

# Leaving No American Indian/ Alaska Native Behind: Identifying Reading Strengths and Needs

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American Indian/Alaskan Native (AI/AN) students are often labeled as struggling readers based on the results of large-scale standardized tests yet little empirical data about specific strengths and needs exists. In the present study we looked beyond high-stakes assessment to highlight reading strengths and needs for a group of fourth grade American Indian students in order to provide specific information to guide instruction. A description of skills considered basic to proficient reading is followed by an explanation of the assessment methods used. The majority of the students demonstrated fairly strong skills in phonemic awareness, vocabulary when assessed orally, and basic word identification (phonics). Reading with a rate appropriate to purpose and comprehension strategies were identified as instructional needs. Explicit instruction in the identified areas is suggested as vital to the future success of these students and may provide a starting point for the identification and instruction of other American Indian/Alaska Native students with similar needs.

**M**any researchers and educators have focused on the reading needs of Hispanic and African American students; however fewer have focused on the reading needs of American Indian/Alaska Native students (Demmert, 2000). At the same time, it appears that reading difficulties are a primary contributor to the challenges American Indian/Native Alaskan students face in school. For example, Dehyle (1992) studied American Indian school dropouts and found that over half thought that difficulties in reading contributed to their problems in school. According to her research, most of the students who had dropped out were at least six grade levels behind the national average in reading. While there are many theories about what the reading needs of American Indian/Alaska Native students are, little empirical research has been published on the diagnosed strengths and needs of Native students and how that data, when gathered and analyzed, can be used to inform instruction.

The way in which education has often approached low-test scores is by focusing only on the results from large-group standardized tests. Although the

results fail to provide specific diagnostic information about reading strengths and needs, they are used as the basis for instructional decisions. For example, in the state where the current study took place, students in some districts are required to attend summer school based solely on test scores from large-scale standardized assessments. This misuse of standardized, nationally-normed tests to assess the progress of any students, and especially American Indians/Alaska Natives, has been criticized for years. It may lead to teachers teaching to the test, using whatever strategies to increase test scores regardless of the actual strengths and needs of the students (Calkins, Montgomery, Santman, & Falk, 1998). Also, this reliance on standardized testing results also focuses educators on a deficit versus difference view of students rather than on an understanding of strengths and differences. Public school reliance on such tests may especially hurt American Indian/Alaska Native students because this deficit view has been already continuously reinforced to the detriment of the education of Native children (Bordeaux, 1995).

Assessments have many different purposes, and most large-scale assessments are not designed to be diagnostic. The reading section of the *National Assessment of Educational Progress* (NAEP; National Center for Education Statistics, 2000) provides one example. The results provide summative information, telling us whether students have reached a particular criterion. The assessments and the reporting of results are not designed to provide specific diagnostic information about students' strengths and needs that can guide instruction; nonetheless, the results are often used to make these types of formative decisions. These tests, developed and normed primarily on majority populations have built-in errors of inconsistency and bias when used with American Indian populations (Chavers & Locke, 1989). The misinterpretations and the lack of true diagnostic measures result in inappropriate applications for instruction.

Many states use NAEP-like performance-based tests. These assessments attempt to assess proficiency in an area, such as reading, through more holistic measures. Similar to NAEP, they do not provide individual diagnostic information—they provide summative results. Yet, schools, districts, states, and the federal government attempt to make formative decisions for many students based on the results. The state in which the current study takes place has implemented a high-stakes standardized assessment entitled the *Washington Assessment of Student Learning* (WASL). The assessment is NAEP-like in that the results are used to determine whether students have reached a level of proficiency in reading, writing, mathematics, and communication. The test is not designed specifically for American Indian students in the state, it is not culturally responsive in nature, nor does it provide true diagnostic information about the reading strengths and needs of students who take the test when only a score on the test is considered. Nonetheless, the state description for the lowest performers on the test includes the words “little or no demonstration of the prerequisite knowledge and skills that are fundamental for meeting the standard” (Washington

Commission of Student Learning, 1998). Prerequisite knowledge and skills are neither directly assessed nor are they reported, making it impossible to diagnose “prerequisite knowledge and skills,” considered to be basic reading skills, from this test alone.

### **Research on Proficient Readers**

A collective body of research over the past 20 years suggests that phonological awareness (especially phonemic awareness), word identification, rate appropriate to purpose when reading (fluency), understanding word meaning (meaning vocabulary), and text comprehension are all basic skills necessary to proficient reading (Adams, 1990; Chall, 1967; Clay, 1993a, 1993b; National Institute of Child Health and Human Development, 2000; Snow, Burns, & Griffin, 1998). Although many would argue that these skills alone are not sufficient, and that some of the reports citing these areas are flawed and overlook other important research, most reading researchers and educators would still agree that they are skills necessary, although not alone sufficient, for proficient reading. At the same time, if students from *any* cultural background lack these very basic components necessary to decode words and understand what the words mean in context, then more complex areas of proficient reading are unlikely to develop. Additional skills such as writing, motivation, engagement, and knowledge of children’s literature would surely be added to the complete picture of basic reading skills. The federal government’s current criteria, however, under the Elementary Education and Secondary Act (ESEA) focuses on five elemental skills, as does this paper. The following section briefly addresses the relation of each of these basic and essential skills for proficient reading.

#### Phonemic Awareness

Phonemic awareness refers to that part of phonological awareness in which we are able to recognize, identify, and manipulate the smallest units of sound (phonemes) comprising spoken language (Adams, 1990). Current research (e.g., Adams, Foorman, Lundberg, & Beeler, 1998; Høien, Lundberg, Stanovich, & Bjaalid, 1995) suggests that a reader’s capability for full segmentation and deletion using individual words illustrate the highest levels of phonemic awareness. Deletion involves a reader’s ability to take sounds away from words; for example, hearing and repeating the word “heat” and then saying the word without /t/. Full segmentation involves the ability to articulate separately each segment of a word; for example, with the word “cat,” a reader would articulate each individual sound, /k/ /a/ /t/ (Stahl & Murray, 1998).

Over the years, substantial research has supported a relationship between phonemic awareness at an early age and proficient reading at a later age (Juel, 1988; Snow et al., 1998; Stahl & Murray, 1998). Phonemic awareness is normally fully developed by the end of second grade. Students who are not able to orally manipulate phonemes are found to have difficulty with reading.

### Word Identification

A skill fundamental to the act of reading is accurate identification of words. In a simple view of reading, a reader must be able to both lift the words from the page and make meaning of those words. Gough and Tunmer (1986) describe this view of reading as the product of decoding and comprehension, or  $R = D \times C$ . More recent research describes the same idea; as a reader's experiences with words increase, word identification demands less cognitive capacity, which appears to allow the reader to make more meaning of what is read (Juel, 1991; Sawyer, 1992; Stanovich, 1986, 1991, 1994). Students who struggle at a frustration level of word identification (meaning they are able to identify less than 90% of the words on a page or in a text) often struggle with comprehension; if they must allocate too much attention to decoding or do not know what the words are, they will have difficulty deriving the overall meaning. Understanding the relationship between sounds and symbols, and being able to decode words, which comes from understanding how the symbols relate to sounds, is an important part of word identification (Calfee, Lindamood & Lindamood, 1973; Just & Carpenter, 1987). Widely published research (e.g., Adams, 1990; Snow et al., 1998) documents the importance of knowing and being able to apply these systematic relationships for proficient reading.

### Rate

Appropriate rate when reading, or how quickly a reader gets the words from the page is an important characteristic of proficient readers, and one sign of a fluent reader. If a reader is stopping constantly to figure out a word, the likelihood is that understanding of the material will be disrupted. As rate of reading increases, often as a result of improved word identification skills, more attention can be placed on comprehension (Stanovich, 1986). Rate when reading is correlated with comprehension (Adams, 1990; Carver, 1990; Pinnell, Pikulski, Wixson, Campbell, 1995). However, readers also need to understand that the rate at which good readers read is dependent upon the purpose. For example, if a reader unfamiliar with chemistry is reading a chemistry text, reading will undoubtedly be slower to facilitate understanding. The reader may need to go back and reread, or stop to summarize to herself as she is reading. In some cases, students seem to read too quickly which can actually hinder comprehension (Riddle Buly & Valencia, 2002).

### Vocabulary

A reader has difficulty understanding a text unless the meanings of most of the words are known. This requires a large store of vocabulary knowledge (Anderson & Freebody, 1981; Nagy, 1988). Not surprisingly, a strong relationship exists between vocabulary knowledge and comprehension. One definition of vocabulary is to think of it as representing the breadth (size and scope) and depth (level of understanding) that readers have of words (Vacca, Vacca, Gove, Burkey, Lenhart, & McKeon, 2003). A reader can have different vocabulary skills in reading,

writing, listening, and speaking. For example, a reader may recognize more words than he or she can write. Because vocabulary size is so critical to reading ability, it is crucial that ethnic minority students, including American Indian/Alaska Native students, are helped to close the gap by immersing them in language learning experiences that provide optimal conditions for building the English vocabulary necessary for mainstream school success (Payne, 1998). St. Charles and Constantino (2000), in a review of research on reading and American Indian students, suggest that “teachers need to provide active, purposeful vocabulary instruction” (p. 45) in order to assist American Indian children to develop language and vocabulary that will assist with schooling.

### Text comprehension

Reading comprehension, highly related to vocabulary, is complex with multiple layers of comprehension influenced by the difficulty of a particular passage for an individual student. Reading comprehension refers to a reader’s skill in understanding text by considering what is explicitly stated and what is implied (Omanson, 1985). Snow et al. (2000) define comprehension as “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. Comprehension consists of three elements: the reader, the text, and the activity or purpose for reading” (Snow et. al., 2002, p. xiii.). Pinnell et al. (1995) define reading as “a dynamic, constructive process requiring the reader to build meaning from text by combining information from the passage with information that the reader brings to the reading situation” (p. 11). In other words, the reader makes meaning by drawing on background knowledge and applying strategies for making sense of what is read (e.g., Anderson & Pearson, 1984; Dole, Brown, & Trathern, 1996, Pinnell et al., 1995; Spiro, 1979). Nation and Snowling (1999) report that “approximately 10-15% of children have impaired reading comprehension in the face of age-appropriate decoding (word identification) skills” (p. B1), which means these readers can identify words but have difficulty understanding the meaning of what they are reading.

Comprehension difficulties can be compounded for students who speak a language other than English as a first language, or who speak a dialect other than school English at home. American Indian students who live in fairly isolated communities, even though adjacent to cities, sometimes speak a Native English dialect. Although not technically English as a Second Language, the dialect, if different from school English, can account for some reading difficulties (Delpit, 1995; Heath, Brice, Mangiola, Schecter, & Hull, 1991).

### **Culturally Relevant Pedagogy**

Culturally relevant pedagogy has often been suggested as important to improving the academic performance of American Indians/Alaska Natives and seems a critical consideration in changing the academic achievement of future American Indian/Alaska Native students. Yet for Native students who are already struggling

readers, if the only change in instruction is a focus on culture without a focus on instruction based on the specific needs of the students, it will do little to help those who are already at-risk of school failure in the middle school grades.

### **The Present Study**

Without diagnostic information, we cannot assume that the reading needs of American Indian students who struggle on fourth grade assessments fall into any of the basic areas outlined above, nor can we properly identify other factors that may exist, which contribute to the lack of success in reading. And without knowing what students' strengths and needs are, we cannot accurately guide instruction. Recent research (author, 2001) focused on diagnosing specific strengths and needs of fourth grade readers who struggled with this same state's assessment. The district in which the previous study was conducted had a very small American Indian population, thus the present study extends the previous study by focusing on American Indian students in a school where they are represented in larger numbers.

Assessments that provide diagnostic information of each area considered basic were conducted with fourth grade American Indian students. Two questions were addressed: First, what skills characterize the reading of this group of fourth grade American Indian students? Second, what is the nature of the relationship that exists between these skills and how the students scored on the state mandated high-stakes reading assessment?

By going beyond state test scores and examining the basic reading skills of one group of American Indian students from one community in the same grade that the NAEP test is given in elementary school, we can identify and explore the reading strengths and needs of the students. This diagnostic information can then be used to provide research-based instructional guidelines.

### Local Context

This study was situated in Washington State, one of 49 states that has implemented new standards and assessments in reading, writing, listening, and mathematics. Washington is one of the consortium states using the Interstate New Teacher Assessment and Support Consortium (INTASC) standards. Like most other state reading assessments and the *National Assessment of Educational Progress* (NAEP), the *Washington Assessment of Student Learning* (WASL) tests students at several grade levels: early intermediate (grade four), middle school (grade seven), and high school (grade 10). In reading, the test assesses literal, interpretive, and analytic comprehension of both fiction and non-fiction text through multiple choice and open-ended items. Based on scores, students are determined to be "proficient" or "not-proficient" as a reader in the areas assessed.

American Indian students comprise approximately 3% of Washington's public school enrollment. The school where this study took place is located on a reservation in the Washington State. The school is a public school on tribal lands. Approximately 7% of the school district's enrollment is American Indian.

Ninety-five percent of the American Indian students in the district are affiliated with the local reservation. The tribes who were moved to the reservation represent several diverse groups from the Northwest—including coastal and mountain peoples. Most of the tribal members identify themselves as Coast Salish. In an attempt to respect the anonymity of the people, specific names are not included in this paper.

Different terminology is used throughout the country to designate people who are indigenous to the Americas: Native Americans, American Indians, Native peoples, Indigenous Americans, Native Alaskan, and/or Indian. In this article, based on the preference of the tribes' community advisory committee about the term that would be most acceptable for a non-community member and non-American Indian person to use, I use the term American Indian.

A rich, traditional culture continues among the members of the community. The tribes' Cultural Resource Center's goals focus on rediscovering traditional lifestyles and activities, including such things as assuring that present and future generations have access to the longhouse, assuring that traditional healing is available to anyone who requests it, ensuring that the museum accurately represents the people, and incorporating the traditional language in all of the Cultural Resource Center's functions. The tribe employs a Rediscovery Coordinator who coordinates cultural classes such as basket-making, beading, art, and carving in an attempt to revitalize the culture.

The traditional languages of the people, along with traditional crafts, were almost lost in the early part of the 20th century when children were forced to go to government boarding schools. The boarding school movement was an attempt by those who "believed that with the proper education and treatment Indians could become just like other citizens," which basically meant assimilating American Indians into white mainstream culture (Marr, 2003). A mission school was opened in this community in 1857. It was replaced by a federal school in 1900-01. By 1907 the institution housed over 200 students, with facilities for both boys and girls. Children who were at boarding school were punished if they spoke their first language or did anything that involved their culture, including wearing any traditional clothing. The site of the former federal boarding school is within two blocks of the present school.

The assimilation movement was effective in almost eliminating the community language, but not in eliminating community traditions. Currently one master language teacher and eight language instructors work through the tribal cultural resources office in an effort to revive the community's almost lost language. During the time of this study, the language teachers went into the schools to help the children learn the traditional language. With few fluent speakers, revitalizing the language continues to be a struggle but remains a tribal priority. English is the day to day language on the reservation; however, tribal members report a type of internal language, "Northwest Coast Jargon" or "Chinook Jargon," commonly spoken among community members and across tribal groups in the region.

## Method

This research relied upon descriptive methods. This type of quantitative research involves making careful descriptions of educational phenomena (Gall, Borg, & Gall, 1996). “Unless researchers first generate an accurate description of educational phenomenon as it exists, they lack a firm basis for explaining or changing it” (Gall, Borg, & Gall, 1996, p. 374). In this study the educational phenomena are basic reading skills and needs of a group of fourth grade American Indian students. Descriptive research cannot determine the reason for the relationships that might exist. It can, however, illuminate characteristics of a particular group of students at the point in time when variables are measured, a necessary first step in understanding the phenomena under investigation.

The public school, located on an American Indian reservation in the Northwest, was chosen based on the population, the first two years of low test scores on a state reading assessment, and interest of the district and school in receiving diagnostic information about the reading strengths and needs of the students. Of the fourth grade students, 73% were identified as American Indian the year when this study took place. The district is considered medium-sized for the state, with 11,439 students enrolled. In the spring of 2000 about 55.9% of the fourth grade students from this district demonstrated proficiency in reading on the state assessment. The school of focus had its best result—with 31% of the students demonstrating proficiency in reading in 2000. These scores, however, were comparatively lower than the state (66.1%) or district (55.9%) averages for the same year.

The primary researcher was invited to conduct research in the school by the district Indian Education Coordinator and the District’s Assistant Superintendent for Curriculum and Instruction. Two university literacy professors and three graduate assistants assisted with data collection. One of the professors has a background in special education, another in early literacy and Reading Recovery, and the primary researcher’s background has a curricular focus on diagnosis, assessment, and instruction of reading with an emphasis on culturally and linguistically diverse students.

This study site is a relatively small school. At the time of this study, there were 58 students enrolled in the fourth grade, 57 of whom took the fourth grade state reading assessment. Of the 57, 46 were identified as American Indian. Of those 46, 11 demonstrated proficiency while 35 did not. We were able to complete diagnostic assessments with 35 of the 46 American Indian students: eight students demonstrated proficiency and 27 students did not. Our sample represented 76% of the American Indian fourth grade students and more than 60% of the total number of fourth grade students enrolled in the school. A case was considered complete if a student had taken part in the state reading assessment and had also participated in the diagnostic assessments that we administered. Cases not completed were due to absences of the students during all or part of the assessments. In some cases students had moved. Assessments



took place over a two week period near the end of the school year. Some students had left for the summer.

Analyses of the data consisted of summarizing the variables, examining the relationships among the variables, and examining relationships among the variables and student performance on a high-stakes assessment of reading.

### Data Sources

In order to determine specific reading skills, measures that go beyond holistic standards are necessary. In the present study, instruments were chosen that would allow us to begin to diagnose strengths and needs of specific skill areas considered basic building blocks for proficient reading.

The assessments took place in the office of the Indian Education Coordinator, a tribal member who is employed by the school district. The office was located on the grounds of the elementary school. This site was selected because the students were most comfortable with the coordinator and her office; she was well-respected in the community and known as “auntie” to many. Personnel working in the school, all of whom were tribal members who had worked at the school throughout the year and knew the students, assisted us by escorting the students to and from the office. The location of the assessments and the assistance of the school employees seemed to help the students feel comfortable participating in the assessments. Each examiner took time to build some rapport with students, and to answer questions, prior to beginning any assessments.

The assessment selection consisted of five tools that provide various measures of phonemic awareness, word identification (including basic sound/symbol relationships), rate, comprehension, and vocabulary. The norm referenced instruments used were the Deletion and Segmentation tasks from the *Comprehensive Test of Phonological Processing* (CTOPP, Wagner, Torgeson, & Rashotte, 1998), Word Attack and Word Identification sub-tests from the *Woodcock-Johnson Psycho-Educational Battery-Revised* (WJ-R) (Woodcock & Mather, 1989), the *Peabody Picture Vocabulary Test – Revised* (PPVT-R) (Dunn & Dunn, 1997), and three years of scores for comprehension and vocabulary from the *Gates-MacGinitie Reading Tests* (GMRT) (MacGinitie & MacGinitie 1989). In addition, similar to a study by Riddle Buly and Valencia (2002), students read one narrative and one expository fourth grade reading selection from the state assessment; the *Washington Assessment of Student Learning* (WASL). Students were asked to read the passage to themselves then, when they were ready, to read the passage orally to the examiner.

The phoneme deletion and phoneme segmentation subtests from the CTOPP (Wagner, et al., 1999) were administered to each student. These two subtests target the two levels considered to be the highest indicators of phonemic awareness; deletion and segmentation. In the deletion task, students repeat a word the examiner says deleting either the initial or ending consonant. In the segmentation task, students are asked to repeat a word and then to say the word one sound at a time without any prompts.

The subtests from the WJ-R provide data on word knowledge. WJ-R subtests provide a measure of word identification when reading lists of words and pseudowords in isolation. Pseudowords are nonsense words that require a thorough grasp of letter-sound knowledge in order for the reader to accurately pronounce the word.

The *Gates-MacGinitie Total Reading Test* (GMRT) (MacGinitie & MacGinitie 1989) is a norm-referenced, standardized test used at the school to evaluate students' progress in the reading program. The test is a group-administered, multiple-choice assessment of comprehension and vocabulary.

The *Peabody Picture Vocabulary Test-Revised* (PPVT-R) (Dunn & Dunn, 1997) was used as a measure of orally tested vocabulary. Students listen to a word said by the examiner and then point to a picture that corresponds to a word (a score of 100 is judged to be average).

Coding of errors in oral reading provide further data about a reader's word knowledge. Coding of errors and rate when reading were based on how accurately students orally read a narrative and an expository passage from the state assessment. Passage reading was administered following informal reading inventory guidelines, although students were asked to first read the passages silently and then provide written responses to comprehension questions. The students then read the passages to an examiner who counted accurate words and timed the reading to determine an oral reading rate.

Counting accurate words read from the WASL passages provided a direct measure of students' ability to automatically decode the actual test selections. According to the test writers, the passages used were at fourth grade reading level. The WASL is comprised of a mix of multiple-choice and open-ended questions. Alpha coefficients are .79 for both item types and .87 for the total test; inter-rater reliability for open-ended items is .98. Concurrent validity with the *Comprehension Test of Basic Skills-4*, Reading Total is reported as .74 (Taylor, 1998). Scale scores on the WASL range from 0-700; the cut score for proficiency (Level 2) is 400 and the cut scores for Level 1, the lowest level, is 375.

Timing the reading provided a data source for one aspect of fluency; reading rate. The correlation for oral reading rate and the *Gates-MacGinitie* Total Reading is reported as  $r=.86$ , *Gates-MacGinitie* Reading Comprehension  $r=.86$ , *Metropolitan Achievement Test* Total Reading  $r=.79$ , and *Metropolitan Achievement Test* Comprehension  $r=.82$  (Jenkins & Jewell, 1993). Depending on the passages read, average rates for fourth grade students appear to range from 120-170 word per minute (Harris & Sipay, 1990; McCracken, 1970; Taylor, 1965).

Following the oral reading of the passage, each examiner probed the students about the written answers that they had completed to try to determine whether the student had used information from the text to help form an answer.

The current paper focuses on the 35 American Indian cases, within the 44 complete case studies. Inter-rater agreement was established on 50% of the students, using tape recordings and paper records of all measures. Inter-rater agreement ranged between 90% and 98%.

## Findings

The findings evolved around two questions: First, what is the nature of the relationship that exists between the basic reading skills assessed and how students scored on the state mandated high-stakes reading assessment? Second, what are the basic reading strengths and needs of this group of fourth grade American Indian students?

### Relationship between skills and high-stakes reading assessment

Variable scores for the 35 American Indian students were significantly and positively correlated to the state reading assessment for all areas with the exception of the two measures of phonemic awareness (segmentation and deletion) and the measure of accuracy when reading a narrative passage. Table 1 displays correlations between each variable and scores on the state test of reading.

When data were disaggregated from those students who were proficient on the state assessment of reading and those students who were not proficient, no significant correlations were identified for those who were proficient on the state assessment (see Table 1). Contrary to the total sample data, a significant correlation was identified between one aspect of phonemic awareness (deletion) and the scores of students who were not proficient on the state reading test. Also contrary to the total group data, no significant correlation was identified between word attack scores, rate when reading a narrative passage, or orally tested vocabulary scores on the PPVT-R for either group when data was disaggregated based on proficiency on the state reading assessment.

### Skills that characterize the reading of fourth grade American Indian students

Tables 2-5 illustrate the findings for the assessments of basic reading skills. The tables include disaggregated data for those students who were not proficient and for those who were proficient on the state test. The following section further presents the findings for each variable.

*Phonemic awareness*: Two subtests from the *Comprehensive Test of Phonological Processing* (CTOPP) were used to assess phonemic awareness. A standard score of 10 indicates that 50% of the population scored above and 50% of the population used to establish norms scored below this score on a subtest, therefore, a 10 is “average” and scores between 7 and 13 are within the average range. On the measure of deletion, standard scores of the students in the current study were 14.06 and standard scores for the segmentation task were 10.77 (See Table 2). No significant correlation was identified between scale score on the reading section of the WASL and standard scores on either the subtests of deletion or segmentation for the 35 students as a group.

When data is disaggregated for those students who scored at a proficient level (n=8) and those who did not (n=27), scores were slightly lower for those students who were not proficient. A significant difference was found between

Table 1  
**Correlations Between Reading Scale Score and Individual Variables**

	All American Indian students (n=35)	Not proficient on state reading assessment (n=27)	Proficient on state reading assessment (n=8)
1	1.00	1.00	1.00
2	.611**	.546**	.606
3	.512**	.364	.341
4	.223	.102	.233
5	.493**	.438*	.427
6	.572**	.407	.344
7	.617**	.438*	.213
8	.376*	.145	-.025
9	.607**	.560**	.227
10	.733**	.618**	.255
11	.316	.447*	.481
12	.101	.020	-.026

\*\* indicates significant at the .01 level

\* indicates significant at the .05 level

1. Score on state assessment of reading
2. Word identification (WJ-R)
3. Word Attack (WJ-R)
4. Accuracy when reading a narrative passage
5. Accuracy when reading an expository passage
6. Rate when reading a narrative passage
7. Rate when reading an expository passage
8. Oral test of vocabulary (PPVT-R)
9. Written test of vocabulary (GMRT)
10. Comprehension (GMRT)
11. Deletion (CTOPP)
12. Segmentation (CTOPP)

those students who were not proficient on the WASL reading test and the scores on deletion, however only 6 of the 27 students who were not proficient on the WASL scored below the average of 10 on the subtest of deletion; the other 21 were above the average.

*Word identification:* Word identification, or decoding skills, was assessed with two subtests from the WJ-R; the Letter-Word Identification test and the Word Attack test, and from total oral reading accuracy scores on two passages read from the state assessment. The WJ-R reports standard scores with a mean of 100 and a standard deviation of 15. The standard score for all of the students in the study on the test of Letter-Word Identification was 95, in the average range for the students' grade level. The standard score for all students on the test of Word Attack was 101, also in the average range for the students' grade level. The range was large for both proficient and non-proficient readers. Students from both groups scored above and below the average range (see Table 3). The lowest

Table 2  
**Standard Scores for Phonemic Awareness Subtests**

Measure	Standard score all American Indian students	Standard deviation	Standard score proficient readers (n=8)	Standard score not proficient readers (n=27)	Range proficient (n=8)	Range not proficient (n=27)	Standard deviation proficient (n=8)	Standard deviation not proficient (n=27)
Oral deletion measure	14.06	4.2	14.38	13.96	8-19	5-19	3.89	4.35
Oral segmentation measure	10.77	3.52	11.25	10.63	6-19	4-19	3.85	3.49

\*Standard scores based on a distribution with a mean of 10 and a standard deviation of three.

Table 3  
**Word Identification**

Measure	Mean sample	Mean proficient readers (n=8)	Mean not proficient readers (n=27)	Range proficient (n=7)	Range not proficient (n=28)	Standard deviation proficient (n=7)	Standard deviation not proficient (n=28)
Accuracy on narrative passage from state assessment	95	95	95	89- 99	85- 98	3.64	3.73
Accuracy on expository passage from state assessment	92	96	91	91- 99	65- 99	2.47	8.85
WJ-R; Word Attack (standard score)	101	115	96	88-138	63-131	16	14
WJ-R; Letter-Word Identification (standard score)	95	107	91	87-134	61-122	17	19

\*Standard scores based on a distribution with a mean of 100 and a standard deviation of 15.

scorers were in the group of students who did not demonstrate proficiency on the state assessment.

Total accuracy of 90% or better is considered to be at least instructional level reading when reading passages (Clay, 1993b). On the passage reading from the state assessment, 86% of all students read the narrative passage with total accuracy > or = 90% and on the expository passage 84% of all students read with total accuracy > or = 90%. The high percentage of accuracy indicates that the passages were at least at an instructional, not frustration, reading level for most of the students. As indicated on Table 3, the range for students who were not proficient was large on both the narrative and expository passage reading, however the range was much larger on the expository passage reading.

*Reading rate:* Unlike the measures of word identification and comprehension which provide a standard score, grade level performance is more difficult to identify for rate when reading. As stated in the methods section, studies of rate and fluency have used a wide range of reading selections and methods for calculating both rate and expression. Pinnell et al. (1995) used measurement procedures similar to those used in this study to examine the reading rates of a nationally representative sample of fourth grade students who participated in the NAEP oral reading study. The range for fourth grade students who fell within the “basic” category, the lowest categorization on NAEP denoting “partial mastery of prerequisite knowledge and skills that are fundamental for proficient work” (National Center for Education Statistics, 2000, p. xi) was generally between 104 and 129 words per minute. Students who scored below the “basic” category on the NAEP reading test read with an average rate of 104 words per minute or less. In contrast, students in this study averaged just 86 words per minute when reading expository passages, substantially below both the basic and “below basic” students on NAEP and 103 wpm when reading narrative passages. For the students in the present study, rate when reading suggests a range of skill (see Table 4). Many students read with rates below 100 wpm, but not all. Rate of reading by students who did not do well on the state reading test ranged from 46 wpm – 159 wpm when reading a narrative passage and from 21 wpm – 173 wpm when reading an expository passage. Remember that the passages were taken from the state assessment. For those students who passed the reading section of the state test, reading rate ranged from 73-175 words per minute when reading the narrative passage and from 72-168 words per minute when reading the expository passage. Albeit it is difficult to determine an appropriate reading rate, by the end of fourth grade many would agree that reading less than 100 words per minute (wpm) is problematic. However, the only student who scored at the top level of reading proficiency on the state assessment read with a rate of only 80 wpm on the narrative passage from the state assessment.

*Vocabulary:* For the total sample, students’ scores on the two measures of vocabulary; one tested orally and one tested in a written format, indicate skills in and above the average range when assessed through the oral format. At the same time, vocabulary scores from the GMRT, a written vocabulary test, suggest a discrepancy between grade level and vocabulary for students who were less than

Table 4  
Rate When Reading

Measure	Mean sample	Mean proficient readers (n=7)	Mean not proficient readers (n=28)	Range proficient (n=7)	Range not proficient (n=28)	Standard deviation proficient (n=7)	Standard deviation not proficient (n=28)
Rate Narrative	103	129	92	73-175	46-159	35	32
Rate Expository	86	120	74	72-168	21-173	34	38

Table 5  
Vocabulary

Measure	Mean sample	Mean proficient readers (n=7)	Mean not proficient readers (n=28)	Range proficient (n=7)	Range not proficient (n=28)	Standard deviation proficient (n=7)	Standard deviation not proficient (n=28)
PVT[R (standard score)	115	126	112	105-143	75-135	14	14
GMRT – Spring 00 Vocabulary (grade level)	3.16	4.33	2.81	3-5	2- 5	.645	.85

proficient on the state assessment of reading (see Table 5). On the GMRT vocabulary test, the average of all scores was almost two years below the students' current grade placement (GE 3.16). However, students' average standard score of 115 on the PPVT-R, an orally assessed measure of vocabulary, is an indication of average vocabulary knowledge.

*Comprehension:* On the GMRT comprehension test, students averaged a grade equivalent of 2.73, more than two years below current grade placement. The average for students who were proficient on the state assessment was almost at grade level (3.78). Those who were not proficient averaged two years below grade level (see Table 6).

*Writing:* Anecdotal notes show that when asked to complete the written portion of the comprehension questions that went with the reading of the passages from the state reading test, students demonstrated a reluctance to write. This demonstration was both verbal, with responses such as "I don't want to write" or "I don't like to write," and physical, with some students refusing to write unless coaxed or students using delaying tactics such as asking for drinks of water.

*Over reliance on background knowledge:* Further evidence of origins of difficulty demonstrating text comprehension comes from anecdotal notes about students' reliance on background knowledge of a topic rather than the text when answering questions. The examiners had the students explain how they had arrived at written answers to questions about the passage. Various students' reliance only on prior knowledge was noted when the examiners asked students "How did you know that?" in response to a student's answer. Many of the answers indicated that students were relying primarily on background knowledge rather than a combination of background knowledge and the text to answer questions. One example of a common response we heard, that shows students' reliance on prior knowledge without consideration of the text, was when Rosa told us that she knew the answer to a question from a home experience. When asked if there was anything in the text about it, she said there was not. We heard

Table 6  
**Comprehension**

Measure	Mean sample	Mean proficient readers	Mean not proficient readers	Range proficient	Range not proficient	Standard deviation proficient	Standard deviation not proficient
GMRT – Spring 00 Comp (grade level)	2.73	3.78	2.41	2-6	1-4	1.2	.76

similar responses from several students indicating that many of their answers were coming solely from background knowledge; knowledge drawn from the local context.

### **Discussion**

Descriptive research, such as that reported here, can illuminate characteristics that allow researchers and educators to consider needs within a specific population group as instructional decisions are made. There does appear to be a relationship between the scores that the students received on this state’s assessment of reading and the students’ measured skills in rate of reading, accuracy, vocabulary, and comprehension. Many of the students who were not proficient on the state test rate appropriate to purpose when reading and comprehension strategies appear to be in need of focused instructional support. We did not find a lack of skills in phonics or phonemic awareness among these students.

#### Phonemic Awareness.

The overall findings for the two measures of phonemic awareness suggest that students’ ability to manipulate individual letters that correspond to sounds was not related to performance on this state mandated assessment of reading, a test typical to those mandated in many states. The descriptive test results further tell us that the majority of the students were phonemically aware at an appropriate level, suggesting that most students had developed skills in phonemic awareness. Since phonemic awareness is normally fully developed by the end of second grade, this is not a surprising finding.

#### Word identification

We used a variety of measures to assess word identification skills, including having students read words in isolation and read pseudowords. Gough and Tunmer (1986) suggest that accurately pronouncing pseudowords provides the “purest measure” (p. 7) of a student’s word identification knowledge and on the measure that utilized pseudowords, the students averaged at grade level. Clearly some students would benefit from additional phonics instruction, but on an average, the word identification skills of the students appear to be at, or close to, grade level based on their average scores on both tests requiring identification of real words and of pseudowords.



### Rate appropriate to purpose when reading

Appropriate rate when reading appears to be a primary area of need for most of the students—even those who were considered proficient on the state assessment. But it is not a simple case of helping to students to read faster! The fastest reader on the expository passage was a student who was not a proficient reader, according to her performance on the state assessment. At the same time, one of the slowest readers was a proficient reader, according to her performance on the state test. She read the expository passage to us at a rate of 72 wpm and read the narrative passage to us at a rate of 73 wpm. The student who reads fast would be considered fluent based on rate when reading, however, this student was not a proficient reader, based on the state assessment. Conversely, looking only at rate, the student who reads at 72 wpm would not be considered proficient, yet she demonstrated reading proficiency on the state test, indicating that she was reading at a rate that allowed her to comprehend the material. Similar to Riddle Buly & Valencia's (2002) findings, the range in reading rates suggests that explicit instruction in how to adjust rate according to comprehension of material is a skill that may benefit many students.

### Comprehension

We found that students scored substantially below grade level on a standardized assessment of reading comprehension. This was in line with their struggles on the state assessment. The underlying difficulties in comprehension do not seem to be due to a lack of word identification skills for the majority of the students. The students are able to “get the words off the page” but not able to comprehend the words, behavior that is supported by previous work reported by Nation and Snowling (1998). Our observations and documentation suggest that the students' heavy reliance on background knowledge to answer comprehension questions about what had been read may have contributed to a lack of text comprehension. This might at first seem contradictory to what we know about the importance of background knowledge in comprehension (e.g., Anderson & Pearson, 1984; Dole, Brown, & Trathern, 1996; Pinnell et al., 1995; Spiro, 1979), but it's not. We want students to use background knowledge—it's important to comprehension. Drawing on prior knowledge as one reads is a characteristic of a skilled reader and a strategy that proficient readers effectively use (Pearson, Roehler, Dole, & Duffy, 1992; Gordon & Pearson, 1983; Hansen, 1981). However, when a student draws on prior knowledge with little or no regard to the text, as seemed to be the case here, then teachers need to carefully revisit how the students use background knowledge. Carefully is stressed here because the teacher must take care not to extinguish this potentially powerful strategy, but rather help students recognize how background knowledge in connection with text deepens understanding of what is being read.

Whether our observed over-reliance on background knowledge to answer questions is due to difficulties making sense of the text, a lack of understanding that where the answer comes from depends on the question and a recognition that

some answers are expected to come from the text, or something else remains to be explored. Based on the evidence we collected, additional instruction and practice with different reading strategies and when different strategies are most useful (including recognizing when meaning has been lost) would undoubtedly strengthen many students' comprehension of text. Using students' strengths in background knowledge as a beginning point for this strategy instruction may assist the students to acquire new strategies (Pearson, 1985).

### Vocabulary

The average, and above average, range of scores on the PPVT-R (an oral test of vocabulary) suggests that the students' comprehension difficulties are more complex than a lack of simple word meanings. Most students were able to identify a picture that represented a word when given a word and four picture choices. However, on a form of vocabulary identification where students had to read a sentence and then choose an appropriate word from a list (a written test) students struggled. This suggests that the students know substantially more isolated word meanings than they demonstrate on paper/pencil tests.

### Writing

As previously noted in the findings, when asked to write in response to reading, students were reluctant. Demonstrating proficiency on the state test for all areas (reading, writing, listening, and math) requires students to produce written responses. It is likely that the students showed the same reluctance to write when engaged in the formal state testing situation. The school had been using a comprehensive reform model that focused on reading instruction. The comprehensive reading program required 90-minute blocks of time. Teachers stated that they did not have time to explicitly teach writing. Many teachers shared that their only writing instruction occurred when students wrote answers to story questions read during the reading instruction block.

### Test format

The discrepancy between vocabulary scores when assessed through an oral or written mode combined with the reluctance of students to write suggests that using a variety of assessment formats is necessary if teachers are to truly understand the strengths and needs of these students.

### Summary

The assessments used in the current study were sensitive enough to identify specific areas of strength and needs. Phonemic awareness, word identification, and vocabulary instruction were not found to be primary needs for the majority of students. Rather, the assessment data indicates needs for instruction in text comprehension strategies and rate appropriate to purpose when reading.

## Implications

While limited due to the size of the sample in the current study, the findings provide further evidence that high-stakes assessments and instructional decisions based solely on those results might underestimate the potential of American Indian students (Brescia & Fortune, 1989). Multiple and diagnostic indicators of strengths and needs are needed for both policy makers and teachers.

The data tell us that most students are able to get the words off the page. Some seem to do so with too much haste while others may read so slowly their comprehension may be hindered. Based on the average scores on the orally assessed test of vocabulary, the students likely know the meaning of isolated words as they read—it's what students do with the words when encountered in context that appears to create comprehension difficulties for this group of students. Rather than using word identification abilities to help understand text, many students seem to identify words, but then set the words that have been read aside as they answer questions from background knowledge, with little regard for the text that was just read. This suggests possible benefits from instruction that focuses on comprehension strategies and rate appropriate to purpose when reading.

### Comprehension Strategies

Specifically, the findings suggest that the students would benefit from explicit instruction, teacher modeling, and think-alouds of key reading comprehension strategies (e.g. summarizing, self-monitoring, creating visual representations, evaluating), using a variety of types of material (Block & Pressley, 2002; Duke & Pearson, 2002). A starting place for these students would be for teachers to teach strategies that assist readers to actively interact with the text as they read. These strategies should focus on helping students monitor so that they recognize when they are not comprehending and know what to do when that occurs. Several instructional books, based on the proficient reader research (e.g., Afflerbach & Johnston, 1986; Anderson & Pearson, 1984; Gordon & Pearson, 1983; Tierney & Cunningham, 1984) of the 80s, have been published in the past six years that focus on strategic comprehension instruction. *Mosaic of Thought* (Keene & Zimmerman, 1997) and *Strategies that Work* (Harvey & Goudvis, 2000) are just two of the many instructional books currently available that educators may find helpful when considering where to start with comprehension strategy instruction.

### Appropriate Rate when Reading

The rate that proficient readers use when reading varies dependent upon the text and the purpose. While reading too slowly can interfere with comprehension (LaBerge & Samuels, 1974), reading too quickly can also create comprehension difficulties. Explicit instruction in the importance of adjusting rate for the reading purpose and adjusting rate, faster or slower, based on ongoing monitoring of comprehension would likely assist many of these students.

### Tests as a Genre of Study

Linked to the need for both appropriate rate when reading and reading comprehension strategies with a variety of materials, students may benefit from instruction in test taking as a genre. Tests and their formats are unique, and test-takers use specific strategies. The questions are unlike those we find when we discuss reading with others. We are asked to answer very specific questions. The writers of tests have predetermined answers that we are to produce—most often in writing. The answers are usually linked to the content of the text itself; so, to score a correct answer, background knowledge alone is usually not sufficient and, as illustrated with these students, can even hinder obtaining a correct response. Although drawing upon background knowledge is important and useful, there are times in testing situations when using too much background knowledge in the answer is not helpful.

### Linking to Classroom Based Assessments

The findings also have implications for classroom assessment. The assessments we used provided diagnostic information which led to insights into the strengths and needs of these students. There is a need for similar, although not as time-intensive, classroom-based assessments if we are to meet the needs of American Indian/Alaska Native students in our schools. The approach that we used, and that teachers could incorporate, is the use of multiple indicators of achievement, a stance that has long been advocated but rarely implemented (Linn, 2000; National Council on Education Standards and Student Testing, 1992). We did not rely solely on the data from the state assessment but instead looked deeper. There are varying interpretations of just what multiple indicators might entail – multiple instruments across disciplines, multiple formats, multiple opportunities for students, multiple measures of context and background factors (Cohen & Ball, 2000; Lewis, 2001). At a minimum, our work suggests a need for multifaceted indicators of student performance in the targeted subject area– in this case, students’ reading abilities. This is the kind of information that can only come from classroom-based assessments (Shepard, 2000).

### **Limitations**

This study has several limitations. The small sample size calls for caution in subsequent analysis and implications. A descriptive study such as this provides one set of data on strengths and needs of American Indian/Alaska Native students—and, as with all such studies, generalizing to all American Indians/Alaska Natives would make no sense. Nonetheless the results do provide guidance to educators of American Indians/Alaska Natives regarding the need for diagnostic assessments and also ideas of skill areas within reading where teachers might want to first focus assessments. Limitations of methodology that warrant caution are the use of assessments that were not normed with the local community, interpretation of items by respondents, and the ability of any assessment, or even any battery of assessments to completely portray students’

true strengths and needs. Acknowledging these limitations, this study does add to an area where previous research focused on American Indian/Alaska Native children is limited and provides some directions for future research.

### **Suggestions for Future Research**

The limited amount of research that has been directly conducted on the reading skills of American Indian/Alaska native children has great implications for researchers. First, additional studies that examine the reading strengths and needs of many groups of American Indian/Alaska Native children across grade levels is needed to determine if there are common instructional needs across tribes. Second, carefully conducted research on the effectiveness of different types of instruction when matched to the assessed needs of American Indian/Alaska students is called for to gain insights into what might be the most effective instruction. For example, theory exists about the need for and potential benefits from culturally relevant assessment and instruction (e.g., Cleary & Peacock; 1998; Dehyle, 1992; Delpit, 1995; Demmert, 2000; Gilliland, 1995; Reyhner, 1992; Klug & Whitfield, 2003) yet little empirical data exists to successfully support or refute its use to support reading development. In addition, research could focus on how classroom teachers both identify and use effective assessments in their classrooms with American Indian/Alaska Native students. Last, although this study was not aimed at analyzing writing, the anecdotal notes suggest that a closer look at writing instruction and its influence on the demonstration of reading and performance on high-stakes assessment might be an important future research step.

### **Conclusion**

Although this study was specific to one group of American Indian children, the results may be useful to other American Indian/Alaska Native groups. The need for appropriate, and sensitive, diagnostic assessment that can accurately inform our instructional decisions is critical for all students, especially when certain skill areas are being promoted, as is the situation under the current Elementary and Secondary School Act (ESEA). In the case of the students from this school study site, we learned much more about the students' strengths and needs by working with students on a one-one basis than we did from group test scores—and we found that there were some skill areas within the basic five currently promoted in the Elementary Education and Secondary Act (ESEA) where instruction is more sorely needed than others. Specifically, to help the most students in this study, teachers should focus on text comprehension and rate appropriate to reading purpose rather than on phonics, isolated word meanings, or phonemic awareness. Our assessments illuminated information that could immediately, and more accurately, inform teachers' instruction. This type of focus on individual strengths and needs, coupled with teacher understanding about the students and skills being assessed, must inform instructional and curricular decisions if we are truly to leave no American Indian/Alaska Native child behind.

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