

The Influences of Culture on Learning and Assessment Among Native American Students

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The purpose of this article is to raise issues concerning the influences of culture on assessments of Native American students. The nature and extent of the problem is portrayed by citing information from national data sources on the achievement of Native American students. Cultural aspects of assessment and principles of assessment are discussed, using personal experiences to encourage others to reflect on cultural aspects of assessment. The article ends with the argument that there is much to learn about assessing Native American and other minority students, taking into account the external influences of culture, environment, attitudes, context, and perspectives.

Why is there an overrepresentation of Native American students (and select other minority groups like African and Hispanic Americans) in special education classes? What are the influences of culture in a person's life? Does the assessment or research currently carried out, in attempting to answer these questions, reflect reality? It is not clear that we have answers to any of these questions. In that context, the literature, whether it is experimental, quasi-experimental, nonexperimental, or opinion, is sufficient to cause concerns among many professionals within the Native American community and is also the topic of much concern, debate, and consideration of other groups outside middle-class White America. In this article, I review current issues concerning the influences of culture on assessment with regard to Native America. I consider information available from national data sources; I then discuss cultural aspects of assessment and principles of assessment. I present personal experiences as a way to reflect on the cultural aspects of assessment. I close by summarizing my views about the major cultural factors in assessment.

NATIONAL DATA SOURCES

In a review of the research literature regarding the education of Native American students (American Indian, Alaska Native, and Native Hawaiian) (Demmert, 2001), and a follow-up analysis of that literature on the influence of Native language and culture on academic performance, one finds a significant lack of quantitative research on the subject (Demmert & Towner, 2003). In expanding a review of the research literature but narrowing the focus to the influences of culture on assessment of Native American students, there is even less information of a quantitative nature. The lack of research in-

formation regarding the influence of culture on assessment regarding Native Americans was also expressed by Long and Christensen (1998), Banks and Neisworth (1995), Banks (1997), Sarouphim (2000), and Ukrainetz, Harpell, Walsh, and Coyle (2000). Hynd and Garcia (1979) found that most research on cultural and sociological factors related to differential assessment techniques centered on only two groups of minority children: Black and Chicano, with very little known about the Native American child.

Information about the academic performance of Native American children from national data sources is also very limited (Grissmer et al., 2004). What is available presents a disturbing analysis of the academic performance level of Native American (as well as of African and Hispanic American) students in comparison to the majority of middle-class White students. Two questions emerge from those data. First, how accurately do the instruments used for assessing academic performance reflect the true knowledge base of the Native American student? And second, are there extenuating circumstances that must be taken into account when using standardized assessment tools that may have been developed for a select group of students?

In examining the status of Native American (American Indian and Alaska Native) kindergarten students entering schools using data from the Early Childhood Longitudinal Survey (ECLS) funded by the U.S. Department of Education, we find that Native American students enter school behind Hispanic, African, and White American students in reading, mathematics, and general knowledge, but that by grade four Native students do as well as Hispanic and African American students. We also find that Native students in rural areas, where over 70 percent of Native students reside, enter school with much lower scores than Native American urban or suburban peers.¹

According to the latest analysis of National Assessment of Educational Progress data (NAEP) on the academic performance of Native American students, Native students do not do as well as their White counterparts in reading, mathematics, writing, history, and science, but they generally do

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better than Black and Hispanic Americans with exceptions in some grades and in some subjects. Native American students have smaller gaps relative to White students in geography, science, and mathematics, and larger gaps in reading, writing, and history. The smallest gap is in geography. There is also a significant difference in scores between Native students in Oklahoma—the highest achieving Native American group among states—and those in New Mexico and Arizona, where the scores are the lowest across states for Native Americans.²

The information on entering kindergarten students from the ECLS and on academic scores from NAEP data sources clearly shows that Native American students (as well as other minority students) do not do as well as White students in assessments of academic progress. The accuracy of this information is important to the Native American community as Native educators and tribal leaders struggle with ways to improve schools and schooling for their students. The information is also critical for federal and state policy makers and for educators responsible for influencing programs and funding options for Native America. We know from the work that David Grissmer et al.³ are doing, which includes a review of the research literature reported by Demmert and Towner (2003), that the national studies carried out by NAEP and by independent researchers are severely limited by small sample sizes for Native American students. Unlike Black and Hispanic students, who are usually oversampled, Native American students are almost never oversampled in national data collections. The lack of information regarding the education of Native American students severely limits our ability to understand the problems faced by Native students as they move through the educational systems that serve various tribal groups and communities.

CULTURAL ASPECTS OF ASSESSMENT

The limited quantitative research literature on the influences of culture on assessment, with regard to Native America, is not surprising. As noted earlier, because of population numbers and the extra cost of obtaining adequate numbers of Native Americans for a national study of Indians and other Native American groups, it is difficult to find sufficient numbers to stratify and analyze the data (which usually focuses on White, Hispanic, and African American groups). For example, as a member of the Independent Review Panel for Title I and other U.S. Department of Education funded programs (1995–2001), I found this to be a constant problem with respect to collecting adequate data for learning more about the problems and issues facing Native American students. In addition, when considering the planning and implementation of an experimental or quasi-experimental research project that attempts to isolate causal factors, one soon realizes there are major hurdles to overcome. First and foremost is formal tribal approval for any modern research activity dealing with a particular tribal entity. Such approval may be difficult to obtain because of past experiences with researchers and the value of that research to the tribe. Second, there is a problem of stability of the student population and teaching force at any given site; Indian students have a history of constantly

moving on and off reservations, as their parents migrate for a number of economic, social, or cultural reasons. A stable teaching or school administration force is a rarity in Bureau of Indian Affairs, tribal, or public schools serving Native communities. As a U.S. Commissioner of Education, Commissioner of Education for the State of Alaska, Director of Education for the Bureau of Indian Affairs, and an administrator for a small rural school, I found these issues to be a constant concern.

One of the most difficult areas to evaluate, because of the limits regarding adequate information, is the accuracy and adequacy of assessment tools used to gather information on academic progress and what some of the challenges might be in interpreting the data. For example, are there extenuating factors surrounding the assessment tools used in examining the achievement levels of different Native tribal groups as compared to Hispanic, African American, and White American groups? How valid are the achievement scores for reading, mathematics, writing, science, and geography? Is there evidence of cultural bias?⁴ Do the cultural backgrounds and experiences of the different groups of students result in alternative perspectives regarding questions, answers, and context of the tests currently used to assess progress or levels of competence among minority students, or in this case, Native American students?

We are all familiar with the issues of limited English language learners and the fact that they may not do well in tests administered in English, and that we may be testing their ability to read and understand English, rather than testing their content knowledge (Bailey, 1995; Geisinger & Carlson, 1992; Meyer, 2001; Tippecanoe & Faircloth, 2002; Vadas, 1996). Unknown to a large extent are the influences of culture, environment, and other factors (e.g., offensiveness of materials; level of a student's acculturation; behavioral issues, perspective, or context) on a student's ability to do well on standardized tests. The evidence that is available tells us that these factors must be accounted for in reaching a fair assessment of a student's academic abilities and cognitive development, that these variables do influence outcomes (Geisinger & Carlson, 1992; Valdivia, 1999).

Ukrainetz, Harpell, Walsh, and Coyle (2000) undertook a preliminary investigation of the potential value of Dynamic Assessment (DA) in evaluations of Native American kindergartners.⁵ The purpose was to examine a process approach to evaluation as a less-biased evaluation system than the traditional assessment measures of performance for evaluating the language learning ability of Native American children. The authors reported success in reliably identifying as weaker or stronger language learners those children previously classified by teachers and examiner classroom observations. In an earlier review of empirical studies using DA in early intervention among American Indian and Alaska Native families (Banks & Neisworth, 1995) only seven studies were located. Banks and Neisworth concluded that DA adds information beyond that provided by static measures. A general concern expressed was that most testing conducted on the Native American student community did not take into account the languages, value sets, customs, spiritual convictions, and childrearing practices of Native America.

In a study by Long and Christensen (1998) a questionnaire for parents was used to compare the cognitive, linguistic, and sociocommunicative skills of Native American 3–5-year-olds and a similar number of middle-class White students. After screening students for both hearing and speech, 20 children from the head start program (10 Indian and 10 Caucasian) were randomly selected from a pool of 80 students and given articulation screening tests.⁶ Mean parent-reported data by age groups for Cherokee Indian and Caucasian children on the Pediatric Developmental Instrument screening questionnaire showed that Caucasian children scored better in cognition, linguistic, and sociocommunication skills than the Native American students, but that the older Native American students did better than the younger Native students.

A report of a tribal environment and natural resources management approach to Indian education and student assessment (Berardi et al., 2003) explored a method of assessment that is multiple in nature and includes the following: (1) written expression, (2) verbal expression, (3) group work (student contributions to group and cooperation within group), (4) grades (based on work completed), and (5) individual faculty and team assessment. Criteria for student assessment included meeting program philosophy, principles, and objectives (developed in concert with tribal members and other partners in the project, and accounting for students' level of understanding and development). Cultural aspects of the community are ingrained in the philosophy, principles, and objectives of the program and assessment process. A conclusion of the authors of this study was that standard academic methods of assessment are not reliable for this population of students because they do not account for the cultural and contextual setting of a program.

According to Smith (1999), past and contemporary researchers fail to take into account the fact that indigenous peoples have critical questions they need to find answers for, and that they are at a disadvantage when individuals outside the indigenous community form the questions and methods of collecting information, set the methodology, determine the answers sought, and shape the analyses.

PRINCIPLES OF ASSESSMENT

In this section, I attempt to explore whether there are key factors or basic principles of assessment or research that evaluators or researchers must keep in mind, principles that in fact may need to be developed and articulated for use, when working with groups that are not European American middle class (the usual point of reference from which cultural practices with other national or international racial or ethnic groups are generally compared) (Berardi, 2003; Lee, 2003; Trimble et al., 2003).

Many of us would agree that there are, or should be, principles from which we should proceed as we struggle with questions for which we are still seeking answers. The difficult task is identifying the principles for which we might reach some level of consensus and understanding. Carol D. Lee, the guest editor of the June/July 2003 *Educational Researcher* (Theme Issue: *Reconceptualizing Race and Ethnicity in Ed-*

ucational Research), calls for a much more complex and nuanced analysis of cultural diversity than was characterized in the educational research field to date (Lee, 2004). Contributors to the National Science Foundation's workshop (April 25–26, 2002) report, titled *The Cultural Context of Educational Evaluation: A Native American Perspective*, attempted to identify and present possible answers to that question.

Each one of us is significantly influenced by the physical, cultural, and intellectual environments in which we grow and mature. We know that genetics and the experiences we have as young children, the cultural mores and attitudes we are exposed to, and the opportunities for exploration and developing our minds all play a critical role in what we become (Begley, 1996; Bowman, Donovan, & Burns, 2001; Bruner, 1996; Gardner, 1985, 1995; Ogbu, 2003; Sousa, 1998; Viadero, 1998; Vygotsky, 1994). Further, Bruner (1966) indicates that culture defines the individual:

Culture shapes mind, . . . it provides us with the tool kit by which we construct not only our worlds but our very conceptions of our selves and our powers . . . You cannot understand mental activity unless you take into account the cultural setting and its resources; the very things that give mind its shape and scope. Learning, remembering, talking, imaging: all of them are made possible by participating in a culture. (Bruner, 1996, p. x–xi; Demmert & Towner, 2003, p. 4).

If culture influences an individual's view of the world, if cultural experiences determine how one approaches a problem and attempts to solve it, if the cultural environment influences the way a person thinks and approaches life, and if early experiences and our environments significantly influence what we become as individuals, then clearly issues of culture, language, cognition, community, and socialization are central to learning. Therefore, each of these factors must be adjusted for in the context of learning, in our social development, in our theories of education, and in our assessment and research, especially when considering the education of Native America.

Three theories of education surfaced from the Northwest Regional Education Laboratory report by Demmert and Towner (2003): (1) Cultural Compatibility Theory, (2) Cognitive Theory, and (3) Cultural-Historical-Activity Theory. All three theories support the premise that the "basis of education is best built on the experiences, values, and knowledge of the students and their families, both personal and community-based."⁷ From my perspective, this means assessment of an individual's knowledge must be based on this context.

A PERSONAL EXPERIENCE

As an entering graduate student in the Harvard Graduate School of Education, I was strongly encouraged to take a writing class and participate in a speed-reading class, both designed to test as well as improve my literacy skills. In the case of the speed-reading class, which was quite large, most of us could read comfortably in the 400–600 word per minute range. As we practiced, most of us began to read comfortably 800–1,000 words per minute while maintaining a relatively high level of comprehension. Near the end of the



FIGURE 1 Bat. An original early art form not generally seen in Alaska, and whose meaning has been lost.

session, information about the life of the Eskimo in the Circumpolar North was introduced. In this context, my reading speed jumped to 1,200 words per minute; my comprehension was 100 percent according to the test that each of us took, and the speed and comprehension for everyone else in the class dropped dramatically. Interestingly, I did not have to think about what I was reading—I knew and understood the content, was very comfortable with the context in which the material was presented (primarily because of my personal experiences as an Alaskan Native) and clearly understood the intent of the questions included in the tests on content that followed. Everyone else in the class had difficulties understanding what they were reading and seeing, in the context in which the information was presented.

I learned something from that experience. I learned that my early experiences as a young person had given me insights and skills that others, without those experiences, did not have. I also realized that the reverse was true and that generally speaking, as the person conducting an assessment of a person's knowledge, it was necessary to understand context and a person's early experiences and background (the cultural context in which we grew and matured). Everything I have observed or learned since then supports those original impressions, and nothing has really challenged that original experience and understanding.

As an illustration, what follows is a short test in a form of communication that most individuals reading this journal may not be accustomed to. The figures (Figures 1–3) represent a perspective that may not be consistent with the reader's experiences, and the information is presented from a historical perspective that is not generally included in our schools. It might be informative, even somewhat entertaining for some.

Few if any readers will be able to read or understand this material without a description.

Certain of my family members and I are able to read and understand the images presented above, for they represent oral histories and legends we were exposed to as youngsters. This form of early communication and record keeping, referred to as "rock art" by the scientists with whom I have been working, present some of the earliest methods of formally transferring intergenerational knowledge among the Tlingit.⁸ It outlined territorial ownership, oral histories, legends, and represents an art form that is very abstract and complex. The fact that few, if any of you, whether you are Tlingit or not, could read the petroglyphs or pictographs that are presented above with any degree of accuracy, does not mean your cognitive skills are impaired, only that you have not had the chance to develop the skills needed to read them.

In theory, my ability to assess your competence and understanding of this form of communication depends upon my knowledge of the oral histories and art form represented, and my understanding of the limits of your knowledge and experiences in this area. That is, in fact, not much different from your assessment of Native children without knowing their language limits, cultural backgrounds, the environments in which they gained their experiences or personal attitudes regarding their own situation, in the context of middle-class America (Ogbu, 2003).

In a two-day workshop sponsored by the National Science Foundation (April 25–26, 2002) on culturally responsive educational evaluation of Native American students, seven concerns were expressed: (1) "context"; (2) demographics (statistical information about the lives and lack of accomplishment

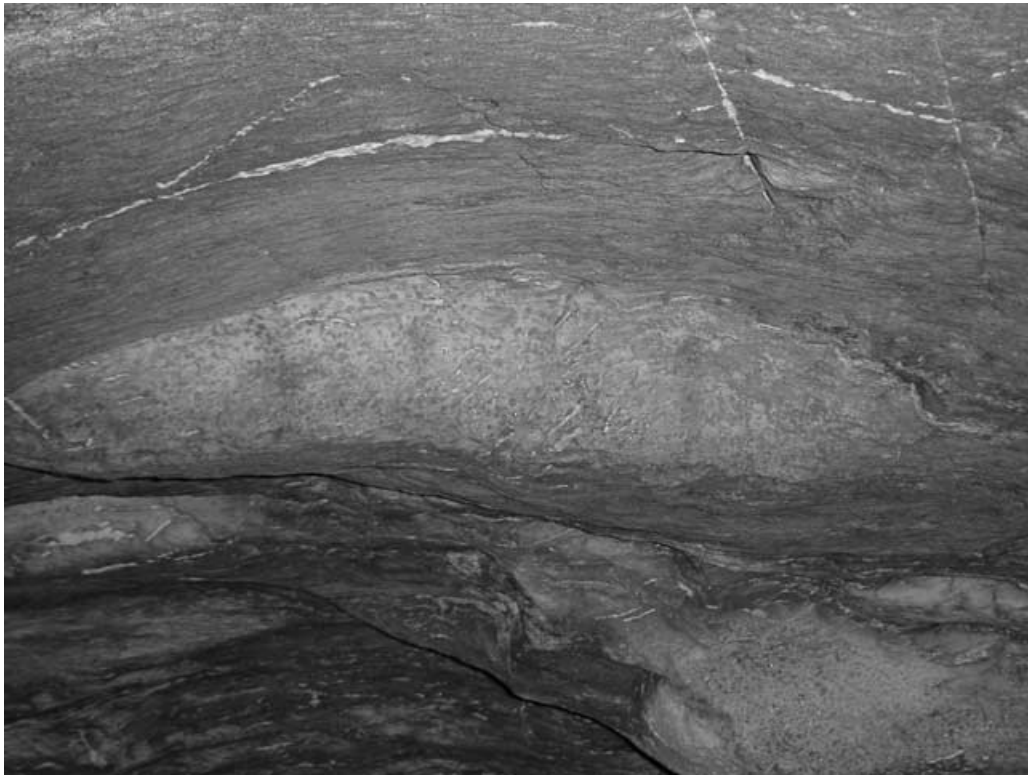


FIGURE 2 Canoe and drums. I learned as a young person that my grandmother's people entered Alaskan waters, from a warm climate, by canoe. The first people to inhabit S.E. Alaska are referred to as the "Kelp People" (Dow Hit in the Tlingit language).

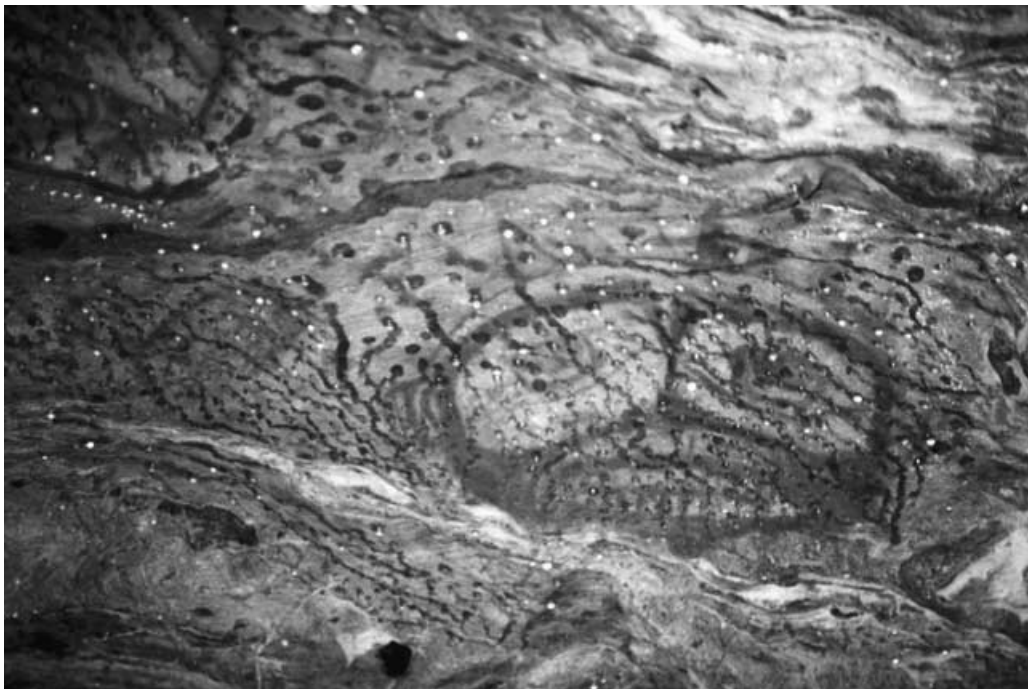


FIGURE 3 Sculpin (Dow Hit crest). This is a crest of my grandmother's clan, the Tak'uenedi, the original people of S.E. Alaska.

of Native students); (3) whether the Indian's view of the world was holistic or analytic; (4) influences of oral traditions (and pictographs and petroglyphs in both abstract and real form); (5) levels of respect between teacher and student; (6) the ever-present influences on the affects of abuse, genocide, or policies of oppression on student image and identity; and (7) the value of starting with local knowledge in both educating and assessing students (National Science Foundation, 2002).

Contributions from the Symposium on Research and Evaluation Methodology: Lifespan Issues Related to American Indians/Alaska Natives with Disabilities (2002), includes the need to develop true collaborations (not just collaboration) with indigenous people when conducting research; overcoming a history of exclusion regarding control of research and assessment; guaranteeing that assessment or research activity does not harm the members of the community in question; the influence of culture on attitudes, perspectives, and other influences of environment; influences of environment on cognitive development; influences of alcohol and other substances on infants; and knowing and understanding the community with which you are working (Davis et al., 2002).

Finally, the writings of three authors present exciting support for Native educators like myself because of their positions regarding the importance of culture in a person's life. These authors include Howard Gardner, Robert J. Sternberg, and Lev Vygotsky (Gardner, 1985; Viadero, 1998; Vygotsky, 1994). First, a well-known leader in the theory of multiple intelligences, Gardner offers the following comments on culture and the way it fosters diverse intelligences:

Culture makes it possible for us to examine the development and implementation of intellectual competences from a variety of perspectives: the roles the society values; the pursuits in which individuals achieve expertise; the specification of domains in which individual's prodigiousness, retardation, or learning disabilities may be found; and the kinds of transfer of skills which we may expect in educational settings (Gardner, 1985, pp. 57–58).

Sternberg has suggested that there are three parts to intelligence—analytic intelligence (used for analyzing, judging, and comparing); creative intelligence (involves imagining, discovering, and inventing), and practical intelligence (putting ideas into action). According to Sternberg, students taught in their different intellectual strengths learn more (Viadero, 1998, p. 28). Vygotsky tells us the following:

The primitive child is a child who has not undergone a cultural development or one who has attained a relatively low level of that development . . . Children's primitiveness, i.e., their delay in cultural development, is primarily due to the fact that for some external or internal cause they have not mastered the cultural means of behavior, especially language (Vygotsky, 1994, p. 58).

SUMMARY

Based on the information presented and reviewed for this article, I believe it is possible to identify the factors or

principles that need to be considered in any dialogue about "cultural factors in assessment." I propose the following as possibilities:

- (1) Genetics, experiences, and culture significantly influence a person's cognitive development and understanding of the world in which he/she lives.
- (2) Cultural attributes are not static and evolve across generations.
- (3) Each of us has a different set of intelligences that may be predetermined or learned, but that we can build upon.
- (4) The context in which information is presented, or in which learning takes place, may enhance or impede a person's understanding.
- (5) One is not able to understand mental activity unless the cultural settings and resources are taken into account.
- (6) There is much to learn before we understand all of the nuances of testing and assessing groups outside our own spheres of experiences and perspectives.
- (7) There is an ethical responsibility to develop a true collaboration with indigenous people when conducting research involving assessment of Native students.

In summary, educational research, assessment information, and data collected nationally on Native America is severely limited. This fact is consistently reported in the literature, along with the recommendations for such research to be continued and expanded. There is still much to learn about assessing Native American and other minority students, taking into account the external influences of culture, environment, attitudes, context, and perspectives. Different societies may have different priorities (which influence what children learn and hold as important). From my perspective it is necessary for educators to take these factors into account in the development and use of assessment tools and procedures in order to obtain fair and accurate measurement of the educational abilities and performance of American Indian, Alaska Native, and indeed any linguistic or cultural minority student. There is limited research and plenty of opinion supporting this position.

In conclusion, one might ask, "What considerations must be taken into account when assessing Native American students?" From my perspective, the following are certainly reasonable: (1) the language of the home and the language of instruction, (2) the context and perspective from which questions are asked, (3) compatibility between the background knowledge of the student and the questions asked of the student, (4) the values and priorities of the community(ies) from which the students come, (5) the ability of the assessor to create an atmosphere in which the students feel safe and comfortable, and (6) the vocabulary of the student and whether he or she understands the meaning of the words used in the assessment tool. There are others, I am sure, but we all need help in determining what these additional considerations might be. Until this is accomplished we will continue to wrongly assess Native American students, their knowledge base, and their talents.

NOTES

1. Information obtained in a personal conversation with David Grissmer, Senior Research Analyst, the RAND Corporation, during the winter of 2003.
2. Information obtained from David Grissmer, Senior Research Analyst, the RAND Corporation, during the winter of 2003.
3. RAND review of National Assessment of Educational Progress (NAEP) data on academic performance of Native American children as part of a National Center for Educational Statistics, U.S. Department of Education contract.
4. Defined as the presence of some characteristic in an item that results in a different level of performance for individuals of the same ability but from different ethnic, sex, cultural, or religious groups by Hambleton and Rodgers (1995). *Item Bias Review, ERIC Clearinghouse on Assessment and Evaluation*. ED398241, Washington, DC.
5. Dynamic assessment includes a “test-teach-test” approach. The assessment process includes a test, a mediated learning experience (a process where the examiner spends time teaching the examinee directly where a child is rated on learning behaviors, i.e., degree of attention, planning, self-regulation, application, motivation, responsiveness to intervention, intensity required to induce change, and indication of carryover), and retested to determine the amount of learning that has occurred.
6. Indian children were compared to middle-class Caucasian children from a 1992 Neely and Christensen study.
7. See Demmert and Towner (2003, pp. 7–9) for a more thorough discussion of these theories.
8. Probably one of the original Native American tribal groups to settle in South Eastern Alaska, eventually emerging as the modern day Tlingit.

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