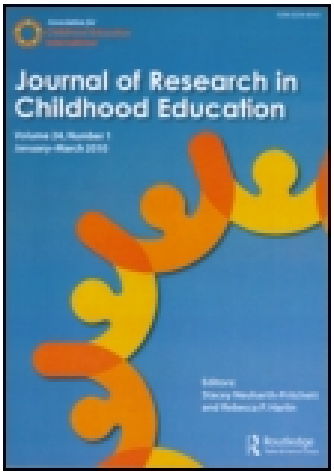

Journal of Research in Childhood Education
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/ujrc20

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Published online: 30 Jul 2010.

To cite this article: Catherine E. Snow , Patton O. Tabors , Petra A. Nicholson & Brenda F. Kurland (1995) SHELL: Oral Language and Early Literacy Skills in Kindergarten and First-Grade Children, Journal of Research in Childhood Education, 10:1, 37-48, DOI: 10.1080/02568549509594686

To link to this article: http://dx.doi.org/10.1080/02568549509594686

Journal of Research in Childhood Education
1995, Vol. 10, No. 1

0256-8543/94

SHELL: Oral Language and Early Literacy Skills in Kindergarten and First-Grade Children

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Abstract. Since learning to read is a complex process, there are a diverse set of prerequisite skills, including both language and literacy related skills. This article reports on a battery of oral language and early literacy tests, called the SHELL. The battery contains measures of oral language development (a narrative production task, a picture description task, a definitions task, and a superordinates task), as well as comprehension, vocabulary, and early literacy measures (both emergent literacy and early reading and spelling.) In addition to presenting the tasks and the scoring systems for the SHELL, we also provide information about performance on these tasks by participants in the Home-School Study of Language and Literacy Development, a longitudinal project that is collecting interview, interactional, and outcome data on low-income children from age three to age ten at home and at school. Descriptive, correlational, and predictive analyses based on scores for SHELL-K (when the children were five years old) and SHELL-1 (when the children were in first grade) are presented.

It has become increasingly apparent that the crucial school readiness skills children are expected to bring with them to kindergarten and first grade include far more than knowing letters, colors, shapes and numbers. Traditional notions of how parents and preschools prepare children for school have always emphasized these basic skills; however, children from economically and educationally impoverished families have been increasingly provided with such readiness skills through "Sesame Street", Head Start, and their parents' interventions, without achieving a greater rate of success in school. We have come to see that although these 'school skills' are necessary, they are not sufficient. Apparently, other components are also important prerequisites to literacy acquisition.

Of course, the traditional reading readiness skills are not irrelevant to the complex task of learning to read. Successful beginning readers will need to have skills in letter recognition, phoneme segmentation, and word recognition, in order to be able to map letters onto appropriate phonetic units, to blend the phoneme segments into words, and then to connect the "sounded out" word to the appropriate meaning. All of these skills are clearly crucial to the learning to read process.

Beyond these print- and sound-analysis skills, however, research shows that children who end up as good readers arrive at school with broad cultural understandings about literacy, its value and its uses (Teale, 1981, 1984). They know what books are for

This paper was originally presented at the annual meeting of the American Educational Research Association, in New Orleans, April 4, 1994. The authors would like to express their appreciation to the Ford Foundation, the Department of Health and Human Services (Head Start) and the Spencer Foundation, which have funded the Home-School Study of Language and Literacy Development.

and how to use a variety of literacy materials. They share positive views of literacy, derived from experiences of reading books with parents, of being read to, and of having their efforts to write or to read valued.

Further, research shows that a wide variety of skills that have been grouped under the term metalinguistic awareness are important in the early literacy acquisition process (Tunmer, Herriman, & Nesdale, 1988). These skills are developed when children become aware of the relationships among the various linguistic rule systems, and when these relationships become a topic of conversation, play or problem solving for young children (Snow & Tabors, 1993).

The final component in the readiness package, we argue, involves children having control over certain ways of using oral language (Snow, 1991a; Snow & Dickinson, 1991). The language used in literate contexts has certain, specific features that differ from much oral language; features that can be learned from the language interactions that go on within families. Such features include the use of sophisticated vocabulary, procedures for making information linguistically explicit rather than relying on shared physical and social contexts, and ways of linking utterances to one another imposed by the presence of extended discourse (Beals, 1993; Beals & Snow, 1994; Beals & Tabors, 1995). We use the term decontextualized oral language skills to describe these competencies, as they demonstrate the ability to sustain talk about the world beyond the here and now.

Given this expanded view of the prerequisites for literacy acquisition—encompassing print knowledge, culture of literacy, metalinguistic awareness, and decontextualized oral language skills—it seems important to investigate how these components are related to each other, and in what ways they are individually or collectively related to later literacy achievement. As a first step in this investigation, we present here a battery of language and literacy tasks appropriate for kindergartners and first graders. Along with information about administration and scoring of the tasks, we provide baseline information about the relationships among these measures derived from a group of low-income children tested with this battery at kindergarten and first grade. As these same children will continue to be followed through fourth grade, we will also be able, in the long run, to investigate the relationship between these language and literacy tasks in the early grades and reading comprehension in fourth grade.

Method

As part of the Home-School Study of Language and Literacy Development (Snow, 1991a), 84 children from 81 low-income families have been visited annually at home and at (pre)school starting at age 3. During home visits, interactive language data have been collected from mothers and children during typical activities like book reading, toy play, and past event narratives, and from the families at mealtimes. During school visits, interactive data have been collected during free play periods in preschool and kindergarten, and measures of classroom environment have been taken each year. Both parents and teachers have also been interviewed during each visit.

Further, starting at age five, the children have been given a battery of language and literacy tests, collectively called the SHELL (the School-Home Early Language and Literacy) battery, each year. Although test data will be collected through fourth grade for these children, we report here only on language and literacy tasks which were given when the children were five years old (when most were in kindergarten) and in first grade.

All families whose children are participants in the Home-School Study were originally contacted through Head Start, day care programs, or health centers when the children were three years old. In order to be eligible for the study, the families needed to identify themselves as speaking English at home and as being eligible for Head

Start or subsidized day care. At the first home visit, just under half of the families in the study were on welfare, over a third of the families were single parent families, and a third of the children were from a racial minority. Mothers' education was as follows: 28.4% had not completed high school, 43.2% had graduated from high school, and 28.4% had completed some post high school education.

The SHELL

The test battery, the SHELL, was designed to include traditional measures of emergent and early literacy skill, standardized measures like the Peabody Picture Vocabulary Test, the WRAT Reading and the Gray Oral Reading test, and some novel assessments of children's ability to produce oral decontextualized language in a variety of genres: narration, description, and definitions. Further, we included a comprehension measure in the SHELL, using a researcher-developed instrument when the children were five and a standardized measure when they were in first grade. An overview of the subtests in the SHELL-K (kindergarten) and SHELL-1 (first grade) appears in Table 1.

Table 1
SHELL-K and SHELL-1 Subtests

SHELL-K	SHELL-1
Narr. Production: The Bear Story	Narr. Production: The Bear Story
Pict. Description: The Circus	Pict. Description: The Circus
Definitions	Definitions
Comprehension: *The Snowy Day*	Comprehension: CELF-R: Listening to Paragraphs Subtest
Vocabulary: PPVT-R	WRAT-R Reading Subtest
Emergent Literacy: Subtest Early Childhood Diagnostic Instrument: The Comprehensive Assessment Program (CAP)	Gray Oral Reading Test
Subtests: Writing, Letter Recognition, Story Concepts, Phonemic Awareness, Environmental Print, Superordinates	Spelling Test

The SHELL-K battery was administered to each child at home. Seventy-four children completed the entire test battery; one child completed all but the emergent literacy tasks (Early Childhood Diagnostic Instrument: The Comprehensive Assessment Program - CAP) and the Story Comprehension (Snowy Day) task. The SHELL-1 was administered one-on-one to each child at school. Sixty-seven children completed the entire test battery; we did not obtain scores for five children on the WRAT Reading, and we did not obtain scores for two children on the Gray Oral Reading, the Spelling Test and the listening comprehension subtest that we used from the Clinical Evaluation of Language Fundamentals-Revised (CELF-R). Each SHELL battery took about 45 minutes to an hour to administer, with frequent breaks between tasks. A brief overview of each test, its purpose, and scoring procedures follows; a complete protocol can be obtained from the authors.

Oral Language Tasks

The first three tasks, the narrative production task, the picture description task, and the definitions task, were designed to assess oral decontextualized language production. They were administered and scored identically on the SHELL-K and the SHELL-1. A fourth oral language task, which tested the children's knowledge of superordinates, was administered in the SHELL-K, but not in SHELL-1.

Narrative production task. The narrative production task involved having the child look at a sequence of three slides that depicted a family of teddy bears in an adventure involving a fly-away kite and a baby bear falling from a tree. The child was allowed to look at the three slides in sequence as often as she wished, but was then asked to put the slide viewer down before telling the story.

A sample bear story is as follows:

One's rolling around in their little wagon and then one of the bears got up the tree and got the kite and then he fell down and they said, 'Speak to me' and he didn't answer 'cause he fell off the tree.

The bear story was coded for structure, for story elements, and for syntactic complexity. First, each story was divided into clauses; clauses that described a complicating action, such as "the kite got stuck in the tree," were coded (see Peterson & McCabe, 1983, Chap. 4). Next, the stories were scored for the presence of certain story elements: 1) was there a classic opening or closing ("once upon a time," "the end")?; 2) was the kite mentioned in the orientation?; 3) were there evaluative elements?; 4) was a problem stated?; 5) was there a resolution proposed?; 6) was there a climax mentioned?; and 7) was there any coda material? And, finally, the number of words in the story was divided by the number of clauses to yield a words per clause measure of syntactic complexity.

The words per clause and the number of complicating action clauses were distributed on five point scales (0-4), and these scores were added to the total points for the story elements (yes=1) to yield the total score for the narrative production task.

Picture description. For the picture description, the child was handed a slide viewer with a slide in it depicting a brightly colored scene outside a circus tent. The tester asked the child to look carefully at the picture, and then to describe the picture as completely as possible because the tester could not see which slide this was from a group of slides which she had brought along. The purpose of these instructions was to see if the child would be able to include specificity markers including adjectives, verbs, and locatives, rather than merely listing the various objects in the picture. A sample of a picture description which displays these specificity markers is:

> A girl with her father and all the balloons. And a girl with her mother. And a clown with an umbrella. And a guy who's selling tickets. And a flag on the top of it. And a clown with red shoes is standing on a board.

The picture descriptions were scored for the total number of words, for the number of adjectives, verbs, and locatives, and for the presence of five key theme words (circus, balloons, clown, tent, tickets). The number of adjectives, verbs, and locatives were placed on five-point scales, and the total number of words was distributed on a 12 point scale. The scores on these scales were added together, then added to the number of theme words to provide a total score for the picture description task.

Definitions. The word definition task involved asking each child to define 14 familiar nouns (alphabet, bicycle, bird, clock, diamond, donkey, flower, foot, hat, knife, nail, stool, thief, and umbrella) using the prompt, "What's a _____." The answers given were scored using Snow's scoring method (Snow, Cancino, Gonzalez, & Shriberg, 1989). Each definition was coded as either formal, marked by the presence of a superordinate (often followed by a relative clause), or informal. Some sample answers are: for *bird*, "It's a flying animal with wings" (formal) and "It flies and lives outside" (informal); for *thief*, "Is a person who sneaks around and gets things that doesn't belong to them" (formal) and "A thief is for stealing stuff" (informal).

Formal definitions were further coded for the quality of the superordinate and the relative clause and informal definitions were coded for the quality of the descriptive, functional, or definitional features mentioned in the definition. The score for formal definitions was derived by dividing the total score for formal definitional quality by the number of definitions attempted. The score for informal definitions was derived by dividing the total score for informal definitional quality by the number of informal definitions.

Superordinates. The superordinates task involved asking each child to supply a superordinate upon request. (This subtest was actually part of the CAP, but is reported here because it is an oral decontextualized task.) The request took the form, for example, "What are tables and chairs?" After the child's answer was

given, he was then asked, "Can you tell me another kind of furniture?" The child received one point for each correct answer.

Comprehension

The story comprehension task in the SHELL-K involved having the child and tester look at the book *The Snowy Day*, by Ezra Jack Keats (1962), as the tester read the book aloud and asked comprehension questions during the story. The total score for this task was the number of questions answered correctly by the child.

At first grade, the Clinical Evaluation of Language Fundamentals-Revised (CELF-R): Listening to Paragraphs Subtest (Semel, Wiig & Secord, 1987) was administered and scored according to the standard instructions.

Vocabulary

The Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981) was administered at kindergarten and scored in the conventional fashion. The standard score equivalent was computed for each child.

Literacy

Emergent literacy. For the purpose of assessing emergent literacy in the SHELL-K we chose five subtests from the emergent literacy strand of the Early Childhood Diagnostic Instrument: The Comprehensive Assessment Program (CAP) (Mason & Stewart, 1989), which has been designed for use with preschool-age children. These subtasks are: Environmental Print In and Out of Context, Story and Print Concepts, Upper and Lower Case Letter Naming, Beginning and Ending Word Sound Awareness, and Writing.

The scoring of the tasks from the emergent literacy strand was done as prescribed by the CAP. Each child received individual scores on each task as well as a total score. The total score was derived by standardizing each subtest score, then adding all of the subtest scores together.

Reading. In the SHELL-1, two tests of reading skill were administered: the Wide Range Achievement Test: Reading Subtest (WRAT-R) (Jastak & Wilkinson, 1984) and the Gray Oral Reading Test (Wiederholt & Bryant, 1986). The Reading Subtest of the WRAT-R was administered and scored according to the instructions. The standard score was computed for each child. The Gray Oral Reading Test was administered and scored according to the instructions. The grade equivalent was computed for each child.

Spelling

A spelling test was also given as part of SHELL-1. This test consisted of asking the children to spell eight words (pet, back, sink, mail, dress, picking, lake, peeked). Children were encouraged to "write down the sounds that you hear" if they protested that they couldn't spell. These spelling words were scored using a developmental scoring system adapted from Morris & Perney (1984).

Results

Descriptive statistics

Oral language measure scores. The scores for the oral language measures—the narrative production task, the picture description task, the definitions task, and the superordinates task—are displayed in Table 2. The maximum score possible on the narrative production task was 15. The range of scores for kindergartners on this task was 0 to 12 with a mean of 5.23; at first grade, the range of scores was 2 to 11 with a mean of 7.10. The maximum score possible on the picture description task was 28. On this task, as for narrative production, the mean score for the first graders (12.0) was higher than for the kindergartners (7.1).

The range of scores for the formal definitions at kindergarten was 0 to 9.43; however, 40 of the 75 children who took the SHELL-K did not produce any formal definitions, so the mean was only 1.95. The range of scores for the informal definitions was 0 to 3 with a mean of 1.36. At the SHELL-1, only 16 children gave no formal definitions, and the mean had risen

to 3.68. Informal definition scores also showed some improvement, to a mean of 1.65 with a range of 0-4. (There is no maximum score for this task.)

The range of the scores on the superordinates task was 0 to 11 (with a maximum of 12) with a mean of 5.92. The scores on this task were moderately correlated with formal definitions ($r = .52$, $p < .001$), indicating that children who were able to provide a superordinate when asked directly were more likely to provide a superordinate (the basic requirement for a formal definition) when giving a definition.

The oral language measures were the only measures that were directly comparable from SHELL-K to SHELL-1. Paired comparisons between SHELL-K and SHELL-1 scores for those children tested at both times indicate that the oral language measures are sensitive to development as, on average, individual children's performances showed substantial increases on these measures over time (see Table 3).

Table 2
Summary Statistics for Oral Language Measures - SHELL-K and SHELL-1

	Kindergarten				
	n	mean (s.d.)	median	range	interquartile range
Narrative Production	75	5.23 (2.79)	5	0-12	3-7
Picture Description	75	7.07 (2.89)	7	1-13	5-9
Informal Definitions	75	1.36 (0.58)	1.29	0-3	1-1.64
Formal Definitions	75	1.95 (2.97)	0	0-9.43	0-4.21
Superordinates	74	5.92 (2.79)	6	0-11	4-8
	First Grade				
	n	mean (s.d.)	median	range	interquartile range
Narrative Production	70	7.10 (2.28)	7	2-11	5-9
Picture Description	70	11.99 (4.55)	11.5	3-23	9-14
Informal Definitions	70	1.65 (0.68)	1.50	0-4	1.25-2.00
Formal Definitions	70	3.68 (3.22)	3.96	0-9.64	0.43-6.82

Table 3
Paired Comparison Between SHELL-K and SHELL-1 Scores on Oral Language Measures

	n	average gain	standard error	T-statistic
Narrative Production	69	1.77	0.38	4.61***
Picture Description	69	4.94	0.61	8.07***
Informal Definitions	69	0.28	0.08	3.63***
Formal Definitions	69	1.64	0.39	4.20***

***$p < .001$

Comprehension measures and vocabulary scores. Both the story comprehension measure from SHELL-K and the listening comprehension subtest of the CELF-R from SHELL-1 elicited nearly a full range of possible scores (maximum possible score was 10). On each of these tests, half of the sample scored 7 or above (Table 4). The PPVT-R, a standardized test, generated a mean score (93.69) somewhat below the population mean of 100. It is important to note, however, that the PPVT-R scores extended into the highly talented range (Table 5).

Emergent literacy scores. The scores on the emergent literacy tasks also showed a great deal of variability, indicating a wide range of preliteracy skills among the children (see Table 6). The scores on the Story and Print Concepts and the Sounds in Words subtests were distributed symmetrically across the entire range of possible scores. Scores on the Letter Naming and the Environmental Print subtests were also distributed across the entire range of possible scores, but there was a strong ceiling effect on the Letter Recognition subtest—half of the children scored between 38 and the maximum of 41 points on this subtest—and a preponderance of low scores on the Environmental Print subtest—half of the children scored 6 or below out of a possible maximum score of 20. The range of the scores on the Writing subtest was slightly restricted (1-17, rather than 0-19), but the scores were symmetrically distributed in that range.

Reading and spelling scores. The first grade literacy assessments showed children performing on average at the expected level, but again with a very extended range of abilities.

Correlational analyses

An assumption behind our incorporating several different kinds of assessments into the SHELL was that several different skills, not necessarily correlated with one another, were all prerequisite to successful reading progress.

SHELL-K correlations. The bivariate correlations among the subtests of the SHELL-K (see Table 7) show that the narrative production, picture description, and informal definitions scores are moderately intercorrelated, but that the formal definitions score correlates with none of these measures except narrative production, which in fact correlates to every other measure.

Table 4
Summary Statistics for Comprehension Measures - SHELL-K and SHELL-1

	Kindergarten				
	n	mean (s.d.)	median	range	interquartile range
Comprehension: Snowy Day	74	6.46 (2.14)	7	2-10	5-8
	First Grade				
	n	mean (s.d.)	median	range	interquartile range
Comprehension: CELF-R	68	6.94 (2.13)	7	1-10	6-8

Table 5
Summary Statistics for Vocabulary Measure - SHELL-K

	Kindergarten				
	n	mean (s.d.)	median	range	interquartile range
Vocabulary: PPVT-R	75	93.69 (15.40)	91	69-133	83-103

Table 6
Summary Statistics for Literacy Measures - SHELL-K and SHELL-1

Kindergarten

	n	mean (s.d.)	median	range	interquartile range
Emergent Literacy: CAP Total (Standardized)	74	0 (4.01)	-.43	-7.1-7.7	-3.3-2.9
CAP Subtests:					
Writing	74	8.54 (4.39)	8	1-17	4-13
Letter Naming	74	32.93 (11.34)	38	0-41	31-40
Story and Print Concepts	74	12.72 (6.49)	11	0-24	8-17
Sound Awareness	74	7.14 (3.64)	7	0-12	5-10
Environmental Print	74	7.15 (4.76)	6	0-20	4-8

First Grade

	n	mean (s.d.)	median	range	interquartile range
Reading: Gray Oral	68	1.59 (0.48)	1.5	1.1-3.2	1.1-2.0
Reading: WRAT-R	65	98.3 (18.3)	99	63-137	82-111
Spelling	68	26.03 (8.23)	28	2-40	22.0-31.5

Table 7
Bivariate Correlations Among All Measures - SHELL-K

	Narrative Production	Picture Description	Informal Definitions	Formal Definitions	Super-ordinates	Compre-hension: *Snowy Day*	Vocabulary: PPVT-R	Emergent Literacy: CAP
Narrative Production	—							
Picture Description	.35** 75	—						
Informal Definitions	.39*** 75	.42*** 75	—					
Formal Definitions	.34** 75	.14 75	.18 75	—				
Super-ordinates	.41*** 74	.18 74	.26* 74	.52*** 74	—			
Compre-hension: Snowy Day	.38*** 74	.29* 74	.30* 74	.45*** 74	.53*** 74	—		
Vocabulary: PPVT-R	.43*** 75	.20~ 75	.24* 75	.53*** 75	.51*** 74	.59*** 74	—	
Emergent Literacy: CAP	.32** 74	.15 74	.17 74	.49*** 74	.63*** 74	.54*** 74	.61*** 74	—

~$p < .10$ *$p < .05$ **$p < .01$ ***$p < .001$

The comprehension measure and the vocabulary measure correlate highly with each other, and with the emergent literacy tasks. Of the oral language measures, the formal definitions score correlates most robustly with the comprehension, vocabulary, and emergent literacy scores.

SHELL-1 correlations. At first grade (Table 8), we see weaker correlations among the various oral language measures, but very high correlations among the three literacy assessments. Again, formal definitions scores show the strongest relationship of the oral language measures to all three literacy measures. It is striking that comprehension shows no strong relation either to oral language or to literacy at this age.

Predictive relationships

It is, of course, also of interest to know how

Table 8
Bivariate Correlations Among All Measures - SHELL-1

	Narrative Production	Picture Description	Informal Definitions	Formal Definitions	Comprehension: CELF-R	Reading: Gray Oral	Reading: WRAT-R	Spelling
Narrative Production	—-							
Picture Description	.30* 70	—-						
Informal Definitions	.37** 70	.22~ 70	—-					
Formal Definitions	.07 70	.15 70	.05 70	—-				
Comprehension: CELF-R	.27* 68	.23~ 68	.27* 68	.05 68	—-			
Reading: Gray Oral	.12 68	.17 68	.37** 68	.32** 68	.09 67	—-		
Reading: WRAT-R	.09 65	.08 65	.25* 65	.32** 65	-.01 65	.72*** 64	—-	
Spelling	.06 68	.02 68	.15 68	.30* 68	.14 67	.61*** 67	.70*** 64	—-

~$p < .10$ *$p < .05$ **$p < .01$ ***$p < .001$

Table 9
Bivariate Correlations Among Oral Language Measures for SHELL-K and SHELL-1

	SHELL-1			
SHELL-K	Narrative Production	Picture Description	Informal Definitions	Formal Definitions
Narrative Production	.21~ 69	.31** 69	.33** 69	.27* 69
Picture Description	.12 69	.14 69	.32** 69	.12 69
Informal Definitions	.19 69	.10 69	.49*** 69	.17 69
Formal Definitions	.25* 69	.26* 69	.40*** 69	.47*** 69
Superordinates	.13 68	-.01 68	.30* 68	.52*** 68

~$p < .10$ *$p < .05$ **$p < .01$ ***$p < .001$

SHELL-K performance predicts SHELL-1 performance, first to assess continuity across similar measures, and second to see which SHELL-K-assessed abilities best predict reading in first grade. As can be seen in Table 9, both informal and formal definitions correlate strongly from kindergarten to first grade, but other oral language measures do not.

The comprehension measures (Snowy Day and CELF-R) showed no cross-age stability (r=.18, p <.15). Literacy measures, on the other hand, showed impressively high degrees of stability, with all the subtests of the CAP, as well as the CAP total score, significantly correlated with all three literacy assessments at first grade (Table 10).

The cross-domain predictive relationships (Table 11) reveal a split between

Table 10
Bivariate Correlations Among Literacy Measures for SHELL-K and SHELL-1

	SHELL-1		
SHELL-K	Reading: Gray Oral (n=66)	Reading: WRAT-R (n=63)	Spelling (n=66)
Emergent Literacy:			
CAP Total	.66***	.66***	.51***
CAP Subtests			
Writing	.52***	.51***	.42***
Letter Naming	.42***	.55***	.49***
Story and Print Concepts	.57***	.54***	.35**
Sound Awareness	.57***	.58***	.45***
Environmental Print	.58***	.51***	.36**

$^{**}p < .01$ $^{***}p < .001$

Table 11
Bivariate Correlations Among SHELL-K Measures and Literacy Measures in SHELL-1

	SHELL-1		
SHELL-K	Reading: Gray Oral	Reading: WRAT-R	Spelling
Narrative Production	.20~ 67	.37** 64	.23~ 67
Picture Description	.02 67	.03 64	-.03 67
Informal Definitions	.17 67	.21 64	.19 67
Formal Definitions	.56*** 67	.53*** 64	.39** 67
Superordinates	.44*** 66	.52*** 63	.43*** 66
Comprehension: Snowy Day	.35** 66	.42*** 63	.31* 66
Vocabulary: PPVT-R	.48*** 67	.44*** 64	.33** 67
Emergent Literacy: CAP	.66*** 66	.66*** 63	.51*** 66

$^{\sim}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

narrative production, picture descriptions, and informal definitions at kindergarten, none of which show strong or consistent relationships to literacy outcomes; and between formal definitions, superordinates, story comprehension, PPVT-R and the CAP at kindergarten, all of which do. Combining these findings with those from the bivariate correlations on the measures at kindergarten and at first grade, we can conclude that skill at formal definitions is the oral language measure most robustly associated with contemporaneous and future literacy skill. In addition to formal definitional skill, however, it is clear that vocabulary, story comprehension ability, and emergent literacy skills are also correlated with first grade literacy achievement.

Discussion

A major goal of the research reported here has been to present more valid and theoretically justified ways of investigating young children's school-relevant skills. We have presented a battery that reflects oral language and early literacy skills, and demonstrated that the measures included in the battery show development from kindergarten to grade 1, and that they relate in interpretable ways to one another. In other work, we have considered aspects of the literacy and language environment of the children's homes and preschool classrooms that relate to these skills (Beals, 1991; Beals & De Temple, 1993; Beals, De Temple & Dickinson, 1994; Beals & Tabors, 1995; De Temple, 1994; Dickinson, 1994; Dickinson & Smith, 1994; Smith & Dickinson, in press; Snow & Kurland, in press).

These data support our hypothesis that young children's literacy related abilities should be analyzed into a set of skills related to oral language and to language comprehension as distinct from skills tied closely to print or phoneme segmentation. While kindergarten print skills are highly predictive of first-grade reading, kindergarten vocabulary and formal definitional skill function almost as well as predictors of literacy outcomes. Indeed, we expect that the power of oral decontextualized language skills to account for variance in reading will increase as reading increasingly becomes a task of comprehension rather than decoding.

Whereas reading tests cannot easily be compared across languages or graphemic systems, oral language performances like telling a story with picture prompts or giving definitions *can* (e.g., Berman & Slobin, 1994 for stories; Tapia-Uribe, 1988 for definitions), providing opportunities for comparative research on the prerequisites to literacy. In fact, definitions have been shown to be a robust correlate of schooling and literacy in both Mexico (Dexter, 1994; Tapia-Uribe, 1988) and Zambia (Steubing, 1994), and among children using American Sign Language (Schley, 1994), as well as children attending American bilingual programs (Velasco & Snow, 1993) and an English-curriculum international school (Snow, 1991b). We contend that young children's oral language skills may give more information about their academic futures than the traditionally assessed skills in the domains of letter, shape, color, and number knowledge, or than print-related assessments.

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