

## The Tending of Diversity Through a Robust Core Curriculum: Gender, Socioeconomic Status, and Ethnicity<sup>1</sup>

JOYCE, Bruce

Booksend Laboratories, Georgia, USA

HRYCAUK, Marilyn

The Northern Lights School Division #69, Canada

CALHOUN, Emily

The Phoenix Alliance, Georgia, USA

HRYCAUK, Walter

Board of Trustees, The Northern Lights School Division, Canada

### **Approaches to Tending Diverse Student Populations**

Generally, there are three approaches to meeting the needs of diverse student populations.. In common, their emphasis has been on increasing the extent to which subpopulations have access to education that enables them to have achievement.

\* The first emphasizes inclusion: Ensuring that various types of students are not deprived of full participation in the mainstream schooling process and that equity in educational opportunity is achieved.

\* The second emphasizes the development of program variations to support the development of students with ethnic, socioeconomic, or social/psychological characteristics that are different from the "mainstream" population.

\* The third, the one discussed and reported here, builds on current research on the teaching of literacy and emphasizes the development of a robust core curriculum that has room for the development of the talents of nearly all students.

We have no intention of pitting the three approaches against one another.

Inclusion is important. There are many natural forces that separate students from one another. Prominently, neighborhood differences in demography can generate inequalities related to SES and ethnic differences, differences that can have a lifelong effect. As difficult as it is, we need to seek ways to reduce the effects of de facto segregation and other forces that generate exclusion and inequality.

Targeted initiatives are important. We need to continue the search for ways of helping students whose characteristics make them candidates for low academic, social, and personal

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<sup>1</sup> This paper renders the case study of a school division that developed a core primary grade literacy curriculum built on current research on the teaching of literacy and studied the effects on the diverse students that it serves in its 15 elementary schools. The emphasis is on Kindergarten and Grade One curriculum, but the effects on student learning have been studied, at this point, through Grade Five.

achievement. Efforts of developers like the SIMS group at the University of Kansas are vital. They are particularly so because large-scale initiatives to target students hampered by low socioeconomic environments have, on the whole, been very unsuccessful as have many programs that serve students with mild or moderate learning disabilities. Interestingly, gender can be very important in the literacy areas. In many school districts, males lag seriously behind females from primary levels through high schools and, in the United States, college, where 60 percent of the enrollment are females and, once there, they outperform males on average (see, for example, Brooks, 2005).

The strength of the core curriculum is important. First, the core curriculum (in this case the literacy curriculum) serves all students. We do not need to make the assumption that it is perfect -- or does a good job with the mainstream students but not such a good job with others! And, we can wonder, does a robust curriculum pull all students, not just mainstream students, into higher levels of achievement through instruction and building a culture of higher achievement?

#### A Strengthened Curriculum

In Northern Lights we made a serious overhaul of our K-2 curriculum. In previous papers we have reported the considerable general improvement in literacy learning that has resulted. (see: Joyce, Hrycauk, and Calhoun, 2001; Hrycauk, 2002; and Joyce, Hrycauk, and Calhoun, 2003). Here we concentrate on the effects on diverse populations.

We begin with a description of the curricular changes and its rationales, proceed to the provisions for staff development and the study of implementation, and then to the evaluation of student effects, including effects on the diverse populations served by the school division. These populations include genders, SES differences, students diagnosed as having learning disabilities, and ethnic differences (especially the progress of aboriginal students). While we have been able to report general effects on student learning, a recent change in provincial regulations now permits us to report data by SES and ethnicity.

First, a note on Northern Lights School Division #69.

#### **The Northern Lights School District**

The division is in northern Alberta and spans over 200 km. with a geographic area of 14,800 square kilometers. Schools are located in the major towns of Cold Lake, Bonnyville, and Lac La Biche (these three have populations of about 6000), the villages of Glendon and Plamondon, the hamlet of Casden, and the rural areas of Ardmore, Ion River, and Wandering river. The division operates a school on 4 Wing, a major air force installation near Cold Lake.

With respect to the student population, there are about 6000 students. The genders are about equal. Students with mild to moderate learning disabilities comprise about 11 percent of the student population and about 8 percent are of interest here, because the diagnosed disabilities theoretically affect learning to read and write. Students whose parents identify them as aboriginal make up 28 percent of the population (1675 students). Of these, 230 are First Nations persons who live on reservations and have "status rights," Including the rights to treaty benefits and to inherit land. Sixty two are First Nations students who do not live on reservations and do not have status rights. Metis students make up the majority. They have some aboriginal ancestors. There

are 976 Metis students or 16 percent of the district student population. There is one Inuit student -- origins are in the arctic areas of North America.

Historically, student achievement might be described as Canadian/US normal. Until the new curriculum was implemented, "standard" test results have been relentlessly average. About 30 percent of the students did not lean to read or write well.

### **Designing the Curriculums**

Here we will concentrate on the rationale for the K-1 curriculums. Because there have been controversial issues about the design and implementation of formal Kindergarten programs because of issues about whether formal instruction is developmentally appropriate, we will allot somewhat more space to the Kindergarten questions. However, issues over how to teach Grade One and Two students to read have been argued heatedly: as "phonics" vs. "whole language" and the rationale for the curriculums we developed cuts across a number of those issues (see, Joyce, 1999). Our purpose here is simply to try to provide the reader with an understanding about what the curriculums looked like and why.

### **What is Developmentally Appropriate?**

For years, the term "developmentally-appropriate" has been the dominating phrase in discussions about Kindergarten curriculum and even Grade One curriculum. Not only professionals but laymen have come to use the phrase, partly because it was popularized by a leading psychologist who was also a columnist on child psychology for a popular magazine (Elkind, 2001, 1987). To educators and laypeople alike, the term makes intuitive sense. "Of course, we would hope that schooling would make contact with the student's developmental level." However, the term got infected with "polar opposite disease." Again and again, the position was (and is) expressed that kindergarten-age students are not developmentally ready to learn to read. And, the picture drawn of teaching reading to young children is often of the worst kind of meaningless drill and practice with flashcards representing abstract words or sounds, even with made-up rather than real words. The use of that horrific picture raises a second and confusing question: Is the problem being raised one of developmental readiness or an aversion to a miserable curriculum? The mantra of developmental readiness has become so entrenched that even a panel of the leading scholars of reading curriculum, charged with making a comprehensive analysis of research on reading, dismissed the idea of kindergarten readers without even a nod toward relevant research (Snow, Burns, and Griffin, 1998). They began their interpretations of research with grade one, apparently because the idea of teaching reading earlier was resoundingly dismissed by the experts. The polarization -- putting a "play school" orientation against a harsh curriculum -- is disseminated to the public regularly. The title of an April 2005 article in the San Diego Union-Tribune, "Kindergarten or 'Kindergrind'" is an example. And the article reports that teachers scaled back literacy goals developed by school officials after a two-year conflict on the grounds of developmental readiness confounded by the idea that if you teach reading you do so harshly. For many decades San Diego Unified has been one of the least-troubled of the nation's large school systems, but a quarter or more of its students cannot read effectively as they exit the primary grades. But its kindergarten teachers construed an upgrade of their emergent literacy emphasis to be necessarily a move toward a harsh and rote curriculum (Gao, 2005).

As we write, the position papers of national organizations continue to come from a "developmentally inappropriate" perspective (IRA, 1998; IRA and NAEYP, 1998). Some experts even question whether having "full day" kindergarten is too much, let alone a curriculum in reading (Natale, 2001). And, with all the controversies surrounding the United States No Child Left Behind initiative, kindergarten was notable chiefly by its absence. As in the Snow investigation, the National Reading Panel simply assumed that reading in kindergarten was not a live proposition.

The categorical rejection of a formal literacy curriculum in kindergarten is odd for several reasons. In the United Kingdom, Year One students, who are the same age as kindergarten students in the United States, appear to learn to read with about the same success (and degrees of failure) as First Grade students in the United States who are a year older. Also, one of the most respected scholars of early reading in the United States has presented an extensive argument (Durkin, 1966) for beginning early, and her rationale is essentially unquestioned by other scholars. Further, in a longitudinal study, Hanson and Farrell (1995) found that the effects of a reading curriculum in kindergarten could be seen in the academic achievement of Twelfth grade students. Finally, the "father" of the idea of Kindergarten, Fredrich Froebel emphasized the need for a rich environment that would pull students into inquiry and development: neither a free-play school in a play-only environment nor a rough-edged curriculum.

From our perspective the real issue is whether a systematic reading curriculum can be developmentally appropriate.

By the way, we are acquainted with some really fine emergent literacy classrooms. In them, there are rich classroom libraries -- collections the children can pore over and ask the teacher to read selections aloud. Interesting field trips are mined for new language, tied to real experiences. The science learning center is a place for observation and experimentation. The students may not learn to read, but they surely grow in cognitions and language development. Unfortunately, when the developmentally-appropriate theory is taken to mean staying within what the students bring to school rather than enriching their development, the result is what Mike Schmoker characterized as the "Crayola Curriculum" (Schmoker, 2001).

### **Curriculum Design**

Important for our early literacy curriculum was the emergence of the Picture Word Inductive Model from the tradition of the language experience frame of reference with the addition of concept formation and attainment models of teaching (Calhoun, 1999). The Picture Word Inductive Model designs cycles that begin with photographs of scenes whose content is within the ability of the students to describe. For example, photographs can be of aspects of the local community, or they can take students around the world with photos of scenes they can relate to -- a picture of a boy in Nepal is an example. The students take turns identifying objects and actions in the picture. The teacher spells the words, drawing lines from the words to the elements in the picture to which they refer, creating a picture dictionary. The students are given copies of the words and they identify them using the picture dictionary. They proceed to classify the words using the well-tested inductive model of learning, noting their similarities and differences. The teacher selects some of their categories for extended study. Both phonetic features and structural characteristics are studied. The teacher models the creation of titles and sentences, and the

students create same, dictating them and learning to read them. The students gradually learn to assemble titles and sentences into paragraphs about the content of the picture. The picture word cycles (inquiries into the pictures) generally take from three to five weeks.

A major assumption underpinning the curriculum is that students need to become inquirers into language, seeking to build their sight vocabularies and studying the characteristics of those words, trying to build generalizations about phonetic and structural characteristics.

Our image of a nurturant curriculum appears to differ widely from what many people imagine would be the shape of a curriculum for young children and which image causes those people to shy away from formal literacy instruction for kindergartners. We believe that the developmentally-appropriate issue is confounded by aversion to a harsh and rote curriculum. For our part, we did not imagine students with workbooks, alphabet flash cards, or letter-by-letter phonics drills. We imagined an environment where students would progress from their developed listening/speaking vocabularies to the reading of words, sentences, and longer text that they had created, where they would examine simple books in a relaxed atmosphere, where they would begin to write with scribbling and simple illustrations, where they would be read to regularly and where comprehension strategies would be modeled for them through the reading and study of charming fiction and nonfiction books. If the work of childhood is play, we imagined the students playfully working their way into literacy. Froebel envisioned capitalizing on children's natural propensity to play to enable them to mature socially and cognitively by engaging in increasingly complex activities. We wished to create an environment where students would learn to read in a joyful fashion. From the literature on early reading, we identified several dimensions of learning to read (see, Calhoun, 1999):

\* the development of sight vocabulary. At first, this would come through the analysis of pictures (a large picture, 24 by 30 inches or more, would be the basis of study for three to five weeks. Imagine the students studying a picture of a woman holding a child in a market in Kuala Lumpur. The students identify items and actions: "banana," "smile" "cars," and so on. These words are printed and spelled by the teacher with lines going from the words to the objects in the picture. Thus the words are within the students' listening-speaking vocabulary. Additional words are studied as the teachers shares nonfiction and fiction books about markets around the world. Students visit these settings through their own exploration and reading of tradebooks.

\* the inductive study of words. Students classify words, discovering phonetic and structural characteristics. They learn that the language is comprehensible -- that words are almost always spelled the same, an onset in one word is likely to sound the same if it begins another word, that rhymes have a lot of regularity, that adding "s" to banana and smile will create a plural, and taking "s" from cars will get you a single car.

\* wide reading at the developed level. At the beginning, students can engage at the picture level (see below) and, gradually can deal with caption level books as they learn how meaning is conveyed by the authors. They also learn to generate sentences from the words they have shaken out, at first dictating them: "The woman is holding the boy." And paragraphs are created from the sentences. The teachers model sentence and paragraph-making. And, of course, the teachers read to the children regularly.

\* regular (several times daily) writing. At first they may just illustrate a word with a drawing. Gradually, students progress to writing picture-related sentences and paragraphs.

\* the study of comprehension strategies. Although most of the research on comprehension is with older students, the search for meaning begins early and the modeling of comprehension strategies (explicit instruction in the literature) is important from the beginning (for greater detail, see, Calhoun, E. 1999, Joyce, Hrycauk, and Calhoun 2003 ).

### **Implementation and Student Learning**

Three types of evaluation were built into the initiative: Implementation of the curriculum, the embedded study of student learning by the teachers, and the formal study of student learning through formal instruments administered by a team of external assessors.

The study of implementation was accomplished through a combination of self-report logs and observations conducted by consultants and central office personnel.

Embedded studies of student learning, from the learning of the alphabet in the kindergarten classes to the study of the acquisition of sight vocabulary, were conducted on a regular (generally monthly) basis by each of the teachers.

A team of external assessors were trained to administer the Gunning Procedure in the Kindergarten, and the Gray Oral Reading Test in grades one to five.

The Gray Oral Reading Test is built around a series of passages that the students read to the assessor. The passages proceed from the simple to the complex.

The assessor studies the students' ability to recognize the words and apply strategies for recognizing the words not recognized by sight. The assessor supplies words that are not recognized after a reasonable period of time (about three seconds). After the reading of each passage, questions are asked to assess comprehension of the content. The test yields scores on fluency and comprehension that have been normed on a substantial population of students. Thus, the results here can be compared with the normative picture.

The Gunning procedure, developed by Thomas Gunning (1998), presents to the students trade books that have been selected because they represent the following levels.

#### **Gunning Levels**

Level One. PICTURE LEVEL. The vocabulary is very small -- sometimes only a half dozen words, and are closely linked to pictures.

Level Two. CAPTION LEVEL. There are a few more words and there is more action -- more to comprehend. Each page has a phrase that moves the book along.

Level Three. EASY SIGHT LEVEL. Extended text is introduced. The student has to read text beyond what is illustrated.

Levels Four to Six. BEGINNING READING LEVELS. The vocabularies increase, the complexity of the stories increases, and the understanding of even lavishly illustrated books depends on the reading of complex text.

Level Seven. GRADE 2-A. These are larger, more complex books. The student who can read at this level can read a large number of books on many topics and do so independently.

The books are presented to the students and the cover pages are discussed briefly. Then, the students read the books and the procedures described above with respect to the Gray Oral Test are followed, including questions designed to assess comprehension of the major aspects of the books. To ensure that the students are not familiar with the books, they are selected from titles published in Great Britain that have not yet been distributed in Canada.

In the following pages we will deal, first, with the general effects of an initial implementation of the curriculum in eight kindergarten sections. We then proceed to examine the effects on diverse populations. Following that, we will look at the expansion of the initiative into a school with a demographic that enables us to highlight ethnic differences.

### **Summative Results for the Initial Kindergarten Population**

The embedded studies of alphabet recognition and vocabulary acquisition are important, but, for our purposes here, the first question is how did those kindergarten students fare initially, with the use of the Gunning procedure and, second, over the years, as represented by the fifth grade,

Table 1 presents the results for the initial kindergarten cohort group at the end of the kindergarten year.

Table 1: *Percent of Students Reaching Gunning Levels at End-of-Year Testing*

Level	Percent Reaching Level
Picture (A few words, closely connected to pictures)	2
Caption (Picture books, with text in captions)	26
Easy sight (Simple text carries meaning)	30
Above Easy Sight (extended Text in complex stories)	42

The students learned to read somewhat better than first grade students usually did in our school district with an important addition -- they all learned to read at some level. In previous years, about 70 percent of the students in those schools learned to read in the primary grades (not in kindergarten) and about 30 percent would have been at the picture level or below, about the same proportion as in United States primary grades in general as reported in the National Assessment of Educational Progress at grade four (Donahue, 1999; NCES, 1999).

All eight sections apparently succeeded in bringing all the students to some level of print literacy. About 40 percent of the students appeared to be able to read extended text and another 30 percent manifested emergent ability to read extended text. Twenty percent reached the "2A" level, which includes long and complex passages and requires the exercise of complex skills both to decode and infer word meanings. All the students could manage at least the simplest level of books. Very important to us was that there were no students who experienced abject failure. Even the student who enters first grade reading independently at the picture level carries alphabet recognition, a substantial storehouse of sight words, and an array of phonetic and structural concepts to the first grade experience. However, a half dozen students needed to be watched closely because, even if they were able to handle books at the caption level, they labored at the task, manifesting difficulty either in recognizing text-graphics relationships or using their phonetic or structural generalizations to attack unfamiliar words.

### **Year One -- Comfort and Satisfaction:**

During the year parents voiced their opinions regularly, and in May we prepared simple questionnaires for both the parents and the children. We asked the parents a series of questions about the progress of their children and whether they and the children believed they were developing satisfactorily. The children were just asked whether they were learning to read and how they felt about their progress. Primarily, we were trying to ferret out whether there were levels of discomfort that were not being detected. Apparently not. No student or parent manifested discomfort or dissatisfaction related to the curriculum. However, some parents were anxious at the beginning and still worried at the end of the year. Some were concerned that we had not taken a "letter by letter" synthetic phonics approach and worried that future problems might develop as a consequence, but they appeared to believe that their children were progressing well "so far."

### **The Grade Five Year**

The Gray Test (GORT) has been administered annually to the initial kindergarten students who have remained in the school division. Currently the initial group has graduated from grade five and we will examine their progress at that point. Sixty nine are still enrolled in division schools. (This is normal attrition for the district. The school on the airbase has considerable mobility and the oil and other mining industries in the area engender mobility as well. There are no systematic demographic differences between the students who have exited and those who are still in residence.)

At the end of grade five the national GORT average Grade Level Equivalent score in comprehension is 6.0 which is about the average for over the years for students in those schools in the division. For the 69 students, the average is GLE 7.7. Contrary to the doctrine that teaching kindergarten students with a formal literacy curriculum will be damaging later, it appears that these students have not been damaged but, rather, have prospered. Importantly, only four students are below the 5.0 level and just one of these is a struggling reader.

Curriculum development may have bypassed the controversies as far as kindergarten is concerned. Also, the balanced curriculum has generated lasting effects much greater than most reported applications of unidimensional approaches (as synthetic-phonics only).

## **Diversity and the Initial Kindergarten Population**

We are concerned here with gender, socioeconomic status (SES), learning disabilities, and ethnicity.

### **Gender**

Gender did not influence levels of success from kindergarten through grade five. The distributions of scores for boys and girls were almost identical. For the United States as a whole, the National Center for Educational Statistics distributions for grade four indicate that the males are at approximately the 30th percentile of the female distribution.

### **SES**

The distributions of scores for students having or not having subsidies for lunch were also approximately equal. Major initiatives, such as the Title One program in the United States, have been directed at SES with indifferent success, despite providing additional resources to schools with sizeable populations of economically poor students.

### **Learning Disabilities**

Typically, in our division, about 28 Kindergarten students were identified by special education diagnostic procedures as having special needs. By grade five, all but eight of those students had been discontinued from special education, whereas, in the district as a whole, all 28 would have been continued.

### **Ethnicity**

In our population area, the major concern is with the achievement of aboriginal students. In the district, nearly all the aboriginal students have done poorly. In the sample of our kindergarten students, there were eight aboriginal students and their average comprehension score score in the fifth grade was 7.0. Just one was below 6.0.

### **Summary**

As student achievement for the entire population of kindergarten students rose with the implementation of the formal and more robust curriculum in literacy, it appears that the sub-populations benefited simultaneously. As we look at the students who have just graduated in Grade Five, the females are prospering, literacy-wise, and so are the males. Mild to moderate learning disabilities appear to be diminishing. SES did not inhibit growth. And, in the area where we have the skimpiest evidence, ethnicity, in this case the progress of aboriginals, did not appear to have the dampening effect that ordinarily occurs.

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