, 2002

Warning Signs

There are many different kinds of warning signs. Animals often pee on things to warn other animals away. People use signs to warn other people of danger. Bad smells often warn us to stay away.

October 16, 2002

Odors

Odors, or smells, are carried through the air. There are many smells around us: the perfume of roses, baking bread, cut grass, leaves rotting, and smoke from fireplaces.

Assessment PWIM WORDS: PICTURE 1

PICTURE # 1 PWIM WORDS Sept 2002 Class Summary								
PWIM Learned Summary	Words		Day 2		Week 2		Later... (ie. end of cycle)	Difference (+) or (-) %
	Raw	%	Raw	%	Raw	%		
Total # of Words:	Raw	%	Raw	%	Raw	%	-----	

24							
<i>l</i>	11	46	17	71	24	100	+54
2	11	46	21	88	24	100	+54
3	6	25	10	42	20	83	+58
4	0	0	0	0	6	25	+25
5	3	13	4	17	22	92	+79
6	5	21	12	50	21	88	+67
7	18	75	20	83	24	100	+25
8	4	17	11	46	24	100	+83
9	2	8	3	13	19	79	+71
10	6	25	20	83	24	100	+75
11	14	58	19	79	24	100	+42
12	0	0	0	0	11	46	+46
13	1	4	1	4	15	63	+59
14	8	33	14	58	24	100	+77
15	5	21	9	38	24	100	+79
16	5	21	19	79	24	100	+79
17	5	21	4	17	18	75	+54
18	22	92	24	100	24	100	+8
19	2	8	9	38	19	79	+71
20	3	13	14	58	20	83	+70
21	5	21	7	29	19	79	+58
22	19	79	22	92	24	100	+21
Average Raw	7/24		11.8/24		20.6/24		
Average %	29		49		86		+57

Assessment PWIM ADDITIONAL WORDS:

PICTURE # 1 PWIM WORDS		
Sept 2002 Class Summary		
PWIM Learned Summary	Words	End of Cycle

Total # of Words: 40	Raw	%
1	40	100
2	39	98
3	31	78
4	4	10
5	32	80
6	32	80
7	40	100
8	26	65
9	15	38
10	37	93
11	40	100
12	4	10
13	7	18
14	26	65
15	29	73
16	39	98
17	7	18
18	40	100
19	19	48
20	20	50
21	7	18
22	39	98
Average Raw	26	
Average %	65	

Assessment PWIM ADDITIONAL WORDS:

PICTURE 1- extra sentences

PICTURE # 1 PWIM WORDS	
Sept 2002 Class Summary	
PWIM Learned Summary	Words End of Cycle
Total # of Words: 12	Raw
1	7
2	12
3	3
4	0
5	9
6	9
7	12
8	8
9	4
10	10
11	12
12	0
13	1
14	5
15	8
16	11
17	1
18	12
19	9
20	1
21	0
22	12

Assessment SUMMARY for Whole Class: Picture 1

TOTAL NUMBER OF PWIM Words Learned	Total Number of Words out of Context		JUST READ numbers
	Raw	%	
Total Possible # of Words: 76			
1	93/129 71/76	72 195	142
2	121/129 75/76	94 99	20
3	54/76	71	6
4	10/76	13	30
5	63/76	83	31
6	100/129 62/76	78 82	142
7	115/129 76/76	89 100	73
8	58/76	76	43
9	38/76	50	59
10	86/129 71/76	67 93	28
11	118/129 76/76	91 100	46
12	15/76	20	28
13	23/76	30	42
14	55/76	72	39
15	101/129 61/76	78 80	63
16	127/129 74/76	98 97	114
17	26/76	34	91
18	162/162 129/129 76/76	100 100 100	59
19	47/76	62	39
20	41/76	54	52
21	26/76	34	25
22	123/129 74/76	95 97	135

Assessment Summary: Random 6

PWIM Words Learned Summary	Week 1		Week 2		Later... (ie. end of cycle)		Difference (+) or (-) %
	Raw	%	Raw	%	Raw	%	
Total # of Words:							-----
RS1:	11	46	17	71	24	100	+54
RS2:	0	0	0	0	6	25	+25
RS3:	4	17	11	46	24	100	+83
RS4:	6	25	20	83	24	100	+75
RS5:	5	21	9	38	24	100	+79
RS6:	3	13	14	58	20	83	+70
TOTAL CYCLE: # of Words Learned	Total # of Words:		Just Read: Total Number of Books Read For Cycle		Just Read: Total Number for the Year		
-----	Raw	%	-----		-----		
RS1:	75	99	20		20		
RS2:	10	13	30		30		
RS3:	58	76	43		43		
RS4:	71	93	28		28		
RS5:	61	80	63		63		
RS6:	41	54	52		52		