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ABSTRACT

Research suggests that children who do not read at the end of the first grade fail to achieve in almost every other academic area. Given the high price of not learning to read in first grade, Maine schools are asking: Are children entering first grade able to take advantage of formal literacy instruction? Are they leaving first grade reading and writing well enough? This paper addresses both questions using performance data from more than a thousand first graders, collected during the 1995-96 school year. The paper also reports Maine stanines of performance at the beginning and end of first grade. It notes that with the widespread implementation in Maine of Reading Recovery, an early intervention program for first graders having difficulty in reading and writing, Maine schools have had access to an effective tool for assessing young children's literacy progress. The paper first describes the assessments and procedures that were used to gather the student performance data, specifically the Observation Survey of Early Literacy Achievement developed by Marie Clay. Second, it discusses issues around stanines and their use and reports the Maine first-grade stanines. Finally, it addresses in detail the two questions posed initially. (Contains 25 references and 4 tables of data.) (NKA)

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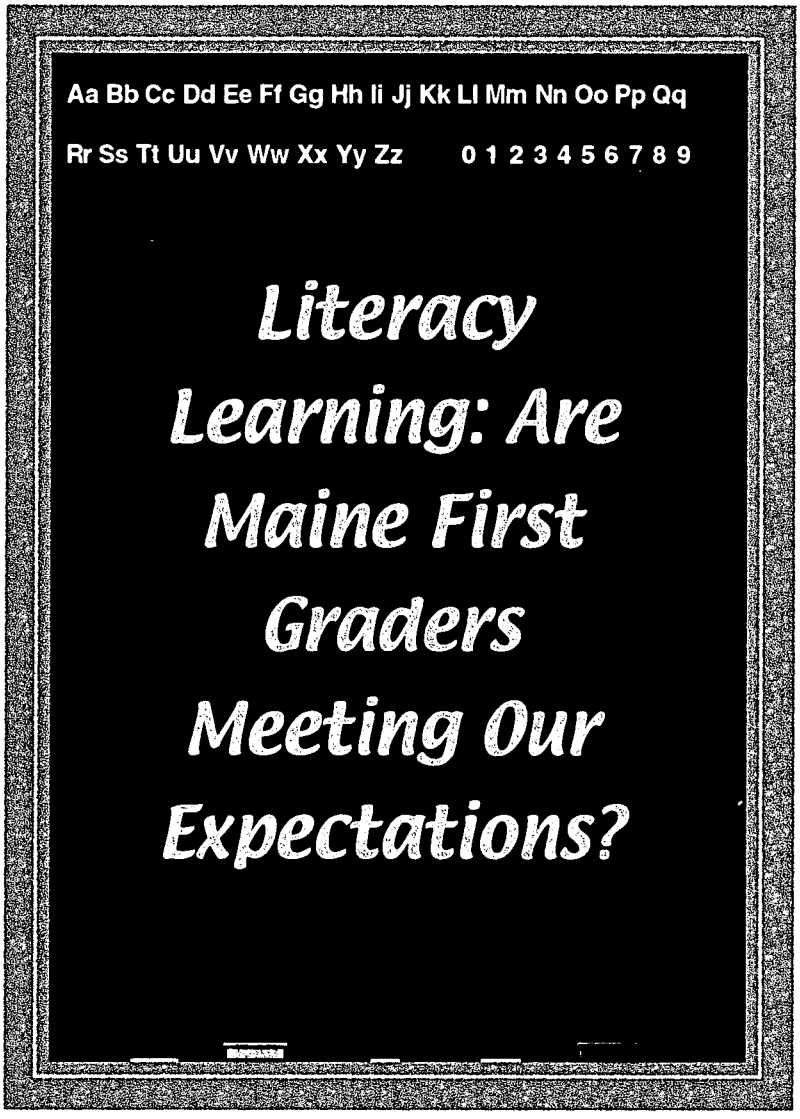

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College of Education & Human Development
University of Maine
December 1996

a publication of the College of Education & Human Development at the University of Maine and the Penquis Superintendents' Association

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The Authors

Paula F. Moore, Ed.D., received her doctorate from the University of Maine in 1994. She spent a year in New Zealand preparing as a University Trainer for the Reading Recovery program. She has subsequently trained twelve Teacher Leaders who provide teacher training at the local sites, and she initiated early literacy in-service courses for pre-K through grade 2 teachers. Prior to her work in Reading Recovery, Dr. Moore was a first-grade teacher, literacy specialist, reading coordinator, summer school administrator, and middle school teacher.

Anne K. Rhodes-Kline, Ph.D., completed her doctorate in psychology at Temple University in 1994. She is the program evaluator at the Center for Early Literacy, responsible for directing data collection and analysis on the Reading Recovery program and other early literacy initiatives for the State of Maine. Prior to her role in the College of Education, she was a researcher with the American Bar Association Center on Children and the Law.

The Center for Early Literacy is a unit within the College of Education at the University of Maine. Since 1992, the Center has linked the College of Education with the Maine Department of Education and local school districts across Maine to provide the Reading Recovery® program and other early literacy initiatives. The director of the Center for Early Literacy coordinates the training program for Reading Recovery teachers, which is delivered at local schools in Belfast, Benton, Bethel, Caribou, Ellsworth, Enfield, Machias, South Portland, Westbrook, and Wiscasset. Also within the Center is a program evaluator who directs data collection and analysis related to the Reading Recovery program and other early literacy initiatives. In support of early literacy, the Center publishes two series of "Little Books for Early Readers" and provides institutes and courses on early literacy for K-2 educators.

The Office of Compensatory Education is a unit within the Learning Systems Team of the Maine Department of Education. To help students achieve their highest potential, this subteam provides leadership, focus, support, and information for Maine educators who serve at-risk students and their families. The subteam administers federal and state programs to provide appropriate education to eligible students through early intervention as well as innovative and supplementary services to improve student performance.

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Meeting Our Expectations?

> No person can reach full human stature in our society without competence in reading. Ten years of compulsory failure at school can be crippling enough for the poor reader without the continuing experience of deprivations which he faces in a society based on the expectation of literacy. The written word influences modern living more deeply every day. Print is persistently increasing its impact on the lives of ordinary people, and in much more complex ways than it influenced a literate minority in the past. (Holdaway, 1980, p. 11).

Holdaway's insightful beginning to his ground-breaking book for elementary teachers, *Independence in Reading*, was written more than a decade ago, but it still rings true. Today, ordinary people are being influenced by the written word more deeply every day and in much more complex ways. We communicate through intricate telecommunication systems via the World Wide Web and the Internet. Our electronic mail beckons persistently. Computers provide recreation in our homes, serve as learning tools in schools, and are indispensable in the work place. Learning how to read is not only the key to education and communication in the modern world, it is also the key to success in an information economy. And ability to access that key may be determined as early as first grade.

Research suggests that children who do not read at the end of the first grade fail to achieve in almost every other academic area (Slavin, Karweit, & Wasik, 1993). While reading and writing success in the first grade does not necessarily mean children will succeed in the rest of their schooling, lack of success in first-grade reading nearly always guarantees failure in the later grades (Adams, 1990). Furthermore, research also suggests that children who start at the bottom of their classes in first grade are still at the bottom three years later (Clay, 1991), establishing a cycle of failure and low self-esteem that lasts throughout their school careers and shapes their

adult lives. In a book about instructional reform at the early elementary level, Cunningham and Allington declared, "Children who do not learn to read and write well while in elementary school become the teens who drop out of high school and, sadly, the adults who swell our welfare, unemployment, and prison systems" (1994, p. xiii).

Given the high price of not learning to read in first grade, Maine schools are asking: Are children entering first grade able to take advantage of formal literacy instruction? Are they leaving first grade reading and writing well enough? In this paper, we will address both questions using performance data from more than a thousand first graders. The data were collected as the children began and ended their first-grade year during 1995-96. We will also report Maine stanines of performance at the beginning and end of first grade. This project was made possible by a collaborative effort of the State Department of Education, which supplied the funding; the Center for Early Literacy in the College of Education at the University of Maine, which supplied the research expertise; and many teachers in 197 Maine schools, who collected the data.

First, we describe the assessments and procedures that were used to gather the student performance data. Second, we discuss issues around stanines and their use, and we report the Maine first-grade stanines. Finally, we address the questions: On average, are Maine children entering first grade able to take advantage of formal reading instruction? On average, are they leaving first grade reading and writing well enough?

Assessments and Data Collection Procedures

Most print-oriented cultures expect children to learn how to read and write between the ages of four and seven. Children at these ages are changing rapidly in cognitive and perceptual skills, and research suggests that by age seven they have established lifetime patterns of thinking

and behaving (Adams, 1990; Clay, 1991). With the widespread implementation in Maine of Reading Recovery®, an early intervention program for first graders having difficulty in reading and writing, Maine schools and teachers have had access to an effective tool for assessing young children's literacy progress. In the next section, we describe this assessment tool, *An Observation Survey of Early Literacy Achievement* (Clay, 1993).

An Observation Survey of Early Literacy Achievement

The Observation Survey is a portfolio of six standardized observation procedures (described in boxes) for systematically recording reading and writing behaviors of five- to seven-year-olds. The Survey was developed in New Zealand by Dr. Marie Clay (1993) and has been used for more than 30 years by schools and teachers to assess the

Concepts About Print: The Concepts About Print assessment in the Observation Survey measures a group of behaviors that reveal what children understand about the conventions of written language. The assessment comprises twenty-four items and performance is measured by number of items correct. Areas measured include:

- Concepts about book orientation: knowing how to open a book and knowing when a book, pictures and print are right-side up or upside down.
- Concepts about whether print or pictures carry the text message: knowing where to read when a page has both text and picture.
- Concepts about directionality of lines of print, page sequences, and directionality of words: knowing how to follow text by moving left to right, return sweep, and move from the top of the text to the bottom.
- Concepts about the relationship between written and oral language: matching speech to print in a one-to-one fashion by pointing with a finger while reading or being read to and recognizing when line of print, letters or words are out of order.
- Concepts of words, letters, capitals, space, and punctuation: understanding the basic symbols of English orthography and understanding and using a meta-language for talking about print.

Letter Identification: The letter identification task includes all lower and upper case letters as well as the literary g and a on a page of randomly arranged letters. Children are given credit for a correct response if they name the letter, give the letter sound, or name a word that starts with the letter. The maximum score on this assessment is 54.

progress of young children and to identify children who are at risk of not learning to read and write. The Observation Survey has been adapted for the U.S. context and has achieved wide use in the U.S. (Reading Recovery Council of North America, 1984-1995) through its association with the Reading Recovery program, another New Zealand import.

The most important attribute of the Observation Survey is that, unlike traditional, group-administered standardized tests, it assesses children on tasks

Text Reading: The text reading measure of the Observation Survey assesses the highest gradient of text difficulty that the child can read with 90% accuracy or better. This level is considered the child's "instructional reading level." All Reading Recovery schools use the *Scott Foresman Testing Packet* (1979), a standard set of benchmark-leveled texts, because it is required for program evaluation. This standardized packet of books is used in order to ensure consistency and reliability in text reading data that are collected across school districts and across states in the U.S. Results on the text level measure in this study were obtained by using the *Scott Foresman Testing Packet*.

To administer the text assessment, the observer gives the child a brief introduction to a book and then asks the child to read the book independently. The observer keeps a "running record" of correct reading, substitutions, repetitions, attempts to get a word, omissions, insertions, self-corrections, appeals for help, and teacher prompts. When a child scores below 90% accuracy on two gradients of text in a row, the observer discontinues the assessment. In addition to assessing a child's instructional level, the running record is a rich indicator of the child's ability to detect and correct errors, problem solve on unknown words, and use print cues from semantic, syntactic, and graphophonic sources in the print.

Reading Vocabulary: The word test is a measure of single word recognition. The U.S. version of the word test, The Ohio Word Test, is a list of twenty high frequency words from the Dolch Word List. The observer selects one of three possible lists and children are asked to read the words aloud. The observer notes not only correct and incorrect responses, but also records the child's attempts at saying the word in order to assess the child's growing ability to analyze unfamiliar words. The maximum score possible is 20.

Writing Vocabulary: The writing vocabulary assessment measures the number of words a child can write correctly in ten minutes. Children are prompted to write words they know. When the children run out of words known, the observer prompts words that the child might be expected to encounter in the first grade or at home (e.g., high frequency words, children's names, names of animals, colors, things to eat). Performance is measured by number of words written correctly, but the observer also analyzes the child's incorrect attempts in order to infer the child's growing understanding of the English orthographic system.

that are closely aligned with instruction at the K-2 level. These tasks include: letter identification, concepts about print, reading vocabulary, writing vocabulary, writing dictation, and text reading. All components of the Observation Survey are administered individually, another factor that assures greater reliability of test results when assessing very young children.

Writing Dictation: The writing dictation task is a measure of how well a child can match letters to sounds in words. The observer selects one of five possible sentences to dictate. He/she encourages the child to say each word slowly and write the sounds heard. Performance is measured by the number of phonemes correctly represented, even though the word may not be correctly spelled (i.e., toda for today). When a child reverses the order of phonemes when representing the sounds (i.e., ma for am), one point is subtracted from the total score for each reversal. Additional letters do not affect the scoring (i.e., todae for today still scores four phonemes). Alternative representations are accepted when the sound analysis is a useful one (i.e., skool for school). The maximum possible score on the writing dictation task is 37.

Data Collection Procedures

During school year 1995-1996, 197 schools in Maine collected Observation Survey scores on thousands of Maine children as they entered and left first grade as part of the state evaluation of the Reading Recovery program. Teachers who collected the data were trained by Reading Recovery Teacher Leaders to administer and score the Observation Survey. Some of the teachers were Reading Recovery teachers, others were classroom teachers or paraprofessionals.

Children in the Study

The children whose scores we used to compute the stanines presented here were from all across Maine. The sample includes children from large schools in South Portland, rural areas in and around Caribou, coastal communities, and the western mountains. All the children in the sample were first graders during the school year 1995-96, and all attended public school. The data were collected in conjunction with the Reading Recovery program evaluation. Although the

sample includes both children who participated in the program and children who did not, it does not include children from schools that have not adopted Reading Recovery.

Results from Observation Surveys in both the fall and the spring of the first-grade year were recorded by the teachers on standardized scan sheets and sent to Ohio State University (the headquarters for Reading Recovery in the U.S.) for processing. Data were returned to the Center for Early Literacy in the College of Education at the University of Maine, where they were cleaned and analyzed. In the next section, we discuss issues around stanines and their use, and we describe the performance of the Maine first graders in our sample as they entered and ended first grade during the 1995-96 school year.

What are Stanines and What Can They Do?

Suppose first grader Jenny receives a score of 38 on an assessment of her literacy skills. This score is meaningless unless we know (1) what kind of skills a score of 38 translates into and/or (2) how other children her age scored on the same assessment. For example, does a score of 38 imply that Jenny knows most of the alphabet but cannot yet read whole words, or does it mean she knows how to write her name and 37 other words? Did most other first graders also score between 35 and 45? Was Jenny the highest scorer in her class or one of the lowest?

Stanine scores are single-digit scores ranging from 1 to 9. Nine is the highest and one is the lowest, with 5 the average. Each stanine spans one half of a standard deviation unit, with the exception of stanines 1 and 9, which cover the tails of the distribution. The mean score falls exactly in the middle of stanine 5.

A stanine score of 5 means the same thing on any assessment. It is an average score. Note that "average" in this context does not mean so-so. It means the statistical average, the mean.

Because two scores that are only one stanine apart may only differ by a single point, stanines 4, 5, and 6 are sometimes thought of as the average range. Similarly, stanines 1, 2, and 3 are thought of as the below average range, and stanines 7, 8, and 9 are thought of as above average. Table 1 illustrates this. It should be noted that stanines 4 - 6 cover a very large range of scores, and typically include a large number of children (54% of children when scores are distributed normally). Stanine 4, although part of the "average range," should not be considered 50th percentile. Stanine 4, in a normal distribution, corresponds to percentiles 23 through 39. Stanine 6, on the other hand, corresponds to percentiles 60 through 76. We use stanines 4 through 6 in this paper to represent the bulk of the classroom, where most children's skill levels are. This is a good goal-point for the skills of at-risk children, many of whom score in the first or second stanine upon entry to first grade. However, the average range should not be confused with stricter definitions of average performance.

Table 1. Stanine Scores.

1	2	3	4	5	6	7	8	9
Below Average Range			Average Range			Above Average Range		

Valid Norming Procedures

In order to develop stanine scores for a particular test, the test must be administered to a large group of children of the same age or grade to estimate how other children that age or grade will score (this is called *norming* a test). Subsequent children's stanine scores will be dependent on the scores of those children on whom the test was normed. It is critical to the accuracy of the stanines that the children selected for the norming group be a good comparison group for all other children whose scores will be presented as stanines.

One of the reasons for computing Maine stanines is that many teachers and other education professionals now use the Observation Survey to compare the progress of Reading Recovery children to that of other first graders. Before conducting this stanines project, the best available stanines for the Observation Survey were normed on a group of first graders from Columbus, Ohio, in 1990. These stanines could tell a teacher how well, for example, an Old Town first grader's scores compared to a first grader from Columbus six years ago, but they could not say how well that child did in comparison to his or her own peers. Therefore, we computed the Maine stanine scores on the Observation Survey in order to provide a more valid comparison group for our first graders. It should be emphasized that these stanine scores will not tell teachers and parents where children's scores should be; they will only tell where children's scores are relative to other Maine children who have taken the same tests.

A Common Misunderstanding

The most important thing to understand about stanine scores is that they will tell you where a student's score falls *in relation to other students' scores,* but they will tell you nothing else. They will not tell you how well the student scored compared to where he or she should be, because the skill levels that are expected of a child are subjective. If American six year olds were tested using the Observation Survey, and the scores were converted to stanines based on New Zealand six year olds, the American children would appear to be far below "average." Since New Zealand starts its children into formal education one year earlier than America does, it is not helpful to use the scores of New Zealand six year olds to norm a test for American six year olds. It makes no sense. "Average" should represent the average score in the population from which the children taking the test are drawn.

The population on which a test is normed should represent, as well as possible, the population which is to take the test in the future. In that regard, the stanine scores presented here should be an accurate meter against which to gauge the relative performance of Maine first-grade children in the mid and late 1990s.

The Maine Stanine Scores

Table 2 gives the Maine stanine scores by Observation Survey test. These stanines are based on the scores of children enrolled in schools where Reading Recovery was implemented in 1995-96. Children of all ability levels and from all geographic areas were included in the sample. These stanine scores can be used to gauge the relative performances of Maine first graders in the 1990s. To the extent that the scores of children change from year to year, stanines should be recalculated at least every five years.

After determining a child's scores on the Observation Survey, the information in Table 2 can be used to determine where that child's performance stands compared to other children in Maine. For example, the average score for a Maine first grader in the fall of 1995 was between 12 and 15 on the Concepts About Print Test, and between level 1 and level 6 on Text Reading. A child whose scores are much lower than these in the fall of first grade is likely to need some extra help at the beginning of the year in order to catch up to his or her peers' skill levels.

Note that stanines merely standardize the scores of the Observation Survey; they do not change the nature of the test itself. Neither the Observation Survey scores themselves nor the stanines we present here measure innate ability or intelligence. The Observation Survey measures acquired skills, and Table 2 merely presents the possible scores on the Observation Survey along a common metric.

Table 2. Observation Survey Stanine Scores.

Concepts About Print

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	0-7	8, 9	10,11	**12**	**13,14**	**15**	16, 17	18, 19	20, 24
Spring	0-16	17	18	**19**	**20**	**21**	22, 23	24	-

Text Reading

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	-	-	-	**1**	**2-4**	**5, 6**	7-9	10	12-30
Spring	1-6	7-9	10, 12	**14, 16**	**18, 20**	**22, 24**	26	28, 30	-

Letter Identification

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	0-33	34, 36	37-40	**41-44**	**45-48**	**49-52**	53-54	-	-
Spring	0-49	50	51	**52**	**53**	**54**	-	-	-

Ohio Word Test

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	-	-	-	**0-2**	**3, 4**	**5-7**	8, 9	10-12	13-20
Spring	0-11	12, 13	14, 15	**16**	**17, 18**	**19, 20**	-	-	-

Writing Vocabulary

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	-	0-2	3-6	**7-10**	**11-14**	**15-18**	19-22	23-26	27+
Spring	0-21	22-28	29-35	**36-42**	**43-49**	**50-56**	57-63	64-70	71+

Writing Dictation

Stanine	1	2	3	**4**	**5**	**6**	7	8	9
Fall	0-3	4-7	8-11	**12-14**	**15-20**	**21-24**	25-28	29-32	33-37
Spring	0-28	29	30, 31	**32, 33**	**34, 35**	**36, 37**	-	-	-

In order to answer the question, how well are Maine first graders reading and writing as they enter and exit first grade, we must consider both conventional wisdom and research on emerging readers and writers. In the following section, we consider criteria for success at entry and exit from first grade, and we compare our Maine stanines for performance to them. We have chosen to represent the average range as the performance of children in stanines 4 through 6. Using only stanine 5 as "average" gives an unrealistically narrow picture of where the largest group of children are operating. In addition, we want to convey to schools and to teachers that "average" represents a wide range of performance. Think of the children in stanines 4 through 6 as the bulk of the classroom; this is the group of children who should benefit best from regular classroom instruction because their level of skill is where lessons tend to be pitched.

Are Maine Children Entering First Grade Able to Take Advantage of Formal Reading Instruction?

First, we want to argue strongly that all children enter first grade ready to learn something. The purpose of this section is not to establish "readiness" criteria or to help schools sort children into who is ready to face literacy learning and who is not. However, it is a widely held view that learning to read and write in first grade will be easier for the child with rich preschool literacy experiences than it will be for the child who has had few opportunities for such learning.

It is the intent of this section to describe those literacy skills that conventional wisdom and research indicate are fundamental prerequisites for success in early literacy learning. These prerequisites fall into four categories (i.e., concepts about print, text reading, knowledge of letters and words, and writing), which are sampled by the Observation Survey and are described in the following section. Most children differ in the experiences with print that they have had before kindergarten. It is the job of schools to be ready for a diversity of skill levels and to give children

the requisite experiences they may lack. We agree with Adams, "In the end, the great value of research on prereaders may lie in the clues it gives us toward determining what the less prepared prereader needs most to learn. For these children, we have not a classroom moment to waste" (1990, p. 90).

What is Successful Kindergarten Reading and Writing?

A diverse array of researchers and theorists have explored the process of reading acquisition with a variety of research methods (e.g., Adams, 1990; Cazden, 1988; Clay, 1991; Ferreiro & Teberosky, 1982; Goodman, 1986; Goswami & Bryant, 1990; Gough, Juel, & Griffith, 1992; Hatfield, 1994; Holdaway, 1980; Juel, 1991; Meek, 1982; Smith, 1988; Sulzby & Teale, 1991; Teale & Sulzby, 1986; Yaden, 1986). Both conventional wisdom and research efforts converge to suggest basic reading competencies that make it easier for a child to take advantage of first-grade reading instruction.

Concepts About Print: The first competency that both teachers and researchers agree is important is knowledge about how written language works (Adams, 1990; Clay, 1982, 1985, 1991; Downing, 1979; Holdaway, 1980; Smith; 1988). A child's global awareness of the forms, functions, and uses of print provides the basic conceptual backdrop against which reading and writing may best be learned. Children's performance on tests designed to measure print awareness, such as the Concepts About Print measure in the Observation Survey, is found to predict future reading achievement and to be strongly correlated with other, more traditional measures of reading readiness and achievement (Adams, 1990, p. 337). In general, children who have acquired at least 14-16 of the 24 concepts on the Concepts About Print test have a global

understanding about the function and uses of print. They should have an easier time making sense out of initial reading instruction in first grade.

Text Reading: Children who enter first grade with practice using early book reading behaviors on very simple, one-line texts are also more likely to have an easier time with initial reading instruction. Some of these early book reading behaviors include knowing where to start reading on one or two lines of text, how to read left to right, and how to match spoken words with printed words on the simplest text supported by pictures. In addition, entering first graders will find reading instruction easy if they know how to use picture clues and repetitive sentence structure as clues for anticipating what is to be read. Generally, children who control these early reading behaviors and strategies can read text at levels one or two in the Scott Foresman test booklets.

Letter and Word Recognition: Decades of research have confirmed the conclusion that knowledge of the alphabet is a strong predictor of a young child's success in early literacy instruction. However, while the ability to name letters is a superlative predictor of reading achievement even through the seventh grade, it is not the naming of letters that is the important factor. It is familiarity with how letters look (see Adams, 1990, for a review of the research). Without engaging in a lengthy discussion of visual perception, suffice it to say that young children who are able to quickly recognize and discriminate between letters are the ones who easily learn to recognize and discriminate between words. They are also more able to learn associations between sounds and letter clusters (i.e., phonics). Generally, children who find it easy to learn from initial reading instruction enter first grade able to rapidly recognize 48-50 letters on the Letter Identification task of the Observation Survey.

Word recognition is a by-product of lots of reading practice. However, in print-rich cultures such as ours, children learn words from many sources. Those children who find it easy to learn from initial reading instruction have learned a small bank of words they recognize immediately: their names, names of family members or friends, McDonald's, Pepsi, and a few of the most frequent words in English print (i.e., I, is, my, go, etc.). The few words recognized will differ from child to child, but these words provide important anchors in a sea of print. Generally, children who learn easily from initial reading instruction recognize between two and five words on the Word Test in the Observation Survey, and they recognize other words that are important to them personally.

Writing: Young children who have had opportunities (a) to see adults write, (b) to experiment themselves with a wide variety of tools and mediums for creating print, and (c) who have had encouragement to record messages important to them learn much without direct instruction. They learn that the purpose of text is to be understood, and they learn important concepts about how print works. They also learn how words work, knowledge that can be used to analyze unfamiliar words in reading. Even among older students, the strongest measurable links between reading and writing abilities tend to cluster at the level of spelling and word recognition skills (Adams, 1990).

Children who leave kindergarten with a repertoire of 5 to 10 words that they can write are well prepared to take advantage of formal literacy instruction in first grade. First, they have a rudimentary understanding of the concept of words, and they have a bank of known words from which they can generalize spellings for other words. In addition, children who have the ability to

hear and record 10 to 20 sounds on the writing dictation task of the Observation Survey possess an excellent early strategy for getting to words they do not know how to write.

In the next section, we examine to what extent our typical Maine kindergartners have the requisite building blocks to take advantage of traditional first-grade literacy instruction.

Where Are Skill Levels of Maine Children Entering First Grade?

On average, Maine children are entering first grade able to take advantage of formal reading instruction. The typical first grader in Maine (stanines 4, 5, and 6) scores between 12 and 15 on the Concepts About Print test. This indicates that, on average, Maine children are entering first grade with a global understanding about the functions and uses of print. See Table 3 for a summary of how Maine children's scores compare to the criteria performance described.

Surprisingly, the average range of scores on text reading level for entering first graders is levels 1 through 6. While the differences between text level 1 and text level 6 are considerable, this indicates that, on average, Maine children are entering first grade already able to read some stories. We can conclude that the typical beginning first grader has had practice using the early book reading behaviors, such as knowing where to start reading, how to read left to right, and how to match spoken words with printed words. On average, Maine children should be very well equipped to take advantage of formal literacy instruction.

In addition, Maine children entering first grade have adequate command of the alphabet (41-52 letters), insuring that they are able to learn how to recognize and discriminate between words and to learn associations between sounds and letter clusters. In addition, the typical entering first grader has acquired a few basic sight words, which insures he or she has important anchors in a sea of print.

Another surprise from the Observation Survey stanines was that, on average, Maine children are entering first grade already doing very well in writing. They are able to write between 7 and 18 words, and they can record between 12 and 24 letter-sound combinations. They should be well-equipped to learn more about writing every time they write.

This underscores the importance of programs such as Reading Recovery, which target children who do not fall into these advantaged averages. In general, Reading Recovery students in Maine score very low on all components of the Observation Survey at the beginning of first grade. They know, on average, 35 out of 54 letters and 10 of the 24 concepts about print. Most can read neither the simplest (level 1) texts, nor any words on the Ohio Word Test. They typically can write only three words, including their names, and cannot record any heard sounds. Reading Recovery children are already significantly out of step with their peers at the beginning of first grade.

Table 3. Criterion Expectations and Performance on Observation Survey at Entry to First Grade

	Concepts About Print	Text Reading	Letter Identification	Word Test	Writing Vocabulary	Writing Dictation
Criterion Expectations	14 - 16	1 - 2	48 - 50	2 - 5	5 - 10	10 - 20
Actual Performance (stanines 4 - 6)	12 - 15	1 - 6	41 - 52	0 - 7	7 - 18	12 - 24

Are Maine Children Reading and Writing Well Enough at the End of First Grade?

In the U.S., expectations for reading and writing achievement at the end of first grade are remarkably similar across states, when one considers that no compulsory national educational curriculum exists (Allington & Walmsley, 1995). Following are expectations for end-of-first grade readers in Maine based on reports from numerous schools and teachers participating in the Reading Recovery Program. In addition, research suggests that when children achieve certain criteria levels on the Observation Survey they have a self-extending system for learning (Clay, 1991). In short, they learn more about reading every time they read, and they learn more about writing every time they write; they know how to learn from their own efforts, and they have acquired the fundamental building blocks for literacy.

What is Successful First-Grade Reading and Writing?

Concepts About Print: First graders who are likely to succeed in second grade have not only global concepts about the form and functions of print, but they also have specific knowledge about punctuation, about vocabulary for describing parts of print (i.e., letter, word, sentence), and they can detect errors in word and sentence order that require close attention to print. Generally, readers who are predicted to succeed in second grade recognize between 20 and 22 concepts on the Concepts About Print test in the Observation Survey. The only concepts they may still miss are those requiring very close observation of print (letter reversals in words) or names for punctuation marks that are not emphasized in instruction, such as quotation marks and commas.

Text Reading: Successful readers at the end of first grade can read short books and stories with multiple lines of text per page. Such texts have been characterized as the "first-grade reader" in the traditional reading basal systems or about text levels 18-20 in literature-based

systems. While pictures accompany texts at this level, they provide low to moderate support in story interpretation. In these books, story structure is moderately complex, with use of literary language (such as, *In a land far, far away)*, although the text may still include a large number of words that are considered high frequency words (such as and, the, is). Episodes in the stories are more elaborate and themes are varied and sophisticated. Successful first-grade readers can also read simple non-fiction texts with more challenging or specialized vocabulary. They also display a variety of strategies for problem-solving on unknown words and errors in their reading.

Letter and Word Recognition: Successful first graders rapidly recognize and can name all forms of the 52 letters, including artistic or unusual representation of the letters, and they achieve the maximum score of 54 on the Letter Identification task on the Observation Survey. In addition, they rapidly recognize a large number of the words that are of highest frequency in the English language, such as and, the, is. When encountering an unfamiliar word, they make an attempt at the word that shows they know how letter sequences are represented by sounds, especially orthographic patterns that are highly predictable in English, such as ain, ight, ode. Generally, successful first-grade readers achieve the maximum score of 20 on the Word Test in the Observation Survey.

Writing: Successful first-grade writers can independently compose a message and write it without help, even though the spelling will not be accurate. They form letters quickly, and they write several lines of text easily because they can use a variety of strategies for getting to words they do not know how to spell, including hearing and recording the sounds in the words or by analogy to words or word parts that they do know.

Research suggests that if a young writer has about 40 to 45 words that she can write accurately, then she can represent most of the letter-sound associations in the English language, and she uses the most frequent and regular spelling patterns (Clay, 1991, p. 244). This seems to be a sufficient bank of known words from which the young writer can generalize the spellings of unknown words.

Generally, children at the end of first grade can hear and record 35 to 37 of the 37 phonemes on the writing dictation task in the Observation Survey. Analysis of their performance on the writing vocabulary task usually reveals that they know how to spell many of the words on the dictation task from memory, and they do not need to do a sound analysis. Furthermore, their attempts on words that they do not know how to spell from memory reveal that they are applying knowledge about the conventions of orthography (i.e., adding silent e on words), and they often use correct orthographic patterns but apply them incorrectly (i.e., reed for read).

Where Are Skill Levels of Maine Children Exiting First Grade?

Again, on average, Maine first graders are meeting our expectations in literacy acquisition (see Table 4 for a summary of Maine children's scores compared to criterion expectations). By the end of first grade, typical Maine children have acquired between 19 and 21 of the 24 concepts about print. They are reading text levels between 14 and 24; they have mastered the alphabet; and they recognize between 16 and 20 high frequency words on the word test.

Much to the credit of teachers and parents, by the end of first grade the typical child in Maine has maintained and surpassed expectations in writing. This child can write between 36 and 56 words and hear and record between 32 and 37 letter-sound combinations.

As a result of these strong gains made by most children in Maine, Reading Recovery students are especially challenged to catch up quickly. Children who do not maintain with the average of their peers are enormously out of step by the end of first grade. In the final section of this paper, we discuss the implications of this study for Maine schools.

Table 4. Criterion Expectations & Actual Performance on Observation Survey, End of First Grade

	Concepts About Print	Text Reading	Letter Identification	Word Test	Writing Vocabulary	Writing Dictation
Criterion Expectations	20 - 22	18 - 20	54	20	40 - 45	35 - 37
Actual Performance (stanines 4 - 6)	19 - 21	14 - 24	52 - 54	16 - 20	36 - 56	32 - 37

Discussion

President Clinton expects all children to read by the end of third grade. We believe that setting standards for children's performance is important, but perhaps this expectation is too low, given the average performance of Maine children on reading and writing tasks at the end of first grade. A typical Maine first grader can read fairly long texts with some challenging and specialized vocabulary. He/she also displays a variety of strategies for problem solving on unknown words and errors in his/her reading. In addition, the typical Maine first grader writes better than conventional wisdom and research suggest. He/she can compose a message independently, spell many words correctly, and use a variety of strategies for getting to words

he/she doesn't know how to spell. If the lowest children in a school don't acquire these skills until the end of third grade, they will be significantly out of step in Maine schools.

Although the average range of literacy performance in Maine meets expectations, we want to emphasize that this range encompasses a wide array of skill levels. We noted that at entry to first grade, the average range for text reading was between text levels 1 and 6. The difference between text reading level 1 (stanine 4) and 6 (stanine 6) is significant. Text level 1 is characterized by one line of text to a page and simple, repetitive sentence structure. Text level 6 has several lines of text to a page, novel words, and more complex story themes. Likewise, at the end of first grade, the average range spans text levels 14 to 22. The differences between text levels 14 to 22 are also significant. This diversity of skill levels is acceptable and normal reading for entering and exiting first graders. Indeed, there is no perfectly "average" child.

However, at the end of first grade, children in stanine 4 (who are reading text levels 14 to 16) are still within the reading acquisition phase of development. They continue to need guided reading instruction; they still have lots to learn about *how* to read. Likewise, children who score at the low end of stanine 4 on the writing tasks (36 - 38 words) do not have adequate word knowledge in writing from which to generalize the spellings of unknown words. They may still need a form of assisted writing instruction similar to that frequently provided in first grade. In other words, we need to watch out for these children at the low end of stanine 4 because they will need lots of support and teaching. Grade 2 teachers will need to have a wide repertoire of instructional strategies to meet the diversity of needs in the population.

One caution about the stanine results is needed. A limitation of this study may be that all the data were collected from schools that have implemented the Reading Recovery program.

Many of these schools share a curricular and staff development emphasis on early literacy. As a result of this focus, K-2 teachers in these schools may have participated in a university course designed to sharpen observation skills and decision making regarding early literacy instruction. In addition, special educators in these schools may have participated in in-service sessions sponsored by the Department of Compensatory Education designed to provide an overview of the theories and techniques on which Reading Recovery is based. Furthermore, many of these schools have implemented a team emphasis at the K-2 level to insure seamless transitions as their children pass between grades and from classroom to special programs and back. Therefore, students in these schools may be performing higher on the Observation Survey than students in schools that have not targeted early literacy.

However, the stanines do provide a useful tool against which all schools in Maine can measure the performance of their kindergarten and first-grade programs. Schools whose entering first graders, on average, operate below the average range may need to examine their kindergarten focus. Similarly, if the average performance of children at the end of first grade lags behind both the criteria performance and statewide averages, schools may want to address whether they are doing their best to meet the instructional needs of first graders.

In Reading Recovery schools, the stanines can be used to assess whether or not a discontinued Reading Recovery student does indeed fall within the average range for Maine. In general, Reading Recovery students at the end of the year should fall at stanine 5 or above in order to insure they continue to make self-sustained progress.

Finally, the results of this study underscore the importance of early intervention for children who are at risk in Maine schools. With most children in Maine (stanines 4 - 6) meeting

expectations on measures of literacy skills, it is especially important to address the needs of those children who are not meeting these standards. Over time, without appropriate intervention, the lowest children do not catch up on their own. They fall farther and farther behind their classmates with each passing school year. It should be noted that there is nothing inherently wrong with the skill levels at stanines 1, 2, and 3. These children are still ready to learn if instruction builds on their current skills. Schools must look at the children in stanines 1, 2, and 3 and provide adequate interventions beyond Reading Recovery, if necessary, in order to insure the success of all children in the school. We agree with Adams:

> But even before children enter grade school, we must become universally committed to developing their appreciation of and familiarity with text. We hug them; we give them treats and good things to eat; we try to teach them to be clean and polite, good natured, thoughtful, and fair. We do these things because it is the best way we know to set them off on happy, healthy lives. We must do as much with reading. In our society, their lives depend on it (1990, p. 91).

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