THE NATURE OF EFFECTIVE FIRST-GRADE LITERACY INSTRUCTION

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ABSTRACT

Five teams of researchers observed literacy instruction in 28 first-grade classrooms in diverse settings across five states. At each site, they observed teachers who had been identified by administrators as outstanding or typical, and they noted how each teacher taught and the literacy achievements of the students in each class. Based on student academic engagement and classroom literacy performances, the most effective and least effective teachers in each locale were selected and their instruction further analyzed. The classrooms of the most effective teachers were characterized by high academic engagement, excellent classroom management, positive reinforcement and cooperation, explicit teaching of skills, an emphasis on literature, much reading and writing, matching of task demands to student competence, encouragement of student self-regulation, and strong cross-curricular connections. The lowest achieving students in these classrooms outperformed their peers in more typical classrooms on several measures.

THE NATURE OF EFFECTIVE
FIRST-GRADE LITERACY INSTRUCTION

INTRODUCTION AND BACKGROUND

The recent years' acrimonious debate about beginning reading instruction, especially at the first-grade level, is consistent with a half century of dispute about what works best in developing young readers (Adams, 1990; Bond & Dykstra, 1967; Chall, 1967). Much of the current first-grade debate has been between those who favor explicit instruction of beginning reading skills, especially the teaching of phonics, and those who favor an approach playing down systematic instruction in favor of immersion in literacy tasks, the whole language philosophy (Pressley, 1998). Those who favor a skills instruction emphasis (e.g., Adams, 1990; Cox, 1986; Moats, 1998; Stahl, McKenna, & Pagnucco, 1994; Sweet, 1997) can point to demonstrations in true experiments that intense teaching of decoding skills to children experiencing difficulties with word recognition increases their performance on standardized measures of word recognition or reading (e.g., Foorman, et al., 1998; Lovett et al., 1994; Vellutino, et al., 1996). Although the advantages of whole language are less apparent when standardized test performance is the criterion, those favoring whole language retort that holistic reading and writing experiences improve student attitudes toward literacy and increase student understandings about reading and writing typically not tapped by standardized assessments (Dahl & Freppon, 1995; Freppon, 1991; Graham & Harris, 1994; Morrow, 1990, 1991, 1992; Neuman & Roskos, 1990, 1992).

To the extent that there are classrooms heavily driven by skills instruction, and to the extent that there are classrooms consistent with pure whole language perspectives, the work reviewed thus far is relevant to understanding primary-level instruction. But to conclude that the skills instructional research and the whole language analyses to date are all one needs to understand contemporary primary literacy instruction is problematic: there is mounting evidence that many primary-level teachers are not principally committed either to skills instruction alone or to exclusive whole language approaches to literacy development. In particular, several analyses have produced portraits of effective primary-level literacy instruction as a balancing of skills instruction and holistic experiences (Allington, Guice, Michelson, Baker, & Li, 1996; Baumann, Hoffman, Moon, & Duffy-Hester, 1998; Hoffman et al., 1998). Indeed, many educators intend

for their first-grade classes to have a balance of skills instruction and whole language (McIntyre & Pressley, 1996).

Particularly relevant here is evidence that teachers who are expert at beginning literacy instruction favor balance. For instance, Pressley, Rankin, and Yokoi (1996) surveyed primary-level teachers (kindergarten, grade 1, grade 2), who had been nominated as outstanding in promoting literacy achievement by their language arts supervisors. In general, these teachers reported balancing many literacy instructional practices. These teachers portrayed effective primary-level literacy instruction as involving the creation of literate classroom practices, modeling and teaching both lower-order (e.g., decoding) and higher-order (e.g., comprehension) processes, extensive and diverse types of reading (e.g. guided reading, shared reading, independent reading), teaching students the writing process (i.e., to plan, draft, and revise as they compose), and extensive monitoring of student progress.

Such survey data, however, cannot substitute for observations of actual teaching. Thus, consistent with a history of educational researchers attempting to identify elements of effective teaching through observation of such teaching (e. g., Rosenshine & Furst, 1973), over the course of a school year Wharton-McDonald, Pressley, and Hampston (1998) analyzed the teaching of nine first-grade teachers who varied in their effectiveness in promoting literacy. The best teachers in their sample had classrooms that were engaging, in that most of the students were productively reading and writing much of the time. By the end of the year, the students in these classrooms were writing long compositions (sometimes several pages in length), which typically included capitalization and punctuation of sentences. The writing of the students in these classrooms included correct spelling of many high frequency words and good invented spellings of less frequent words (i.e., spellings that accurately reflected the sequence of sounds in the words). By the end of the year, most students in these classes were reading books that were at or above end-first-grade reading level. In short, the Wharton-McDonald team (1998) observed some classrooms in which students were highly motivated to read and write and doing it well.

In contrast, in other classes in that sample engagement was much lower (i.e., students were often off task or spent their time doing tasks that did not involve much reading and writing). Writing and reading also was much less impressive in these classes. At the end of the year, writing typically consisted of only a few sentences, ones in which conventional capitalization and punctuation were uncertain and spelling was poor. Much of the reading in these classes was of books below the end-of-first-grade level.

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Most importantly, there were striking differences in the teaching observed in the Wharton-McDonald et al. (1998) study. First, the teachers with the most engaged and best performing students were superb classroom managers, with the result that there were few disciplinary encounters because the students were so engaged with academics. Second, the density of academic activity was very high, with the various activities interconnected, so that what was being read often was related to current writing. Since what was being read often pertained to science or social studies, there was clear integration of literacy and content learning. Third, the best classrooms were very positive places, fostering student reading and writing in many different ways and conveying the message "You can be a reader." Fourth, the teachers monitored students carefully, providing assistance as needed—just enough support so that the students could get back on track, but not so much that the teacher was doing the work for the students. Fifth, and critical in this context, the best classrooms were exceptionally well balanced with respect to explicit, systematic teaching of skills and holistic reading and writing experiences. Skills typically were practiced as part of real reading and writing.

An important limitation to Wharton-McDonald et al. (1998) was that the study was carried out only in upstate New York. Moreover, only a few teachers were studied. To enhance the level of confidence in the general conclusions of the study, including that excellent primary-level teachers balance skills instruction and holistic experiences, there was a need to replicate that study. What is reported here is a constructive replication of the Wharton-McDonald et al. (1998) study. It was carried out in five different states in various regions of the United States, in classrooms serving children of diverse ethnic, racial, and socioeconomic background. The overarching goal of this study was to determine whether there are teaching practices that distinguish primary-level teachers who are very effective in developing their students' literacy proficiencies from teachers who are less effective in doing so.

METHODS AND RESULTS

Participants

In this project, first-grade classrooms were recruited from (a) Madison, WI (four classrooms), (b) upstate New York (eight classrooms), (c) metropolitan New Jersey (six

classrooms), (d) the Dallas-Fort Worth area (eight classrooms), and (e) northern California (four classrooms).

At each site local school personnel were asked to identify two first-grade teachers, one who was outstanding in promoting student literacy achievement in the opinion of school officials and one who was more typical, but who taught students very similar to the students taught by the outstanding teacher. (Typically, the teacher nominated as typical was in the same school as the teacher nominated as outstanding.) The directions for nomination clearly noted that no weak or incompetent teachers should be nominated. In other words, the teachers nominated as typical should be considered representative of the first grade teachers generally found in the district. How the school officials made their determinations of nominees was left to them, except it was suggested that they could consider a variety of indicators in making their decision, including standardized test performances, knowledge of student performance in writing, student enthusiasm in the classroom, the extent to which teaching was representative of best practices as conceived in their district, involvement in professional development, and teacher creativity. In each of the five locales, the initial observations of the research teams confirmed that variability in teaching was apparent in each of the five samples of teachers, although the observers had not been informed as to which teachers had been nominated as outstanding and which as typical.

Class sizes varied from a low of 12 to a high of 27, although all but two had at least 20 students. The students in these classrooms represented the full range of diversity in American elementary schools. Even so, two-thirds of the classrooms that were observed were populated by children from predominantly lower-middle to lower socioeconomic classes. Also, two-thirds of the classrooms included the full range of America's ethnic and racial diversity; the remaining third of the classrooms were populated by predominantly Anglo students.

Although there was some variability with respect to the professional preparation of the teachers serving the classrooms studied, in general, the teachers in this study had received conventional teacher education and were experienced elementary-level teachers (i.e., the range was 4 to 30 years of experience). All of the teachers had had first-grade teaching experience before the year of participation in this study, and for most of the teachers, the majority of their service had been in first grade. There was also variability with respect to the approaches to literacy instruction and the materials used to support literacy instruction in these classrooms; in general, however, the approaches and materials were well within the range of what should be expected in an American first-grade classroom in the middle 1990s.

Procedure

The 30 participating teachers were observed repeatedly to document their teaching and to observe the reading and writing of students in their classes. Consistent with the grounded theory approach, data collection and analysis occurred simultaneously at each locale during the course of the study. The primary means of data collection consisted of classroom observations and teacher interviews. Data consisted of field notes from the observations and teacher responses to interview questions. The number of observers and number of observations per teacher, as well as the data coders, varied somewhat from locale to locale. Appendix A summarizes the methodological particulars for each locale.

Most of the observations were consistent with a *privileged observer* approach (Wolcott, 1988). That is, when observers were in the classroom, they tried to be unobtrusive, minimizing their interactions with teacher and students. Yes, there were occasional questions posed to teachers during transitions when the observer needed some clarification, and yes, as the students became familiar with the observers, there were some exchanges with students. Still, the observers attempted to be not much noticed by the teachers or students. Observers at all locales felt they were seeing business as usual, especially after the initial visits to the classrooms.

The observers attended especially to teaching processes, the types of materials used in the class, and student reading and writing performances and outcomes. Consistent with the recommendations of Spradley (1979), they paid special attention to what was said in the classroom, attempting to code many verbalizations as verbatim as possible. Moreover, every attempt was made to describe what was occurring in concrete terms, avoiding abstract jargon. The notes included maps of the classroom.

The data collected during classroom visits were complemented by data from a formal interview. In general, the interview questions were formulated to be informative about aspects of the classroom experience that were not revealed by observations alone. That is, the interview was developed after observations were begun, with the questions informed by what the investigators believed to be gaps in their understanding based on the observations alone. For example, the teachers were asked, "Can you explain how your reading groups work?" "What is your theory about demanding better of students?" and "How do you coordinate instruction with special education aides/teachers?" From locale to locale there were slight variations in the

specific wording of questions, and the investigators at each locale were permitted to add questions that they felt might be specifically informative for their site and delete ones that seemed to have little potential to be informative about the teachers they were studying.

Analysis

Preliminary analyses began as data were collected, with a number of categories coded and summarized (e.g., activities in the class, class groupings, instructional objectives, teacher affect and energy, student affect and energy, teacher language, student language, materials, classroom arrangement). Although, based on previous work, the researchers were sensitive as to the categories that might be coded in a study of first-grade literacy instruction, the categories emerged from the data (i.e., there was no firm *a priori* determination to look for certain categories to the exclusion of others). The initial data summaries were used to inform subsequent observations, with gaps in the data suggesting information that might be flagged for attention during later observations.

After each new observation, the emerging summaries were revisited, with gaps in previous conclusions filled in on the basis of the new data. Again, new observations often led to new insights and new questions, which informed subsequent observations. As the observations proceeded, fewer and fewer new conclusions emerged during the analyses of the observations.

The observational and interview data were used together to construct a set of conclusions about the teaching and literacy achievement in the classrooms studied. These conclusions were presented to teachers for their review and comment, with the summaries worded positively. For example, in one case student writing was characterized as ". . . typically, consisting of at most 1 or 2 sentences, with some use of capitalization and punctuation conventions, and extensive, almost exclusive use of invented spelling." The teacher who received this evaluation agreed with it without objection. In fact, there were few disagreements from teachers about the conclusions offered about their teaching and the performance of students in their classes, with the disagreements that did occur being over relatively minor issues.

In short, there was methodological triangulation in this study, with observational and interview data combined, and at least two observers visiting each classroom and agreeing on the

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conclusions advanced about the teacher. Although the amount of time spent in the classrooms varied from locale to locale, in general, there was prolonged engagement in these classrooms, permitting sufficient time for observers to come to understand the classroom, check for consistencies and inconsistencies, and build trust with the teachers, who were informative about their teaching both during incidental question and answers and during the formal interview. (In general, after the initial visits by the investigators, the teachers were comfortable with being visited by the researchers.) Moreover, teachers provided an important member check (Lincoln & Guba, 1985), confirming the conclusions about teaching and learning drawn by the researchers.

Documenting Fully the Teaching of the Most Effective Teacher at Each Locale

Identifying the most- and least-effective teachers. From the full set of typical and outstanding teachers at each locale, researchers selected a most effective teacher and a least effective teacher for that locale. (Please recall that the teacher identified as least effective at each locale was least effective of a set of typical and outstanding teachers.) In doing so, the researchers attended to student performances in the classrooms. Consistent with Wharton-McDonald et al. (1998), they paid particular attention to student engagement in literacy, what the students were reading, and the quality of student writing: At each locale, students in the most effective teacher's class were engaged most of the time (i.e., 90% of the students were engaged 90% of the time). In contrast, engagement was lower in the corresponding class of the least effective teacher. By the end of first grade, most of the students in the most effective teacher's class at each locale were reading texts that were at least at the end-of-first-grade level. A lower proportion of students were reading at the end-of-first-grade level in the locale's least effective teacher's class. Also in each locale, by the end of grade 1 students were typically writing three- to four-sentence compositions with good spelling and use of conventions. Writing was less impressive in the least-effective-for-locale classes.

Admittedly, identifying the most and least effective teachers at each locale was challenging, especially because the teachers so identified within each locale served different populations of students. Even so, the team of observers at each locale succeeded in identifying teachers that the team agreed were their most and least effective teachers in terms of student classroom

performance. Classrooms of both the most and least effective teachers represented the diversity of students in the full study.

Validation of most-effective and least-effective categories. At each locale, an end-of-year reading achievement test (Terranova, CTB-McGraw-Hill) was administered to all target students by members of the local research team. In all 30 classrooms, the achievement test performances of six students identified in September as target students (two students representing high achievement, two average achievement, and two low achievement) were collected. When the test data were returned by the publisher, the student performances were analyzed.

In the classrooms of the teachers identified as the most effective, the achievement test scores were descriptively better compared to those in the classrooms identified as least effective. The descriptive differences favoring the students in the most effective classrooms is apparent in the data summarized in Table 1. It reports the comparison of the end-of-year student test performances across all target students in each classroom. Although the descriptive differences favored the students of the most effective teachers across all achievement levels, it was the word analysis performances of the children taught by these teachers that differed statistically from the performances of children in the classrooms of the teachers identified by the researchers as least effective.

Table 1: Mean Terra Nova Scores for Students Taught by each Locale's Most and Least Effective Teachers (Collapsing across All Five Sites)

	Most Effective		**Least Effective**	
Subtest Score	**Mean**	**S.D.**	**Mean**	**S.D**
Passage Reading	57.63	24.98	48.00	23.02
Vocabulary	55.17	22.36	48.41	18.83
Reading Composite	55.87	24.63	48.07	21.55
Language	55.13	28.24	48.28	23.85
Word Analysis*	57.80	20.75	43.76	15.09

* Difference significant, $p < .01$.

Note: Means based on student of n=30 for most effective teachers and n=29 for least effective, with six students (two high, two average, two low) provided by each of the classrooms, except for one least effective classroom, which provided only one low reader.

However, the differences in end-of-year achievement were most striking for the lower achieving target students as summarized in Table 2. The descriptive data for the standardized test performances illustrates the clear differences in the performances of the lower-achieving students in the two types of classrooms and the statistical comparisons show the clear advantage the students in the most effective classrooms demonstrated. We would also note that the standardized test performances of lower-achieving students in the most-effective-for-locale classrooms equaled or surpassed the achievement of the "average" students in the least-effective-for-locale classrooms. That is, the primary impact of the most effective teachers was observed in the dramatically improved performances of their lower-achieving students. Thus, the data suggest that researcher judgments of teacher effectiveness were supported by the end-of-year standardized achievement test comparisons.

Table 2:   Mean Terra Nova Scores for Low Students Taught by each Locale's Most and Least Effective Teachers (Collapsing across All Five Sites)

Subtest Score	Most Effective		Least Effective	
	Mean	**S.D.**	**Mean**	**S.D**
Passage Reading*	51.50	22.30	28.78	16.66
Vocabulary	41.20	18.93	31.00	14.49
Reading Composite	45.40	19.57	28.55	15.69
Language	42.70	30.43	30.89	19.09
Word Analysis*	53.30	24.27	35.00	10.39

*Difference significant, $\underline{p} \leq .05$.

Note: Means based on student n=10 for most effective teachers and n= 9 for least effective, with 2 provided by each of the classrooms, except for one least effective classroom, which provided only one low reader.

Constructing and analyzing case studies. Each research team constructed a detailed case study describing the locale's most effective teacher's instruction. In doing so, each observer was asked to comment on the following: (a) daily schedule in the class, (b) the nature of reading instruction and the types of reading that occurred, (c) the nature of writing instruction and the types of writing that occurred, (d) how skills development was addressed, (e) the extent and nature of opportunistic teaching, (f) the extent and nature of across-curricular connections, and

(g) the methods and effectiveness of classroom management. All five of these case studies of the most effective teachers were then coded with respect to every instructional practice mentioned in them and every characteristic of teaching and the classroom mentioned so that a comprehensive list of the teaching behaviors and characteristics in the most-effective-for-locale classrooms then could be generated. Specifically, this list was compiled by taking the behaviors and characteristics of one teacher as the start of the list. Then, the list of behaviors/characteristics of a second most effective teacher was analyzed for items not on the startup list, with the missing items added to the startup list. This addition process continued for the behaviors/characteristics of the third, fourth, and fifth most-effective-for-locale teachers' lists, with very few new items entering the overall list by the time the fifth teacher's behaviors/characteristics were analyzed. The complete list of behaviors/characteristics was then returned to the research team at each locale. They were asked to examine the list and determine if any important instructional practice or characteristic of their teacher had been omitted. No omissions were detected.

The researchers at each site were then asked to indicate which of the entire list of behaviors and characteristics occurred in the most effective classroom they had observed at their locale. These ratings were used to produce a 200+ list of behaviors and characteristics that were found to occur in at least four out of five of the most-effective-for-locale classrooms.

The researchers at each locale were next asked explicitly to compare the most effective teacher at their locale with the least effective teacher at their locale, indicating which of the behaviors and characteristics were more consistent with the most effective teacher, equally consistent with the two teachers, and more consistent with the least effective teachers.

This comparison of the most effective teachers at each locale with the least effective teacher at each locale generated a second list—the behaviors/characteristics that distinguished the most effective teachers in the sample from the least effective teachers in the sample (See Table 3 and Appendix B). The listing provided in Table 3 represents all characteristics and features that were found to be more consistent with at least four of the five most effective teachers, as opposed to the least effective teachers. In other words, the items in Table 3 represent those characteristics and features that were consistently associated only with the most effective classrooms. These nine overarching and distinguishing characteristics are described more fully in Appendix B and will be taken up in the discussion that follows.

Table 3: Characteristics That Differentiate the Most-Effective-for-Locale Classrooms in the Study

High Academic Engagement and Competence
Excellent Classroom Management
Positive, Reinforcing, Cooperative Environment
Explicit Teaching of Skills (i.e., word-level, comprehension, writing skills)
Literature Emphasis
Much Reading and Writing
Match of Accelerating Demands to Student Competence, with a Great Deal of Scaffolding
Encouragement of Self-Regulation
Strong Connections across the Curriculum

DISCUSSION

Something that deserves emphasis at the outset of this discussion is that although we sought out good teachers as participants in the study, we specifically asked that ineffective teachers not be nominated as typical. Rather, we asked the participating districts to provide typical teachers as a contrast to outstanding teachers. In identifying for ourselves the most-effective-for-locale and least-effective-for-locale teachers, we did not rely on the opinions of district officials; rather, we drew our own conclusions about effectiveness based on what was observed in the classrooms. We relied on evidence of engagement and student performance on literacy tasks and activities to identify the most-effective-for-locale and least-effective-for-locale teachers.

Consistent with previous evaluations of very good first-grade classrooms (e.g., Pressley et al., 1996; Wharton-McDonald et al., 1998), we observed much going on in particularly effective classrooms. From multiple effective teacher case studies we generated a listing of over 200 separate features of their instructional environments. Our primary interest was in locating those features that distinguished the most effective classrooms. Our contrastive analysis produced behaviors and characteristics that differentiated the most-effective-for-locale classrooms from the least-effective-for-locale classrooms. Thus, Table 3 reports the 60 teaching behaviors and characteristics that differentiated the most effective-for-locale classrooms from the least effective-for-locale classrooms. The items listed represent those features found in at least 4 of

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the 5 most effective-for-locale classrooms that local site coordinators identified as more characteristic of the most effective-for locale teachers in at least 4 of the 5 paired comparisons.

Although we were struck that it was possible to identify many behaviors and characteristics that were common in the most-effective-for-locale classrooms, we were also struck that these effective classrooms were not simply cookie-cutter replicates of one another. Rather, they varied in the particular activities occurring in them, with the activities in any classroom varying somewhat from hour to hour and day to day. In other words, there were many facets of effective classrooms, and these most effective teachers organized these facets much as a mosaic is constructed. Nonetheless, there were consistencies across these classrooms – consistencies that differentiated these most effective classrooms from the less effective ones.

Engagement and Competence

A striking characteristic of every one of the most effective classrooms was the intense involvement of the students in literacy activities, with academic engagement apparent on each and every observation day. This contrasted with the least-effective-for-locale classrooms in this study, some of which never had as academically engaging a day as the least engaging day in the most effective classroom in their locale. High academic engagement was associated with strong student performances, and low academic engagement was associated with weaker student performance.

Thus, one simple rule of thumb that we have developed for quickly sizing up a classroom is to calculate the proportion of children who are productively engaged in literacy activities when the teacher must leave the room momentarily. In the most-effective-for-locale classes, this figure was typically more than 90% of the students more than 90% of the time during language arts. Engagement was much, much lower in the least-effective-for-locale classrooms in this study, and frankly, in many of the other 20 classrooms in this study as well. (This finding is consistent with previous reports [e.g., Knapp, 1995], including Wharton-McDonald et al. [1998] who observed that about a third of the first-grade classrooms in their study were very engaging, with the remainder much less engaging.) Such differences in engagement occurred despite the fact that no classrooms in this study were selected because they were felt to be ineffective

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classrooms. Rather, the school officials attempted to provide outstanding and more typical first-grade classes for their districts.

Why are the most effective-for-locale classrooms so engaging, with students making much progress in literacy development? There probably are multiple reasons, reflected by the multiple differences in the teaching behaviors and characteristics of the most-effective-for-locale and least-effective-for locale classrooms, with those differences considered in each of the remaining subsections of this discussion.

Excellent Classroom Management

The most-effective-for-locale classrooms were extremely well managed, which is hardly surprising given that effective classroom and lesson management is a hallmark of effective classrooms (Anderson, 1995). Even so, there were some aspects of the management in the most-effective-for-locale classrooms that typically are not covered in traditional treatments of classroom and lesson management.

First-grade classrooms often have one or more other adults who assist the classroom teacher with instruction. It was striking in the most-effective-for-locale classrooms how the teachers coordinated the instruction provided by paraprofessionals and special teachers in order to assure the integrity of the curriculum, especially its continuity for students in need of extra help. This contrasts with previous observations that frequently there is little coordination between the various adults who are teaching students from the same class (Allington & McGill-Franzen, 1989). The observations of effective management of other adults by teachers in this study, however, is consistent with what was observed in the best classrooms in the earlier Wharton-McDonald et al. (1998) investigation.

The team of researchers have many memories of first-grade students spending inordinate amounts of time generating illustrations to accompany their writing, for example, struggling with scissors and/or paste to construct a frame for their writing (e.g., cutting out a pumpkin, followed by pasting their writing about Halloween onto the pumpkin). We recall students wandering during individual reading time. We still can see first graders at their desks with hands raised, waiting and waiting to have a word pronounced for them. However, these memories are not

prompted by our observations in the most-effective-for-locale classrooms, where student art was integrated with writing so that the bulk of students' effort and time went into the writing. Again, this finding is consistent with the Wharton-McDonald et al. (1998) observation that art activities related to writing consume much more time in less effective classrooms. It is largely effective teacher planning that enables students to concentrate on writing. For example, students in an effective classroom might put their writing on a pumpkin frame, but if they did, the pumpkins would have been cut out by the teacher or an aide the night before, and every table would have a bottle of liquid glue that flowed with just one squeeze. Pumpkin framing would take just a few minutes rather than taking up much of the language arts period as in a less effective classroom.

In the best classrooms, we observed teachers monitored student reading, assisting students with book selections when needed and insisting students actually read the books they chose. In these classrooms, students were provided lots of problem-solving strategies to use when they encountered a word they did not know. In short, these classrooms contained well planned lessons and activities with a focus on student acquisition of self-regulation (taken up in some detail later in this discussion) and problem-solving strategies.

Positive, Reinforcing, Cooperative Environment

The most effective classrooms were all exceptionally positive places, and more positive than the least-effective-for-locale classrooms. What we emphasize here, however, is that when the field notes for the most-effective-for-locale classrooms were reviewed, we rarely found even single moments that were not handled positively and constructively. This contrasts especially with our memories of some of the least-effective-for-locale classrooms in this study that were decidedly not positive places for many of the students in them. Some of these first-grade classrooms were filled with voiced teacher criticisms of students, reflecting in part the teacher's inability to manage the classroom and/or stimulate academic engagement. In contrast, the most-effective-for-locale teachers were able to shape classrooms that were positive for all students.

The classrooms of the most-effective-for-locale teachers were also differentiated by an emphasis on cooperative aspects of the classroom environments. Children talked respectfully with each other and assisted each other throughout the school day. In these classrooms "put

downs," sarcasm, and negativism simply were not part of either the teacher talk or the student talk. These classrooms did not have "winners" and "losers" in the way many of the least effective classrooms did.

Balance of Skills Instruction and Whole Language: Teaching of Skills, Literature Emphasis, and Much Reading and Writing

There was a clear balancing of skills instruction and immersion in literature and writing in the most-effective-for-locale classrooms (e.g., McIntyre & Pressley, 1996). Much explicit teaching occurred: Students were taught word recognition skills, self-monitoring behaviors, comprehension tactics, and writing strategies. This explicit teaching occurred through teacher modeling, but more importantly, reteaching occurred in reaction to student needs. Indeed, opportunistic teaching and reteaching prevailed in the most-effective-for-locale classrooms, with the teacher consistently monitoring students as they read and wrote and offering mini-lessons on an as-needed basis. In the Wharton-McDonald et al. study (1998) such salient monitoring and reteaching on an individual basis was also observed more frequently in the most effective classrooms than in the less effective classrooms. The case is growing that excellent first-grade teaching involves a great deal of opportunistic teaching and reteaching based on student instructional needs.

Perhaps the most acrimonious issue in the recent debates about beginning reading instruction is how word recognition skills are first developed (e.g., Smith, 1994). At one end are arguments for an emphasis on teaching students to attend to letter-level cues to the virtual exclusion of other cues. According to the advocates of this perspective, what is required to learn to read is merely for students to associate letters and word parts with their sounds and blend the sounds (Sweet, 1997). An opposing position is that first-grade students should be taught to give priority to context cues (e.g., picture clues and other semantic-context cues, syntactical constraints) and within that approach to attend to letter- and word-level cues (Routman, 1996; Smith, 1979; Weaver, 1994). What was observed in the most-effective-for-locale classrooms in this study was not consistent with either extreme. The teachers definitely taught students to attend to multiple cues (i.e., letter and sound clues, pictures and semantic context, syntactical cues), but without teaching their students to give priority to the picture, semantic-context, and syntactic cues over

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the letter- and sound-level cues. In the most-effective-for-locale classrooms, we observed plenty of teaching of the analysis of words on the basis of their letter and sound correspondences (e.g., students encouraged to 'stretch' words into their component sounds), but the intensity of this instruction was nothing like what is advocated by many phonics-first (only?) advocates, and much of this instruction was offered in the context of an ongoing reading or writing activity. Again, the most-effective-for-locale teachers seemed to be balancing the alternative perspectives on word recognition instruction and teaching to children's needs more than adhering to particular theories.

Even though a great deal of skills instruction was occurring, it co-occurred with immersion in literature and writing could not be missed in the most-effective-for-locale classrooms, with virtually every day filled with exposure to and reading of excellent literature and writing. Students read and wrote alone, with buddies, and with adults in these classrooms.

They read orally, silently, and chorally. The literature and leveled books (e.g., Story Box books, Sunshine, and Little Celebrations books) that seem to characterize whole language classrooms were everywhere in the most-effective-for-locale classrooms. The planning, drafting, revising, and publishing of student writing that is prominent in the whole language approach was also prominent in the most-effective-for-locale classrooms. These elements of whole language were more prominent in the most-effective-for-locale classrooms than in the least-effective-for-locale classrooms. That balancing of skills instruction and whole language was occurring more often in the most effective-for-locale classrooms was apparent by the fact that not only were the whole language elements more prevalent in the most effective-for-locale classrooms, but so was skills instruction.

Match of Accelerating Demands to Student Competence, with a Great Deal of Scaffolding

Many analysts of motivation have concluded that children are more motivated when presented tasks just a bit beyond their current competence, ones that are challenging but not overwhelming (Kohlberg & Mayer, 1972; Piaget, 1970; Vygotsky, 1978). The teaching of the most-effective-for-locale teachers was certainly consistent with the motivational tenet that a little challenge is good, expecting students to improve consistently. For example, we observed time

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and time again the most effective teachers making certain that students were reading books that were just a little bit challenging for them. That is, these teachers worked to match children with "just right" books—not too hard, not too easy.

Increasing expectations also were apparent in writing. The teachers were very ready to provide assistance as needed by students and, in fact, expected to provide such assistance. That is, they monitored the students as they wrote, alert for opportune moments to intervene and prompt the student so that she or he overcame an obstacle to writing. The most effective teachers provided enough support to allow students to make progress, but stopped well short of doing the task for them (Wood, Bruner, & Ross, 1976). For example, if the spelling in a piece of writing was problematic, the teacher might suggest to the student that it might be good to check the word wall or a dictionary for help in spelling some of the words, but the teacher did not spell the words for the student. If more help was needed, the teacher might do some opportunistic reteaching about how to use the word wall or cue the use of sound-stretching strategy, perhaps modeling such skills for the struggling student.

Again, these results are consistent with those obtained by Wharton-McDonald et al. (1998), who also found that effective teachers provided more appropriately matched tasks for their students than did less effective teachers and that much more instructional scaffolding was provided by the most effective teachers than by other teachers. The results of both this study and Wharton-McDonald et al. (1998) support the depiction of the effective first-grade literacy teacher as someone who does more than monitor children's progress – he or she cues materials or scaffolds instruction as students do appropriately challenging tasks, prompting them to use skills and opportunistically reteaching skills to individual students on an as-needed basis.

Encouragement of Self-Regulation

The most-effective-for-locale teachers did more to encourage students to do things for themselves than did least-effective-for-locale teachers. The most effective teachers expected students to be self-regulated, and they taught them how to do things by themselves. The result was that at any given moment, most students were engaged academically and making progress in reading and writing. Sometimes students worked with partners, but the two partners were on

task, with both exerting appropriate effort. The self-regulation in the most-effective-for-locale classrooms was such that students seemed to be lost in their work, so much so that it was not unusual at all to see students continue to work right into recess, oblivious to the fact that other classes were heading outside.

Encouragement of self-regulation by effective teachers is consistent with an observation that Pressley, Wharton-McDonald, Mistretta, and Echevarria (1998) made in grades-4/5 classrooms. In that study, they observed that self-regulation was greatest in classrooms in which the teacher demanded that students be self-regulated. Whether elementary-level students are self-regulated may depend on what the teacher expects of students, with self-regulation most likely if those expectations are accompanied by teaching students how to do appropriately matched literacy tasks for themselves and by arranging the room to facilitate such self-regulation (e.g., having bins of leveled books, with the students taught how to decide which bin to choose from).

Strong Connections across the Curriculum

Many have observed that student engagement can be high and learning great when reading and writing are integrated with content-area instruction (e.g., Applebee, 1996; Barth & Mitchell, 1992), although it is also true that such integration is far from universal in elementary schools (e.g., Walmsley, 1995). This study found a striking consistency in the most-effective-for-locale classrooms in their commitment to connecting reading to writing as well as connecting reading and writing to skills (e. g., spelling) and content-area learning. Indeed, there was greater connection across the curriculum in the most-effective-for-locale classrooms, as compared with the least-effective-for-locale classrooms.

CONCLUDING COMMENTS

Based on the analysis presented here, we conclude that excellent first-grade teaching is more complicated than rocket science. Effective teaching is complex and requires well-informed teachers who can routinely identify children's instructional needs and offer targeted lessons that

foster development. Effective teaching goes beyond either skills instruction, and it is much more complex than simply creating a rich literacy environment. The effective first-grade teaching we have documented is consistent with the type of conceptual selectivity that Duffy (e.g., 1991) has advocated: teachers combine the instructional practices that work well for them with little regard for the theoretical purity of their teaching. What was observed here is consistent, however, with a number of formulations of effective literacy instruction involving the responsive teaching of the strategies and skills students need to know, with an emphasis on understanding how to use the strategies and skills (i.e., metacognition) elaborated and refined by using them in authentic situations (e.g., Brown, Bransford, Ferrara, & Campione, 1983; Paris, Lipson, & Wixson, 1983; Pressley, Borkowski, & Schneider, 1989). In these same models, there is recognition that use of strategies can go far in helping students develop all types of content knowledge (e.g., reading comprehension strategies increasing the likelihood that ideas in science and social studies texts are understood and remembered). In addition, these models specify that teaching and learning is most likely to be successful if students are motivated, and thus, there is very good reason for teachers to do everything possible to maximize their students' motivation to engage in things academic.

Basically, the most-effective-for-locale teachers all seemed to buy into such models. That is, their literacy instruction involved a great deal of both strategies and skills instruction. They knew how to use and adapt the skills taught as they occurred during reading and writing opportunities. Reading and writing often served the learning of important content, so strategies and skills instruction served the acquisition of content knowledge. The most effective-for-locale teachers also did much to make their classrooms motivating, including the structuring of their lessons so that there were salient interconnections between reading and writing and content learning and permitting students great choice about what they read and wrote. Motivation was further enhanced by making certain that students made progress by assigning appropriately challenging tasks and scaffolding students' efforts at completing such tasks. The most effective-for-locale classrooms were very positive places.

An important perspective in instructional models such as those proposed by Brown et al. (1983), Paris et al. (1983), and Pressley et al. (1989) is that there is no single magic bullet that develops effective literacy, but rather that learning strategies and skills, metacognition, content knowledge, and motivation work in interaction. The outcomes of this study certainly support such interactive positions, for the strategy, knowledge, metacognitive, and motivational

components continually intermixed. Thus, we emphasize the following point: It would be a mistake to examine the mix of differences between most-effective-for-locale and least-effective-for-locale teachers and to focus on particular features as the probable source of the difference in effectiveness between them. This caution is important for two reasons. First, our initial feature list contained over 200 items. While these features were not found to differentiate the more- and less-effective teachers, that does not suggest that these features are unimportant. Perhaps these features portray baseline characteristics of effective first-grade teaching. But the differentiating features we identified may be only the icing on the cake. Second, in the recent pedagogical debates, many have made the case that effective primary-level instruction is characterized by an emphasis on particular components of instruction (e.g., explicit teaching of word recognition skills, or literature-based, or integrated instructional emphasis). This study provides no support for any hypothesis that effective literacy instruction boils down to one or two critical components but rather supports the position that effective literacy instruction is a complex interaction of multiple components.

In fact, the findings have nothing to say about the effectiveness of any of the particular components of instruction noted here. Thus, many who identify with the position that letter- and word-level cues are more important than other word recognition cues (e.g., Adams, 1990; Lyon, 1998; Moats, 1998) might be disappointed that the most-effective-for-locale teachers did not emphasize letter- and word-level cues more than semantic-context and syntactic cues. Alternatively, those who support an emphasis on contextual cueing (e. g., Routman, 1988; Smith, 1979; Weaver, 1994) might attempt to interpret these results as support for their perspective. In fact, neither conclusion is justified. The quite successful word-level instruction observed in this study was observed in the context of many other components, with the most-effective-for-locale teachers consistently seeming to take account of the textual situation when they offered word-level instruction as well as adapting the instruction to the capabilities of the child. Yes, these teachers were often quite explicit when developing word-level skills and strategies, but they also contextualized this explicit instruction in real reading and writing activities and tailored the instruction to children's specific needs. Such instruction cannot be packaged in "teacher-proof" curriculum materials.

We suspect that the potency of the word recognition instruction we observed in the most effective-for-locale classrooms might be due in part to its occurrence in the context of other rich instruction. Such word recognition instruction might not work nearly so well in classrooms not

filled with informed observation of students, opportunistic reteaching of skills, abundant reading and writing opportunities, and emphasis on student motivation and self-regulation.

Finally, these outcomes are silent with respect to how to develop more effective first-grade literacy teachers. But we assert as an hypothesis that many more such teachers can be developed. An important next step is to work with teachers to attempt to develop their teaching to be consistent with the most-effective-for-locale teaching documented here. If teachers whose current instruction is unlike the most-effective-for-locale teachers can learn to teach as these most effective teachers teach, and if their students' literacy engagement and performances improve as their teaching is transformed, it will then make sense to argue that the instructional characteristics identified in Table 3 can foster development of readers and writers more certainly than would be the case in classrooms not consistent with the most effective-for-locale classrooms. For the moment, however, we must be satisfied with the advance that has been made in this study: This study provides a quite detailed descriptive characterization of the unique features of outstanding first-grade classrooms in five states, thereby extending what we know about effective beginning reading instruction. The diversity of classrooms studied generate more confidence in the findings reported. In addition, our findings generally replicated those of the smaller Wharton-McDonald et al. (1998) study in terms of differences in very effective versus less effective first-grade teachers.

Much is yet to be learned about truly effective beginning reading instruction. But this study provides more useful evidence of the complexity of teaching beginning reading well. Until we recognize and honor this complexity, it seems unlikely we will ever make much progress toward dramatically increasing the supply of exemplary primary grade teachers.

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APPENDIX A: RESEARCH PERSONNEL RESPONSIBILITIES

California

Observers. A senior professor visited three of the four classrooms for at least a half day apiece, and two graduate student researchers spent five full days in each classroom (i.e., roughly 30 hours observations in each room). These visits occurred in the spring. This was necessitated by the implementation of a state mandate to reduce first-grade class size to 20 or less, which was not fully implemented until the spring. The districts delayed the observations until the class rosters stabilized. The professor asked some questions during his visit to clarify what he saw. The full interviews were administered by the research assistants.

Coders. The observers coded their own field notes and developed daily summaries of their observations. The graduate student observers cross-checked with each other, since both observed all classrooms. They met with the professor, with all three formulating the final summaries and resolving concerns about the descriptions of the classroom routines and events. Because of the compressed time frame and the pressures of implementing the class-size reductions, the profile of only the most effective teacher at this locale was shared with the teacher, who validated it.

New Jersey

Observers. There were five observers: two senior professors, one assistant professor, one doctoral student, and one undergraduate student in the education program. Each classroom was visited at least 8 times, with the visit lasting an entire morning. Typically, a single observer visited at one time, although some of the visits were conducted by up to three observers. All classrooms were visited at least once in the afternoon. Thus, each classroom was observed for about 30 hours between October and May. The profiles were prepared principally by one senior professor, the assistant professor, and the doctoral student, with these then submitted to teachers for their review, with adjustments made as necessary based on the teachers' reviews.

Coders. One of the senior professors, the assistant professor, and the graduate student generated a set of detailed conclusions about the literacy practices in each classroom. These profiles were then shared with the classroom teachers for their input. The undergraduate student who visited classrooms also reviewed the profiles and provided input about adjustments that could be made in them.

New York

Observers. Three research associates (one post-doctoral scientist, two graduate students) visited the classrooms during language arts, shifting the visitation times (i.e., visits averaged about two hours) so that different activities were observed during different portions of the day. The visits occurred between November and June. The same three research associates conducted two interviews per teacher, the first in the early spring and the second at the end of the school year.

Coders. Each observer coded her/his field notes following the observations. The three observers met several times during the project to triangulate a profile of the teacher. These emerging profiles were revised and expanded as data continued to be collected. Once no new information was being generated for a teacher, the teacher was presented her/his profile for review, with the profiles then adjusted based on the input of the teachers.

Texas

Observers. A senior professor visited each classroom on three different occasions, typically for two hours per visit. A second senior professor visited all but two of the classrooms on one occasion, for approximately 1-1/2 hours per visit. Two graduate student research assistants visited each teacher as well, with six graduate student visits per teacher, averaging two hours per visit. The visits occurred between September and May. The interviews of the teachers, two per teacher, were conducted by the graduate students.

Coders. The senior professor who led the team and the two graduate students generated a set of literacy practices aboutthe literacy practices in each classroom. These were reviewed and confirmed by the participating teachers, with the professor then adjusting the profiles based on the input from the teachers,with the two graduate assistants then reviewing the notes again. Two additional graduate students then reviewed the field notes for four of the teachers and confirmed the conclusions for these four teachers based on the field notes.

Wisconsin

Observers. A professor visited each classroom on six to seven different occasions, typically for a half day to a full day per visit (i.e., more than 30 hours of observation of each class). These visits were distributed from January to May. An assistant professor visited each class one time in April, experiencing a full day of each class.The professor carried out the extensive interview with each of the teachers, either in May or June, before generating his penultimate conclusions about the classrooms.

Coders. The professor who visited all classrooms generated a set of conclusions about the literacy practices in each classroom.These were reviewed and confirmed by the participating teachers with the professor making adjustments in light of the corrections/interpretive suggestions made by the teachers. The assistant professor who visited once also reviewed the notes and confirmed the conclusions as much as possible based on her notes. A graduate student reviewed the conclusions in light of his review of the field notes.

High Academic Engagement and Competence

Most students (e.g., 90%) are engaged in things academic most of the time (e.g., 90%). **††

There is very little misbehavior. **††

There is lots of on-task student talking. **††

Students often keep working right into recess time. *†

By the end of the year, most student writing includes multiple sentences. There is use of important conventions, such as capitals at the beginning of sentences and punctuation marks at the end of sentences. **††

By the end of the year, most students are reading books that should be expected of end-of-first-grade readers. **††

Excellent Classroom Management

There are clear rules and expectations. **†

Much teacher planning is evident in instruction. **††

Tasks that are assigned are designed so students spend much more time on academically demanding subtasks than non-demanding ones (e.g., on a writing and illustrating task, students spend the majority of time on the composing activity not the illustrating). **††

The teacher carefully coordinates with aides and special teachers to assure that the curriculum integrity is maintained—that is, everyone working with students focuses on skills, strategies, and tasks that are emphasized in the classroom instruction. *††

Positive, Reinforcing, Cooperative Environment

There is a consistent positive tone in the classroom. **†

There is a great deal of positive reinforcement for achievement. **†

Students are encouraged to work cooperatively with one another as part of reading and writing—and do so (e.g., buddy reading, buddy writing). **+

When discipline occurs, it is handled gently but firmly with minimal disruption to the class. **†

Explicit Teaching of Skills (i.e., word-level, comprehension, writing skills)

Skills are taught exclusively or predominantly in the context of actual reading and writing tasks. **+

Teacher explicitly and saliently models many of the activities students are asked to do. **†

There is explicit teaching of word recognition skills. **†

Students are taught to use multiple cues (i.e., phonics, word parts, looking at the whole word, picture clues, other semantic context clues, syntactic clues) as part of word recognition. **††

There are explicit activities around common word patterns(i.e., word families—such as generating as many of the -all words as possible or as many of the -at words as possible). **†

The teacher makes use of Pat Cunningham's (1994) "making-words" approach.*†

Explicit Teaching of Skills (continued)

Students are expected to identify new words in books that they read. **†

There are many words posted on the wall of the room—large enough so students can see them easily. *†

Teacher makes reference to classroom resources that can assist in spelling (e.g., easel displays and charts with words on them). *†

There is explicit teaching of comprehension skills (e.g. making predictions, construction of mental images, summarizing, looking for story grammar elements to understand a story). **††

Students are taught to plan, draft, and then revise. Sometimes this results in publication of the final product. **††

There is a great deal of opportunistic teaching/reteaching of skills—for example, word recognition strategies are cued and reviewed (phonics, use of rime and onset, reminding students of sight words) when students encounter difficulties in decoding; also, spelling strategies are cued when students are having difficulties writing a word in a composition. **†

When explicit teaching and opportunistic teaching are combined, often there are many skills (10-20) covered during every hour of literacy time in the classroom. **††

Stronger students especially are encouraged to model for weaker students. *†

When the students publish their books, they input them themselves on a computer. *†

Literature Emphasis

The teacher reads outstanding literature to the class. **†

There is use of Story Box, Sunshine, and similar natural language beginning reading texts. **†

There are author studies—that is, particular authors are highlighted, with a number of the author's books read to/by the class. *†

Much Reading and Writing

There are large blocks of time for language arts (i.e, 45 minutes or more). **†

One-on-one reading in the classroom occurs with an adult other than the teacher (e.g., parent volunteer). *†

Students frequently read aloud to other students. *†

Students do buddy reading. **†

There are many easy-to-read books available for students to read. *†

Student writing is prominently displayed in the room. *†

There are "big books" that the class has written. **††

Match of Accelerating Demands to Student Competence, with a Great Deal of Scaffolding

There are high, but realistic expectations. **†

The teacher consistently encourages students to try more challenging tasks, but ones that are not too challenging. (That is, the teacher structures tasks and makes assignments to assure student success.) **†

The teacher heavily scaffolds students use of skills—monitoring when they need them and are not using them, providing prompts for them to do so on an as-needed basis. *†

There is extensive scaffolding of reading (especially word recognition), with the teacher encouraging use of decoding strategies. **†

There are editing sheets and cue cards for the writing processes—for example, a card providing hints about what needs to be checked during revision. **††

One-on-one teacher writing conferences are part of the revision process. **†

The teacher gradually and steadily increases the writing demands as the year progresses—in terms of length, use of conventions, etc. **†

By the end of the year there are high demands on most students with respect to use of conventions—for example, capitalizing sentences, ending sentences with punctuation marks, spelling high frequency words correctly. **††

There are high demands with respect to spelling during writing—that is, correct spelling of high frequency words expected, reasonable invented spellings are expected for lower frequency words, and some use of a dictionary to check spellingsis expected. **††

Encouragement of Self-Regulation

The teacher explicitly teaches children to self-regulate. **††

Teacher does not so much cue use of particular skills at aparticular moment but rather emphasizes that students should choose appropriate skills to be applied as they do the task in question. *†

Students are taught to check their writing to determine if their use of conventions (i.e., capitalization, punctuation, spelling) is correct. **†

Teacher teaches students strategies for selecting a book(e.g., count number of words not known at the beginning of the book; if it does exceed 5, book is probably too difficult). *†

The teacher expects/demands that students work to their capacity—and does not accept work from them that is not at their capacity. *†

Strong Connections across the Curriculum

Students encouraged to use/have opportunities to use the skills they are learning across the school day. **†

There are extensive across-curriculum connections—that is, reading and writing often relate to and are in the context of social studies and science themes. **†

Vocabulary words taught are driven by what students are reading. **†

APPENDIX B: CHARACTERISTICS THAT DIFFERENTIATE THE MOST-EFFECTIVE-FOR-LOCALE CLASSROOMS IN THE STUDY)

Strong Connections across the Curriculum

The thematic unit drives much of what is read by students. **†

Thematic units drive much of writing. **†

Students often write in response to literature—that is, there is a clear integration of reading and writing instruction. **†

Writing occurs in the context of science/social studies instruction. **†

Note: Single-starred (*) items were noted in 4 of 5 most effective-for-locale classrooms. Double-starred (**) items were noted in all 5 of the most effective-for-locale classrooms. Single-crossed items (†) were cited as more characteristic of most effective- compared to least effective-for-locale classrooms for4 of 5 locales. Double-crossed (††) items were cited as more characteristic of most-effective-for-locale compared to worst-for-locale classrooms at all 5 locales.