



Promising Education Interventions to Improve the Achievement of Native American Students

An Annotated Bibliography

May 2015



West Comprehensive Center at WestEd



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**Prepared by
RMC Research Corporation for the
West Comprehensive Center at WestEd**

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Introduction

Historically, American Indian/Alaska Native (AI/AN) students have experienced disproportionately low education achievement relative to their grade-level peers. National Assessment of Educational Progress (NAEP) results from 2009 indicated that mathematics and reading achievement scores of AI/AN students in grades 4 and 8 were substantially lower than national average scores for all students. For example, in grade-8 mathematics, only 21 percent of AI/AN students scored at the proficient or advanced level compared to 39 percent of all students who took the test (National Center for Education Statistics, 2009). Further, AI/AN graduation rates continue to drop, and achievement lags behind other groups.¹ Improving AI/AN student achievement at all levels continues to be a serious challenge.

The purpose of this annotated bibliography is to identify interventions, and supporting research, that may benefit educators in their efforts to close the AI/AN achievement gap. It answers the question: *What are promising programs, policies, practices, and processes related to improving academic and non-academic outcomes for AI/AN students in pre-kindergarten through 12th grade?*

Collectively, the articles included in this bibliography relate to a broad range of Indigenous peoples, including American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders. Studies touch on Indians living on reservations, students in Bureau of Indian Education (BIE) schools, students in tribally controlled schools, and English language learners.

¹ <http://www.edweek.org/ew/projects/2013/native-american-education/running-in-place.html>



Methods

Research studies in this bibliography were included based on the following attributes:

- **Topic relevance:** The study focused on the effects of an education-related intervention.
- **Timeframe relevance:** The study was published from 1994 to 2014.
- **Sample relevance:** The study sample included Native students enrolled in pre-kindergarten (preK), elementary, middle, or high school or the individuals responsible for their education.
- **Study language:** All study reports were written in English.
- **Study location:** Most studies were conducted within the United States.
- **Study design relevance:** Qualitative and quantitative studies, mixed methods, case studies, and ethnographies were included if they were methodologically sound, clearly described an intervention, informed the design of an intervention, and/or reported results that detailed the impact of the intervention.
- **Outcome relevance:** The study focused on student outcomes and included at least one relevant academic or non-academic outcome or variables related to academic outcomes.
 - » **Academic outcome areas:** Outcomes in reading, writing,

mathematics, science, social studies, foreign language, the arts, language arts, physical education, computers, technology, and engineering were measured by achievement tests and other assessments.

- » **Non-academic outcome areas:** Outcomes of goal setting, motivation, resiliency, self-esteem, sense of self, positive behavior, task persistence, self-regulation, self-concept, and self-efficacy were measured by self, teacher, or parent ratings or through observations.

Databases used to search for relevant articles were Google Scholar, ERIC, General OneFile, Academic Search Premier, WorldCat, Academic OneFile, GALE PowerSearch, Expanded Academic ASAP, and InfoTrac Educators 200.

Searches focused on three areas: *core subjects*, including language arts (English, reading, writing), mathematics, and science; *affective needs*, including engagement, motivation, self-esteem, and confidence; and *culture*, including cultural awareness, cultural identity, and culturally responsive instruction. The search was broadly defined, initially, and later refined when preliminary searches with online databases produced insufficient results.

The table on page 3 indicates keywords employed in the search.

Table 1. Keywords employed in search

Theme	Keywords
Population	Alaska Natives, American Indians, English language learners, Hawaiian Natives, Indigenous peoples, Native Americans, Native Indians, Native population, Pacific Islanders, Reservation Native American Indians
Interventions, Policies, Practices, Strategies, Processes	bicultural curriculum, boarding schools, BIE schools, classroom organization, classroom strategies, closing the achievement gap, Common Core, communication styles, community engagement, community influences, culturally responsive schooling, curriculum, distance learning, early childhood education, effective classroom practices, effective interventions, effective teaching practices, engagement, family support, instruction and curriculum, intervention, language preservation, language revitalization, mentors, multicultural education, Indian education, Native education reform, online learning, parent involvement, parental influences, peer influences, programs in schools, social-emotional learning, standards-based, teacher knowledge of culture, teachers, traditions, tribally controlled education, technology
Academic Outcomes	academic, academic engagement, academic skills, attendance, college and career readiness, Common Core, dropout, dropout prevention, dropout rate, engineering, English language acquisition, English language arts, formative assessments, heritage language, interim assessments, language arts, mathematics, mathematics assessment results, numeracy, reading, science, social studies, science, technology, engineering, and mathematics (STEM), summative assessments, test scores, writing assessment results
Non-Academic Outcomes	affective, American Indian culture, behavior, cognition, cultural awareness, cultural identity, goal setting, identity, Indigenous knowledge, motivation, nurturing, relationships, resilience, self-efficacy, self-esteem, sense of self, social-emotional, social engagement, well-being
Methodologies	case study, dissertations, ethnography, evaluations, fugitive literature, gray literature, meta-synthesis, mixed methods, qualitative, quantitative, reviews, syntheses, theses

A range of narrow and broad search strategies were used when narrow searches produced no results. A search of the literature related to interventions for AI/AN students using the keywords “Native American” AND “education reform” OR “education intervention” OR “academic intervention” resulted in 8,710 articles. A similar search for literature related to cultural interventions

using the keywords “Native American” OR “American Indian” AND “preK–12” AND “interventions” AND “cultural” resulted in 1,341 articles. Finally, a search for literature using “Native American” AND “social” OR “emotional” resulted in 1,059 articles.

This body of articles was further reduced by excluding any that did not pertain directly to K–12 students, to subject areas, to cultural



issues, or to social-emotional issues. Article identification was supplemented in two ways. First, a limited-distribution annotated bibliography was used to identify additional articles (Jesse et al., 2013), and commonly cited literature reviews in the field were examined to identify additional resources. Each article was then further screened by two reviewers to identify a corpus of articles to be coded. Articles were included only if they discussed qualitative or quantitative findings related to an intervention, or if they provided other analyses that would inform interventions. In total, 33 articles were eventually selected to be included in this bibliography.

The 33 articles (e.g., studies, books, reports) in this bibliography inform or describe interventions for improving the achievement of Native American students. The articles are categorized as follows:

- **School Improvement.** The eight articles in this section discuss the background and components of school improvement interventions showing documented effectiveness with specific Native American student populations. Strategies identified in these articles include engaging instructional practices, comprehensive curriculum content, safe and productive school climate, comprehensive assessment, high-quality teacher preparation, regular professional development, common planning time, parent and community support, class size reduction, increased instructional time, after-school tutoring, Individualized Education Programs (IEPs), and Advanced Placement (AP) courses. Other factors associated with improved student outcomes

are caring teachers with high expectations, teachers who are respectful of and knowledgeable about cultural identity, classrooms that foster motivation to learn, and school efforts to support stability in the home.

- **Literacy, Mathematics, and Science.** The six publications in this section include studies and descriptions of promising interventions in content areas. Literacy strategies include transitioning from a textbook-based curriculum to a child-centered approach through integration of dialogue groups; literature study; implementing instructional approaches such as hands-on activities; identifying relevant learning cycles; and providing theme-based instruction. Mathematics interventions focused on having students engage in sense-making and constructing meaning together through indirect instructional methods; extended discourse; student inquiry; development of long-term mathematical conceptual understanding; use of number, data, and space curriculum; mathematics games for homework; using student-centered instructional approaches; and holding students accountable for their own learning. Science strategies included efforts to involve culture and community in relationally driven, place-based, and problem-based interventions. Hands-on outdoor education activities were prominently featured.
- **Language and Culture.** The six research articles in this section describe the relationship between cultural programming and educational outcomes. This literature discusses strategies related to school



climate, parental involvement, quality of instruction, and motivation. One set of findings identified maternal warmth, extracurricular activities, enculturation, and self-esteem as being positively related to school success, although enculturation was not related to self-esteem.

- **Behavioral and Social-Emotional Interventions.** The eight articles in this section focus on interventions directed toward non-academic student development in areas such as social-emotional learning, leadership, and avoidance of engaging in risky behaviors. Specific strategies included important skills for AI/AN students; achievement motivation; and professional learning for teachers that covers developmental changes in adolescence, cultural sensitivity for counselors, refusal skills for students, and correlates of suicide risk.

- **Parent, Family, and Community Involvement.** The four articles in this section examine the relationship between parent, family, and community involvement and student outcomes. Programming that involved parents resulted in improvements in students' academic competence and behavior. Engaging parents in the design and implementation of programming approaches had the strongest program benefit. Success in school was also related to specific values held by mothers.

Note: Within the field, how Indigenous people and groups are referred to varies. With a few exceptions, each annotated article in this bibliography uses the terminology of its author(s). The term "Native" is often used to refer to American Indian (or Native American) and Alaska Native peoples. Non-Native appears in some instances to refer to non-Indigenous peoples.



School Improvement

Engaging Native American Learners With Rigor and Cultural Relevance

Oakes, A., & Maday, T. (2009, August). *Engaging Native American learners with rigor and cultural relevance*. Washington, DC: Center for Comprehensive School Reform and Improvement.

The Center for Comprehensive School Reform and Improvement identified research-based strategies that foster Native American student engagement and improved academic achievement. The study explored three areas identified in the literature as improving educational outcomes for Native students: (1) instructional practices, (2) curriculum content, and (3) school climate. Short case studies were conducted in the Zuni Public School District in New Mexico, Denver Public Schools in Colorado, and Klamath-Trinity Joint Unified School District in California. The literature review identified promising instructional practices, which included increasing local autonomy; actively valuing elders' knowledge; creating congruence between home and community life and education; and employing culturally responsive pedagogy. Engaging curriculum content tapped into students' prior knowledge, experiences, and community values; infused culturally relevant content across the curriculum; and ensured that content was accurate and free of bias and stereotype. Aspects of a healthy school climate included creating positive behavior supports; building relationships with students

and families; communicating a belief in the abilities of learners; learning about the rich Indian heritage; and providing needed supports to reach high levels of achievement. Case studies detailed the variety of practices and strategies used by the three districts. The Zuni Public School District took a multidisciplinary approach, with high school students taking Zuni language and culture classes as freshmen, enrolling students in block scheduling to increase contact hours per credit, and providing activities to strengthen student relationships. Denver Public Schools instituted an Indian language program, increased the number of qualified teachers providing upper-level mathematics instruction to Native American students, and engaged with Native American parents in a more structured manner. The Klamath-Trinity Joint Unified School District worked closely with all three tribes in its service area and created a culturally relevant curriculum by integrating modules throughout the scope and sequence of various subject areas. The curriculum is complemented by a resource library containing a variety of culturally relevant resources and materials. The district offers Native American language instruction that meets state foreign language requirements and has established a "college-going culture" through raised academic expectations and exposure to college life through field trips.

WEB LINK: <http://files.eric.ed.gov/fulltext/ED507588.pdf>



Alaska Rural Systemic Initiative: Year Three Annual Progress Report, December 1, 1997–November 30, 1998

Alaska Native Knowledge Network. (1998). *Alaska rural systemic initiative: Year three annual progress report, December 1, 1997–November 30, 1998* (ERIC Document Reproduction Service No. ED443603). Fairbanks, AK: University of Alaska.

The Alaska Native Knowledge Network (ANKN) was created under the Alaska Rural Systemic Initiative (AKRSI) — one of a national network of statewide projects promoting systemic reform and improvement of science and mathematics education in schools and districts in rural, economically disadvantaged areas. The ANKN is a clearinghouse for the exchange of information relating to the indigenous knowledge systems of Alaska Native peoples, including its integration into instructional practices. ANKN continues as a preeminent resource for educators of American Indian and Alaska Native children. Composed of six initiatives, the project was implemented in different Native cultural regions over a five-year period. Rural schools that served the greatest number of students performing at the lowest achievement levels in Alaska participated in this study. The initiatives addressed comprehensive, standards-based curricula and assessment; high-quality mathematics and science education and preparation and support of teachers; a focused, continuously improving program; parent and community support; collection of evidence; and improvement in the achievement of all students. Teachers received extensive training and support to implement the new approach. Findings from the 20 treatment schools were compared to

nonparticipating rural schools in the state. Researchers analyzed California Achievement Test (CAT-5) scores, student enrollment rates, and student dropout rates. AKRSI partner schools had greater gains than non-AKRSI rural schools in the percentage of students who scored in the upper quartile on 8th-grade standardized achievement tests in mathematics. Treatment schools also had a greater decrease than non-participating schools in the percentage of students who were performing in the bottom quartile. At the 11th-grade level, AKRSI students moved out of the lower quartile in mathematics performance at a significantly higher rate than non-AKRSI students, but non-AKRSI students entered the top quartile at a faster pace than AKRSI students. The student dropout rate for grades 7–12 in AKRSI schools declined from a mean of 4.4 in 1995 to 3.6 in 1996, with a slight increase to 3.7 in 1996; in non-AKRSI schools, the dropout rate increased from 2.7 to 3.2, and then decreased to 2.6 during the next year.

WEB LINK: <http://files.eric.ed.gov/fulltext/ED443603.pdf>

The Montana Story: Providing Support to Frontier Communities Through State Oversight, Embedded Coaching, and Community Engagement

Corbett, J. (2011). *The Montana story: Providing support to frontier communities through state oversight, embedded coaching, and community engagement*. Lincoln, IL: Center on Innovation & Improvement.

In 2010, the Montana Office of Public Instruction (OPI) analyzed the state's student performance data and identified the



lowest-performing schools in the state. All seven schools on the persistently lowest-performing list were located on American Indian reservations in some of the most remote locations in the state. OPI conducted a study of each school to identify effective improvement strategies. Participants in this study were the OPI team and each community's stakeholders, including the local school board, administrators, teachers, students, parents, community leaders, tribal colleges, tribal councils, and county administrators. OPI staff held community meetings to describe requirements of the federal School Improvement Grant (SIG) and to forge a partnership with the local districts to implement change. Strategies identified in these meetings guided SIG-funded school reform. Over time, these schools increased the percentage of students performing at the proficient or near-proficient levels in 10th-grade reading when compared to the previous year before program implementation. Three of the four schools showed greater increases in 10th-grade mathematics and science criterion referenced test (CRT) scores along with a greater percentage of students at the proficient or above and near-proficient levels when compared to the previous year. Strategies emphasized clarity, accountability, and focus from the top down, and the embedding of coaches in the field. A transformation leader, an instructional leader, a school board coach, and a community liaison were assigned to each site.

WEB LINK: http://www.centerii.org/survey/downloads/Promising_PracticesMontana.pdf

From Division to Vision: Achievement Climbs at a Reservation School High in the Rocky Mountains

Sherman, L. (2002). From division to vision: Achievement climbs at a reservation school high in the Rocky Mountains. *Northwest Education*, 8(1), 22–27.

In response to Salish and Kootenai tribal demands for educational equity in school outcomes, a Montana school district chose to implement Success for All, an educational reform model based on cooperative learning strategies. Success for All was adopted at Pablo Elementary, which served 260 students, 65 percent of whom were American Indian and represented 32 distinct tribes. After two years, the percentage of 4th graders meeting state standards increased from 50 percent to 80 percent. Many of the 4th-grade students were reading at 6th-, 7th-, and 8th-grade levels. Some achievement discrepancies still existed between White and Indian students, but both of these groups showed similar gains in terms of growth. Attendance was up by 15 percent, and behavioral referrals were down by 40 percent.

WEB LINK: <http://files.eric.ed.gov/fulltext/ED478246.pdf>



From Where the Sun Rises: Addressing the Educational Achievement of Native Americans in Washington State

CHI Xapkaid (Pavel, M.), Banks-Joseph, S. R., Inglebret, E., McCubbin, L., Sievers, J., Bruna, L., . . . Sanyal, N. (2008). *From where the sun rises: Addressing the educational achievement of Native Americans in Washington state*. Pullman, WA: Clearinghouse on Native Teaching and Learning, Washington State University.

Interviews and demographic and assessment data from Washington state were used to develop an ecological framework for reducing the achievement gap and promoting educational attainment for Native Americans in the state of Washington. The study included analysis of test scores from 81 districts serving K–12 students in Washington state with sufficient Washington Assessment of Student Learning (WASL) data. Interviews were conducted with Native American parents and students. Researchers analyzed the data to identify characteristics of exemplary programs and practices for Native American students. They found that number of students per classroom, size of the grade cohort, percentage of students with IEPs, percentage of students enrolled in AP programs, and career and technical education program participation were associated with higher WASL scores for Native American students. Interview data showed that students were perceived to have benefited most when teachers provided encouragement, support, and respect for their cultural identity; were flexible and adaptable in helping Native American students make up for absences and missed assignments due to family issues and losses; and provided

cultural opportunities outside the classroom. Parents and community elders reported multiple factors they believe to be related to improved academic performance, including curriculum that reflected commitment to culture and identity; staff who were familiar with Native American history, culture, and language and were bi-culturally competent; schools that nurtured connections among and between educators and the community; positive role models for students; instilling and maintaining students' desire to learn; caring and invested teachers; and stability in the home and the community.

WEB LINK: <http://www.goia.wa.gov/Links-Resources/NativeAmericanAchievementReport.pdf>

Against All Odds

Parrett, W. H. (2005). Against all odds. *School Administrator*, 62(1), 26–29.

Lapwai Elementary School, located on the Nez Perce Reservation in northern Idaho, has had remarkable success in teaching minority children. This study explored the strategies the school implemented to improve Native American student achievement. Lapwai Elementary serves a K–6 population of 302 students. Eighty-four percent of the students are Native American, and 79 percent of the students live at or below the poverty line. A seven-component approach to improvement included curriculum aligned to state standards and assessments; two hours of common planning and professional development each week; full-day kindergarten; reduced class size; looping; extended after-school tutoring; and increased daily instructional time in reading



and mathematics. Additionally, the leadership team focused on implementing effective reading and mathematics programs, and teachers and administrators participated in assessment literacy learning teams. Student achievement scores in reading and mathematics increased between 1999 and 2004. In 2004, 91 percent of 3rd-grade students (compared to 16 percent in 1999) and 89 percent of 4th-grade students (32 percent in 1999) performed at or above state proficiency in mathematics. In 2004, 73 percent of 3rd-grade students (17 percent in 1999) and 77 percent of 4th-grade students (27 percent in 1999) performed at proficient or advanced levels in reading. In 2004, 82 percent of Lapwai kindergartners read at or above grade level. Student attendance increased by five percentage points to 94 percent. Parental satisfaction also increased.

WEB LINK: <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=8842>

Critical Pedagogy and Praxis With Native American Youth: Cultivating Change Through Participatory Action Research

Price, P. G., & Mencke, P. D. (2013). Critical pedagogy and praxis with Native American youth: Cultivating change through participatory action research. *Educational Foundations*, 27(3–4), 85.

To address the high dropout rate, Leadership Development Camp created a program

during the summer of 2010 that focused on the transition between middle school and high school for Native Americans. Youth, ages 13 to 17, participated in a summer camp and lived at a community college for the duration of the 2010 session. The camp was focused on the theme of “Tell Your Story” and encouraged students to explore issues of identity, history, and storytelling through team-building activities and to interact with college faculty and doctoral students. Many students also participated in a second-session day camp featuring sports activities and academic seminars that utilized storytelling. The curriculum and pedagogical style of the camps were based on two assumptions: (1) students would rise to high expectations if they knew they were cared for, and (2) students would become engaged in their own learning when they were provided a safe space. While attending the camp, students became involved in Participatory Action Research (PAR) with a focus on the dropout rate in the local reservation community. Using skills acquired in their storytelling classes, students researched and told the stories of why some individuals dropped out and others graduated. Through a follow-up survey, it was determined that all participants in one or both camp sessions successfully completed middle school and entered high school with the lowest dropout rate recorded.

WEB LINK: <https://www.questia.com/library/journal/1G1-408782294/critical-pedagogy-and-praxis-with-native-american>



DISCOVER in High School: Identifying Gifted Hispanic and Native American Students

Sarouphim, K. M. (2002). DISCOVER in high school: Identifying gifted Hispanic and Native American students. *Prufrock Journal*, 14(1), 30–38.

This article researches the DISCOVER assessment, designed to identify gifted minority students, and its validity in assessing youth from different ethnic backgrounds. The test requires students to engage in a variety of activities designed to measure spatial, linguistic, logical-mathematical, and personal intelligences. Students worked in groups of approximately five on each of the different types of activities. Observers

took notes and discussed their ratings for each student, focusing on processes and strategies students used while problem solving. Students who received the highest ratings on two activities were labeled gifted. To examine the relationship between the DISCOVER assessment and Gardner's theory of multiple intelligences, various analyses were conducted. There were strong correlations between the various measures. The researchers thus concluded that DISCOVER was a culturally bias-free measure and had the potential for reducing the underrepresentation of minorities in programs for gifted students.

WEB LINK: <http://joa.sagepub.com/content/14/1/30.short>



Literacy, Mathematics, and Science

The Ganado Learning Arts Development (GLAD) Project

Boloz, S. A. (1999). The GLAD project. In D. Chavers (Ed.), *Exemplary programs in Indian education* (3rd ed., pp. 46–50). Albuquerque, NM: Native American Scholarship Fund, Inc.

The Ganado Learning Arts Development (GLAD) project integrates the writing process, dialogue groups, literature study, hands-on activities, relevant learning experiences, and thematic cycles into a child-centered curriculum that requires school staff to set long-range goals and devote time and energy to encouraging positive literacy skills. A total of 475 kindergarten through 2nd-grade students from Navajo families living in primarily low-income communities in northeastern Arizona participated in a study of the effects of participating in this initiative. The number of books read at home was used as a primary outcome measure, and standardized student reading scores, attendance rates, motivation, and student involvement in activities were used as secondary outcome measures. Before the school implemented the GLAD project, standardized test scores were relatively low and stable. After GLAD implementation, students made dramatic improvements in academics and behavior. Standardized reading comprehension scores showed a 19-point increase over five years. Students who stayed in the program were 5–10 normal curve equivalents ahead of those students who moved in and out of the program. Reading achievement was correlated with

participation in the at-home reading program and was affected by the commitment of the teacher to literature study and the writing process. Students read over 42,000 books at home the first year. By the fifth year, students were reading a total of 141,361 books at home. Student surveys indicated that students liked reading, and parent surveys found that parents liked the approach.

WEB LINK: <http://files.eric.ed.gov/fulltext/ED445845.pdf>

Improving Elementary American Indian Students' Math Achievement With Inquiry-Based Mathematics and Games

Stone, J., & Hamann, E. T. (2012). Improving elementary American Indian students' math achievement with inquiry-based mathematics and games. *Journal of American Indian Education*, 51(1), 45–66.

This study focused on the extent to which inquiry-based mathematics strategies were being consistently implemented in three 5th-grade classrooms at K–5 elementary schools with substantial Native American student populations. Two approaches for examining student achievement were utilized. Test results of Native American 5th-grade students from three schools were compared with test results of Native American 5th-grade students at a fourth school considered by district leadership to be an exemplar of inquiry-based mathematics instruction. The district achievement gap was also compared to the state achievement gap. The schools



implemented inquiry-based and cognitively guided instruction by using mathematics teacher leaders in buildings and making graduate courses available. Cognitively guided instruction (CGI) is a method of teaching that involves problem solving and sense-making. This method is linked to the real-life experiences of students and does not have typical classroom time constraints. Technical Education Research Centers (TERC) Investigations in Number, Data, and Space curricular materials were used. Job-embedded professional development was provided, and teacher leaders met on a weekly basis with teachers. Ethnographic methodologies provided some evidence that implementation occurred as intended. While the district achievement gap declined by 11 percent, the state achievement gap rose by 4 percent. Analysis comparing the higher-achieving school with the lower-achieving schools suggested that the largest difference between them was the expectation in the higher-achieving school that students would play 10 mathematics games per week as homework and that students were individually held accountable for meeting this expectation.

WEB LINK: <http://digitalcommons.unl.edu/teachlearnfacpub/111>

Math in a Cultural Context: Two Case Studies of a Successful Culturally Based Math Project

Lipka, J., Hogan, M. P., Webster, J. P., Yanez, E., Adams, B., Clark, S., & Lacy, D. (2005). *Math in a cultural context: Two case*

studies of a successful culturally based math project. Anthropology & Education Quarterly, 36(4), 367–385.

This study explores the effects of implementing Math in a Cultural Context (MCC) curriculum. Two case studies of novice 6th-grade teachers (one a cultural insider and the other an outsider) illustrate how each taught MCC. The two teachers participated in the study as comparison teachers and later as treatment teachers. Both teachers implemented the MCC curriculum, a supplemental elementary school mathematics series created through collaboration between educators, Yup'ik elders, teachers, mathematicians, and Alaska school districts. Teachers were observed, videotaped, and interviewed. After participating in the training, a teacher was notably more likely to encourage students to use multiple strategies to solve problems and to foster classroom discussion. One teacher noted that students took more control of their learning after the intervention and she was more comfortable relinquishing control. The teacher felt that the classroom held more promise for long-term mathematical conceptual understanding and talk, and level of engagement in the classroom was higher after the intervention. After participating in the project, the second teacher reported relinquishing control of communication, fostering student inquiry, and allowing students to construct meaning together. The modules provided by the program gave her a framework for mathematics content that she previously did not have.



The Efficacy of CREDE’s Standards-Based Instruction in American Indian Mathematics Classes

Hilberg, R. S., Tharp, R. G., & DeGeest, L. (2006). The efficacy of CREDE’s standards-based instruction in American Indian mathematics classes. *Equity and Excellence in Education, 33*(2), 32–40.

This study examined the effects of implementing a standards-based instructional method, designed by the Center for Research on Education, Diversity & Excellence (CREDE), on the achievement of at-risk American Indian 8th graders studying mathematics. Thirty-one 8th-grade mathematics students from two mathematics classes at a reservation middle school in the southwestern United States participated in this study. All participants were American Indian and ranged in age from 13 to 16 years. Groups were randomly assigned to two 107-minute block classes with an 8th-grade pre-algebra teacher who was trained by CREDE through several professional development sessions, which included instructional strategies centered around student-directed activities and modeling and demonstration. Results indicated that students instructed in a manner consistent with CREDE’s standards had greater achievement than students instructed with traditional methods. However, results were not statistically significant.

Cultural Processes in Science Education: Supporting the Navigation of Multiple Epistemologies

Bang, M., & Medin, D. (2010). Cultural processes in science education: Supporting the navigation of multiple epistemologies. *Science Education, 94*(6), 1008–1026.

Researchers hypothesized that American Indian students would be more engaged in science at school if they viewed it as relevant and useful in their communities. Twenty-four American Indian students participated in case studies for this project to test this hypothesis. Curricular units were developed by rural and urban American Indian community-based design teams. The curricula were relationally driven, place-based, and problem-based, involving meaningful interventions focused on local ecosystems. Community-based summer science programs were developed and implemented to help students acquire skills and Indigenous scientific knowledge. Pre/post student interviews explored content knowledge, conceptions of the nature of science, and associated motivations for participating in and identifying with science. Researchers found that involvement of community members in the program and the explicit use of American Indian orientations in science-related practices served as a strong signal to American Indian students that school science applies to all people. Researchers found shifts in student reports of their sources of knowledge, along with an increase in student agreement with the statement, “My tribe has been doing science for a long time.”

WEB LINK: <http://groups.psych.northwestern.edu/medin/documents/BangMedin2010ScienceEd.pdf>



A Comparison of Integrated Outdoor Education Activities and Traditional Science Learning

Zwick, T. T., & Miller, K. W. (1996).

A comparison of integrated outdoor education activities and traditional science learning. *Journal of American Indian Education*, 35, 1–9.

This study examines the relative effects of participating in outdoor-based versus classroom-based science education experiences for American Indian students. A new activity-based service program was developed by 18 resource people from industry, city and county libraries, and state and federal agencies; 3 staff members from Montana State University in Billings; and 17 teachers, 3 principals, and 4 supervisors/coordinators from the Hardin School Districts 17-H and 1. The project served 360 students, including 198 American Indians. Program evaluation was conducted by selecting two 4th-grade classes of similar characteristics and size from the population of 4th-grade classes within the Hardin School Districts. The treatment class used the new activity-

based program, while the comparison group class used the textbook-based program that was in place before the development of the activity-based program. California Achievement Test (CAT) scores were reported both as a composite score and as individual scores in the science sub-disciplines of botany, zoology, ecology, chemistry, physical science, and earth science. A comparison of science scores between the treatment and comparison group classes showed significantly greater gains by the students in the treatment class. However, the science scores of the non-Native students in the treatment and the comparison group classes showed no significant difference, suggesting that non-Native students learned, or were taught equally well, in either of the learning environments. American Indian and non-Native students in the treatment class performed equally well over all the science sub-disciplines. This finding also indicated that the American Indian students and the non-Native students performed equally well in cognitive science understanding as a result of using activity-based science strategies.



Language and Culture

Teachers' Cultural Knowledge and Understanding of American Indian Students and Their Families: Impact of Culture on a Child's Learning

Ingalls, L., Hammond, H., Dupoux, E., & Baeza, R. (2006). Teachers' cultural knowledge and understanding of American Indian students and their families: Impact of culture on a child's learning. *Rural Special Education Quarterly*, 25(1), 16–24.

This descriptive study included seven teachers who participated in focus group discussions concerning the cultural sensitivity of educational practices used in the reservation school system. All teachers were in graduate school and worked in a reservation school. Discussions took place weekly for 16 weeks. Teachers often noted the differences they found in their pre-service training, their graduate-level textbooks, and their actual experiences in the classroom. These points of disjuncture became the topics of the final weeks of the course. An emerging theme was that many of the practices learned in pre-service training or from textbooks were incompatible with the practices, values, and beliefs of their students. Findings from this study suggested that teachers in reservation schools may be using typical teacher communication methods, and these may not be culturally sensitive to the students in the classrooms.

Does Cultural Programming Improve Educational Outcomes for American Indian Youth?

Powers, K., Potthoff, S., Bearinger, L. H., & Resnick, M. D. (2003). Does cultural programming improve educational outcomes for American Indian youth? *Journal of American Indian Education*, 42(2), 17–49.

The goal of this project was to determine whether attempts to increase the cultural continuity of schooling through cultural-based programming led to increased parental involvement in school, higher quality of instruction, greater student motivation, and improved school climate. Two hundred-forty American Indian students aged 9 to 18 and living in urban neighborhoods participated. Students were either enrolled in a culturally based after-school program, which included sports and recreational activities, academic tutoring, social skill development, and exercises in substance use resistance skills, or they were selected from public school enrollment records as part of a comparison group. Students completed surveys about alcohol, tobacco, and other drugs; the Indian Culture and Values Survey; and the Urban Indian Youth Health Survey. Twelve scales were created, of which 6 were significantly correlated with cultural programming, including: achievement, school presence and participation, motivation, home school collaboration, quality of instruction, and school personnel supportiveness. Supportive school personnel and safe and drug-free schools were the most important factors



affecting educational outcomes, followed by cultural programming. The variables that influenced the relationship between cultural programming and educational outcomes included school climate, parental involvement, quality of instruction, and achievement motivation. The teacher supportiveness scale was much more important than the “safe and drug-free” scale, indicating that students’ perceptions of teacher supportiveness were a major contributing factor to their perception of school climate. Student motivation and quality of instruction also moderately affected outcomes. Ability and prior achievement had negligible effects on educational outcomes and on student motivation to learn when analyses included the factors mentioned.

Traditional Culture and Academic Success Among American Indian Children in the Upper Midwest

Whitbeck, L. B., Hoyt, D. R., Stubben, J. D., & LaFromboise, T. (2001). Traditional culture and academic success among American Indian children in the upper Midwest. *Journal of American Indian Education, 40*(2), 48–60.

This study explores the relationship between enculturation and traditional school success in 196 5th- through 8th-grade American Indian students. Enculturation was defined as involvement with traditional activities, identification with American Indian culture, and involvement in and importance of traditional spirituality. Participants were interviewed after completing surveys. Findings demonstrated maternal warmth, extracurricular activities, enculturation, and self-esteem were positively related to school

success. Enculturation was not related to self-esteem in this study.

From a Place Deep Inside: Culturally Appropriate Curriculum as the Embodiment of Navajo-ness in Classroom Pedagogy

Yazzie-Mintz, T. (2007). From a place deep inside: Culturally appropriate curriculum as the embodiment of Navajo-ness in classroom pedagogy. *Journal of American Indian Education, 46*(3), 72–93.

Through interviews with three Navajo teachers, this study explores what culturally appropriate curriculum and pedagogy looks like in the classroom. Teachers were asked to define culture and discuss what they believed was appropriate curriculum for all youth. Classroom observations allowed the researcher to connect teacher philosophy and classroom practices. The author proposes that both culturally appropriate curriculum and culturally appropriate pedagogy are needed for teachers to be effective. The pedagogy should include an instructional plan, a personal history, and a degree demonstrating cultural knowledge. These anecdotal stories suggest that implementing a culturally appropriate curriculum and pedagogical style involves bringing one’s whole self to the classroom, re-learning the student’s language, knowing and living the cultural traditions, and knowing the traditional knowledge and stories.

WEB LINK: https://jaie.asu.edu/sites/default/files/463_2007_6_yazzi-mintz.pdf



Navajo Culture and Family Influences on Academic Success: Traditionalism Is Not a Significant Predictor of Achievement Among Young Navajos

Willeto, A. A. A. (1999). Navajo culture and family influences on academic success: Traditionalism is not a significant predictor of achievement among Navajo youth. *Journal of American Indian Education, 38*(2), 1–24.

Participating in this study were 451 Navajo students attending 11 high schools in the eastern and central regions of the Navajo reservation during the 1991/92 school year. Students completed questionnaires consisting of measures of ritual behavior, cultural conventions (e.g., feelings about Navajo heritage, parent expectations about involvement in the culture, and being respected in the Navajo community), and language use. Student responses were analyzed to determine the measures that predicted academic outcomes (i.e., self-reported grades, school commitment, and college aspirations). A random sample was generated from student rosters and the data were gathered at the schools. Overall, a traditional orientation to Navajo culture was modestly correlated with grades, school commitment, and college aspirations of youths in the study. Girls had stronger academic orientations than boys. Personal investment in cultural conventions of the Navajo way was found to be strongly correlated with evidence of an achievement orientation, while involvement in Navajo rituals was found to be related at a lower level. Native language use was negatively related to academic performance, school commitment, and college goals. However, only the measure of cultural conventions was

statistically significant when family processes and origins were added to the analysis. Youths involved in cultural conventions were more apt to be oriented toward college when compared to other adolescents, but this modest effect was accounted for by family influences. The college aspirations of parents were strongly related to student orientation to college.

English Language Acquisition and Navajo Achievement in Magdalena, New Mexico

Smallwood, B. A., Haynes, E. F., & James, K. (2009). *English language acquisition and Navajo achievement in Magdalena, New Mexico*. Washington, DC: Center for Applied Linguistics.

The school district in Magdalena, New Mexico, has adopted instructional practices that allow students to improve their English and Navajo language skills. Through a heritage language education program, students of Navajo heritage, who represented half of the district's student body, receive instruction in English as a second language (ESL) and in Navajo language and culture during the regular school day. Participants were ESL teachers, Navajo teachers, and K–12 students who attended a rural New Mexico school district and spoke the Alamo dialect of the Navajo. Professional development on second language acquisition and effective instructional strategies for English language learners was provided to teachers and paraprofessionals by the Center for Applied Linguistics staff. Peer coaching for ESL training was also implemented. Outreach activities for parents, elders, and other members of the Alamo Navajo community were offered on the reservation rather than



at the school. A case study approach was employed to examine implementation and outcomes. Key findings from this study included students' increased sense of belonging, improved proficiency in English, and increased scholarship attainment. Additionally, mean scores improved on standardized reading, mathematics, and

science tests for Navajo students in 3rd through 9th grade. At least 30 percent of the Navajo students achieved "nearing proficient" status in reading, mathematics, and science in 2007 across grade levels and 94 percent of Navajo students in grade 9.

WEB LINK: <http://www.cal.org/heritage/research/bib/indigenous.html>



Behavioral and Social-Emotional Interventions

Social Skills Efficacy and Proactivity Among Native American Adolescents

Turner, S. L., Conkel, J. L., Reich, A. N., Trotter, M. J., & Siewart, J. J. (2006). Social skills efficacy and proactivity among Native American adolescents. *Professional School Counseling, 10*(2), 189–194.

The purpose of this study was to investigate how Native American adolescents understand and identify social skills and how these skills were associated with proactive attitudes and behaviors. Participants included 212 Native American students with an average age of 13 years, representing 14 different tribes, and from two urban public schools. The study used self-report scales including the Perceived Social Self-Efficacy Scale to assess social behaviors and the Proactivity Skills for the New Economy to measure constructs of proactivity. Findings indicated that six types of social skills emerged from the data including prosocial skills, leisure skills, interpersonal skills, group skills, social persistence, and leadership skills. Findings also showed that the students had significant strength differences in social skills self-efficacy. Girls had greater prosocial skills efficacy than boys. It was suggested that school counselors incorporate community and tribal values, traditions, culture, and lifeways (i.e., ways of living, such as subsistence, including cultural practices and protocols) of students in order to strengthen Native American students' social skills. It was

also suggested that counselors or teachers use discussion groups in order to strengthen students' interpersonal and group skills and have students involved in leadership groups for leadership skills. Findings are limited to Native American students in urban areas.

WEB LINK: <http://www.jstor.org/stable/24029163>

Succeeding in School: The Online Reflections of Native American and Other Minority Students

Zyromski, B., Bryant Jr., A., & Gerler Jr., E. R. (2011). Succeeding in school: The online reflections of Native American and other minority students. *The Journal of Humanistic Counseling, 50*(1), 99–118.

This study used a phenomenological approach to explore and understand the school experiences of Native American students. Data analyses found that Native American students are academically similar to other students through the 4th grade but experience a drop in their achievement motivation around the 7th grade. This is at a time when Native American students see themselves as different and realize their "Indianness." This study used an online program titled Succeeding in School to identify barriers or supports of Native American students in relation to their academic success in school. Three classes of 4th- and 5th-grade students (139 participants) accessed the program once per week over



a 10-week period. Students responded to visual and written prompts that encouraged them to explore and journal “how to be comfortable and responsible in their school environment, how to improve their environment by listening and asking for help, and how to focus on the bright side of the environment to stay positive about school.” Findings showed that students were fearful of tests, of poor academic results, and of punishment. Students were unsure of how to overcome fears but expressed the desire to work on their fears. Based on these findings, it was suggested that school counselors address these types of concerns with students.

Effects of a Developmentally Based Intervention With Teachers on Native American and White Early Adolescents’ Schooling Adjustment in Rural Settings

Hamm, J. V., Farmer, T. W., Robertson, D., Dadisman, K. A., Murray, A., Meece, J. L., & Song, S. Y. (2010). Effects of a developmentally based intervention with teachers on Native American and White early adolescents’ schooling adjustment in rural settings. *The Journal of Experimental Education, 78*(3), 343–377.

This study reports the effectiveness of a teacher professional development intervention aimed at improving early adolescent school adjustment. Students were randomly assigned to intervention and control conditions, and measures of their social, behavioral, and academic adjustment were compared. The sample consisted of 165 5th-, 6th-, and 7th-grade students (92 boys, 73 girls) from 10 classrooms. The sample was 55.2 percent White and

44.8 percent Native American. Across schools, on average, 64.6 percent of all students were eligible for free or reduced-price lunch. In the schools randomly designated as intervention sites, all grade-level teachers for the targeted grades took part in professional development designed to help teachers understand the nature of developmental change during early adolescence and its impact on student academic, social, and behavioral adjustment. In the control schools, teachers carried out their normal activities during the intervention year and did not take part in any of the intervention activities. Student data collection involved student adjustment survey completion at three points in time. It was found that Native American students experienced greater intervention benefits than did their White peers. After controlling for previous year achievement and demographic variables, students’ end-of-year achievement in the intervention schools was significantly higher than that in control schools.

Native American Healing Practices and Counseling

Rybak, C. J., Eastin, C. L., & Robbins, I. (2004). Native American healing practices and counseling. *The Journal of Humanistic Counseling Education and Development, 43*(1), 25–32.

This article reviews a graduate-level class offered to future counselors to familiarize them with perspectives of Native American healing practices. Unlike conventional Western healing practices, Native Americans perceive human development and counseling in a circular and holistic model. Both in and out of class, students created their own



medicine wheels, chose new names based on their characteristics and nature, observed pipe ceremonies, attended powwows, and participated in other Native American traditions in order to learn more about their healing practices and ideology. The experiential teaching method was coupled with group participation, discussion, readings, and individual work in order to teach and encourage the students to reflect on the various actions. The culminating activity was the creation of a shield or “mandala” by each student to reflect on their learning experience. The teaching of this course included direct involvement with the Native Americans and their practices. Students reported the approach felt more respectful and sensitive to the culture.

Exploring Culturally-Based Drug Resistance Strategies Used by American Indian Adolescents of the Southwest

Okamoto, S. K., Hurdle, D. E., & Marsiglia, F. F. (2001). Exploring culturally-based drug resistance strategies used by American Indian adolescents of the southwest. *Journal of Alcohol and Drug Education*, 47, 45–59.

This study concentrated on identifying the drug resistance behaviors of American Indian students. The qualitative study used focus groups to collect data from 19 Native American students between the ages of 12 and 15 who attended a semi-urban middle school. The semi-structured focus group protocol included questions related to substance use and delinquency. Students were asked to share their experiences using a “story-telling” format. Three primary drug and alcohol resistance strategies were identified, including “redirecting the

discussion away from the topic of drugs or alcohol; avoiding or leaving the situation; and saying ‘no’ to offers.” It was suggested that the findings have implications for Native-specific drug prevention programs since the strategies students identified were chosen to be used in “problematic situations.” Generalizability of findings may be limited since the study used a small sample of students and all members of one southwest American Indian tribe.

American Indian Youths’ Perceptions of Their Environment and Their Reports of Depressive Symptoms and Alcohol/Marijuana Use

Nalls, A. M., Mullis, R. L., & Mullis, A. K. (2009). American Indian youths’ perceptions of their environment and their reports of depressive symptoms and alcohol/marijuana use. *Adolescence*, 44(176), 965–978.

This study focused on the relationships between American Indian youths’ alcohol/marijuana use and experience of depressive symptoms with their sense of safety in their school and neighborhood environments. Data were drawn from an existing survey data set on adolescent well-being that was conducted with middle and high school adolescents who lived on American Indian reservations. Survey items were related to antisocial behavior, risk, and protective factors at the individual, peer, school, community, and family levels. A total of 148 students took the survey, with 97 percent of the students self-identified as American Indian. The only significant predictor of depressive symptoms was neighborhood safety. Neighborhood safety was also a significant predictor for alcohol use and marijuana use. School safety was



a significant predictor for marijuana use. It was suggested that perceptions about one's neighborhood and school are important to American Indian adolescent development. Neighborhood drug sales and crime can affect adolescents' sense of safety and may partially explain alcohol/marijuana use and the experience of depressive symptoms.

Promoting School Achievement Among American Indian Students Throughout the School Years

Powers, K. (2005). Promoting school achievement among American Indian students throughout the school years. *Childhood Education: Infancy through Early Adolescence*, 81(6), 338–342.

Researchers have reported that American Indian students perform academically in the average range up until grade 4; by grade 10, they are, on average, three years behind their non-Native peers. Some researchers equate the decline in achievement to incongruence between Native culture and school culture. This research project examined the correlation between 10 education variables and students' Native culture. Surveys were administered to 240 urban American Indian students ages 9 to 18 from two large urban cities. Survey items covered student perceptions about achievement, home-school collaboration, and achievement motivation and students' affiliation with their culture, which included Indian values, tribal language, and participation in traditional activities. Survey findings showed a significant negative correlation between age and grades; a significant negative correlation between achievement motivation and age; and a negative correlation between age and

teacher supportiveness. No difference was found between younger and older students' reports of parent involvement in school, and most students reported that they learned about culture at school. Findings also revealed that older students reported more alcohol and drug use and more fighting than the younger students. It was recommended that teachers strengthen their interpersonal relationships with American Indian students, which promote a sense of belonging, develop academic motivation, and reduce academic risk behaviors. It was also suggested that teachers receive training on Native cultural competencies. Additionally, American Indians should be monitored for underachievement, and individualized intervention plans should be implemented when students start to fall behind in achievement.

Attempted Suicide and Associated Health Risk Behaviors Among Native American High School Students

Shaughnessy, L., Doshi, S. R., & Jones, S. E. (2004). Attempted suicide and associated health risk behaviors among Native American high school students. *Journal of School Health*, 74(5), 177–182.

This article presents data from the 2001 Bureau of Indian Affairs (BIA) Youth Risk Behavior Survey (YRBS) and investigates associations between attempted suicide among high school students and unintentional injury and violence behaviors, sexual risk behaviors, tobacco use, and alcohol and other drug use. The YRBS was administered to students in grades 9–12 attending BIA-funded schools. Sixteen percent of BIA-high school students attempted suicide during the 12 months



preceding the survey. Females were more likely than males to report attempting suicide. Compared to students who did not attempt suicide, students who did report attempted suicide were more likely to engage in other risky behaviors. This study revealed that American Indian students who have tried to commit suicide are also more likely than their peers to engage in unintentional injury

and violent behaviors, sexual risk behaviors, tobacco use, and alcohol and other drug use. This was true for both males and females. Implications of this study include incorporating suicide prevention messages in other health risk behavior prevention programs and making this message culturally relevant for all.

Parent, Family, And Community Involvement

The Traditional Tribal Values of Ojibwa Parents and the School Performance of Their Children: An Exploratory Study

Coggins, K., Radin, N., & Williams, E. (1996). *The traditional tribal values of Ojibwa parents and the school performance of their children: An exploratory study*. Ann Arbor, MI: University of Michigan.

This study explored the relationship between the mothers' and fathers' levels of holding traditional values and their children's academic and social functioning in school. Using a questionnaire, 17 families were interviewed. Families included at least one child in school. The levels of holding traditional values were determined by an index created by Arthur Le Blanc, and the items focus on sharing, other-centered harmony, circular time, non-interference, patience, non-confrontation, and view of family. Report cards were used to determine the academic functioning of the child, and other scales were used to determine the social-emotional well-being of the youth. Thirty-nine of the total 200 possible correlations were significant. Thirty-five of the correlations showed a relationship with positive child outcomes. Mothers' cultural values that contribute to their child's success in school were sharing, other-centeredness, harmony, non-interference, and family views.

WEB LINK: <http://eric.ed.gov/?id=ED400116>

Cultural and Parental Influences on Achievement Among Native American Students in Barstow Unified School District

Leveque, D. M. (1994, March). *Cultural and parental influences on achievement among Native American students in Barstow Unified School District*. Paper presented at the National Meeting of the Comparative and International Educational Society, San Diego, CA. (ERIC Document Reproduction Service No. ED382416)

This study examined Native American students' school performance, the involvement of Native American parents in the school life of their children, and assimilation patterns of a specific group of Navajo families who have lived in Barstow, California, for at least three generations. A case study approach used participant observation, ethnographic interview, and documentary analysis to determine trends. Native American families in Barstow, California, who were the descendants of Navajo and Pueblo railroad workers participated in this two-year case study. Achievement data, dropout and graduation rates, honor roll information, and postsecondary career information were analyzed. Analysis of norm-referenced test data indicated that Native American students (K-12) in Barstow Unified School District (BUSD) scored as well as or better than the Caucasian subpopulation in all areas except



2nd-grade reading in 1992 and 3rd-grade reading in 1993. Between 1991 and 1993, an examination of records from 22 students indicated that the dropout rate for Native American students was 10 percent, and the honor roll rate was 30 percent. At least 36 percent of Native American students who attended BUSD between 1988 and 1993 continued their education past high school. The strongest link between educational opportunities and Native American student achievement was found in the involvement of parents in the design and implementation of programs for students. The strongest elements contributing to Native American student achievement were parental involvement and family acculturation patterns.

WEB LINK: <http://files.eric.ed.gov/fulltext/ED382416.pdf>

Families and Schools Together: An Experimental Analysis of a Parent-Mediated Multi-Family Group Program for American Indian Children

Kratochwill, T. R., McDonald, L., Levin, J. R., Young Bear-Tibbetts, H., & Demaray, M. K. (2004). Families and schools together: An experimental analysis of a parent-mediated multi-family group program for American Indian children. *Journal of School Psychology, 42*(5), 359–383.

This study examined the Families and Schools Together (FAST) program, an activity-based collaborative curriculum that provides supports for at-risk children. Parents participate in FAST program activities and become aware of relationships among and between the social ecology of child

development, family stress, family systems, social support, behavioral parenting techniques, and stress, isolation, and poverty. Over three years, seven multi-family group cycles of FAST were implemented, each lasting eight weeks. Fifty pairs of kindergarten, 1st-, and 2nd-grade American Indian students at three reservation or public schools in northern Wisconsin were assessed, matched, and then randomly assigned to either the FAST or non-FAST conditions. Of the 50 families that attended FAST meetings at least once, 40 graduated (80 percent) from the seven FAST cycles. Pretest, posttest, and 9-to-12-month follow-up data were collected by American Indian staff and university students on multiple indicators of academic and behavioral performance, including parent and teacher Child Behavior Checklists (CBCLs) and measures of academic achievement. Key findings for this study include statistically significant teacher-reported differences between FAST and non-FAST students' academic competence at the one-year follow-up assessment. On the immediate posttest, statistically significant differences were found on the Aggressive Behavior scale of the teacher-rated CBCL and on the parent-rated Withdrawn scale of the same instrument favoring FAST participants. One-year follow-up assessment data found that teacher ratings on the Social Skills Rating Scale (SSRS) revealed that FAST participants had exhibited relatively greater improvement in their academic competence.



An Exploratory Study of Cultural Identity and Culture-Based Educational Programs for Urban American Indian Students

Powers, K. M. (2006). An exploratory study of cultural identity and culture-based educational programs for urban American Indian students. *Urban Education, 41*, 20–49.

This study utilized surveys administered to a sample of 240 urban American Indian students, ages 9 to 18, and explored the role of culture-based education (CBE) in influencing school engagement and achievement. Authors found that culture-based programming had a mostly indirect effect on engagement and achievement that was largely mediated by conditions

such as a safe and positive school climate, parental involvement in school, and quality of instruction. Students who identified closely with their Native culture, as indicated by a high score on the culture scale, displayed statistically significant increases on measures of school completion, presence and participation in school, quality of instruction, and motivation. The authors concluded that students who already identified with their culture experienced the greatest benefit from association with CBE. In addition, they found that American Indian students benefited from factors that tended to support learning for all students, such as constructive school climate, parental involvement, and quality teaching.

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