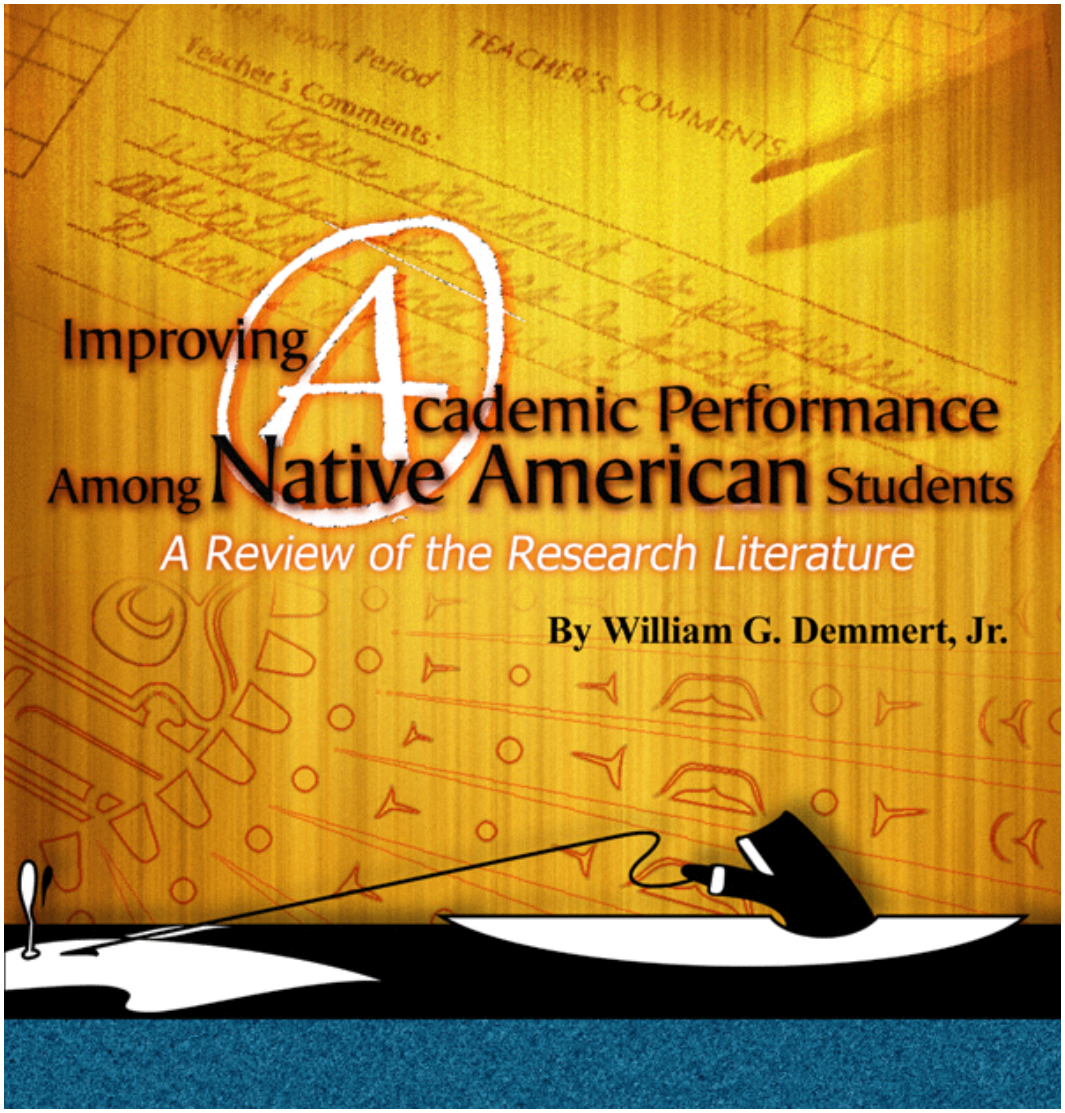

Report Period
TEACHER'S COMMENTS
Teacher's Comments:
Improving Academic Performance
Among Native American Students
A Review of the Research Literature
By William G. Demmert, Jr.

Improving Academic Performance among Native American Students

A Review of the Research Literature

by
William G. Demmert, Jr.

ERIC
Clearinghouse on Rural Education and Small Schools
Charleston, WV

ERIC
Clearinghouse on Rural Education and Small Schools
AEL, Inc.
PO Box 1348
Charleston, WV 25325-1348

December 2001

OBTAINING THE FULL TEXT OF MATERIALS CITED IN ERIC

ERIC DOCUMENTS (Citations identified by an ED number) are available in microfiche form at libraries or other institutions housing ERIC Resource Collections worldwide; to identify your local ERIC Resource Collection, connect to: http://www.ed.gov/BASISDB/EROD/eric/SF.

Many libraries now offer E*Subscribe, which grants their patrons free electronic access to some ERIC documents. Ask your local librarian if they offer this valuable service. If they do not, documents are also available selectively in a variety of formats (including microfiche, paper copy, or electronic) from the ERIC Document Reproduction Service for a fee: telephone 800-443-ERIC, e-mail service@edrs.com, or use the online order form available at http://edrs.com/Webstore/Express.cfm.

ERIC JOURNALS (Citations identified by an EJ number) are available in your local library or via interlibrary loan services, from the originating journal publisher, or for a fee from Ingenta: http://www.ingenta.com/, e-mail ushelp@ingenta.com, or telephone 617-395-4046 or toll-free 800-296-2221.

The ERIC Clearinghouse on Rural Education and Small Schools is operated by AEL, Inc. and funded by the U.S. Department of Education. AEL is a catalyst for schools and communities to build lifelong learning systems that harness resources, research, and practical wisdom. Information about AEL projects, programs, and services is available on our Web site or by writing or calling us. AEL is an affirmative action/equal opportunity employer.

This publication was prepared with funding from the Office of Educational Research and Improvement, U.S. Department of Education, under contract no. ED-99-CO-0027. The opinions expressed herein do not necessarily reflect the positions or policies of OERI, the Department, or AEL.

Table of Contents

Preface and Acknowledgements iv

Foreword v

Introduction 1
Native Education Reform 2

A Review of the Findings 5
Theme 1. Early Childhood Environment and Experiences 5
Theme 2. Native Language and Cultural Programs in Schools 8
Theme 3. Teachers, Instruction, and Curriculum 17
Theme 4. Community and Parental Influences 26
Theme 5. Student Characteristics 29
Theme 6. Factors Leading to Success in College 38
A Summary of What the Research Tells Us 42

Annotated Bibliography 45

Bibliography of Footnoted Material 85

Preface and Acknowledgements

This literature review and annotated bibliography is an expansion of a Center for Research on Education, Diversity, and Excellence (CREDE) project funded by the Office of Educational Research and Improvement (OERI). The original review focused on Native language and cultural programs that supported improved academic performance among Native students. It served as the starting point for this publication, which represents a significant expansion of the original and covers many more topics.

This document also is part of a larger project designed to assess whether Native American students have improved their reading and mathematics scores over the past decade. The quality of the research has not been formally assessed for this report. ERIC and dissertation abstracts were screened and judgments were made about which research reports to include and which to exclude. Some of the work was familiar territory; in other cases, the abstracts were too sketchy to make judgments. In the latter cases, articles and documents were examined to make determinations about including them in the review. A more formal analysis of the quality of these studies will be made and reported on as part of the larger RAND Corporation study focusing on whether Native American students have improved their reading and mathematics scores. The forthcoming RAND study will evaluate National Assessment of Educational Progress (NAEP) data collected by state departments of education and the U.S. Department of Education.

I wish to thank Peter Smith of the Western Washington University Library and Patricia Cahape Hammer of the ERIC Clearinghouse on Rural Education and Small Schools (ERIC/CRESS) for their help in locating dissertations and screening the thousands of ERIC documents reporting studies that show improved academic performance of Native American students. I also wish to recognize the excellent work of Chinca Jung, a student at Western Washington University, for the many hours she spent sorting through hundreds of documents and helping to identify those included in this report and for her exemplary work with the bibliography. ERIC/CRESS staff who helped prepare this review for publication include Susan Voelkel (who wrote many of the abstracts), Robert Hagerman, Velma Mitchell, and Marilyn Slack.

I also wish to thank David Beaulieu, former director of the Office of Indian Education, U.S. Department of Education, Washington DC, for his vision and interest in this project. Thanks also to two anonymous reviewers whose comments greatly improved the quality of this review.

Foreword

There are few people as qualified as William G. Demmert, Jr. to develop this review of literature on "what works," or doesn't work, in effectively educating American Indians, Alaska Natives, and Native Hawaiians. Dr. Demmert is a professor at the Woodring College of Education at Western Washington University in Bellingham, Washington. He previously served as an Irvine Scholar and visiting professor at Stanford University, commissioner of education for the State of Alaska, professor of education and dean of the School of Education and Liberal Arts at the University of Alaska-Juneau, director of Indian Education Programs for the Bureau of Indian Affairs, and deputy U.S. Commissioner at the U.S. Office of Education's Office of Indian Education, Department of Health, Education, and Welfare.

Dr. Demmert has also served on a number of influential committees, task forces, and commissions for the federal government. He was assigned to Senator Ted Kennedy's office, where he worked as an expert in Indian education to help produce the original language for the Senate bill that later became the Indian Education Act of 1972. His more recent involvements have included work on the National Indian Task Force, which worked on Presidential Executive Order 13096 on American Indian and Alaska Native Education; the Indian Nations At Risk Task Force; and the Circle of Advisors for the Smithsonian Institution's National Museum of the American Indian. He recently worked as an advisor to the U.S. Department of Education's National Center for Education Statistics and Office of Indian Education.

Dr. Demmert's involvement in Indigenous education extends beyond North America to include work in the Circumpolar North in Greenland, Norway, and Russia. His interest in Native languages and culture is grounded in boyhood memories of Tlingit elders who spoke the language with each other but not with the youth of his generation. Over the course of three generations (his being the third), he witnessed the Tlingit people—like so many other Native Americans—as they nearly lost their Native language. Since that time, he has helped lead the movement to transform U.S. education policy and practice, so it can help arrest and reverse a trend it did much to create—the loss of a rich and diverse North American cultural and linguistic heritage and the widespread alienation of Native people from the educational establishment.

A Note about the Format of This Review

The literature review includes both footnotes and American Psychological Association (APA)-style author-date citations in the text. The citations in text refer to

studies included in the annotated bibliography and represent articles, reports, and books describing original research studies involving American Indians, Alaska Natives, Native Hawaiians, and other Indigenous groups (e.g., Maori and Canadian First Nations). The citations in footnotes include reports of non-Indian, or mainstream, research and a number of secondary sources such as literature reviews. A separate bibliography for these resources is included at the end of this document, following the more detailed annotated bibliography.

— **Patricia Cahape Hammer,** Director, ERIC Clearinghouse on Rural Education and Small Schools

Introduction

Improving the quality of education for Native American (American Indian, Alaska Native, and Native Hawaiian) students—especially with the intent of improving academic performance—presents a complex challenge for schools serving Native communities. Especially important players in meeting this challenge are Native American educators, researchers, parents, and tribal and political leaders.

Traditional systems of Native American education—used to transfer skills and knowledge from one generation to the next—developed over thousands of years. In these systems, students were not allowed to fail. The family, clan, tribe, and responsible mentors worked with the youth until the information or task was clearly learned. The lessons were an integrated part of daily life and ceremonies, not a separate or isolated activity.

Many of these traditional systems for educating the youth of a tribe are no longer practiced. Dramatic changes in education systems occurred because of a mix of cultural, social, and political interventions that have taken place among all Native peoples. In response, tribal groups recognized that knowledge and technology new to the tribe required mentors from outside the community. Missionaries and church groups first introduced formal educational opportunities outside the tribe by offering religious curricula and exposure to new technology. Beginning with the Treaty of August 14, 1722, some early treaties between eastern colonies and Indian tribes established educational opportunities.

However, not all change was voluntary. In many places, more powerful governments took or assumed responsibility for the education of Native children. With the Act of March 3, 1819, the federal government formally assumed responsibility for the education of Indian children, to prevent the decline and extinction of Indian tribes and to introduce the customs and knowledge of contemporary society. In the Act of March 1, 1873, responsibility for Indians—including their education—was transferred from the War Department to the Secretary of the Interior and a new Bureau of Indian Affairs.[1]

Today, the vast majority of Native students attends state-run public schools, with

---

[1]Deloria, V., Jr. (1975). *Legislative analysis of the federal role in Indian education.* Washington, DC: U.S. Department of Education, Office of Indian Education.

a few tribes operating tribal schools funded through the Bureau of Indian Affairs. Except for the tribal schools, responsibility for the education of Native children and youth has been transferred from the tribes to state agencies, mostly to administrators and other individuals outside the communities or tribes. With this transfer of responsibility, Native students began experiencing high levels of educational failure and a growing ambivalence toward learning traditional tribal knowledge and skills. They often exhibited indifference to formal Western academic learning, as well.

Native Education Reform

After World War II, tribal communities, as well as African Americans and other minorities, began to organize to gain greater self-determination and civil rights.[2] Tribal communities, concerned about the inability of state and federal education agencies to provide an adequate education to Native students, applied pressure to government agencies and Congress to regain some control and responsibility for the education of Native youth. Their efforts resulted in a number of important federal efforts to investigate the status of American Indian and Alaska Native education and to pass legislation to address its inadequacies.

First was the U.S. Senate Report of 1969, *Indian Education: A National Tragedy—A National Challenge*, which provided impetus and guidance for passage of The Indian Education Act of 1972 (PL 92-318 as amended), and, in 1975, for the Indian Self-Determination and Education Assistance Act. Since passage of this legislation, Native efforts to improve the quality of education have focused both on improving their children's traditional knowledge (heritage languages and cultures) and academic performance.[3]

A better understanding of the condition of Native education—and what will be needed to improve it—has been gained since the 1970s. This interest expanded and intensified in the last decade of the twentieth century, culminating in a series of

---

[2]Reyhner, J. (1989). *Changes in American Indian education: A historical retrospective for educators in the United States.* ERIC Digest. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED324228)

[3]U.S. Senate Special Subcommittee on Indian Education. (1969). *Indian education: A national tragedy—A national challenge.* Senate Report No. 91-501. 1969 report of the Committee on Labor and Public Welfare, United States Senate. Washington, DC: U.S. Government Printing Office. (ERIC Document Reproduction Service No. ED034625)

investigations, reports, and initiatives:

- the U.S. Department of Education report, *Indian Nations At Risk: An Educational Strategy for Action. Final Report*, October 1991[4]
- the White House Conference on Indian Education and follow-up report of May 1992[5]
- Executive Order 13096 on American Indian and Alaska Native Education signed by President Clinton on August 6, 1998

Among the activities initiated as a result of the Executive Order was a nationwide effort involving tribal leaders and Native education researchers and professors to develop a "research agenda." The agenda was approved by U.S. Secretary of Education Rod Paige in late 2001.[6] This document is significant because it outlines an agenda guided by Native commitments to self-determination, the perpetuation of Native languages and cultures, and to finding effective ways of educating Native children and youth. In other words, Native peoples once again will design educational systems in which all students will be expected to succeed.

Fortunately, some good groundwork has already been laid. This literature review and annotated bibliography will help readers locate research projects that provide information on factors and programs associated with improved academic performance of Native students. This review began with a search of the Educational Resource Information Center's (ERIC) more than 8,000 document and article abstracts related to American Indian, Alaska Native, Native Hawaiian, and other Indigenous education; master's degree and doctoral dissertations; and other sources of research information on the education of Native America. From these sources, there emerged a limited number of research studies—just over 100—that provide evidence of what works or does not work to improve the academic performance of

---

[4]Indian Nations At Risk Task Force. (1991). *Indian nations at risk: An educational strategy for action. Final report.* Washington, DC: U.S. Department of Education. (ERIC Document Reproduction Service No. ED339587)

[5]White House Conference on Indian Education. (1992). The final report of the White House Conference on Indian Education (Executive Summary). Washington, DC: Author. (ERIC Document Reproduction Service No. ED353124).

[6] Executive Order Working Group, Strang, W., & von Glatz, A. (2001). *American Indian and Alaska Native Research Agenda.* Washington, DC: U.S. Department of Education. Retrieved January 8, 2002, from http://www.indianeduresearch.net/index.htm.

Native students. This group of studies is the primary focus of this review.

This review includes a discussion of the identified research studies organized along six themes (listed below) and brief synopses of the study findings. In addition, ERIC staff have prepared abstracts for an annotated bibliography of the items selected. Many of the documents described here can be obtained in full text from the ERIC system. For information about obtaining documents, see page ii.

A Review of the Findings

The studies were organized into the following themes: (1) early childhood environment and experiences; (2) Native language and cultural programs in schools; (3) teachers, instruction, and curriculum; (4) community and parental influences on academic performance; (5) student characteristics; and (6) factors leading to success in college.

Theme 1. Early Childhood Environment and Experiences

The earliest recognition of the importance of early childhood education programs for American Indians appeared in the federally funded Meriam report of 1928 (Prucha, 2000). Lewis Meriam, an early visionary, realized that creating a healthy environment during a child's early life was important to future well-being.[7]

By the 1970s, the influence of environment on a young child's intellectual development was better understood. Providing good prenatal care, giving children opportunities to explore and satisfy their curiosity, promoting language development, nurturing kinesthetic skill development, and building proper physical and social mother-child relationships were all considered important in promoting a child's general well-being.[8] Major findings of a report on the Kamehameha Early Education Program (KEEP), involving Native Hawaiians, showed that the best predictors of first-grade reading achievement were verbal ability and high reading-readiness scores, and that family background was strongly related to school achievement (Kamehameha Early Education Program, 1974).

In 1976, the most comprehensive report ever produced on early childhood issues among Native children was submitted to the Bureau of Indian Affairs by Herbert Zimiles, project director, and staff of the Bank Street College (U.S. Bureau of Indian

---

[7]Meriam, L., Brown, R. A., Cloud, H. R., Dale, E. E., Duke, E., Edwards, H. R., McKenzie, F. A., Mark, M. L., Ryan, W. C., Jr., & Spillman, W. J. (1928). *The problem of Indian administration.* Report of a survey made at the request of Honorable Hubert Work, Secretary of the Interior, and submitted to him February 21st. Baltimore, MD: Johns Hopkins Press.

[8]Demmert, W. G., Jr. (1974). *Critical issues in Indian education: 1972-1973.* Ann Arbor, MI: University Microfilms.

Affairs, 1976). This document includes information on economic conditions; health, nutrition, social, and emotional problems and issues; mental health issues; early development; and education. Primarily focusing on early childhood education and parenting, these researchers explored the interrelated problems Indian reservations and communities faced and their impact on learning. The case studies and other research included in this report point to the critical need for parent-focused early childhood education programs as an avenue for developing the whole child, including improved cognition and academic performance.

This line of study was continued into the 1980s. Macias (1987) reported findings of an ethnographic study of Papago children in a tribal Head Start program, focusing particularly on how Papago teachers helped children bridge the cultural discontinuity between their homes and the schools, resulting in academic benefits in their later schooling. Swisher and Deyhle (1989) reported that the physical, social, and cultural environments in which young children mature significantly influence their behavior, learning preferences, and other characteristics later in life. A policy study published during this same period was produced by the Alaska Governor's Interim Commission on Children and Youth. This influential report laid out a comprehensive strategy for providing early childhood education for all of Alaska's children and identified the critical need for more Native teachers and a culturally based curriculum for Alaska Native children.[9]

More recent studies examining the effects of early environment and educational programs on the intellectual development of Native children are scarce. In contrast, the body of research on these topics for non-Native groups is growing in significance and volume. For example, a review of 36 studies provided evidence that early childhood programs can effect short-term benefits in intelligence quotients and long-term benefits in school achievement, grade retention, placement in special education, and social adjustment among low-income families.[10] Related results come from a national evaluation of tribal Even Start Family Literacy programs, which found that comparatively greater numbers of participating children performed at their expected developmental level, even into the primary grades (Levin, Moss, Swartz, Khan, &

---

[9]Alaska Governor's Interim Commission on Children and Youth. (1988). *Our greatest natural resource: Investing in the future of Alaska's children.* Juneau, AK: Governor's Interim Commission on Children and Youth, Office of the Governor.

[10] Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children*, *5*(3), 25-50.

Tarr, 1997). In a 2-year project with the children and families of the Oklahoma Seminole Nation Head Start, researchers studied the impacts of a program meant to encourage emerging mathematics literacy by working with families. Participants in the program scored higher on kindergarten screening tests than students in prior years (Medearis, 1996).

Brain researchers have looked for the biological bases of these findings in current studies on the development of the brain and the effects of environment on cognition. The information on cognitive development tells us that early experiences have a significant impact on the intelligence of a young child.[11] The research suggests that early experiences build synaptic connections in the brain, and the more connections created the smarter the child. Other research suggests that physical activity of young children creates a glucose that feeds the brain and is a necessary requirement for cognitive development.[12]

Although research on the influences of early childhood education and development on Native children is limited, the studies that exist support mainstream studies. Consequently, it is possible to infer that efforts to improve educational outcomes must begin by paying attention to this critical period of a child's life. Ensuring a challenging and stimulating early environment for young children is associated with cognitive development and, later, achievement in the formal school setting. If improving academic performance for all Native children is a priority, we must take these findings seriously and pay attention to this period in a Native child's life.

Listing of findings. Abstracts of these reports are in the annotated bibliography at the end of this literature review.

- The physical, social, and cultural environments in which a person grows and matures significantly influence behaviors, learning preferences, perceptions, and other human characteristics (Swisher & Deyhle, 1989).

---

[11]Bowman, B. T., Donovan, M. S., & Burns, M. S. (eds.). (2001). *Eager to learn: Educating our preschoolers*. National Research Council, Committee on Early Childhood Pedagogy, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[12]Begley, S. (1996, February 19). Your Child's Brain. *Newsweek*, 55-62; see also Sousa, D. A. (1998, December 16). Is the Fuss About Brain Research Justified? *Education Week, 18*(16), pp. 35, 52.

- At the Papago Early Childhood Head Start program Papago teachers developed their own "hidden curriculum" geared to reduce the negative impact of discontinuity. These teachers incorporated Papago experiences, values, and ways of relating into discontinuous activities and experiences and thereby increased student engagement, compliance, and later success in school (Macias, 1987).
- Parents were found to be more comfortable receiving services in their own homes than in public settings, and students who received services performed at higher levels of development, even into the primary grades (Levin, Moss, Swartz, Khan, & Tarr, 1997).
- In a 2-year research project with the children and families of the Oklahoma Seminole Nation Head Start, standards-based packets of simple ideas and easy at-home activities meant to encourage emerging math literacy were distributed to families on a monthly basis, with family training provided at a preschool center and through home visits. Participants in the program scored higher on kindergarten screening tests than students in prior years (Medearis, 1996).
- Major findings of a report on the Kamehameha Early Education Program show that the best predictors of first-grade reading achievement are verbal ability and reading-readiness scores, and that family background is strongly related to school achievement (Kamehameha Early Education Program, 1974).
- A study on economic conditions; health, nutrition, social, and emotional problems and issues; mental health issues; early development; and education explored the interrelated problems Indian reservations and communities faced and their impact on learning (U.S. Bureau of Indian Affairs, 1976).

Theme 2. Native Language and Cultural Programs in Schools

The available research on the influences of Native language and cultural programs on academic performance is growing in both volume and importance. The studies include both qualitative and quantitative research, which shed light on two interrelated interests: (1) the struggles of a growing number of Native American communities to maintain or strengthen their traditional languages and cultural heritages and (2) the relationship between strengthening traditional Native identities

and improving educational outcomes for Native children (for more on this topic, see theme 5 below). These interests are shared by other Indigenous peoples in the Pacific and Circumpolar regions and elsewhere, as evidenced by research reported in this section.

A school curriculum that promotes the language and culture of the community or tribe served—adopted in partnership with that community—holds significant promise for improving academic performance of Native children. This finding has been reported in both policy studies and research and evaluation studies for many years.

In policy studies and investigations, inclusion of Native languages and culture in schools serving American Indian and Alaska Native students was first recommended in the Meriam report of 1928 (Prucha, 2000) and was later a theme of the U.S. Senate Report *Indian Education: A National Tragedy—A National Challenge*.[13] This theme was strongly highlighted in the Indian Nations At Risk Task Force report (1991),[14] and the White House Conference on Indian Education (1992).[15]

Developing linguistic and cultural congruence. Mainstream research tells us that congruency between the school environment and the language and culture of the community is critical to the success of formal learning.[16] Similar findings have emerged from studies of Native communities in Alaska and the Circumpolar North (Barnhardt, 1990).[17] A series of studies conducted in the past 30 years collectively provides strong evidence that Native language and cultural programs—and student identification with such programs—are associated with improved academic performance, decreased dropout rates, improved school attendance rates, decreased clinical symptoms, and improved personal behavior (Lipka & McCarty, 1994; Smith, Leake, & Kamekona, 1998; Stiles, 1997; Yagi, 1985).

These programs have also had positive impacts on their communities. Native

---

[13]U.S. Senate Special Subcommittee on Indian Education. (1969). *Indian education: A national tragedy—A national challenge.* Senate Report No. 91-501.

[14]Indian Nations At Risk Task Force. (1991). *Indian nations at risk: An educational strategy for action. Final report.*

[15]White House Conference on Indian Education. (1992).

[16]Bowman, B. T., Donovan, M. S., & Burns, M. S. (eds.). (2001). *Eager to learn: Educating our preschoolers.*

[17]See also Darnell, F., & Hoem, A. (1996). *Taken to extremes: Education in the far North.* Cambridge, MA: Scandinavian University Press North America. (ERIC Document Reproduction Service No. ED453998)

language literacy is reportedly a source of empowerment for the Mesa Valley Navajo community; where schools are seen as less alien and local people are more inclined to become involved in the educational process (McLaughlin, 1992). Kleinfeld (1979) found that bicultural approaches to education in a Catholic boarding school in Alaska helped students function well in the majority culture. Equally important, she found that effective skills and knowledge development in a formal education setting did not separate students culturally from the home village; many students went on to college and were later noted for quiet village leadership.

In contradiction to other studies on Native languages and traditionalism, a study in Alaska showed relatively high levels of tribal language use in childhood to be associated with higher potential to drop out (James, Chavez, Beauvais, Edwards, & Oetting, 1995). This finding may have several explanations. The language of the school was English, and students may not have been allowed to continue developing their Native language while learning the second language. Another possible explanation is that schoolteachers and administrators did not support the use of the Native language in the school setting. Willeto (1999), in a study of Navajo youth from 11 high schools in the Navajo nation, found only a small positive relationship between students' academic achievement and their cultural attachments and practices and no effect, overall, of traditionalism. A study of rural Native students in Alaska showed that geographic and cultural isolation were factors in creating a lack of language proficiency (in English) and educational achievement (Travis, 1979). This study, conducted before more recent discoveries about the benefits of learning the language of the home as a base for learning English, may have overstated the impacts of isolation on learning and may not have taken other social or economic factors into account, as newer studies commonly do. Clearly there is more to be learned, in order to sort out the interactive effects of social, language, and cultural variables.

Many studies have investigated how and when language and cultural programs produce positive outcomes. Research has focused on *bilingual and immersion programs*, where the commitment to maintaining the use of the Native language is very strong; *Native language and culture revitalization programs* in other communities; and the *use of local knowledge and culture as integral parts of the curriculum*.

Bilingual and immersion programs. In most programs, there was a tacit, if not a stated, assumption that Native languages and culture could not be dealt with separately, as they were two sides of the same coin. A host of studies have been

conducted with particular communities in a variety of settings (Rosier & Farella, 1976; Rosier & Holm, 1980; Hartley & Johnson, 1995; Holm & Holm, 1995; Franks, 1988; Markowitz & Haley, 1973; McBeath, McDiarmid, & Shepro, 1982; Stiles, 1997; Yamauchi & Ceppi, 1998; Yamauchi, Ceppi, & Lau-Smith, 2000; Watson-Gegeo, 1989; Rubie, 1999; Harrison, 1998; Wright & Taylor, 1995; Wright, Taylor, Ruggeiro, MacArthur, & Elijassiapik, 1996; Feurer, 1990; Stairs, 1987; Watahomigie & McCarty, 1994; Watahomigie, 1995). In most, the students spoke English as a second language and were at least somewhat conversant in their Native languages. Collectively, the studies suggest important benefits to educating students in their Native language and within a congruent cultural context (for brief synopses of these studies, see the listing at the end of this section).

Native language and culture revitalization programs. The accomplishments of the Hawaiian and Maori language immersion programs can be difficult to replicate, as seen in the Wind River Reservation (Wyoming) program to revitalize Arapaho among children who spoke only English. Although students in the immersion program made astonishing progress, their mastery of Arapaho did not achieve fluency. Greymorning (1997) concluded that to achieve fluency, children must be systematically exposed to a full array of speech forms by a well-trained teacher with a clear understanding of language acquisition. Thus, effective teacher training remains a critical issue in language immersion programs.

Ayoungman (1991) reported a similar outcome among the Siksika (Blackfoot) of southern Alberta. Language revitalization efforts did not significantly raise language proficiency, but the status of the language improved in other ways.

Even when efforts to restore languages met with only modest success, they had other benefits. As Rudin found in an Omaha restoration program, benefits included improved tribal solidarity and pride among both elders and children and better attitudes and academic performance for at least some students (Rudin, 1989). Ovando (1994) found similar outcomes in Nulato, a remote Athapaska village.

Use of local knowledge and culture in the curriculum. A substantial number of studies have shown that when local knowledge plays a dominant role in instruction (usually in combination with use of the Native language), improvements are seen in various performance and attainment measures (Barnhardt, 1999; deMarrais, 1992; Alaska Native Knowledge Network, 1998; Stiles, 1997; Yagi, 1985; Smith, Leake, & Kamekona, 1998; Slaughter & Lai, 1994; Rubie, 1999; Rudin, 1989; Watahomigie & McCarty, 1994; Temp, 1974).

For example, in Alaska, data specifically show enhanced student achievement in science and mathematics and improvement in the achievement of all students, including those historically underserved. During the first three years of implementation, students in Alaska Rural Systemic Initiative (AKRSI) schools showed a net gain (relative to non-AKRSI schools) in mathematics achievement scores and a reduction in dropout rates (Alaska Native Knowledge Network, 1998).

However, Deyhle and Swisher reported that students with strong traditional language and cultural knowledge require less reinforcement of their Native heritage in the school setting than students whose Native knowledge and language base is weak.[18]

Conclusion. In spite of the reports, research findings, and federal legislation promoting the development of Native language- and culture-based programs in schools serving Native American children, significant resistance to the implementation of such programs continues to exist among state and federal policymakers. The preponderance of research evidence in this review shows a positive association between academic performance and the presence of Native language and cultural programs, outweighing research that shows little or no influence. Consequently, schools should seriously consider amending their curricula to support this Native American priority, while researchers should continue to study factors that increase or decrease the effectiveness of these programs.

Listing of findings. Abstracts of these reports are in the annotated bibliography at the end of this literature review.

- A combination of peer tutoring, counseling, attendance monitoring, cultural education, and hardship assistance decreased student attrition, increased attendance, and improved academic achievement (Yagi, 1985).
- Relatively high levels of tribal language use in childhood were associated with the potential to drop out (James, Chavez, et al., 1995).
- A study of rural Native students in Alaska showed that geographic and cultural isolation were factors in creating a lack of language proficiency (in

[18]Deyhle, D., & Swisher, K. G. (1997). Research in American Indian and Alaska Native education: From assimilation to self-determination. In M. W. Apple (Ed.), *Review of research in education* (Vol. 22, pp. 113-194). Washington, DC: American Education Research Association.

English) and educational achievement (Travis, 1979).

- The level of congruence between the culture of the school and the culture of the community appears to have some influence on student success in the formal school setting (Barnhardt, 1990).
- A school's philosophy and goals emphasizing language and cultural programs were associated with success (Barnhardt, 1994).
- A study of 451 Navajo youths attending 11 high schools in the Navajo Nation found no negative effect of cultural attachments and practices (including Native language usage) on academic achievement (Willeto, 1999).
- Native language literacy is a source of empowerment for the Mesa Valley Navajo community. Schools are seen as less alien, and local people are more inclined to become involved (McLaughlin, 1992).
- Working with Native Navajo and Yup'ik teachers and elders to change the culture of their schools resulted in improved academic performance and changes in attitudes about schools and schooling among the teachers, students, and members of the communities in which these schools were located (Lipka & McCarty, 1994).

Bilingual and immersion programs

- A study of the English-Navajo bilingual education program at Rock Point, Arizona, showed that learning to read in one's mother tongue will result in better reading skills and improve second language reading skills (Rosier & Farella, 1976).
- Researchers found that monolingual Navajo-speaking students who were initially taught reading and mathematics literacy in Navajo, switching to English instruction at the end of second grade, scored higher on standardized achievement tests than students who had received English-only instruction (Rosier & Holm, 1980).
- In Manokotak, Alaska, a school shifted from English to a Yup'ik immersion program and taught English as a second language. Results for the first two years showed a marked improvement in average achievement in reading and mathematics. In addition, students reported feeling good about going to school, and they were interested in what they were doing. Students were able

to keep the languages separate and communicated more fluently in both languages. Students and parents communicated more about school activities because they had a common language (Hartley & Johnson, 1995).

- Navajo students in a two-language program (in place of bilingual) and an immersion program had higher academic test scores and increased pride and confidence (Holm & Holm, 1995).
- In a Mississippi Choctaw bilingual/English as a second language (ESL) program, students had greater gains [than did non-ESL students] in three batteries of the California Achievement Test (CAT): reading, language, and overall scores (Franks, 1988).
- A bilingual Navajo curriculum project was developed to provide learning materials in the Navajo language, so that Navajo-speaking children could begin learning when they first entered school. Evaluations showed that the Navajo children in the program improved in their reading and attitudes toward school (Markowitz & Haley, 1973).
- Case studies in three separate Alaskan communities with schools offering bilingual or bicultural classes showed exceptional school staffs, satisfied parents, excellent student attitudes, and excellent test scores (McBeath, McDiarmid, & Shepro, 1982).
- In a study of four Indigenous language programs (Cree Way in Quebec, Canada; Hualapai in Arizona; Te Kohanga Reo [Maori] in New Zealand; and Punana Leo in Hawaii), all of the programs showed decreased dropout rates, an increased sense of heritage and identity, and improved test scores (Stiles, 1997). Common elements leading to their success included home and community initiatives and involvement; not separating the culture from the language; beginning the program at an early age, preferably preschool; operating out of a firm theoretical foundation; and using written teaching materials.
- A case study of Papahana Kaiapuni, a Hawaiian language immersion program established in 1987, showed that it provided opportunities for students to learn both the minority and majority languages well (Yamauchi & Ceppi, 1998). Further, teachers viewed the program as a model of school reform for Native Hawaiians, and the program transformed many teachers' views of themselves as teachers and as members of the Hawaiian

community (Yamauchi, Ceppi, & Lau-Smith, 2000).

- An ethnographic study of a Hawaiian Native language immersion program showed a strong academic program, close ties between students and teachers, strong parental support, and improved self-esteem and sense of identity (Watson-Gegeo, 1989).
- Maori children (New Zealand) participating in an intense Maori cultural program showed significant gains in self-esteem and locus of control (according to testing and interviews), improved academic performance, more positive attitudes toward school, improved organizational skills, and increased time spent on homework (Rubie, 1999).
- Another study showed that Maori students improved academic performance on standardized tests as part of a language immersion and culturally based education program (Harrison, 1998).
- In Canada, Inuit children instructed in their heritage language showed an increase in self-esteem after one year. Children educated in their second language showed no increase (Wright & Taylor, 1995).
- Students taught in Inuktitut (the language of the home) showed more progress than students taught in French or English (the language of the school) (Wright, Taylor, Ruggeiro, MacArthur, & Elijassiapik, 1996).
- The Cree Way project in Quebec demonstrated that Cree students educated in their own language did well in learning a second language. The Waskaganis school where the program began has a rapidly growing Native teaching staff (Feurer, 1990).
- In Arctic Quebec, a study of language learning found a strong correlation between early Inuktitut proficiency and later English proficiency, both individually and within settlements (Stairs, 1987).

Native language and culture revitalization programs

- In a Wind River Reservation (Wyoming) immersion program to revitalize Arapaho among children who spoke only English, students made astonishing progress, but their mastery of Arapaho did not achieve fluency. Greymorning (1997) concluded that to achieve fluency, children must be systematically exposed to a full array of speech forms by a well-trained teacher with a clear understanding of language acquisition.

- Ayoungman (1991) reported a similar outcome among the Siksika (Blackfoot) of southern Alberta. Language revitalization efforts did not significantly raise language proficiency, but the status of the language improved in other ways.
- In an Omaha restoration program, benefits included improved tribal solidarity and pride among both elders and children and better attitudes and academic performance for at least some students (Rudin, 1989).
- Ovando (1994) found similar outcomes in Nulato, a remote Athapaska village.
- The Hualapai (Arizona) Bilingual/Bicultural Program is nationally recognized for its achievements in Native language literacy and bilingual/bicultural curriculum development in a community with a previously unwritten language. (Watahomigie & McCarty, 1994). Further, between 1975 and 1995, only two students failed to graduate and 50 percent of graduates went on to college (Watahomigie, 1995).

Use of local knowledge and culture in the curriculum

- A case study examined recent efforts by the people of Quinhagak to integrate Yup'ik language, values, and beliefs into school practices and policies. Achievement testing showed a steady rise in test scores and higher graduation rates. Further, students who attended Yup'ik First Language School had higher average achievement scores than students who did not (Barnhardt, 1999).
- In a bilingual/bicultural program implemented in eight rural communities in Alaska in 1973-74, students showed a marked increase in knowledge of historical culture and gains in their ability to read Native language materials. Additionally students and community were enthusiastic about the program (Temp, 1974).
- The Yup'ik tradition of storytelling (story knifing) provided a forum for Yup'ik girls to develop both cultural and cognitive knowledge (deMarrais, 1992).
- During the first three years of implementation, students in Alaska Rural Systemic Initiative (AKRSI) schools showed a net gain (relative to non-AKRSI schools) in mathematics achievement scores and a reduction in

dropout rates (Alaska Native Knowledge Network, 1998).

- Native language and cultural programs have been shown to decrease dropout rates (Stiles, 1997; Yagi, 1985).
- Native cultural and language programs improved school attendance rates, decreased clinical symptoms, and improved personal behavior (Smith, Leake, & Kamekona, 1998).
- A Hawaiian program that promoted local knowledge, with Native language playing a dominant role in instruction, had a positive influence on academic performance (Slaughter & Lai, 1994).
- Maori children participating in an intense Maori cultural program showed significant gains in self-esteem and locus of control (according to testing and interviews), improved academic performance, more positive attitudes toward school, improved organizational skills, and increased time spent on homework (Rubie, 1999).

Theme 3. Teachers, Instruction, and Curriculum

Research on what works in classrooms tends to organize itself around five main topics: characteristics of teachers; classroom organization and strategies; reading, writing, and communications instruction; science and mathematics instruction; and individual student support/dropout prevention.

Cleary and Peacock (1998) described patterns of successful practice that suggest methods and teacher behaviors that work with Indigenous students:

> . . . the need to build trust; to connect with the community; to establish cultural relevance in the curriculum; to tap intrinsic motivation for learning; to use humor; to establish family support; to provide situations that yield small successes; to make personal connections with students; to use highly engaging, activity-based learning and, in some cases, cooperative learning; to provide role models; to be flexible, fair, and consistent; and to provide real audience and purpose for student work (p. 13).

Many of these themes are found in other studies that have been conducted over the past 30 years, as discussed below.

Teacher characteristics. Solid content knowledge, sound pedagogy, an understanding of cognitive development and the different learning stages of children, cultural knowledge and an understanding of the students served, and outstanding interpersonal skills are well-established characteristics of effective teachers.[19]

The research on effective teachers and teaching within the Native American community is somewhat limited. What is available is consistent with the research on non-Native teachers. Teacher attitudes about students, knowledge of subject matter, and understanding and knowledge about the culture of students are all shown to promote improved academic performance and student behavior (Yagi, 1985). Rohner (1965) found that social and economic factors influencing poor academic performance of students could be mitigated by teachers that become involved in community activities and spend time with community members.

Kleinfeld (1979) reported that promoting cross-cultural teaching strategies among prospective teachers is difficult to achieve. She suggests that the quality of teachers and teaching may best be improved by better selection of candidates, instead of by employing cross-cultural strategies in teacher training institutions or by allowing self-selection into programs. In any case, teachers with a demanding but warm teaching style appear to challenge students to work at higher intellectual levels (using or developing higher-order thinking skills).

Classroom organization and strategies. Successful classroom teachers are able to organize their classes and adjust their teaching strategies in a way that motivates, engages, and challenges students to learn. An often unrecognized factor that influences these organizational skills and teaching strategies is the cultural context in which learning takes place. A growing body of research reports on the positive aspects of including the language and cultural base of the Native community served as a necessary characteristic of successful schools.

Brancov (1994) reports that informal classroom organization, culturally relevant activity, and group work enhanced language learning. In addition, group work improved students' mathematics problem-solving skills and attitudes towards mathematics. Supporting these findings is an earlier study by McCarty et al. (1991) that notes that changing the classroom learning environment to support open-ended questioning, inductive/analytic reasoning, and student participation in the context of a

[19]See National Commission on Teaching and America's Future (1996) & Cotton (1995) for a more comprehensive discussion on the importance of teachers.

Native language and cultural environment resulted in students becoming very articulate and responsive to teacher questioning. A study of reservation and non-reservation Native students in New Mexico found that learning was enhanced by informal classroom organization, with flexible arrangement of furniture and emphasis on group work; shared locus of control by teachers and pupils; cooperative learning; use of dialogue; and culturally relevant materials (Little Soldier, 1988).

Swisher (1990) points out that a variety of teaching strategies and methods contributed to improved academic achievement in 33 studies evaluating Student Team Learning classes. This observation is supported by Larimore (2000) in a study among urban Indian students in cooperative-style classrooms with peer-directed, collaborative group work. These students took more risks and performed new skills based on existing learning repertoires.

Instructional conversation—a dialogue between teacher and learner in which prior knowledge and experiences are woven together with new material to build higher levels of understanding—is a direct contrast to less successful, traditional Western schooling, which is highly structured and teacher-dominated, with a carefully planned routine to follow (Tharp & Yamauchi,1994). Changing the classroom learning environment by emphasizing open-ended questioning, inductive/analytical reasoning, and student discussion in large and small group settings challenges the perception that Indian students do not respond well to teacher questions and standard teaching methods. In classrooms where dialogue is shared between students and teachers and where students' ideas are encouraged within the context of their Native language and culture, Native students are found to respond eagerly to questioning, even in English (their second language) (McCarty et al., 1991).

Reading, writing, and communications instruction. The ability to read and write well are closely aligned to a student's success in school.

Earlier studies—particularly those produced in the 1970s—tended to focus on techniques for improving skills that could enhance reading, including work analysis, study, comprehension, vocabulary, and language development skills (Kimble & Davison, 1972; Alley, Davison, Kelley, & Kimble, 1974; Fox, 1976). Some work from this period focused on simply increasing the amount of time spent on reading instruction. For example, researchers found improvements in students' reading skills when they were provided increased opportunities to read (Jacob, 1976; Edington & Pettibone, 1975) or when they were offered a focus on remedial reading skills for 25-30 minutes a day (American Institutes for Research in the Behavioral Sciences,

1971). Citing mainstream research, Cotton confirmed these findings, reporting that there is a direct relationship between the amount of quality time spent on a subject and the learning that takes place.[20]

In the 1980s, educators became interested in the use of computers for improving English fluency and writing skills, citing gains in writing, academic performance, attitudes, and other cognitive skills in several settings (Diessner, Rouscul, & Walker, 1985; Bennett, 1987; Carnew & Clark, 1985). Interest in uses of technology has continued with mixed results. In a computer-assisted writing instructional program for students in grades 7-9, no significant difference between control and experimental groups was found, but teacher evaluations expressed improvement in the quality of expository writing among the students (Clark, 1996).

In the 1980s and 1990s, a few studies continued to explore techniques for developing writing, reading, and vocabulary, particularly in the use of daily dialogue journals (Dooley, 1987); verbal-visual work association strategies (Hopkins & Bean, 1999); and the use of big books with young children (Fayden, 1997).

It should be noted that throughout this period, various groups were exploring the interrelated issues of bilingualism, Native language use, and literacy, as reported in the previous section. Among Native students, the development of a strong language base (English or a tribal language) depends in large measure upon whether the student attends a school in his or her first language and whether that first language is used as a base for learning one or more other languages. One study that illustrates this point was conducted among the Northern Ute Indians. Separate programs that promoted literacy in their Native language or in English both resulted in students improving their literacy levels—sometimes in both languages (Leap, 1991).

Science and mathematics instruction. Like literacy skills, in order to improve science and mathematics skills, the research indicates that students need to spend more quality time learning the subject matter and connecting science and mathematics to local and traditional knowledge.

The Alaska Rural Systemic Initiative, a multifaceted program which included standards-based curricula (including standards for culturally responsive curricula), assessment, high-quality science and mathematics education, professional

---

[20]Cotton, K. (1995). *Effective schooling practices: A research synthesis, 1995 update.* Portland, OR: Northwest Regional Educational Laboratory.

development and support for teachers, and parent and community support, resulted in improved mathematics achievement scores and a decrease in dropout rates (Alaska Native Knowledge Network, 1998). In a "Natural Math" project for Seminole (and African American) children, improved raw test scores occurred where parents and kindergarten children were engaged in math games and activities in the home. For the Native children, the inclusion of cultural concepts into the project may have had an influence (Sears & Medearis, 1992).

From the research on early cognitive development and influences of environment, one would expect that early attention to the skills associated with math and science would make a difference. Research in this area has not occurred among Native students and is overdue.

Individual student support/dropout prevention. In the study of successful Native students by Coburn and Nelson (1987), and in the study of successful Native leaders by Silverman and Demmert (1986), the support of community mentors, family, and teachers ranks high in motivating students and keeping them in school.

Other kinds of support, like peer tutoring, counseling, attendance monitoring, cultural education, and hardship assistance, are associated with improved academic achievement (Yagi, 1985) and a reduction in dropouts (Martens, 1992). Individualized instruction, reward systems, conducive physical and human factors (e.g., low student-adult ratios, caring teachers, affective education, strong administrator), student and parent involvement in decision making, and vocationally oriented components promoted significant growth in academics and social rehabilitation in an alternative high school (Malmberg, 1983). Monitoring of students' success and personal relevance of curriculum has also been found to be associated with improved academic performance (Radda, Iwamoto, & Patrick, 1998).

Conclusions. Factors that can be altered in the school setting need to be identified and tested for possible application in school improvement efforts. One important factor, standards-based reform, has been gaining support legislatively and among portions of the education community for the past decade. In Native America, this reform movement holds great potential if tribes and communities become involved in setting culturally responsive standards. The State of Alaska and the Bureau of Indian Affairs have provided interesting models for developing such standards. Another related trend in rural education, including scattered rural Native communities, is the development of "place-based" education. Place-based education is an educational approach that draws on local history, culture, economics, environment, and

circumstances as a curriculum source, sometimes with the explicit goal of connecting students to their community and thereby promoting citizenship, entrepreneurship, community sustainability, or environmental stewardship. Early reports of these efforts show promise, and research in this particular area—as well as many others—must be increased if we are to understand the factors that influence improved academic performance for individuals and society.

Lastly, little research was available on the use of computers as instructional tools with Native students. However, evidence suggests the potential for computer use for improving learning, particularly in combination with place-based curriculum. Research into technology use by Native students may be a particularly rich field for evaluation and development studies.

Listing of findings. Abstracts of these reports are located in the annotated bibliography at the end of this literature review.

Teacher characteristics

- Teachers that use a demanding but warm style of teaching appear to challenge the intellectual abilities of students (Kleinfeld, 1975).
- Teacher attitudes, knowledge, and understanding, as well as differences in culture-specific modes of discourse and formal English textbooks are seen as factors that create interethnic communication problems (Travis, 1979).
- Social and economic factors influencing poor academic performance can be mitigated by teachers that become involved in community activities and spend time with community members (Rohner, 1965).
- Teachers in schools that serve Indian children should see themselves as learners who are open to understanding the reasons that children and communities are the way they are, who are willing to discover and consider the differences between school and home cultures, and who are willing to change their ways of teaching to give children a better chance in school and life (Cleary & Peacock, 1998).

Classroom organization

- Student team learning strategies contributed to improved academic achievement in 33 studies evaluating Student Team Learning classes (Swisher, 1990).

- Informal classroom organization, culturally related activity, and group work enhanced language learning. Group work also improved students' mathematics problem-solving skills and attitudes towards mathematics (Brancov, 1994).
- Changing the classroom learning environment to support open-ended questioning, inductive/analytical reasoning, and student participation in the context of a Native language and cultural environment resulted in students becoming very articulate and responsive to teacher questioning (McCarty et al., 1991).
- When placed in cooperative-style classrooms with teachers that used peer-directed, collaborative group work strategies, a group of urban Indian students took more risks and performed new skills based on existing learning repertoires (Larimore, 2000).
- In observations of about 50 classrooms, conducted in schools serving predominantly Native American pupils on and off reservations in New Mexico, language learning was found to be enhanced by informal classroom organization, with flexible arrangement of furniture and emphasis on group work; shared locus of control by teachers and pupils; cooperative learning; use of dialogue; and culturally relevant materials (Little Soldier, 1988).
- In a quasi-experimental design, Brancov (1994) studied the effects of using cooperative learning to improve mathematics achievement, attitudes toward mathematics, and time on task among 129 middle school Indian students. Improvements were measured in pre- and posttests in mathematics problem-solving skills and attitudes toward math. There was no significant difference between experimental and control groups for time on task.
- Instructional conversation (IC) is a dialogue between teacher and learner in which prior knowledge and experiences are woven together with new material to build higher understanding. IC contrasts with the highly routinized and teacher-dominated "recitation script" of traditional Western schooling. "Ideal" Native American activity settings embed ICs in the social context of small student-directed units. Working together, students ask questions and incorporate their own experiences into the curriculum context (Tharp & Yamauchi, 1994).

Reading, writing, and communications instruction

- The development of individual (Jacob, 1976) and group student reading skills improved with increased opportunities to read (Edington & Pettibone, 1975).
- Focusing on remedial reading skills for 25-30 minutes per day improved reading comprehension (AIRBS, 1971).
- Concentrating on work analysis skills, study skills, comprehension, vocabulary, and language development resulted in significant improvement in reading skills (Kimble & Davison, 1972; Alley, Davison, Kelley, & Kimble, 1974; Fox, 1976; Leap, 1991).
- Students using a reading program (Distar) on the Rosebud Reservation in South Dakota, where the student body is racially mixed, *did better* than students in more remote Indian communities (Wescott, 1974).
- An intervention program involving 56 Cree Indian youth included instruction in introductory LOGO computer language, computer use, reading, writing, and mathematics. In a controlled experiment, researchers found that the intervention positively affected cognitive functioning abilities and improved academic achievement in reading and writing, but had no effect on mathematics achievement or attitudes toward academic study (Carnew & Clark, 1985).
- The use of computers improved written English fluency in students from grades 7-12 at the Yakima Tribal School; however, thematic maturity did not increase, and students became reluctant to do handwritten work (Diessner, Rouscul, & Walker, 1985).
- Students in grades 3-8 from two elementary schools attended weekly, multigrade bilingual classes in Hupa/English or Yurok/English to develop natural history dictionaries. Using computers and local knowledge while working in cooperative groups, students stayed interested and engaged for a whole school year. Their attitudes towards school improved, as did their oral communication skills and ability to translate from one language to the other (Bennett, 1987).
- Computer assisted writing instruction for students in grades 7-9 resulted in no significant difference between control and experimental groups. However, teacher evaluations noted improvement in the quality of students' expository writing (Clark, 1996).

- Integration of early reading and writing skills, via instructional use of a daily dialogue journal over a five-month period, improved punctuation, grammar, and sentence structure skills among most of the 10 third-grade Navajo students studied (Dooley, 1987).
- Underachieving urban Native students were found to be more at ease with written than oral discourse (Anderson, 1987).
- The verbal-visual work association strategy increased vocabulary knowledge among junior high and high school students on the Northern Cheyenne Reservation (Hopkins & Bean, 1999).
- The use of predictable big books helps Native American and Hispanic kindergarten children and children with limited early experiences with books develop reading skills in the classroom (Fayden, 1997).

Science and mathematics instruction

- A multifaceted program that included standards-based curricula, assessment, high-quality science and mathematics education (including professional development and support for teachers), continuous program improvement, and parent and community support resulted in improved mathematics achievement scores and a decrease in dropout rates in schools involved in the Alaska Rural Systemic Initiative (Alaska Native Knowledge Network, 1998).
- A "Natural Math" project was undertaken to encourage Native American (and African American) parents and kindergarten children to engage in math games and activities at home. Natural Math was also used to integrate Seminole culture into math materials. The participating students were tested for verbal, math, and social skills. Students had higher raw scores in the areas tested than students of previous years (Sears & Medearis, 1992).

Individual student support/dropout prevention

- The Behavior Analysis Model of Follow Through was shown to improve the reading achievement scores of students in all grade levels who participated in this program for one full year. Typical components of this model include: individualized instruction through the use of aides; programmed reading materials; biweekly progress assessment; on-site training; small group instructional procedures; and a motivational system such as contingency

contracting or a token economy (McLaughlin, Williams, Cady, & Bement, 1982).

- Use of a combination of peer tutoring, counseling, attendance monitoring, cultural education, and hardship assistance decreased student attrition, increased attendance, and improved academic achievement (Yagi, 1985).
- A case study of an alternative high school that served a high American Indian student population and emphasized basic academic skills showed significant growth in academic achievement and social rehabilitation. Factors influencing the success of this model include individualized instruction, reward systems, conducive physical and human factors (e.g., low student-adult ratio, caring teachers, affective education, strong administrator), student and parent involvement in decision making, and vocationally oriented components (Malmberg, 1983).
- In a small study that included 16 Native American students (of 23 total students), a dropout prevention program comprising tutoring, counseling, and parent involvement led to a reduction of absences and increased grade point averages (Martens, 1992).
- Four program components targeted at 1,100 American Indian students in nine school districts in Pierce County, Washington, were evaluated. Two of the four program components produced positive results: (1) tutoring services for students identified as needing remedial classes resulted in substantial academic improvement (by one-tenth of one grade for every 20 days); and (2) the collection and/or publication of tribal bibliographies, books, films, records, legends, tribal artifacts, etc., resulted in general success in providing a variety of cultural experiences to the majority of students in the target group (Nelson & Clark, 1977).

Theme 4. Community and Parental Influences

The framers of Title IV, PL 92-318, The Indian Education Act of 1972, recognized that partnerships between schools and parents (including tribes and representatives of Native communities) were requisite to any movement aspiring to improve academic performance among Native students. This recognition was tied to local control issues and to building local ownership for programs and schools. Later mainstream research, most notably the studies of effective schools, confirmed the

importance of parental participation.[21] The idea of requiring parental-committee or tribal sign-off authority for federal programs supporting Native communities originated with the Indian Education Act of 1972 and also became a requirement of the Johnson O'Malley Act.[22] Later legislation also included such provisions.[23]

Community or tribal control. The struggle among minority groups to regain some control of their children's education has been widely heralded as a necessary element to improving the performance of underserved students.[24] Separating out the influence of parental and community involvement from other variables is a difficult task; consequently, studies that address this factor tend to include other interventions as well. However, Native education research in this country and Canada tends to support findings from mainstream research that show improved school performance when communities and parents are involved in their operation. Kleinfeld (1985), in a study of 162 small (under 100 students) rural high schools in Alaska, found that the ones that worked best exhibited a strong alliance between teachers and the community. In a case study of a highly successful California school serving American Indian students, Leveque (1994) found that the strongest link between educational opportunities and student achievement was parental involvement in the design and implementation of programs. In another study of First Nations students attending a school in Canada that had come under First Nations control three years previously, improvements were measured in academic achievement (CTBS test scores), attendance, student suspensions and expulsions, age-grade deceleration, dropout rates, and graduation rates. Thirty-four students (who had previously dropped out) returned to this school and graduated (Mason, 1998).

---

[21]Cotton, K. (1995). *Effective schooling practices: A research synthesis, 1995 update.*

[22]Myron Jones and Charles F. Wilkinson worked with Congressman Lloyd Meed from the state of Washington to enact that requirement.

[23]Butterfield, R. A., & Pepper, F. C. (1991). Improving parental participation in elementary and secondary education for American Indian and Alaska Native students. In *Indian nations at risk task force commissioned papers.* Washington, DC: U.S. Department of Education. (ERIC Document Reproduction Service No. ED343763)

[24]Cummins, J. (1986). Empowering minority students: A framework for intervention. *Harvard Educational Review, 56*(1), 18-36. (EJ 330827) This article presents a theoretical framework for analyzing minority students' school failure and the relative lack of success of previous attempts at educational reform, such as compensatory education and bilingual education. The author suggests that these attempts have been unsuccessful because they have not altered significantly the relationships between educators and minority students and between schools and minority communities.

Traditionalism and family influences. Another small group of studies examined mothers', fathers', and other family members' influences on educational outcomes and the role of traditionalism. In a study of Navajo students, motivation to do well in school was linked very strongly to social concern and affiliation, and parents and extended family members were found to be the strongest influences (for good or ill) on student progress at school (McInerney, McInerney, Ardington, & De Rachewiltz, 1997). Among 87 American Indian students at a Montana college, those from traditional Native families were more task and achievement oriented, had higher grade point averages, and spent more time doing homework than those from more modern families, who cared more about professors' opinions and skipped more classes (Lin, 1990). Willeto (1999) found a small positive relationship between involvement in Native cultural conventions and activities and commitment to school; she found no support for the idea that traditionalism, including use of the Navajo language, had a negative effect on school achievement. She also found that adolescents who identified with their mothers (typically girls) did better in school. A study of 19 northern Ojibway families showed that the support of a mother who has strong traditional values and practices is beneficial to a student's academic and social performance in school (Coggins, Williams, & Radin, 1996). The role of fathers among these families was complex. Researchers found that in boys, time spent with their fathers was associated with improved academic performance and social development, yet greater nurturance was associated with poorer academic performance (Williams, Radin, & Coggins, 1996).

Conclusions. Local control of schools was a major issue in the 1960s among Alaska Natives and tribes in the lower 48 states. More research is needed to sort out under what circumstances parental and community involvement works most powerfully; however, the research that exists supports the importance of local control on community attitudes and academic achievement among Native students. The research on how parental support influences students' success is also revealing. In light of this research, Native communities that have not yet gained control and taken direct responsibility for the education of their children must evaluate their role in the educational process.

Listing of findings. Abstracts of these reports are located in the annotated bibliography at the end of this literature review.

- Parental involvement in the design and implementation of school programs was strongly associated with improved student achievement in a California

school district (Leveque, 1994).

- Among 87 American Indian students at a Montana college, those from traditional Native families were more task and achievement oriented, had higher grade point averages, and spent more time doing homework. Those from more modern, assimilated families cared more about professors' opinions and skipped more classes (Lin, 1990).
- Willeto (1999) found a small positive relationship between students' involvement in Native cultural conventions and activities and commitment to school; she found no support for the idea that traditionalism, including use of the Navajo language, had a negative effect on school achievement. She found that adolescents who identified with their mothers (typically girls) did better in school.
- A study of 19 northern Ojibway families showed that the support of a mother who has strong traditional values and practices is beneficial to a student's academic and social performance in school (Coggins, Williams, & Radin, 1996).
- A study that examined Ojibwa families for the relationship between quantity and quality of father involvement in child rearing and children's academic and social performance found that the more time spent by fathers was associated with better academics and social development for boys, while greater nurturance was associated with poorer academic performance (Williams, Radin, & Coggins, 1996).
- Partnerships between teachers and communities were associated with the success of 162 small rural high schools serving primarily American Indian and Eskimo students (Kleinfeld et al., 1985).
- Parental and extended family influences are strongly linked to students' motivation and ability to do well in school (McInerney, Roche, McInerney, & Marsh, 1997).
- After three years of local control, students in a First Nations school were more successful academically, had better attendance, and had higher completion rates for high school (Mason, 1998).

Theme 5. Student Characteristics

Important student characteristics discussed in previous sections include second language use and traditionalism (see theme 2 on language and cultural programs and theme 4 on community and parental influences on student performance). Other student characteristics discussed in the research include poverty status, resiliency, identity, sense of self and self-esteem, goal setting and student motivation, communication styles, and language and cognitive skills.

Poverty status. The National Assessment of Educational Progress (NAEP), an ongoing assessment conducted by the National Center for Education Statistics that examines reading, writing, mathematics, science, and other academic performance of students from across the nation, has shown lower performance scores for students (all groups combined) who are eligible for free and reduced lunch (an indicator of poverty) compared to students whose family incomes are too high to qualify.[25] Nationally, 25.9 percent of American Indians and Alaska Natives had incomes below the poverty line between 1998-2000; the rate for children is even higher.[26] Consequently, the academic performance of a large portion of Native children is affected by complex social factors associated with poverty.

A study in Arizona by Boloz & Varrati (1983) examined these interactions and concluded that socioeconomic status (SES) was the variable most consistently associated with academic achievement of Native students in all test areas for all grades except 12. An earlier study of the Seminole indicated that an improvement in economic opportunities and "social conditions," coupled with a concentration on improving academic performance, resulted in improving student performance (Greene & Kersey, 1975).

Resiliency. Benard explains that longitudinal studies, some that followed individuals over the course of decades, have consistently documented that "between half and two-thirds of children growing up in families with mentally ill, alcoholic,

---

[25] See for example, *NAEP 1998 Reading Assessment* (http://nces.ed.gov/nationsreportcard/reading/findings.asp); *NAEP 1998 Writing Report Card* (http://nces.ed.gov/nationsreportcard/writing/findings.asp); *The Nation's Report Card: Mathematics 2000* (http://nces.ed.gov/nationsreportcard/pubs/main2000/2001517.asp#section3); and *The Nation's Report Card: Science 2000* (http://nces.ed.gov/nationsreportcard/science/results/lunchprogram.asp).

[26] U.S. Bureau of the Census. (2001). *Poverty in the United States: 2000.* Report No. P60-214. Washington, DC: U.S. Department of Commerce. Retrieved February 21, 2002, from http://www.census.gov/prod/2001pubs/p60-214.pdf

abusive, or criminally involved parents or in poverty-stricken or war-torn communities do overcome the odds and turn a life trajectory of risk into one that manifests 'resilience,' the term used to describe a set of qualities that foster a process of successful adaptation and transformation despite risk and adversity."[27] Benard identifies three main categories of "protective factors" that foster resilience: (1) caring and supportive relationships; (2) positive and high expectations; and (3) opportunities for meaningful participation. While not all Native children are exposed to high levels of the sorts of risks described above, many are; especially risks related to poverty. Thus, this line of research is relevant to Native education.

Findings from studies of Native Americans who have succeeded in school and life parallel the resiliency research. Many studies identified the importance of caring and supportive families and teachers (e.g., Barnhardt, 1994; Silverman & Demmert, 1986; Coburn & Nelson, 1987; McInerney, McInerney, Ardington, & De Rachewiltz, 1997; Coggins, Williams, & Radin, 1996). Other resiliency factors (high expectations and opportunities to participate) seemed to be at work in their lives, as well. In two studies from the 1980s (Silverman & Demmert, 1986; Coburn & Nelson, 1987), Native graduates and leaders cited as important to their success the early identification with a goal or profession and participation in student activities in school, sometimes in leadership positions (e.g., student government, sports activities, debate, choir, or other extracurricular activities).

In an ethnographic study of 120 high-school-age Native youth from various locales in the United States and Canada, Bergstrom, Cleary, and Peacock (in press) cited student resiliency as a factor in school success. They defined resiliency as "a quality of people who, although they face much life stress and adversity, do not give up and succeed despite the failures that school and society lay out for them."[28] The

---

[27]For a brief review of this literature, see Benard, B. (1995). *Fostering Resilience in Children. ERIC Digest.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. Seminal studies on resilience were Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth.* New York: McGraw-Hill; and Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High-risk children from birth to adulthood.* Ithaca: Cornell University Press. (ERIC Document Reproduction Service No. ED344979)

[28] Comments from an online forum, "The Seventh Generation: Understanding the Life Experiences of American Indian, Alaska Native, and First Nations Youth," held November 26-30, 2001, by the ERIC Clearinghouse on Rural Education and Small Schools. Transcript

(continued...)

students they studied identified a number of factors as *hindering* resiliency: absenteeism and tardiness; mandatory school attendance policies (when missing a specified number of days leads to failing the term); anger (many youth were angry and understood how their anger posed an obstacle to success); teen pregnancy; misusing alcohol and drugs; sexism; and living out the low expectations of others. These findings are similar to another study, which associated poor academic progress, drug use, violence, and sexual abuse with dropping out of school (Beauvais, Chavez, Oetting, Deffenbacher, & Cornell, 1996).

Identity. A Native student's identity and view of the dominant culture may have an impact on that student's academic performance. According to Jim Cummins, considerable data show that power and status relations between minority and majority groups exert a major influence on school performance. As with other minority groups that tend to experience academic difficulty, American Indian groups in the United States and Canada appear to be insecure and ambivalent about the value of their own cultural identity as a result of interactions with the dominant group. Minority students are disempowered educationally in much the same way that their communities are disempowered by interactions with other societal institutions.[29] This theory may partially explain findings of a study in which the success of Indian students in mainstream schools was found to be related to stronger Anglo cultural identity but not to Indian cultural identity (James, Chavez, Beauvais, Edwards, & Oetting, 1995). Perhaps relatedly, self-concept, school attendance, and parental attitudes toward school were found to be important factors in student success in a study of Ute Indians in Colorado as well (Gage & Robson, 1984).

However, when students' Native identity is strong, there is evidence to suggest that they may do better in school. A survey of 185 Navajo students in grades 7 and 11 examined the relationship between their identification with traditional Navajo culture and their achievement level on standardized tests. Results suggest that student identification with Navajo language, culture, and tradition helps develop self-esteem and promotes academic success (Vadas, 1995). In a study of Sioux college students, cultural identity and retention of Native cultural traditions was most important for their success (Huffman, Sill, & Brokenleg, 1986). Another study of Navajo students

---

[28](...continued)
available at http://www.ael.org/eric/fora2001.htm#november26.

[29]Cummins, J. (1992). The empowerment of Indian students. In J. Reyhner (Ed.), *Teaching American Indian students* (pp. 3-12). Norman: University of Oklahoma Press.

suggested that a stable family life with traditional values may influence the achievement of Navajo students more than socioeconomic status (Rindone, 1988).

Sense of self and self-esteem. Based on a literature review and a study employing the Inventory of School Motivation to profile Navajo student motivation in school settings, McInerney and Swisher (1995) concluded that "Key values such as sense of competence, sense of purpose and striving for excellence in one's work, are values that appear to be universally important to all students irrespective of cultural status" (p. 46). Further, sense of self (reflected in sense of competence and sense of purpose) is critically related to motivation, academic achievement, and retention in school. McInerney and Swisher suggest that understanding these factors better would be a more fruitful line of research for improving practice than research on "cognitive styles, learning styles, hemispheric preference, and achievement motivation" (p. 46).

Although efforts to improve self-esteem have fallen out of favor in certain quarters, there is ongoing interest among some practitioners and researchers in Native education. It is not difficult to understand the importance of students—who may have internalized racist views of their own efficacy and worth—learning to view themselves as capable and worthy of defining goals for their education and accomplishing those goals. Two studies have examined approaches to improving self-esteem among Native Hawaiian students. In one study involving 60 Native Hawaiian students, guided affective and cognitive imagery has been shown to enhance self-esteem among children of Hawaiian ancestry (Omizo, Omizo, & Kitaoka, 1998). Another controlled study involving 50 students showed that group counseling using art activities for improving self-esteem among Hawaiian elementary children resulted in higher social (peer-related) and academic (school-related) self-esteem scores (Omizo & Omizo, 1989).

Goal setting. Another interesting area of inquiry relates to cultural impacts (or lack thereof) on student goal setting, school motivation, and achievement. The goals and values students hold, how these goals are related to school motivation and achievement, and how they develop and change over a period of years in the context of cultural background, family, society, and school was studied with Native American and Anglo American students from a middle and high school in Phoenix, Arizona. Participants in this longitudinal study were interviewed over a period of three years. The analyses of these interviews indicate that for Native American and Anglo American students alike, there were four needs that motivated them to strive for school success: (1) seeking excellence in their work; (2) self-esteem; (3) affiliation;

and (4) social concern. A number of the values and needs emphasized in the school setting, such as competition, group leadership, recognition, and rewards, were perceived to be relatively unimportant by these students (McInerney & McInerney, 2000).

In a related study, researchers observed a narrow range of goals and sense-of-self variables that were common in explaining school achievement across Indigenous, immigrant, and Anglo groups in Australia, Canada, and the United States. Goals held by students from diverse cultural backgrounds were shown to be more similar than different, and there appeared to be a relationship between goals and sense-of-self variables and school achievement (McInerney, Roche, McInerney, & Marsh, 1997).

Communication styles. A Canadian study indicated ways in which interethnic communication may promote problems of understanding between Native students and their non-Native teachers (Darnell, 1985). For example, Cree students used silence as a mechanism of self-defense and of protecting individuals' autonomy; speech, on the other hand, was used to promote intimacy, trust, and consensus. Cree children also responded differently to elder mentors than they did to non-Native teachers.

Academic skills and cognition. Last but not least, research has shown the importance of having basic skills (Silverman & Demmert, 1986; Coburn & Nelson, 1987) and English proficiency (James, Chavez, Beauvais, Edwards, & Oetting, 1995) in order to do well in school academically. More on the skills needed to succeed in college is presented in the last section. We know from mainstream early childhood research (and some suggestive studies in Native education) that environment and life experiences help shape a person's outlook on life, cognitive skill, and intellectual development (see theme 1). A void exists in the research on intellectual development (including multiple intelligences) for Native students.[30]

Conclusions. Research and theory on resiliency, student identity, cognitive development, multiple intelligence, motivation, and goal setting suggest many potentially powerful avenues of research. Clearly, much remains to be learned about personal characteristics of successful Native students—especially what is alterable and what is not in the school setting. The research community must help us

[30]See for example, Viadero, D. (1998, November 11). Research notes on 'triarchic' intelligence. *Education Week, 18*(11), p.28; and Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century.* New York: Basic Books.

understand all of these areas more fully.

Listing of findings. Abstracts of these reports are located in the annotated bibliography at the end of this literature review.

Poverty status

- To test the impact of the three variables on academic achievement, the Ganado (Arizona) Unified School District No. 20 analyzed available information on six academic subtests for a representative sample of its reservation student population in grades 3, 6, 8, and 12. Socioeconomic status was the most consistent variable, showing a strong relation to academic achievement in all test areas for all grades except 12. Attendance had a significant effect on language and reading scores of students in grades 6, 8, and 12. Attendance was also a significant variable for students of low SES, as was stability of enrollment (Boloz & Varrati, 1983).
- Improvement in social and economic status of Seminoles influenced academic performance (Greene & Kersey, 1975).

Resiliency

- Aside from school-related factors, the following student characteristics were found to contribute to the academic success of Alaska Native teacher education students who graduated from the University of Alaska-Fairbanks: strong family and community support, supportive prior school and life experiences, and exceptional individual efforts (Barnhardt, 1994).
- Two studies reported characteristics of successful Native leaders and students in Alaska and the continental United States. Participants reported the influences of parents, teachers, or other persons and several personal characteristics contributing to their success: early identification with a goal or profession; actively participating in student activities in school (e.g., student government, sports activities, debate, choir, or other extracurricular activities); having the basic skills to do well in academically (with an interest in one or more subject areas); and serving as a student leader in some capacity (Coburn & Nelson, 1987; Silverman & Demmert, 1986).
- A study of 19 northern Ojibway families showed that the support of a mother, who has strong traditional values and practices, is beneficial to a student's academic and social performance in school (Coggins, Williams, &

Radin, 1996).

- In a study of students and teachers at Window Rock High School on the Navajo Indian Reservation, McInerney, McInerney, Ardington, & De Rachewiltz (1997) found in their examination of goal theory of achievement motivation that, overwhelmingly, parents and extended family were the prime referent groups in influencing student progress at school.
- A large survey of Mexican American, American Indian, and White adolescents found that dropouts were most likely to be involved with drugs, perpetration of violence, and victimization by violence, while students in good academic standing were least likely to have such involvement (Beauvais, Chavez, Oetting, Deffenbacher, & Cornell, 1996).

Identity

- Among 1,607 American Indian and Anglo dropouts and currently enrolled middle- and high-school students, the success of Indian students was related to stronger Anglo cultural identity and better English proficiency (in mainstream schools) but not to Indian cultural identity (James, Chavez, Beauvais, Edwards, & Oetting, 1995).
- School attendance, self-concept, and parent attitudes towards the school all were found to affect achievement in a study that compared Ute, Anglo, and Hispanic student achievement and attitudes in a school district in California (Gage & Robson, 1984).
- A survey of 185 Navajo students in grades 7 and 11 examined the relationship between their identification with traditional Navajo culture and their achievement level on standardized tests. Results suggest that student identification with Navajo language, culture, and tradition helps develop self-esteem and promotes academic success (Vadas, 1995).
- A study explored the relationship of several social, cultural, and aspirational factors to achievement measured by grade point average (GPA) among 38 Sioux and 48 White college students. Researchers found high school GPA and parental encouragement most important for White students, while cultural identity and retention of Native cultural traditions was most important for Sioux students (Huffman, Sill, & Brokenleg, 1986).
- Another study of Navajo students suggested that a stable family life with

traditional values may influence in the achievement of Navajo students more than socioeconomic status (Rindone, 1988).

Sense of self and self-esteem

- Over 500 Navajo high school students completed the Inventory of School Motivation, based on the personal investment model of motivation. Results suggest that the model's most salient elements for this group were the sense-of-self components and one task component: striving for excellence (McInerney & Swisher, 1995).
- In a study involving 60 Native Hawaiian students, guided affective and cognitive imagery has been shown to enhance self-esteem among children of Hawaiian ancestry (Omizo, Omizo, & Kitaoka, 1998).
- Another controlled study involving 50 students showed that group counseling using art activities for improving self-esteem among Hawaiian elementary children resulted in higher social (peer-related) and academic (school-related) self-esteem scores (Omizo & Omizo, 1989).

Goal setting

- The goals and values students hold, how these goals are related to school motivation and achievement, and how they develop and change over a period of years in the context of cultural background, family, society, and school was studied with Native American and Anglo American students from a middle and high school in Phoenix, Arizona. Participants in this longitudinal study were interviewed over a period of three years. The analyses of these interviews indicate that for Native American and Anglo American students alike, there were four needs that motivated them to strive for school success: (1) seeking excellence in their work; (2) self-esteem; (3) affiliation; and (4) social concern. A number of the values and needs emphasized in the school setting, such as competition, group leadership, recognition, and rewards, were perceived to be relatively unimportant by these students (McInerney & McInerney, 2000).
- In a related study, researchers observed a narrow range of goals and sense-of-self variables that were common in explaining school achievement across Indigenous, immigrant, and Anglo groups in Australia, Canada, and the United States. Goals held by students from diverse cultural backgrounds were shown to be more similar than different, and there appeared to be a

relationship between a narrow range of goals and sense-of-self variables to school achievement (McInerney, Roche, McInerney, & Marsh, 1997).

Communication style

- Interethnic communication may promote problems of understanding between Cree and non-Native persons, with the Cree using silence as a mechanism of self-defense and protecting autonomy of one's self. In addition, Cree children respond differently to elder mentors than they do to non-Native teachers (example of young White women is used). Speech is seen as promoting intimacy, trust, and consensus (Darnell, 1985).

Academic and cognitive skills

- See Coburn & Nelson, 1987; Silverman & Demmert, 1986; James, Chavez, Beauvais, Edwards, & Oetting, 1995 cited above.

Theme 6. Factors Leading to Success in College

Studies on factors leading to success in college or success in completing college are surprisingly numerous in the research . The knowledge these studies provide is consistent with what has been learned about how to improve academic performance among elementary and secondary students.

Family support. High levels of family support and encouragement are important factors in student retention and academic success in college (Barnhardt, 1994; Davis, 1992; Huffman, Sill, & Brokenleg, 1986; Rindone, 1988; Wilson, 1983). Brown (1993) found that parents' educations and occupations were important predictors of student success in college. Family attitudes about education and identification with the mother (and being female) were associated with young Navajos' college aspirations and success (Willeto, 1999).

Cultural identity. Research has produced mixed results regarding the role of Native traditionalism in enhancing or reducing success at the postsecondary level. Maintaining cultural identity and traditions was found to enhance success by Huffman, Sill, & Brokenleg, 1986. However, Kerbo's (1981) data on cultural factors and academic success of Native American college students suggest that the best independent predictors for Native Americans are the degree of identification and social integration with *Whites*. Most recently, Willeto (1999), in studying Navajo high school students, found no support for the idea that traditionalism, including use

of the Navajo language, had a negative effect on school achievement. She found a slightly positive association between participation in Native cultural activities and college aspirations and suggests that the role of traditionalism in the education of Native students be explored more thoughtfully.

Personal determination and goal setting. Multiple studies have reported the role of personal determination in college success (Barnhardt, 1994; Davis, 1992; Rindone, 1988; Wilson, 1983). Academic performance of Native college students has been found to be positively correlated to career maturity (the ability to deal with occupational choices) (West, 1988).

Financial support. Students identified financial support as important to staying in college (Wilson, 1983).

Academic skills. Good prior academic performance has been shown to be positively associated with postsecondary academic performance (Brown, 1993).

Mentors and supportive faculty. Among other factors, Indigenous students at the University of Alaska-Fairbanks rated professor accessibility, approachability, availability, genuineness, and caring, as necessary for learning success (Wilson, 1997). Supportive teachers, support services, and an ability to adopt new traits while maintaining a traditional Native perspective are all related to success in college (Dodd, Garcia, Meccage, & Nelson, 1995).

Bicultural curriculum. A bicultural postsecondary training curriculum in early childhood care and development, incorporating both Euro-Western and Aboriginal knowledge, showed significant Native student retention and program completion, exertion of leadership, and closer ties with community and intergenerational relationships (Ball & Pence, 2001). Barnhardt (1994) identified student support services respectful of the interests and needs of culturally diverse students as one of five factors contributing to the success of Alaska Native teacher education students at University of Alaska-Fairbanks.

Listing of findings. Abstracts of these reports are located in the annotated bibliography at the end of this literature review.

Family support

- Five factors were identified as contributing to Alaska Native teacher education students' academic success at the University of Alaska-Fairbanks: (1) a teaching and learning environment responsive to the interests and

needs of culturally diverse students; (2) student support services respectful of the interests and needs of culturally diverse students; (3) strong family and community support; (4) supportive prior school and life experiences; and (5) exceptional individual efforts (Barnhardt, 1994).

- A study of the family and educational histories of 10 American Indian college graduates (most from low socioeconomic and limited educational backgrounds) attributed their success to family encouragement and personal desire for betterment (Davis, 1992).
- A study that examined the backgrounds of 107 Navajo college graduates (most from traditional, low SES family backgrounds), to identify factors contributing to their academic success, found that students' own motivation and encouragement from family were the most important factors contributing to their high educational attainment; about half said that a teacher had encouraged them (Rindone, 1988).
- In a survey of American Indian college graduates and students in Wisconsin, financial aid ranked first as a factor contributing to college completion, followed by family support, having a personal goal, determination, and intelligence (Wilson, 1983).
- A study examined the characteristics of successful and unsuccessful Native American and non-Native secondary students who participated in the Northern Arizona University (NAU) Upward Bound program. No significant differences were found between the success rates of Native and non-Native students. Participants' success was associated with total years of program participation, parents' educational and occupational levels, prior academic performance, and consistency in program personnel (Brown, 1993).
- A study undertaken to learn about experiences of academically successful American Indian students at a postsecondary school found that most students considered family to be their primary support; the few reported obstacles were academic, indicating the importance of student support services (Dodd, Garcia, Meccage, & Nelson, 1995).

Cultural identity

- A study exploring the relationship of several social, cultural, and aspirational factors to achievement, measured by grade point average among 38 Sioux and 48 White college students, found high school GPA and parental

encouragement most important for White students and cultural identity and retention of Native cultural traditions most important for Sioux students (Huffman, Sill, & Brokenleg, 1986).

- Willeto (1999) found that a small positive relationship between involvement in Native cultural conventions and activities and commitment to school; she found no support for the idea that traditionalism, including use of the Navajo language, had a negative effect on school achievement. She found that adolescents who identified with their mothers (typically girls) did better in school.
- Data on cultural factors and academic success of Native American college students suggested that the best independent predictors for Native Americans are degree of identification and social integration with Whites (Kerbo, 1981).

Personal determination, confidence, and goal setting

- See Barnhardt, 1994; Davis, 1992; Rindone, 1988; Wilson, 1983 above.
- A study comparing career maturity and academic achievement between 30 American Indian and 39 non-Indian college students found strong positive correlations between grade point average and career maturity for freshman and sophomore Indians and freshman non-Indians, but not for the total sample or either ethnic group overall (West, 1988).

Financial support

- See Wilson, 1983 above.

Academic skills

- See Brown, 1993 above.

Mentors and supportive faculty

- See Dodd, Garcia, Meccage, & Nelson, 1995 above.
- High failure rates among Native students sparked a study of professor/student relationships at the University of Alaska-Fairbanks. On the Personal Learning Styles Inventory, minority (Native and Hispanic) students scored highest on active experimentation and concrete experience. Indigenous students also rated professor accessibility, approachability, availability, genuineness, and caring as necessary for learning success

(Wilson, 1997).

Bicultural curriculum

- See Barnhardt, 1994 above.
- Aboriginal communities partnered with a university to construct an early childhood care and development curriculum, delivered entirely in the communities. Results included high rates of Aboriginal student retention, program completion, leadership, and application of training within their communities; revitalization of intergenerational relationships through tribal elders' involvement in curriculum construction, teaching, and learning; enhanced community cohesion; and reinforcement of valued cultural concepts and practices (Ball & Pence, 2001).

A Summary of What the Research Tells Us

A review of the literature on improving academic performance of Native American students provides some very definite insights on what has worked in certain circumstances, and suggests alternatives for educators, parents, and policymakers to consider as each searches for ways to improve academic performance of all Native children.

Though limited, the literature focusing on young Native children reminds us that providing opportunities for early development of language and other skills can have significant influence on how well these children will do academically in their later life as students. In addition, the review of recent information on the development of the brain tells us that the environment in which young children learn influences the development of their many intelligences. The message is very clear—if parents and educators have an interest in promoting the development of smart, healthy, well-adjusted children, we must provide a safe, challenging, and enriched environment early in the life of a child.

The importance of Native language and cultural programs in schools in motivating students, promoting a positive sense of identity and self, stimulating positive attitudes about school and others outside a child's immediate environment, and supporting improved academic performance among Native students is worthy of recognition outside Native communities. The concept is accepted among Native peoples in the United States and in the Circumpolar North.

The research on effective teachers and classroom practice is less cohesive and more scattered than some of the other themes explored in this review. Hopefully future research can become more focused, long-term, and cumulative, which may give us more reliable information. The recently released *American Indian and Alaska Native Research Agenda*[31] published by the U.S. Department of Education may provide the focus needed to produce research that will be useful to practitioners.

We have learned that levels of congruency between the culture of the school and the culture of the community served can be an important factor in community support and community attitudes towards the school. Community attitudes and participation of parents in the educational process appear to be critical elements for teachers to be more successful with Native students. Responsibility for and ownership of schools by parents and other community members are also significantly tied to success of the schools.

Knowledge about characteristics of successful Native students is somewhat limited, but the information that is there tells us that attendance, language competence, motivation, positive life experiences, sense of purpose, early goal setting, the ability to balance conflicts between home and community, and knowledge of basic skills all contribute to a student's ability to successfully navigate the process of schooling. There is much we still need to learn about this area and what is alterable and what is not.

We know that social and economic circumstances of families and communities have some level of influence on student performance. We also know that Native traditional values and practices of students and families, when clearly understood in the modern context, may be significant assets to learning. There is some evidence that community and tribal political or traditional roles may mitigate outside social and economic factors. This is worth a closer examination.

The international studies of improving academic performance among Native (Indigenous) peoples clearly support the information on Native American students. Issues of language, culture, early learning environments and language development, and local control in international studies are all closely aligned with the scene one finds in the United States among American Indians, Alaska Natives, and Native Hawaiians. To better understand the similarities and differences between American

[31]To obtain a copy of this document, go to the following Web site: http://www.indianeduresearch.net/agenda.pdf.

Indians, Native Alaskans, and other Indigenous peoples regarding improved student achievement, I suggest some international studies making comparisons among Native peoples.

The success of Native college students depends on many of the same factors that influence the achievements of Native elementary and secondary students. Family support, knowledge of the basics, motivation, sense of identity and self, language development, early goal settings, and mentors all affect whether a student stays in college and succeeds academically, socially, and spiritually.

In conclusion, there are significant levels of transferability between the research on Native Americans, other racial and ethnic groups in the United States, and Native peoples in the Circumpolar North. The research base specific to the Native community is growing as the number of Native researchers increases and as knowledge gained by research becomes more important to Native communities in their efforts to address problems that have persisted for many decades.

Annotated Bibliography

Alaska Native Knowledge Network. (1998). *Alaska rural systemic initiative: Year three annual progress report, December 1, 1997-November 30, 1998.* Fairbanks: University of Alaska. (ERIC Document Reproduction Service No. ED443603)
The Alaska Rural Systemic Initiative (AKRSI) was established in 1994 to develop pedagogical practices that incorporate the Indigenous knowledge systems of Alaska Native peoples into formal educational programs. The statewide project is organized around five initiatives, each of which is implemented in one Native cultural region at a time on a rotational schedule over 5 years. A sixth initiative focuses on developing a statewide educational telecommunications infrastructure. This report addresses questions associated with the following six "drivers": (1) implementation of comprehensive, standards-based curricula, including assessment, in every classroom and learning experience provided through AKRSI; (2) provision of high quality mathematics and science education and preparation and support of teachers; (3) convergence of all resources that support science and mathematics education into a focused, continuously improving program; (4) generation of parent and community support for the program based on presentations, evidence, and critical discussions; (5) accumulation of evidence that the program is enhancing student achievement in science and mathematics; and (6) improvement in the achievement of all students, including those historically underserved. During the first 3 years of implementation, AKRSI schools showed a net gain relative to non-AKRSI schools in mathematics achievement scores and dropout rates.

Alley, R. D., Davison, R. G., Kelley, W. T., & Kimble, R. L. (1974). A reading improvement strategy. *Journal of American Indian Education, 13*(2), 14-20. (EJ093434)
A report of the Title I, Elementary and Secondary Education Act, reading improvement project at the Chilocco Indian School (Oklahoma) is presented.

American Institutes for Research in the Behavioral Sciences (AIRBS). (1971). *Model programs: Reading. Remedial reading program, Pojoaque, New Mexico.* Palo Alto, CA: (ERIC Document Reproduction Service No. ED053 890)
The elementary school in Pojoaque, New Mexico, has recently developed a remedial reading program for children in grades 2 to 4. Eighty-three children participated in 1969-70. As the population of the area is 76 percent Spanish-American, 12 percent Indian, 12 percent white, and less than 1 percent black, work in the program focuses on language and communication problems.

Children work in remedial reading groups 25 to 30 minutes daily. Activities are divided between individual and small group work. Textbooks and workbooks are used for skill development, and high interest library books, filmstrips, and a tape recorder are used for motivating pupil interest. Pretest and post-test scores on the Gilmore Oral Reading Placement Test, administered primarily for individual diagnosis, indicated that the months of progress in accuracy and comprehension

generally exceeded the number of months the children spent in the program. References and a list of materials used are included.

Anderson, S. H. (1987). Discourse performance of Native Indian students: A case study with implications for academic instruction (Doctoral dissertation, University of British Columbia, Canada, 1987). *Dissertation Abstracts International, 49*(05), 1078.
The oral and written discourse performance of eight underachieving Native American high school students was assessed through individual, interactive talk-write sessions. Four male and four female urban high school students, who came from different Native cultural backgrounds but had similar histories of family instability, took part in interactive talk-write sessions on two narrative and two academic topics. Contrary to findings with non-Natives, and despite difficulties with writing processes, these subjects were more comfortable with written performance than oral performance. Most of their writing difficulties were related to the demands of academic discourse, and it appeared that the talk-write process helped the students to think through and present their arguments with a better understanding of academic discourse.

Ayoungman, V. (1991). Siksika language renewal efforts: Description and assessment (Indians, Canada) (Doctoral dissertation, Arizona State University, 1991). *Dissertations Abstract International, 52*, 1188.
The Siksika (Blackfoot) of southern Alberta, Canada, responded to the endangerment of their aboriginal language with various school and community language revitalization efforts. Multiple assessments of the impact of these efforts were carried out. Language proficiency scores of elementary students showed some improvement related to the language revitalization efforts but were not high enough for the students to be considered speakers. Other data revealed positive impacts on students, homes, schools, and the community. A survey of language use in households and the community and of the importance placed on Siksika and English showed that the status of the aboriginal language had also improved.

Ball, J. & Pence, A. (2001). *Constructing knowledge and training curricula about early childhood care and development in Canadian Aboriginal communities.* Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, WA, April 12, 2001. (ERIC Document Reproduction Service No. ED451995)
The Meadow Lake Tribal Council (MLTC) (Saskatchewan) and the University of Victoria (British Columbia) developed a bicultural postsecondary training curriculum in early childhood care and development that incorporated both Euro-Western and Aboriginal knowledge. Since the MLTC sought curricula using representative Cree and Dene cultures rather than generic pan-Aboriginal culture, seven groups of Aboriginal communities partnered with the university to co-construct a two-year curriculum delivered entirely in their communities. Tribal elders played key roles in developing the curriculum. A steering committee in each community had responsibility to raise funds; recruit instructors, students, elders,

and practicum supervisors; and provide facilities and supports for teaching and learning. Four of the community groups were able to recruit Native American instructors. A two-year evaluation using interviews, questionnaires, focus groups, participant observations, community forums, and record reviews was completed in 2000. Positive program impacts included unprecedented high rates of Aboriginal student retention, program completion, leadership, and application of training to relevant vocations within their communities; revitalization of intergenerational relationships through tribal elders' involvement in curriculum construction, teaching, and learning; enhanced community cohesion; and reinforcement of valued cultural concepts and practices.

Baratz-Snowden, J., et al. (1988). *The educational progress of language minority children: Findings from the NAEP 1985-86 special study*. Princeton, NJ: National Assessment of Educational Progress (ERIC Document Reproduction Service No. ED299839) From 1985-86, the National Assessment of Educational Progress (NAEP) conducted a special survey of reading and mathematics performance of language minority Asian American, Hispanic American, and Native American children to determine the progress of these children at grades 3, 7, and 11. The study also sought to identify whether the differences in achievement within and among the groups could be at least partially explained by differences in demographic background, language use and competence, attitudes and school-related behaviors, and school experiences. Three achievement measures were examined, including: (1) academic performance as measured by seventh and eleventh-grade students' self-report of grades in school; (2) NAEP reading scores for seventh-graders; and (3) NAEP math scores for third-, seventh-, and eleventh-grade students. Factors relating to the students' self-reports of high grades and to students' tested reading and math scores indicated that (1) frequency of second language use in the home had a significant positive relationship to grades in the total sample, as did English competence and (2) locus of control, English competency, and positive attitudes toward reading tended to be important explanatory variables of reading performance, but that frequency of second language use in home had little or no relationship to reading performance. Sample NAEP reading and math test items are appended.

Barnhardt, C. (1994). *Life on the other side: Alaska Native teacher education students and the University of Alaska-Fairbanks*. (Doctoral dissertation, University of British Columbia, 1994). (ERIC Document Reproduction Service No. ED382415) The thesis identifies factors that have contributed to the academic success of Alaska Native teacher education students who graduated from the University of Alaska-Fairbanks (UAF) between 1989 and 1993. It contains a brief history of schooling for Alaska Native peoples; a description of the programs, student services, and academic coursework at UAF designed to respond to the interests and needs of Alaska Native students; and a review and analysis of the experiences of 50 Alaska Native teacher education graduates based on data obtained through

interviews, review of student records, and participant observation. Five factors were identified as contributing to students' academic success: (1) a teaching and learning environment responsive to the interests and needs of culturally diverse students; (2) student support services respectful of the interests and needs of culturally diverse students; (3) strong family and community support; (4) supportive prior school and life experiences; and (5) exceptional individual efforts. The data indicate that accommodation and adaptations by both the students and the institution were essential to student success. Appendices describe 27 programs and services that address Alaska Native peoples and issues at UAF, and list Alaska Native and rural undergraduate courses at UAF, student database variables, and interview themes. (Contains 259 references.)

Barnhardt, C. (1999). *Kuinerrarmiut Elitnaurviat: The school of the people of Quinhagak. Case study.* Portland, OR: Northwest Regional Educational Lab; Fairbanks: University of Alaska. (ERIC Document Reproduction Service No. ED437252)

As part of a larger study of systemic educational reform in rural Alaska, this case study examines recent efforts by the people of Quinhagak to integrate Yup'ik language, values, and beliefs into school practices and policies. Quinhagak is a Yup'ik Eskimo community of 550 people on the southwest coast of Alaska. Nearly all residents can communicate in both Yup'ik and English. The K-12 school enrolls about 140 students. A brief history of the community and its schools is drawn from the experiences of an elder and her descendants. As a participant in Alaska Onward to Excellence (AOTE), a district-driven reform process implemented around the state, the Quinhagak community leadership team developed an AOTE action plan that encompassed 10 statements of values and beliefs, a mission statement, and one student learning goal of communicating more effectively in Yup'ik. With that, the team decided upon two areas of study: (1) community involvement in schooling decisions and (2) the contribution of Yup'ik proficiency to overall student achievement. The case study gathered information on school organization; elementary and secondary facilities, personnel, and curriculum; special education and discipline programs; parent and community involvement; and assessment. Evidence of changes and trends is listed. Final comments summarize factors contributing to community choices for its school, factors enabling the school to implement new and self-determined educational priorities and challenges to narrowing the school-community gap and approving achievement. Appendices include school district statistics, school documents, and related publications. (Contains 14 references.)

Barnhardt, R. (1990). Two cultures, one school: St. Mary's, Alaska. *Canadian Journal of Native Education, 17*(2), 54-65. (EJ420524)

Describes the successful school serving preschool through twelfth grade in St. Mary's Alaska—a small Yup'ik community. Examines the bilingual curriculum, strong community support, and the school's philosophy and goals emphasizing

integration of Yup'ik ways and values and the educational responsibility of the community.

Beauvais, F., Chavez, E. L., Oetting, E. R., Deffenbacher, J. L., & Cornell, G. R. (1996). Drug use, violence, and victimization among White American, Mexican American, and American Indian Dropouts, students with academic problems, and students with good academic standing. *Journal of Counseling Psychology, 43*(3), 292-99.
A survey of 1,052 Mexican American, 504 American Indian, and 459 White adolescents found that dropouts were most likely to be involved with drugs, perpetration of violence, and victimization by violence, while students in good academic standing were least likely to have such involvement. Students in poor standing were intermediate in involvement. Differences between dropouts and student groups were similar across ethnic groups. (Contains 27 references.)

Bennett, R. (1987). *Cooperative learning with a computer in a Native language class.* Arcata, CA: Humboldt State University Education Department. (ERIC Document Reproduction Service No. ED320709)
In a cooperative task, American Indian elementary students produced bilingual natural history dictionaries using a Macintosh computer. Students in grades 3 through 8 attended weekly, multigraded bilingual classes in Hupa/English or Yurok/English, held at two public school field sites for training elementary teaching-credential candidates. Teams of three students worked together at the computer to complete a dictionary page, a task involving selection of a natural item, formulation of its definition, transcription in the Unifon alphabet, translation to English, and page layout. The project focused on written sentence construction and oral communication skills. The goal of producing a dictionary dealing with plants and animals known to local tribes allowed students to use knowledge obtained from family and other tribal members. The computer provided concrete realization of abstract concepts and a self-directed interactive learning environment. Classroom observation showed that (1) students worked on the project willingly for the entire school year; (2) students' oral communication skills, used in the cooperative learning groups, developed over the year; (3) students tended to build on the work of other students; (4) older and younger students differed in their ways of viewing the natural world; and (5) older students advanced from producing literal English translations to making "good" free translations. The success of this project points to the importance of implementing a teaching methodology compatible with the learning style of the home culture. This report contains 26 references.

Bergstrom, A., Cleary, L. M., & Peacock, T. (in press). *The seventh generation: Native students speak about finding the good path.* Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools.

Boloz, S. A., & Varrati, R. (1983). *Apologize or analyze: Measuring academic*

achievement in the reservation school. (ERIC Document Reproduction Service No. ED232817)
Three variables—student attendance, stability of enrollment, and socioeconomic status—can affect reservation students' performance on standardized tests as significantly as the quality of instruction. To test the impact of the three variables on academic achievement, the Ganado (Arizona) Unified School District No. 20 analyzed available information on six academic subtests for a representative sample of its reservation student population in grades 3, 6, 8, and 12. Socioeconomic status was the most consistent variable, showing a strong relation to academic achievement in all test areas for all grades except 12. Attendance had a significant effect on language and reading scores of students in grades 6, 8, and 12. Attendance was also a significant variable for students of low SES, as was stability of enrollment. In general, students with stable enrollment in grades 6, 8, and 12 outperformed transient students in language areas. Overall, students with the best scores were those with the best attendance records who had been enrolled consistently in the district. Evaluators felt that these results proved the quality of the district's program. Variables such as one-parent homes, negative parental attitudes, and school expectations can also affect attendance and performance, and should be investigated.

Brancov, T. (1994). Cooperative learning in mathematics with middle school Indian students: A focus on achievement and on-task behavior (Native Americans). *Dissertation Abstracts International, 55*(11), 3396A. (UMI No. 9506443).
A study examined the effects of cooperative learning in mathematics on American Indian middle school students' achievement, time on task, and classroom environment. A quasi-experimental design was established using 129 Indian middle school students and two teachers on a South Dakota Indian reservation. Pretests/posttests revealed that compared to controls, the cooperative learning group showed improvements in mathematics achievement, specifically problem solving; attitudes toward mathematics; and classroom climate. No differences were found in time on task.

Brown, J. R. (1993). Upward Bound at Northern State University: A characteristic analysis of successful participants, 1977-1985 (Arizona). *Dissertation Abstracts International, 54*(11), 4012A. (UMI No. 9411451).
A study examined the characteristics of successful and unsuccessful Native American and non-Native secondary students who participated in the Northern Arizona University (NAU) Upward Bound program during 1977-1985. The study also looked at the academic performance of participants who later enrolled as college students at NAU. No significant differences were found between the success rates of Native and non-Native students. Participants' success was influenced by total years of program participation, parents' educational and occupational levels, prior academic performance, and consistency in program personnel. Postsecondary performance was related to academic preparation, as

opposed to ethnicity.

Carnew, F. I., & Clark, W. B. (1985). *Cognitive education and Native adolescents: A pilot study.* Alberta: Calgary University Instruction for Computer Assisted Learning. (ERIC Document Reproduction Service No. ED268989)
This study investigated the potential usefulness of a cognitive education intervention approach to improving learning abilities of underachieving Native adolescents. The specific variables considered were: (1) the manner in which this approach may affect cognitive development; (2) academic learning; (3) attitudes towards and interest in academic subjects; and (4) teacher attitudes towards such students. Subjects included 56 Native Cree Indian adolescents who were assigned to experimental (N=38) and control (N=18) groups based on their need for remedial or regular instruction respectively. Pretests were administered to identify underdeveloped cognitive functions and computer literacy was assessed via a computer awareness questionnaire. The experimental group received the intervention program, which comprised an introductory LOGO computer language component; an extended computer component; and reading, writing, and mathematics components. Posttests were then administered to both groups and an analysis of variance was conducted to determine the significance of any differences between the experimental and control groups. Results indicated that involvement in the intervention program did positively affect the experimental subjects' cognitive functioning abilities and improve their achievement in reading and writing; however, teaching for transfer of cognitive functions neither affected the students' attitudes toward academic subjects nor improved their achievement in mathematics. An extensive bibliography is provided, and copies of the computer awareness questionnaire, parent permission slips, and tables of contents for the program components are appended.

Clark, W. J. (1996). *Effect of a computer assisted instruction program on Aboriginal student achievement.* Unpublished master's thesis, Brandon University, Manitoba, Canada. (ERIC Document Reproduction Service No. ED400777)
Many parents on a southwestern Manitoba (Canada) Indian reservation are troubled by the small number of high school students who graduate. Much of the failure can be attributed to the generally poor writing skills of aboriginal students. To increase the students' writing ability, a computer-assisted instruction program emphasizing writing and thinking was implemented for students in grades 7-9. The purpose of this study was to investigate whether students receiving computer-assisted writing instruction would outperform students receiving traditional writing instruction (using pencil and paper) on the language arts component of a standardized diagnostic test. Following a quasi-experimental design, the researcher applied both a pretest and a posttest to the experimental and control groups. Prior to the introduction of the "Knowledge Builder" writing program and again at the end of the school year, the students in grades 7-9 of two southern Manitoba Indian reserves were administered the Canadian Test of Basic Skills, and the mean scores

for each grade of the two schools were compared. While the findings of this study showed no significant difference between the groups, the experimental school's teachers felt there was an overall improvement in the quality of expository writings. Thirteen tables present results of the study and descriptions and comparisons of the control and experimental groups.

Cleary, L. M., & Peacock, T. D. (1998). *Collected wisdom: American Indian education*. Needham Heights, MA: Allyn & Bacon.
Based on interviews and classroom observation, this book presents the "collected wisdom" of 60 teachers of American Indian students in all parts of the United States, as well as teachers of Indigenous students in Australia and Costa Rica. Chapter 1, "Introduction: The Teacher as Learner" presents the authors' backgrounds, the study's emerging themes, general procedures of the study, and rationale for the final presentation of data. The study was based on the premise that teachers in schools that serve Indian children should see themselves as learners who are open to understanding the reasons that children and communities are the way they are, who are willing to discover and consider the differences between school and home cultures, and who are willing to change their ways of teaching to give children a better chance in school and life. Each subsequent chapter has a theme and standard format: a story that introduces the chapter's content, questions to tap the reader's prior knowledge, a profile of a teacher-interviewee, a problematic case study, a summary of research on the theme and its implications for practice, and references. Chapter titles include the following: "Cultural Difference: Recognizing the Gap into Which Students and Teachers Fall"; "What Has Gone Wrong: The Remnants of Oppression"; "Creating a Two-Way Bridge: Being Indian in a Non- Indian World"; "Issues of Native Language"; "Ways of Learning"; "Literacy, Thought, and Empowerment"; and "What Works: Student Motivation as a Guide to Practice." The last chapter is an epilogue which discusses the universality of issues in Indigenous education, the strength and tenacity of culture, and the need for an integrated approach to educational problems. Appendixes detail the research methodology and provide questions to guide a teacher's change to authentic assessment. (Contains an index.)

Coburn, J. & Nelson S. (1987). *Characteristics of successful Indian students: Research and development program for Indian education.* Portland, OR: Northwest Regional Educational Laboratory. (ERIC Document Reproduction Service No. ED297909)
A survey was taken to identify characteristics of Indian students completing high school. Using the regional Indian education network, 571 surveys were mailed to 1987 high school graduates; 123 surveys were returned for a 23-plus percent response rate. Responses came from public and tribal schools, urban and rural, in Oregon, Washington, Idaho, and Montana. Responses showed a variety of student types. Half of the students surveyed were involved in sports, 35% in church activities, 25% in tribal activities, and 15% in civic organizations. Their average cumulative grade point average was 2.86. Eighty-two percent of students identified

teachers as most influential in their success. Forty-seven percent also identified counselors and 39% identified coaches as influential. Attributes of most influential teachers included caring and positive attitudes, honesty, concern, respect, and patience. These teachers made school interesting, and inspired and challenged the students, while maintaining high expectations. The most helpful teachers were those who gave help willingly, were open-minded, encouraged goal setting, were supportive when students failed, but complimented them when they did well. Half of the Indian students surveyed ascribed their motivation to finish high school to the reward of current successful experiences, including individual attention of teachers and participation in sports and other extracurricular activities. High expectations of family and friends, aspirations for a college education, self-confidence, and the negative consequences of dropping out were also cited as strong motivations. Students suggested telling other students that finishing high school is the way to future success on and off the reservation.

Coggins, K., Williams, E., & Radin, N. (1996). *The traditional tribal values of Ojibwa parents and the school performance of their children: An exploratory study.* Ann Arbor: University of Michigan. (ERIC Document Reproduction Service No. ED400116)

This study of 19 northern Michigan Ojibwa families examined antecedents to holding traditional values, and the relationship between mothers' and fathers' level of holding traditional values and their elementary school children's academic and social functioning. Participating families had a child between ages 3 and 11 years; the focal child of the study was the oldest attending elementary school. Interviews were held individually with the 15 mothers and 14 fathers comprising the sample. Based on interview information, the interviewers completed a scale measuring the extent to which traditional values were held. Academic functioning was assessed through teacher assigned report card grades and two Adaptive Functioning items from Achenbach's Teacher's Report Form of the Child Behavior Check List (CBCL). Social functioning was assessed by two Adaptive Functioning items from the CBCL; the Problem Behavior CBCL items; an American Indian Child Behavior Check List to assess personality traits important to American Indians; and an Index of Future Community Leadership, important in an American Indian population. Results indicated that identification with more traditional American Indian values in mothers had a beneficial impact on children's academic and social performance in school. Fathers' level of holding traditional values was not associated with his children's academic and social outcomes. Mothers' greater adherence to traditional values was associated with higher levels of parental education and higher status parental occupation. (Contains 37 references.)

Darnell, R. (1985). The language of power in Cree interethnic communication. In N. Wolfson & J. Manes (Eds.), *Language of inequality* (pp. 61-72). Berlin: Walter de Gruyter & Company.

This chapter examines difficulties and misunderstandings that arise in

communication between Native Americans and Whites, difficulties often compounded by asymmetrical access to power. Examples are drawn from the Cree of northern Alberta (although many of these patterns are widespread in Native North America) and focus on public meetings, political decision making, and interactions in the classroom. One area of miscommunication is related to cultural differences in decision making and attitudes toward leadership. In the context of public meetings and decision making, Whites tend to expect speedy group decisions in which the majority rules. Native people seek consensus, which takes time; avoid confrontation by depersonalizing differences of opinion; and use mediators to effect compromises. Cultural differences in communication styles include differences in interactional timing and the ways that speakers and learners use silence or murmur acknowledgements. In traditional Cree teaching, an elder conveys his experience, often in a monologue, or a teacher demonstrates a skill. The learner has little or no input. The interaction is open-ended, as the learner is responsible for putting the teaching to effective use. Other Cree interactional practices or premises often cause conflict in the classroom. Cree do not correct a mistake directly, do not force anyone to accept teaching, do not verbalize their feelings or talk about talk, avoid direct eye contact, and regard children as autonomous persons. Some thoughts on establishing true interethnic communication are offered.

Davis, J. (1992). Factors contributing to post-secondary achievement of American Indians. *Tribal College, 4*(2), 24-30. (EJ465863)
Describes a study of the family and educational histories of 10 American Indian college graduates to determine factors in their success. The graduates, most of who came from low socioeconomic and limited educational backgrounds, attributed their success to family encouragement and their personal desire for betterment.

deMarrais, K. B. (1992). Meaning in mud: Yup'ik Eskimo girls at play. *Anthropology & Education Quarterly, 23*(2), 120-44. (EJ448044)
Describes storyknifing, a traditional way of storytelling illustrated through pictures traced in mud, by young girls in a Yup'ik Eskimo village on the Kuskokwim River (Alaska). Storyknifing provides a forum in which young girls learn cultural and cognitive knowledge. Storyknifing maintains a link with traditional society in this village.

Diessner, R., Rouscul, E. E., & Walker, J. L. (1985). English fluency via computers at Yakima tribal school. *Journal of American Indian Education, 25*(1), 17-24. (EJ334947)
A project using Apple IIe processing stations and Apple Writer II software increased written English fluency for Native American students in grades 7-12 at the Yakima Tribal School. Thematic maturity did not increase, and students became reluctant to do handwritten work.

Dodd, J. M., Garcia, F. M, Meccage, C., & Nelson, J. R. (1995). American Indian student retention. *NASPA Journal, 33*(1), 72-78. (EJ514460)

Presents results of study undertaken to learn what academically successful American Indian students at one postsecondary school encounter and what persons and/or support services help with their academic success. Most students indicated family of primary support. Few reported obstacles were academic, indicating the importance of student support services.

Dooley, M. S. (1987). *Dialogue journals: Facilitating the reading-writing connection with Native American students.* Marquette: Northern Michigan University. (ERIC Document Reproduction Service No. ED292118)
Focusing on the integration of early reading and writing skills, a study examined the instructional use of daily dialogue journals over a five-month period in a class of 10 third-grade Native American students living on an Indian reservation in northern Michigan. Students were required to make an entry of at least three lines every day, all writing was confidential, and the journals were not graded. Punctuation skills, grammar, and sentence structure improved in most cases, the length of sentences and paragraphs improved in all cases. Ninety percent of the students indicated a positive feeling about writing, and a majority reported that they enjoyed sharing reading and writing with their classmates. Difficulties in using this teaching technique included the amount of teacher time spent in answering the journals on a daily basis, and the problem of motivating students to write. Overall, results indicated that the dialogue journals were successful in combining the need for a culture-based learning style, which emphasized group cooperation, and pragmatic learning based on experiences. (Examples of pre-writing, a student attitude chart, a student progress chart, and 22 references are appended.)

Edington, E. D., & Pettibone, T. J. (1975). *Project HEED. Final evaluation report, 1974-1975.* (ERIC Document Reproduction Service No. ED108791)
Project HEED's (Heed Ethnic Education Deplorization) main emphasis in 1974-75 was to develop reading and cultural awareness skills for kindergarten through 4th grades in the seven project schools on American Indian reservations in Arizona. In its fourth year of operation, the project (funded under Elementary and Secondary Education Title III) involved 725 Indian students in grades K-3 at St. Charles Mission, Hotevilla, Sells, Rice, and Many Farms and in K-4 at Sacaton and Peach Springs. For the project's fourth evaluation, all the students were administered the pre and posttest SRA Reading Achievement tests and the DISTAR Mastery tests. A minimum of two visits was made to all sites, except Hotevilla, during the year. Some of the project's successes were; (1) significant gains were attained at all schools; (2) changes in average grade level equivalence ranged from 4 to 7 months; and (3) in terms of national posttest norms, only 1 school achieved as high as the national median score of the 50th percentile. This report covers 3 basic areas of the evaluation: (1) reading performance by SRA (WRAT) and DISTAR Reading Mastery test; (2) development of reading objectives; and (3) cultural awareness activities. The reading scores are reported both as grade level changes and as percentile changes.

Fayden, T. (1997). What Is the effect of shared reading on rural Native American and Hispanic kindergarten children? *Reading Improvement, 34*(1), 22-30. (EJ544226)
Finds that the use of predictable Big Books in the classroom with primarily Native American and Hispanic kindergarten children and with children whose early experiences with books are limited is an effective way to develop reading skills.

Feurer, H. (1990). *Multilingual education: An experimental project by the Cree Indians of Waskaganish in Quebec, Canada.* Paper presented at the International Conference on Thai Studies, Yunnan, China. (ERIC Document Reproduction Service No. ED337045)
The struggle of one Cree community, the Waskaganish (formerly called Rupert House) in Quebec, to maintain its own language and culture within the larger multicultural Canadian context has led to the creation and development of a linguistic experiment, the Cree Way Project. After a discussion of the Canadian historical context, this report describes Quebec and Amerindian education and the Cree Way Project. The project was a first attempt to help the Cree people remain a nation, introducing Cree syllabic readers for primary grade children. Since 1978, the project has been incorporated into the Cree School Board's curriculum in one community and has begun to be implemented in seven others. There are now more than 500 textbooks printed in Cree syllabics, and a Cree immersion program is in its second year. The school calendar honors Cree traditions such as hunting and ceremonial activities. The school, with its rapidly growing Native teaching staff, seeks to meet the needs and maximize the abilities of the Waskaganish community. The Cree experience supports the hypothesis that the education of Indigenous peoples in their own language will further the process of second language acquisition. Contains 18 references.

Fox, S. J. (1976). An evaluation of the eighth grade reading programs implemented for Indian students in North and South Dakota (Doctoral dissertation, University of Maryland College Park, 1976). *Dissertation Abstracts International, 37,* 7095.
Poor reading achievement is a major problem of American Indian students. This dissertation describes eight Title I reading programs implemented during 1973-74 in Bureau of Indian Affairs schools of North and South Dakota and evaluates them with regard to U.S. Department of Education criteria for exemplary Title I programs. The students in these programs were primarily of the Chippewa and Sioux tribes. Students in all programs improved significantly in reading ability after 1 year of program participation. The three schools that showed the best gains in reading ability also ranked the highest when rated against the criteria for exemplary programs. Specifically, these three schools were rated higher than other schools on having close coordination between Title I and the regular reading program and on having a structured program approach. Recommendations are offered for improving Title I programs that serve Indian children.

Franks, M. E. (1988). *Using the gap reduction model to evaluate a successful bilingual/ESL program.* Paper presented at the Annual Meeting of the Mid-South

Educational Research Association, Louisville, Kentucky. (ERIC Document Reproduction Service No. ED303505)
Procedures and results of an evaluation of the Choctaw Bilingual/English as a Second Language (ESL) Program, conducted in east central Mississippi, are discussed. The program, which is in its fifth year, is implemented using Title VII funds in three of the six Bureau of Indian Affairs elementary schools on the Mississippi Choctaw Reservation. The Bilingual/ESL program focuses on increasing students' proficiency in English in a manner that does not devalue Choctaw language or culture. It involves formal classroom instruction and parent training. A major component involves the training of instructional personnel in ESL instructional methods. The means used to evaluate the project was the gap-reduction design advocated by G. K. Tallmadge et al. During the evaluation, the program served 139 students enrolled in kindergarten through grade 3. All students were dominant Choctaw speakers with limited English proficiency. A comparison group of 194 non-ESL students in kindergarten through grade 4 was used. Students in both groups were administered the California Achievement Test (CAT) in April of 1987 and 1988. The unit of analysis was the standard score for the reading, language, and total battery. Results indicate that the students in the program made greater gains in all three batteries of the CAT than did non-ESL students. It is concluded that the program has been sufficiently effective to recommend its adoption by the entire school system. In addition, the gap-reduction method of program evaluation has proven to be an efficient and effective method of evaluating supplemental educational programs. Nine data tables and five graphs are presented.

Gage, J., & Robson, D. (Oct 1984). *Patterns of achievement and self-concept among students in a tri-ethnic community.* Paper presented at the Annual Meeting of the Northern Rocky Mountain Educational Research Association, Jackson Hole, WY. (ERIC Document Reproduction Service No. ED252343)
Commissioned by the Southern Ute Tribal Council and coordinated by the Education Division of the tribe, this study was undertaken to collect and analyze data relating to achievement patterns of Native American, Hispanic, and Anglo children in the public school system in Ignacio, Colorado. The major objective of the study was to determine if differences existed in achievement levels of the three ethnic groups in elementary, junior high, and senior high schools and if differences were found, which demographic, attitudinal, and cultural variables were associated with the differences. A self-inventory was completed by 364 students (primary, 109; intermediate, 66; secondary, 189). A random sample of 10 Ute, 10 Hispanic, and 10 Anglo parents of high school students were interviewed. The basic findings of the study revealed that achievement differences did exist between the three ethnic groups. These differences were associated with three factors—school attendance, self-concept, and parent attitudes towards the school. Eight recommendations were presented to the Ute Tribal Council for consideration in reference to this study.

Greene, R. H., & Kersey, H. A. (1975). Upgrading Indian education: A case study of the Seminoles. *School Review, 83,* 345-61. (EJ113653)
Authors' research indicated that the "equal and alike" approach to education doesn't work for the American Indian either.

Greymorning, S. (1997). Going beyond words: The Arapaho immersion program. In J. Reyhner (Ed.), *Teaching Indigenous languages* (pp. 22-30). Flagstaff, AZ: Northern Arizona University. (Also listed as ERIC Document Reproduction Service No. ED415061)
This paper examines the growth and development of the Arapaho immersion program and discusses language revitalization strategies and methods used on the Wind River Reservation (Wyoming). Following a community request for an Arapaho language and culture program in reservation public schools, a test class of kindergarten students received an hour of Arapaho instruction daily for 18 weeks. After 12 weeks, 80 percent of students had mastered 162 words and phrases. These favorable results plus information from Hawaiian immersion programs led to implementation of a half-day immersion kindergarten class in September 1993. A belief in the need to increase students' language contact hours led to a preschool immersion class; a summer program; and finally, a 6-hour-a-day school immersion program. Although children in the expanded school program greatly increased their mastery of Arapaho, they did not come close to fluency because they lacked the ability to independently use and manipulate new speech forms. In 1996, a trainer from the Hawaiian language immersion system was hired to guide and train staff in proven immersion techniques, and a second immersion class was begun on another part of the reservation. Both classes made astonishing progress, but fluency was again elusive. To achieve fluency, children must be systematically exposed to a full array of speech forms by a well-trained teacher with a clear understanding of language acquisition. Thus, effective teacher training remains a critical issue for language immersion programs. Implications of the enormous success of Maori immersion efforts are discussed.

Harrison, B. (1998). Te Wharekura o Rakaumangamanga: The development of an Indigenous language immersion school. *Bilingual Research Journal, 22*(2-4), 297-316. (EJ607046)
Describes development since 1985 of a Maori immersion school for children aged 5-17. Provides background on Maori and New Zealand history, the Waikato tribe and the community, Indigenous language revitalization efforts, and national school restructuring that facilitated Maori immersion programs. Discusses the school's educational practices, school-community relations, student performance and academic persistence, and teacher training. (Contains 30 references.)

Hartley, E. A., & Johnson, P. (1995). Toward a community-based transition to a Yup'ik first language (immersion) program with ESL component. *Bilingual Research Journal, 19*(3-4), 571-85. (EJ528256)
In the small Alaskan village of Manokotak, the community participated in the

school's shift from an "English submersion" program to Yup'ik immersion plus ESL. Discusses community involvement and participative planning, first-year goals, scheduling of instructional time in each language, staff development, materials development, cultural relevance versus competency based education, student evaluation, and problems during the change process.

Holm, A., & Holm, W. (1995). Navajo language education: Retrospect and prospects. *The Bilingual Research Journal, 19(1),* 141-67. (EJ499403)
Describes the growth and development of bilingual education on the Navajo Reservation and resultant outcomes for Navajo students, educators, and communities, and demonstrates how learning is mediated by language and culture in the Navajo context, as well as the critical conditions needed to sustain genuine two-language education. (16 references)

Hopkins, G., & Bean, T. W. (1999). Vocabulary learning in the verbal-visual word association strategy in a Native American community. *Journal of Adolescent & Adult Literacy, 42*(4) 274-81. (EJ575037)
Describes classroom action research with the verbal-visual word association strategy. Explores the strategy with a group of junior high and high school students on the Northern Cheyenne Reservation in southeastern Montana. Shares interpretative impressions and results of a vocabulary quiz given to the high school group.

Huffman, T., Sill, M. L., & Brokenleg, M. (1986). College achievement among Sioux and white South Dakota Students. *Journal of American Indian Education, 25*(2), 32-38. (EJ336454)
Relates several social, cultural, and aspirational factors to achievement measured by grade point average among 38 Sioux and 48 White college students. Finds high school GPA and parental encouragement most important for White students, cultural identity and retention of Native cultural traditions most important for Sioux students.

James, K., Chavez, E., Beauvais, F., Edwards, R., & Oetting, G. (1995). School achievement and dropout among Anglo and Indian females and males: A comparative examination. *American Indian Culture and Research Journal, 19*(3), 181-206. (EJ515294)
Among 1,607 American Indian and Anglo dropouts and currently enrolled middle- and high-school students, language difficulties and problems with teachers were predictive of academic troubles and dropping out. Success of Indian students was related to stronger Anglo cultural identity and better English proficiency (in mainstream schools) but was not related to Indian cultural identity.

Jacob, J. (1976). The effects of individualizing instruction by the use of multi-sensory multi-media learning centers in reading and arithmetic achievement of inner-city children (Doctoral dissertation, Michigan State University, 1977). *Dissertation Abstracts International, 37,* 5586.

NOTE: Also abstracted in ERIC Document Reproduction Service No. ED155678: Reading Instruction: Remedial and compensatory: Abstracts of doctoral dissertations published in "Dissertation Abstracts International" March through June 1977 (Vol. 37 nos. 9 through 12).
A study examined the effects of an individualized, diagnostic, prescriptive instructional approach on the reading and mathematics achievement of inner-city children. Subjects were 211 fifth- and sixth-graders in Benton Harbor, Michigan. Experimental groups of students received individualized instruction through multisensory, multimedia learning centers and were allowed to progress at their own pace. Control groups received conventional instruction. After 6 months, students in experimental groups had significantly higher reading scores on the California Achievement Test, compared to controls. In addition, individualized instruction increased the self-direction and independence of students in the experimental group. There were no significant differences in mathematics achievement. Teacher training in the individualized instructional approach is described. (Contains 34 references.)

Kamehameha Early Education Program. (1974). *Major KEEP findings, 1971-1975.* Honolulu, Hawaii: Kamehameha Schools. (ERIC Document Reproduction Service No. ED158869)
This report lists the 34 major research findings from the Kamehameha Early Education Program (KEEP) for the years 1971-1975. Each finding is accompanied by a listing of KEEP technical reports and working papers, which contain information relevant to that finding. Included among areas covered in the findings are: (1) student motivation, (2) teacher training, (3) student achievement, (4) curriculum, (5) teaching methods, (6) ethnic dialects, (7) family background, and (8) information dissemination.

Kerbo, H. R. (1981). College achievement among Native Americans: A research note. *Social Forces, 59*(4), 1275-80. (EJ245079)
Data on cultural factors and academic success of Native American college students suggest that the predictors of grade point average among these students are different from predictors for Whites. The best independent predictors for Native Americans are degree of identification and social integration with Whites.

Kimble, R. L., & Davison, R. G. (1972). Reading improvement for disadvantaged American Indian youth. *Journal of Reading, 15*(5), 342-46. (EJ052423)
(Abstract not available in ERIC)

Kleinfeld, J. (1975). Effective teachers of Eskimo and Indian students. *School Review 83*(2), 301-44. (EJ113652)
Author described the problems of Alaskan Natives who confront the "equal and alike" classroom teacher and who fail to learn. As well, she considered four different types of teachers in the classrooms of Alaska and how only one successfully taught her Native students.

Kleinfeld, J. S. (1979). *Eskimo school on the Andreafsky: A study of effective bicultural education. Praeger studies in ethnographic perspectives on American education.* New York: Praeger Publishers. (ERIC Document Reproduction Service No. ED201437)
Written as part of a series of ethnographic studies, this book is a case study of a Catholic boarding high school for Alaskan Eskimos from remote villages undergoing rapid change. Six chapters appraise the bicultural educational principles employed at St. Mary's: (1) a profile of the students as effective bicultural people; (2) the relationship between students and staff; (3) educational aims and methods used at St. Mary's; (4) values and ideals of the students; (5) student selection policies; and (6) the model used at the school for bilingual and bicultural education. The study concludes that: St. Mary's is highly effective in cross-cultural education and produces graduates with skills and communication style needed for access to the opportunities of majority culture; its graduates succeed in college much more frequently than comparable Eskimo students, but learning skills which enable them to function well in the majority culture does not cut them off from the culture of their home villages, where they are noteworthy for quiet village leadership. An epilogue discusses problems encountered by the school and possible alternatives for its continued existence. Four appendices present statistics on characteristics of students, staff, and graduates, and the research methods used.

Kleinfeld, J. S., et al. (1985). *Alaska's small rural high schools: Are they working? Abridged edition.* Fairbanks: University of Alaska, Center for Cross-Cultural Studies. (ERIC Document Reproduction Service No. ED264989)
The report describes the educational programs that Alaska's 162 small rural high schools offer, identifies educational problems, and examines strategies that districts and schools have devised to strengthen these schools. The schools mostly serve Eskimos and American Indians, have fewer than 100 students, and are located in communities of fewer than 1,000 residents. Information was obtained through telephone interviews, mailed surveys, site surveys of 32 randomly selected schools, achievement test scores, and in-depth studies by educators. Findings indicate: (1) most communities want village high schools as well as boarding school options; (2) replacement of boarding schools with village high schools has resulted in dramatically increased graduation rates; (3) high school size does not determine the quality of students' educational experiences or achievement on standardized tests; and (4) schools that are working well exhibit a strong teacher/community partnership, teacher/community agreement on a theme for the educational program, an enterprising teaching staff, and a central office that encourages adapting schooling to local needs. Successful strategies are described for problems in the areas of increasing course and teacher variety, providing vocational education, preparing students for college, raising achievement test scores, teaching students about the outside world, and helping rural students through the transition to adulthood.

Larimore, C. K. (2000). When worlds collide: Native American students navigating dominant culture classrooms. *Dissertation Abstracts International, 61*(07), 2932A. (UMI No. 9979694)
A group of Native American children in an urban, public elementary school were followed across different types of classroom environments, from third to fifth grade. Similar to Native students in reservation schools, these children disengaged when teachers emphasized verbal, versus visual, instruction; avoided competition and public performance, and were uneasy about demonstrating new skills without adequate practice. However, these children tended to adapt more readily, take more risks, and perform new skills more willingly in classrooms where teachers used cooperative learning practices. Surprisingly, the influence of a competitive or cooperative classroom could be mitigated by student actions. Native students with willing collaborators could find ways to learn cooperatively even in competitive classrooms. On the other hand, a preponderance of highly competitive non-Native students could interfere with practices in a cooperative classroom and thus impede Native students' progress. Native parents influenced their children's adaptation to school through the relative value they placed on education versus becoming a good person.

Leap, W. L. (1991). Pathways and barriers to Indian language literacy-building on the Northern Ute reservation. *Anthropology and Education, 22*(1), 21-41. (EJ426523)
Describes recent efforts by members of the Ute tribe (northeastern Utah) to introduce a written form of the Ute language. Discusses several reasons for the resistance to Ute literacy among many members of the tribe and the steps that have been taken in response to these concerns.

Leveque, D. M. (1994). *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)
The academic achievement of Native American students in the United States has consistently been the lowest in the nation. This study examined the school performance, involvement of Native parents in the school life of their children, and assimilation patterns of a specific group of Native Americans who have lived in Barstow, California, for at least three generations. The case study approach used participant observation, ethnographic interview, and documentary analysis. 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 BUSD mean percentile scores for the total student population and the Caucasian subpopulation in all areas except second-grade reading in 1992 and third-grade reading in 1993. Between 1991 and 1993, the dropout rate for Native American students was only 10 percent, and the honor roll rate was 30 percent. At least 36 percent of Native students who attended BUSD between 1988 and 1993 continued their education past high school. The strongest link between educational

opportunities and Native student achievement was found in the involvement of parents in the design and implementation of programs. The Native American families in Barstow are the descendants of Navajo and Pueblo railroad workers who chose to come to Barstow (thus assuming "immigrant" characteristics). Full assimilation into the majority culture occurred over three generations. Thus, the strongest elements contributing to Native student achievement were parental involvement and family acculturation patterns. The findings suggest that Ogbu's categories of immigrant and nonimmigrant minorities are not static, and that nonimmigrant minorities may not be bound to their caste like status.

Levin, M., Moss, M., Swartz, J., Khan, S., & Tarr, H. (1997). *National evaluation of the Even Start Family Literacy Program. Report on Even Start Projects for Indian tribes and tribal organizations.* Bethesda, MD: Abt Associates, Incorporated; Fu Associates, Ltd. (ERIC Document Reproduction Service No. ED415084)
The tribal Even Start program is one of the set-aside components of the U.S. Department of Education's Even Start Family Literacy Program. Even Start combines adult literacy, early childhood education, and parenting education services for parents eligible for adult education and their children from birth to age 7. In 1994-95, nine Indian tribes and tribal organizations received direct federal grants to administer Even Start Projects. This report examines three of the projects: those administered by the Makah Tribe (Washington), the Cherokee Nation (Oklahoma), and the Pascua Yaqui Tribe (Arizona). The following is covered for each project: community characteristics, recruitment of families, program staff, content and delivery of Even Start services, coordination of service components, and evaluation and the Even Start Information System (ESIS). The three projects each serve 20-27 families in primarily rural areas. Many core services are delivered during home visits. This may be the preferred mode of delivery for tribal projects, due to expansive catchment areas and lack of public transportation, and because participants and staff are often previously acquainted. Major issues and challenges confronting tribal projects are related to preserving tribal culture, encouraging parent involvement, poverty, unemployment, lack of facilities, and lack of culturally relevant materials. Appendix includes topic and observation guides for site visits.

Lin, R. (1990). Perception of family background and personal characteristics among Indian college students. *Journal of American Indian Education, 29*(3), 19-28. (EJ413874)
Among 87 American Indian students at a Montana college, those from traditional families were more task and achievement oriented, had higher grade point averages, and spent more time doing homework. Those from modern families cared more about professors' opinions and skipped more classes. Contains the survey questionnaire.

Lipka, J., & McCarty, T. L. (1994). Changing the culture of schooling: Navajo and Yup'ik cases. *Anthropology & Education Quarterly, 25*(3), 266-84.

This article presents two cases in which Indigenous teacher groups are transforming the culture of schooling. Data are drawn from over a decade of ethnographic and action-oriented research at Rough Rock Demonstration School, on the Navajo Nation in northeastern Arizona, and in 10 Yup'ik community schools in southwestern Alaska. By coming together in Indigenous teacher study groups, Navajo and Yup'ik teachers and elders are finding creative ways to use their culture, knowledge, and language in the construction of curriculum and pedagogy. These teacher groups have created zones of safety in which resistance to conventional practices can be expressed and innovative approaches to schooling investigated and practiced. The work of these teacher groups has theoretical implications for community-based teacher preparation. Factors influencing development of these groups and their ability to effect change are discussed, along with the challenges of transferring their cultural creations to the wider institutions of schooling. (Contains 32 references.)

Little Soldier, L. (1988). *Sociocultural context and language learning of Native American pupils*. Paper presented at the Annual Meeting of the National Association for Bilingual Education, Houston, TX. (ERIC Document Reproduction Service No. ED295503)

A study examined the quantity and quality of language produced by kindergarten and early primary Native American pupils in relation to selected factors in the classroom context in which the language was produced. Observations of about 50 classrooms were conducted in schools serving predominantly Native American pupils on and off reservations in New Mexico. A rating sheet was used to evaluate the sociocultural environment of the classrooms. Results showed that informal classroom organization with flexible arrangement of furniture and emphasis on group work enhanced language learning. Other factors relating positively to language learning were situations in which the locus of control was shared by teachers and pupils, where there was an emphasis on cooperative learning and dialogue patterns involving pupils to a great degree, and in which culturally relevant materials or activities were used.

Macias, J. (1987). The hidden curriculum of Papago teachers: American Indian strategies for mitigating cultural discontinuity in early schooling. In G. Spindler & L. Spindler (Eds.), *An interpretive ethnography of education: At home and abroad* (pp. 363-80). Hillsdale, NJ: Lawrence Erlbaum Associates.

This chapter summarizes the major findings of an ethnographic case study of Papago children in a tribal Head Start program on the Papago Reservation (Arizona). For many children of ethnic minority origin, the transition from home to school is a critical period of cultural discontinuity. The two-year study, which included 9 months of intensive field work at the Papago Early Childhood Head Start Program (PECHS), examined some cultural discontinuities experienced by Papago preschool children and the responses of their Papago teachers in helping them cope with the contradictions of their first schooling experience. PECHS was

intentionally preparing preschool children to enter a mainstream school system. Three main areas of cultural discontinuity were identified: the school's encouragement of children's verbal behaviors; increased interference with children's autonomy through imposition of new behavioral rules and norms; and introduction to mainstream ways of life through various new experiences. At PECHS, Papago teachers developed their own Papago "hidden curriculum" geared to reduce the negative impact of discontinuity. These teachers incorporated Papago experiences, values, and ways of relating into discontinuous activities and experiences and thereby increased student engagement, compliance, and later success in school.

Malmberg, S. R. (1983). *A new beginning: A case study of the establishment of a rural community-based alternative high school, emphasizing basic academic skills, with a high Native American minority student population, I.* An occasional paper series. Sault Sainte Marie Public Schools, Michigan. (ERIC Document Reproduction Service No. ED231600)
The case study of the establishment of the rural community-based Sault Ste. Marie Area Public Schools' Alternative High School, emphasizing basic academic skills, and with a high Native American minority student population (16 years or older), shows that alienated youths, when given the opportunity and support, tend to show significant growth in academics and in social rehabilitation. Chapter I discusses demographics of the service area, local efforts to produce change, formation of the Neighborhood Education Center, selection of a program site, and selection and referral. Chapter II contains the evaluation of the Alternative High School Program (1974-75): description of program objectives and evaluation criteria; and selection of evaluation models for program evaluation, needs assessment, program planning, and formative and summative evaluation. Chapter III examines various program results, i.e., services provided, recognition and exposure, student enrollment and disposition data, performance objective data, and conclusions and recommendations. The last chapter looks at the Alternative High School as a vehicle for educational and social change: factors influencing replication (individualized instruction, reward systems); conducive physical and human factors (low student-adult ratio, caring teachers, affective education, strong administrator); student and parent involvement in decision making; vocationally oriented components, etc. Appendices list agencies and individuals who contributed to the program and a list of topics covered by "survival" classes; and data on students, staff, program costs, and test results.

Markowitz, A., & Haley, F. (1973). *A bilingual Navajo curriculum project. Profiles of promise 16.* (ERIC Document Reproduction Service No. ED095073)
Ninety-six percent of the students who enter first grade in the San Juan School District, Blanding, Utah, cannot speak or understand English. They are Navajo and attend school on the Navajo reservation. A unique bilingual Navajo curriculum project has been developed to provide learning materials in the Navajo language to

enable the child to learn when he first enters school, regardless of the language he speaks. Using filmstrips, cassette recordings, slides, 16 mm films, book illustrations, and the printed word, the project translates the learning materials found in the classroom into the Navajo language. Major objectives of the San Juan Educational Program are to provide instruction in the language the child understands best so that he does not become retarded in the academic areas while learning the common instructional language; build a positive self image of all children; and develop closer communication and understanding between parents and teachers. Evaluation shows that the Navajo children in the program have improved in their reading and in their attitudes toward school.

Martens, B. A. (1992). The implementation of a dropout prevention program for at-risk secondary students (at risk). *Dissertations Abstracts International, 53*(08), 2759A. (UMI No. 9237374).

The impact of a 14-week dropout prevention program was assessed for 16 Native American and 7 Anglo American students in grades 9-11. All 23 students were experiencing academic difficulties, and most had excessive absences, had behavioral problems, and came from single-parent homes. The students received tutoring in current coursework and participated in a weekly group counseling session. Counseling topics included social relationships, study skills, careers, motivation, importance of education, self-esteem, peer pressure, decision making, and extracurricular activities. Parent involvement was addressed through increased communication between school and home. After 14 weeks, the group showed a significant decrease in absences and a significant increase in grade point average. Academic self-concept improved significantly, but four other affective areas were unchanged.

Mason, N. (1998). *Project research on the achievement of Aboriginal students in reserve schools: A success or disappointment.* Unpublished Master's Thesis, Brandon University, Manitoba, Canada. (ERIC Document Reproduction Service No. ED427901)

With the move to self-governance and the dismantling of Indian and Northern Affairs Canada (INAC), there is a need to know if Aboriginal education systems are providing superior, adequate, marginal, or unsatisfactory standards of education for their students. A study of 165 First Nations students attending a K-10 First Nations school sought to determine if Aboriginal students were more successful in a locally controlled reserve school, as opposed to a federal school. A student survey examined attitudes toward school, values, and sources of enjoyment. Measures of success at the school, which had come under First Nations control 3 years previously, included academic testing (CTBS), attendance, student suspensions and expulsions, age-grade deceleration, dropout rates, and graduation. Attendance improved significantly under Native control, compared to under INAC control. Student enrollment increased steadily from 1990 to 1997, an average of 25 students per year. Age-grade deceleration was reduced by 20.8 percent, primarily in the K-8

grade levels. Students were staying in school, and 34 older students who had been out of school for some time, returned to finish. The paper includes 25 recommendations for increased school success, and suggestions for further research. (Contains 38 references and 34 data tables.)

McBeath, G. A., McDiarmid, B., & Shepro, C. E. (1982). *Achievement and school effectiveness: Three case studies. A report to the Alaska department of education.* (ERIC Document Reproduction Service No. ED233840)
Case studies of high student achievement levels and school effectiveness from three rural Alaska Native schools, all offering some bilingual or bicultural classes, examine curriculum and school instructional practices, school social systems, student outcomes, aspects of school governance, and school-community relations. Chaputnguak High School, in the Yupik Eskimo village of Chefornak, enrolls 29 students in individualized, self-paced mastery programs and has the region's highest graduation requirements; school-community relations are excellent, students have positive attitudes and a sense of "ownership," and one-third to one-half of seniors enter college. Metlakatla elementary/secondary school, in a Tsimshian Indian village, has a history of local control and emphasizes teaching basics; student academic achievement, measured on standardized tests, is very good compared to other rural small schools in Alaska, but some questions exist about school effectiveness in meeting community needs. The 22 students (K-8) who attend Tanacross school are largely Athabaskan Indians; the school exists because parents felt their children were not well served by being bused to school in another community, and took legal action to have their own school, which opened in 1980; school staff is exceptional, parents are satisfied, and student attitudes and test scores are excellent.

McCarty, T. L., Wallace, S., Lynch, R. H., & Benally, A. (1991). Classroom inquiry and Navajo learning styles: A call for reassessment. *Anthropology & Education Quarterly, 22*(1), 42-59. (EJ426524)
Describes experimental K-9 bilingual-bicultural curriculum in Navajo studies emphasizing open-ended questioning, inductive/analytical reasoning, and student verbalization in both small and large groups, and discusses reasons why it has been well received by teachers and students. Findings challenge conventional view that these students are nonanalytical, nonverbal learners. Suggests educational application of such "learning styles" can perpetuate patterns of learned dependence.

McInerney, D. M., & McInerney, V. (2000). *A longitudinal qualitative study of school motivation and achievement.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED441815)
The goals and values students hold, how these are related to school motivation and achievement, and how these goals develop and change over a period of years in the context of cultural background, family, society, and school was studied with Native American and Anglo American students from a middle and high school in Phoenix,

Arizona. Participants were selected for this longitudinal study when they were in grades 7 and 8, and it was intended that they would be interviewed annually until they finished high school. Over 3 years, 48 first interviews, 26-second interviews, and 11 third interviews were conducted. The analyses of these interviews indicate that for Native American and Anglo American students alike, there are four needs that motivate them to strive for school success: (1) seeking excellence in one's work; (2) self-esteem; (3) affiliation; and (4) social concern. A number of the values and needs emphasized in the school setting, such as competition, group leadership, recognition, and rewards, are perceived to be relatively unimportant by these students. Many students did not have a clearly articulated sense of purpose for their schooling, and this lack should be addressed. (Contains 2 tables and 42 references.)

McInerney, D. M., Roche, L. A. McInereney, V., & Marsh, H. W. (1997). Cultural perspectives on school motivation: The relevance and application of goal theory. *American Educational Research Journal, 34*(1), 207-36. (EJ545456)
Whether goals held by students from diverse cultural backgrounds differ and the relationship of these goals to school motivation and achievement were studied with 2,156 Australian (Anglo, immigrant, and Aboriginal), 529 Navajo, and 198 Canadian Montagnais Betsiamite Indian secondary school students. Cross cultural and educational implications are discussed.

McInerney, D. M., McInerney, V., Ardington, A., & De Rachewiltz, C. (March 1997). *School success in cultural context: Conversations at Window Rock. Preliminary Report.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL. (ERIC Document Reproduction Service No. ED407202)
The goal theory of achievement motivation maintains that the goals stressed by schools influence children's self-efficacy and willingness to try hard. This paper examines the applicability of goal theory to a Navajo school and community and widens the focus to encompass a range of potential culturally relevant goals. Interviews were conducted at Window Rock High School on the Navajo Reservation (Arizona) with 20 students in grades 8-12, 10 Navajo community members, and 9 Navajo teachers. In general, interviewees believed that school-based education is important in that it assists students to develop self-sufficiency and competitive skills that will ultimately benefit the community. However, competitiveness is not regarded as merely a desire to win at all costs; it is tempered by a strong sense of affiliation to the Navajo group in that individual achievement is not sought at the expense of the community. Student motivation to do well at school was strongly linked with social concern and affiliation. Overwhelmingly, parents and extended family were the prime referent groups in influencing student progress at school. A generally supportive home environment was seen as essential for educational success. The most frequently cited inhibitors of school motivation were family substance abuse, gang behavior, student substance abuse, and

pregnancy. Respondents scrutinized the Inventory of School Motivation, agreed that all items and scales were relevant to the Navajo educational context, but offered differing Navajo perspectives on the items measuring competitiveness and group leadership. The results suggest that Navajo and Western cultures share many similar values related to education. Contains 25 references and interview excerpts.

McInerney, D. M., & Swisher, K. G. (1995). Exploring Navajo motivation in school settings. *Journal of American Indian Education, 34*(3), 28-51. (EJ518695)
Over 500 Navajo high school students completed the Inventory of School Motivation, based on the personal investment model of motivation. Results suggest that the model's most salient elements for this group were sense-of-self components and one task component, striving for excellence. Combinations of variables were useful in predicting student performance and attitudes. Contains 66 references.

McLaughlin, D. (1992). *When literacy empowers: Navajo language in print.* Albuquerque: University of New Mexico Press.
This book presents an ethnographic study of literacy practices and beliefs about Navajo and English usage in one Navajo community. Throughout the book, Spolsky's structuralist notion of "special diglossia" on the Navajo Reservation—Navajo for most oral communication and English for nearly all written purposes—is contrasted with Street's "ideological model" of literacy, which relates literacy functions and beliefs to the requirements of local institutions and ideologies as they reflect particular requirements of the more powerful mainstream society. Chapter 1 reviews traditions of sociolinguistic analysis and previous research on Navajo and English usage. Chapter 2 provides a historical background and description of the community from the different perspectives of major actors in local institutional settings: trading post, chapterhouse (center of local tribal government), mission church, and community school. This chapter also details the history and development of the school's bilingual education program. Chapter 3 describes ways that the trading post and chapterhouse “script” uses for English print, while Chapter 4 describes uses for written English and Navajo scripted by the community school and church. The concluding chapter presents survey data on the community's literacy-related practices and beliefs and discusses study implications in terms of pedagogical practice in Navajo schools and theoretical notions about the relationship between literacy and society. Appendices describe a demonstration project in applied literacy and include survey questionnaires in English and Navajo. (Includes chapter notes, an extensive bibliography, and an index.)

McLaughlin, T. F., Williams, R. L., Cady, M., & Bement, G. (1982). Reading achievement in the northern Cheyenne behavior analysis model of follow through. *Reading Improvement, 19*(2), 111-13. (EJ266955)
Reports on a study that evaluated the effectiveness of Project Follow Through programs on the Northern Cheyenne Indian Reservation. Reveals continued improvement in reading achievement scores at all grade levels studied.

Medearis, L. C. (1996). Young Seminoles and Natural Math. *The Journal of Educational Issues of Language Minority Students, 16*. Special Issue: Parent Involvement.
A two-year research project with the children and families of the Oklahoma Seminole Nation Head Start aimed to encourage emerging math literacy in preschool children. Standards-based packets of simple ideas and easy at-home activities were distributed to families on a monthly basis, with family training provided at the preschool and through home visits. Preschool students exposed to the program scored higher on kindergarten screening tests than students in prior years, and their older siblings (who had also participated) showed improvements in their mathematical skills. The researcher describes experiences and mistakes made in attempting to develop culturally relevant materials.

Nelson, S., & Clark, R. (1977). *Pierce County Indian education program, educational service district #121, Tacoma, Washington. 1976-77 Final Evaluation Report.* Portland, OR: Northwest Regional Educational Laboratory, Office of Research and Evaluation Services. (ERIC Document Reproduction Service No. ED145997)
Comparing program objectives with program outcomes, 4 program components targeted at 1,100 American Indian students in 9 school districts in Pierce County, Washington were evaluated. Program objectives operationalized by an 11-member staff including 9 specialists and 1 coordinator were to develop: (1) basic skills via tutoring services for students identified by testing as needing remedial classes; (2) cultural knowledge via the collection and/or publication of tribal bibliographies, books, films, records, legends, tribal artifacts, etc.; (3) career counseling by surveying Indian students' interests and then distributing the results to guidance counselors in the high schools; (4) court liaison activities to provide linkage between the Pierce County Juvenile Court and the Indian home. Program evaluation indicated: substantial (academic improvement by 1/10 of 1 grade for every 20 days) improvement in the basic skills component, though it was suggested that standardization of the assessment instruments across districts would further analysis; general success in providing a variety of cultural experiences to the majority of students in the target group, though two districts received very few services; little tangible evidence of success in the career counseling component, but there appeared to be a high level of activity in this component which may eventuate in more successful post-high school experiences; the Coordinator and the specialists were actively involved in court liaison activities but that these services would be terminated due to time and legal issues.

Omizo, M. M., & Omizo, S. A. (1989). Art activities to improve self-esteem among Native Hawaiian children. *Journal of Humanistic Education and Development, 27*(4), 167-76. (EJ398687)
Investigated effects of group counseling using art activities in improving self-esteem among Hawaiian elementary children (N=50). Found subjects who participated in counseling had higher Social Peer-Related and Academics/School-

Related Self-Esteem scores than children who did not participate.

Omizo, M. M., Omizo, S. A., & Kitaoka, S. K. (1998). Guided affective and cognitive imagery to enhance self-esteem among Hawaiian children. *Journal of Multicultural Counseling and Development, 26*(1), 52-62. (EJ567219)
Investigates the efficacy of guided affective and cognitive imagery in enhancing self-esteem among children of Hawaiian ancestry. Children (N=60) who participated in 10 weekly group sessions had significantly higher post-test scores on two self-esteem measures when compared to the control group.

Ovando, C. J. (1994). Changes in school and community attitudes in an Athabaskan village. *Peabody Journal of Education, 69*(2), 43-59. (EJ490166)
Reports a study that examined the attitudes of students, parents, and teachers toward school and community issues in Nulato, a remote Athapaskan village, noting changes in attitude between 1983 and 1992. Results suggested the community valued the maintenance of cultural heritage, and cultural and language restoration were becoming high priorities in 1993. (EJ490166)

Prucha, F. P. (Ed.) (2000). *Documents of United States Indian Policy. Third Edition.* Lincoln: University of Nebraska Press.
The 238 documents printed in this volume illustrate the history of the United States government and the American Indians from the founding of the nation to the end of the 20th century. They are a collection of official and quasi-official records that marked significant formulations of public policy. The documents, presented in full text or extracts, include federal legislation, court decisions, treaties, and administrative actions. Documents related to education include the Civilization Fund Act, 1819; Indian Commissioner statements on civilizing the Indians and on cooperating with Religious Societies, 1881-82; Use of English in Indian Schools, 1887; Supplemental Report on Indian Education, 1889; Inculcation of Patriotism in Indian Schools, 1889; Indian School Superintendents as Indian Agents, 1893; Indian Commissioner Leupp on Reservation Schools, 1907; Meriam report, 1928; Report on Indian Education, 1969; Indian Education Act, 1972; Comprehensive Employment and Training Act, 1973; Student Rights and Due Process Procedures, 1974; Indian Self-Determination and Education Assistance Act, 1975; Tribally Controlled Community College Assistance Act, 1978; Education Amendments Act of 1978, Title XI: Indian Education; Indian Child Welfare Act, 1978; Report on BIA Education, 1988; Tribally Controlled Schools Act of 1988; National Museum of the American Indian Act, 1989; American Indian and Alaska Native Education, Executive Order 13096, 1998; and various treaties. (Contains an index, a selected bibliography, and a list of federally recognized Indian tribes as of March 2000.)

Rindone, P. (1988). *Factors affecting achievement motivation and academic achievement of Native American students.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED302370)

This study examined the backgrounds of Navajo college graduates in order to identify factors contributing to Native Americans' academic motivation. A questionnaire mailed to 200 randomly selected Navajo college graduates investigated family characteristics, educational experience, socioeconomic status, language use, and demographic data. Among the respondents were 80 women and 27 men with a mean age of 33; 87% had been born on the reservation. Most respondents came from families that spoke Navajo at home and practiced the Navajo Way. More than half the parents completed less than 6 years of schooling, and most annual family incomes were less than $10,000. About half of respondents spoke no English at school entry, and most attended schools that taught primarily in English. Respondents indicated that their own motivation and encouragement from family were the most important factors contributing to their high educational attainment. About half said that a teacher had encouraged them to succeed in school. The paper contends that Native Americans and other minority groups have aspired to high academic achievement but have not until recently had the opportunity to act on those aspirations. Whereas other studies have correlated achievement and socioeconomic status, the present study suggests that a stable family life with traditional values may be a more important influence in the achievement of Navajo students. This study contains 19 references.

Rohner, R. P. (1965). Factors influencing the academic performance of Kwakiutl children in Canada. *Comparative Education Review, 9*(3), 331-40.
Social and cultural factors affecting the academic performance of Kwakiutl children were studied in the isolated Kwakiutl village on Gilford Island, British Columbia. Poor educational achievement of Kwakiutl children was indicated by higher median age per grade than is characteristic of other provincial schools and poor performance on two intelligence tests. Two sets of factors contribute to this situation: students' cultural background, which is inconsistent with school assumptions and demands, and teachers' attitudes toward and relationships with the community. Sociocultural conflicts include the permissive, informally structured, bilingual environment of the home versus the authoritarian, formally structured, English-only environment of the school; experiential learning in the community based on observation and manipulation versus language-based learning in school; and values associated with time, independence, compliance, and aggression. Repeated failures or bad experiences in school cause students to approach school with anxiety or distaste and drop out at the minimum age. In addition, school is not seen as contributing anything important to students' present or future lives. Teachers themselves have a profound influence on the progress of Indian children. Teachers of Kwakiutl children have been inconsistent in their demands and expectations, have a high rate of turnover, and rarely have close personal contacts with the community. Finally, large classes containing many grades managed by a single teacher create problems for both pupils and teachers.

Rosier, P., & Farella, M. 1976). Bilingual education at Rock Point—Some early

results. *TESOL Quarterly, 10*(4), 379-88. (EJ151531)
This article describes the English-Navajo bilingual education program at Rock Point, Arizona, and reports on the results of various reading achievement tests illustrating that learning to read in one's mother tongue will result in better reading skills, and will improve second language reading skills.

Rosier, P., & Holm, W. (1980). *The Rock Point experience: A longitudinal study of a Navajo school program (Saad Naaki Bee Na'nitin). Bilingual education series 8, papers in applied linguistics.* Washington DC: Center for Applied Linguistics. (ERIC Document Reproduction Service No. ED195363)
Conducted from 1975 to 1977, this reading achievement study examined the effects of initial literacy in Navajo on later reading in English and the effects of initial arithmetic instruction in Navajo on later arithmetic instruction in English by comparing two groups of Navajo students, both of whom began school essentially monolingual in Navajo. The bilingual group consisted of students from Rock Point Community School who had first been taught to read in Navajo and then, at the second grade level, had also been taught to read in English. The second group consisted of students from a selected sample of BIA schools who had been taught to read in English only in English as a Foreign Language (EFL) direct method programs. The study utilized existing programs in carefully selected schools. Students who had received bilingual instruction scored higher on standardized achievement tests than did students at comparable schools who had received English-language-only instruction and better than earlier Rock Point students who had received English-language-only instruction. Also, the bilingual students who were taught arithmetic in Navajo and English until the end of the second grade had significantly higher mean scores on the Total Arithmetic subtests than did the EFL direct method group at grades above the fourth. The major portion of the monograph consists of Appendix A, which describes other related studies and Appendix B, which details the Rock Point Study's methodology, findings of the study, and a statistical analysis.

Rubie, C. (1999). *Kia Kaha: Improving classroom performance through developing cultural awareness.* Paper presented at the Joint Conference of the Australian Association for Research in Education and the New Zealand Association for Research in Education, Melbourne, Australia. (ERIC Document Reproduction Service No. ED441651)
A study of 24 Maori children in grades 3-6 who were invited to perform at a children's festival in Turkey and two control groups (control 1, n=24; control 2, n=23) of Maori children who did not participate in the festival examined the effect of an intense cultural program on children's self-esteem, locus of control, and academic performance. Literature related to adventure programs and developing ethnic identity was drawn upon extensively in structuring the Maori cultural training program. The study group and two control groups were pre-tested on a self-esteem scale, a locus of control scale, and a range of academic measures. Post-

testing was completed one year later. A subgroup of the Maori children, their caregivers, and teachers was also interviewed regarding their experience of the program. The standardized testing showed that children in the Maori Culture Group made significant positive changes in self-esteem and locus of control, changes not matched in the control groups. Both parents and teachers noted developments in the social skills, confidence, and social maturity of the Maori children. Although the group activities were not theoretically related to the academic activities assessed by the standardized tests, a facilitative effect on academic achievement was suggested. Moreover, both the results of testing and the interviews with the Maori children, their caregivers, and teachers suggested positive developments in these children's academic performance, a more positive attitude toward school, improved organizational skills, and more time spent on their homework. (Contains 37 references and 6 tables.)

Rudin, C. (1989). *Omaha language preservation in the Macy, Nebraska Public School.* Washington, DC: National Science Foundation. Paper presented at the Meeting of the Mid-America Linguistics Conference, Cedar Falls, IA. (ERIC Document Reproduction Service No. ED347785)
A Native language renewal program at the Macy, Nebraska Public School is described that is designed to preserve Omaha, a Native American Indian language that is only a generation away from extinction. At the time of this research, only about 100 fluent Omaha speakers lived on the Omaha Reservation in Nebraska. The language and culture program, instituted in 1970, has employed various instruction techniques and methodologies, including immersion, memorization of words and phrases, and publication of student-authored stories in English and Omaha. The program has suffered from a lack of consistency; frequent changes in funding, personnel, and curriculum; and a lack of attention to syntax, morphology, and conversational competence. Although the program has not been successful in preserving Omaha as a living spoken language, it has helped to improve tribal solidarity and pride. Nearly every child knows at least some Omaha words and phrases, and the classes have provided satisfaction and a sense of pride for children and elders. In addition, many teachers at the school believe that the program has led to better attitudes and academic performance for at least some students. The program may enhance Omaha cultural survival and enrich the educational experience of the children.

Sears, N. C., & Medearis, L. (1992). *Natural Math: A progress report on implementation of a family involvement project for early childhood mathematics among children of the Oklahoma Seminole head start and Boley head start.* Paper presented at the Meeting of the Rocky Mountain Research Association, Stillwater, Oklahoma. Oklahoma State Regents for Higher Education. (ERIC Document Reproduction Service No. ED352172)
The Natural Math project was undertaken to encourage parents of Native American and Black preschool and kindergarten children to engage in math activities and

games at home. Natural Math also attempted to integrate Seminole culture into math materials. The project originally included only Seminole preschool and kindergarten children. Later, Boley school, located in a rural Black community, petitioned for inclusion. Natural Math activities included: (1) the provision of start-up supplies and other materials to the children and their families; (2) an initial meeting to explain the project and the proper use of the materials; (3) a portable computer lab; (4) a math fair; and (5) the distribution of materials for the summer. After their participation in the project, former Head Start children were tested for verbal, math, and social skills, and parents were surveyed. Participating students had higher raw scores than the students of the previous year. At Boley School, Natural Math materials were introduced to the children before they were given to parents, with several advantages resulting. An extensive literature review covers adult literacy and communication among Native Americans; a Native American perspective of giftedness; the role of culture in education; demographic and academic achievement data for six tribes; and Native American early childhood education and Head Start programs. A 36-item bibliography is included.

Silverman, R. J., & Demmert, W. G., Jr. (1986). *Characteristics of successful Native leaders.* (ERIC Document Reproduction Service No. ED269208)
Characteristics were profiled for 40 southeast Alaskan Haida, Tlingit, and Tsimshian tribal members in positions of responsibility in business, government, or a profession. Respondents had found school easy, did well, liked school, and participated in school-related activities. Positive influence and encouragement of family members, especially mothers, were important success factors. Families viewed school as important and expected children to do well. Over half the respondents indicated teachers as a key influence outside the immediate family, with advice, push to action, and role model the most frequent forms of encouragement. Positive learning experiences outside of school were important, especially experiences involving social skills. Family socioeconomic level had a positive effect on future success. Family members of 80% of respondents were clan, church, or community leaders or were recognized for some skill. Establishment of goals was important to success, with deciding to go to college the most common goal. "Making a contribution to society" and "being at peace with oneself" were the most used definitions of success. Respondents felt they had had many opportunities to succeed, but had encountered barriers of racism and lack of money. Applications to educational situations are suggested. Questionnaire, tabulated responses, and respondents' comments form the appendix.

Slaughter, H. B., & Lai, M. (1994). *Indigenous language immersion as an alternative form of schooling for children of Hawaiian ancestry: Lessons from a six-year study.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED375637)
The Hawaiian Language Immersion program (HLI) is described and evaluated.

HLI began in 1987 with two small classes on two islands and within 6 years had grown, in response to parent interest, to serve 621 students in grades K-7 in 6 schools on 5 islands. Participating students are taught entirely in Hawaiian until grade 5; in grades 5 and 6 one hour a day of instruction is in English, and immersion may continue into grade 7. The report contains an assessment of the program based on the status of the first sixth-grade cohort of participating students. Data used include: qualitative reading assessment in Hawaiian and English; reading, writing, and mathematics achievement data, tested in English; mathematics achievement, tested in Hawaiian; longitudinal data; comparison of participant and non-participant attitudes; and student, parent, and teacher interview data. An introductory section outlines positive and negative implementation factors influencing the first cohort, then results from the analyses listed above are summarized. Recommendations include: assurance of adequate curriculum materials in the case of program expansion; reconsideration of the policy of teaching English language arts in Hawaiian; further consideration of participant interaction with non-participating students; continued support for the successful programs; better planning for students with special needs.

Smith, D. C., Leake, D. W., & Kamekona, N. (1998). Effects of a culturally competent school-based intervention for at-risk Hawaiian students. *Pacific Educational Research Journal, 9*(1), 3-22. (EJ592505)
Studied the effects of an intervention designed to foster emotional, academic, and interpersonal skills on 22 elementary school students at risk of emotional and behavioral disorders. The intervention, which was designed to be culturally competent, was associated with decreased clinical symptoms and improved academic and behavioral performance.

Stairs, A. (1987). *Evaluating the role of first language in Native education: developmental results in a Canadian Inuit setting.* Paper presented at the Annual Meeting of the American Educational Research Association, Washington, DC. (ERIC Document Reproduction Service No. ED283394)
A study of language learning in Arctic Quebec examines relationships between early Inuktitut competence and later learning of English as a second language, general and local characteristics of Native language competence, and early Inuktitut instruction and later competence. It also looks at the reliability of Native educators' assessment of language competence and the identification of features of Inuktitut competence for use in improving Native language instruction. Participants in both phases of the study numbered approximately 90 Inuit children. As students in grades 3 and 4 they provided Inuktitut writing samples that were compared with English samples written a year later. Each group of samples was organized by knowledgeable raters into "strong," "average," and "weak" categories. In general, it was found that: (1) the Native language situation in the region is not homogeneous, with settlement groups varying in both proficiency and style of Inuktitut; (2) a nonlinear relationship exists between fluency and complexity in judgments of

Inuktitut competence, and apparently in Inuktitut development; and (3) a strong correlation exists between early Inuktitut proficiency and later English proficiency, both individually and within settlements. However, facts and policy resulting from such research should be tempered with consideration for the community's linguistic and social values.

Stiles, D. B. (1997). Four successful Indigenous language programs. In J. Reyhner (Ed.), *Teaching Indigenous languages*. Flagstaff, AZ: Northern Arizona University Press. (ERIC Document Reproduction Service No. ED415079)
This paper examines four Indigenous language programs to compare common components, problems, and outcomes. The programs are Cree Way in Quebec, Canada, Hualapai in Arizona, Te Kohanga Reo (Maori) in New Zealand, and Punana Leo (Hawaiian) in Hawaii. These programs were chosen for four characteristics: (1) the languages are no longer transmitted to the younger generation (in the home or community); (2) the programs all have curriculum development, community support, parent involvement, and government support; (3) the programs exist in different countries; and (4) they are recommended as model programs for endangered Indigenous languages. Each program's description covers historical background; program development; funding; parent, community, and academic involvement; and current status. Each program has a curriculum that combines Indigenous language and cultural heritage, literacy, community involvement, and parent participation. Common problems are related to teacher availability, teacher training, lack of written materials, and funding. Outcomes of all programs have included decreased dropout rates, increased sense of heritage and identity, and improved test scores. It is concluded that the success of these types of programs depends on home and community initiative and involvement; culture cannot be separated from the language. It is also important to begin the program at an early age, preferably preschool; to have a firm theoretical foundation; and to have written teaching materials. (Contains 29 references.)

Swisher, K. (1990). Cooperative learning and the education of American Indian/Alaskan Native students: A review of the literature and suggestions for implementation. *Journal of American Indian Education, 29*(2), 36-43. (EJ413871)
Reviews the literature, as it relates to American Indian students, on cooperative learning, competition, learning styles, teacher-student interactional styles, peer influence, and the effects of cooperative versus competitive learning on academic achievement. Discusses Student Team Learning techniques. (Contains 31 references.)

Swisher, K., & Deyhle, D. (1989). The styles of learning are different, but the teaching is just the same: Suggestions for teachers of American Indian youth. [Special Issue]. *Journal of American Indian Education,* 1-14. (EJ402975)
Examines learning style and interactional style differences of American Indian and Alaskan Native students. Provides specific classroom examples and research findings concerning culturally influenced learning styles, the visual approach to

learning, field dependence, public versus private demonstration of learning, and cooperation versus competition in the classroom. (Contains 46 references.)

Temp, G. E. (1974). *Final evaluation report for Alaska Native Education Board, Inc., 1973-74. First year of the bilingual/bicultural program.* Anchorage: Alaska Native Education Board. (ERIC Document Reproduction Service No. ED094580)
The ANEB bilingual/bicultural programs were in operation in eight rural communities in Alaska in 1973-74. This evaluation is based on the results of interviews with members of the community, staff, and student body. The information collected was in four areas: (1) fall 1973 student pretest information; (2) spring 1974 student posttest information; (3) winter-spring 1974 community reactions; (4) spring 1974 staff reactions. The questions presented to the students tested their knowledge of present and past Native cultures. The results demonstrated a marked increase in knowledge of historical culture due to the instruction of the bilingual/bicultural programs; their knowledge of the present Native culture was already high. In regard to reading and speaking skills in Native languages, 68 percent of the children were able to read some of the Native language materials by spring 1974, but there is still room for movement toward equal Native/English-speaking ability. Virtually all of the students involved were enthusiastic about the programs. In addition, wide community support of the programs was shown from a random sampling of members of the community. Finally, 14 of 16 staff members questioned wanted the program to continue.

Tharp, R. G., & Yamauchi, L. A. (1994). *Effective instructional conversation in Native American classrooms. Educational practice report: 10.* Santa Cruz, CA: National Center for Research on Cultural Diversity and Second Language Learning. (ERIC Document Reproduction Service No. ED372896)
Instructional conversation (IC) is a dialogue between teacher and learner in which prior knowledge and experiences are woven together with new material to build higher understanding. IC contrasts with the highly routinized and teacher-dominated "recitation script" of traditional Western schooling. IC varies in form in different cultures, as do other discourse forms. Analysis of research on the formal and informal learning of Native Americans (including Native Hawaiians) indicates that successful Native American ICs are influenced by at least four basic psycho cultural factors: (1) sociolinguistics (teacher and student expectations about conversational "wait time," participation structure, tempo, loudness, and nonverbal behavior); (2) cognition (Native American emphasis on the visual/holistic approach); (3) student motivation (enhanced by the use of culturally relevant curriculum materials and by teacher respect for student autonomy); and (4) social organization (Native American emphasis on small peer-oriented work groups). The evidence suggests that the nature of classroom activity settings influences the participation and engagement of American Indian and Alaska Native students in these activities. "Ideal" Native American activity settings embed ICs in the social context of small student-directed units engaged in joint productive activity that

contextualizes formal knowledge in the immediate experience and concerns of the learners. This report contains 74 references.

Travis, M. (1979). *Significant impact of environment regarding eligibility of Native American and Alaskan Native students for ESEA Title VII regulations.* Juneau, AK: Alaska State Department of Education. (ERIC Document Reproduction Service No. ED195362)
Early Russian religious and educational influences on the 20 various Alaskan Native languages are described, followed by those of American origin in schools and religious groups after the American purchase in 1867, all of which show the development of diglossia and language shifts. The present dual educational system, which includes state schools and Bureau of Indian Affairs (BIA) schools, has contributed to shifts in language use from Alaskan Native languages to varieties of English or combinations of both. Alaskan Native and non-Native students learn Native language-specific dialects of English which have their own phonological and syntactical characteristics. Teacher attitudes, knowledge, and understanding, as well as differences in culture-specific modes of discourse, and the use of formalized textbook English are seen as factors which create interethnic communication problems. The geographic and cultural isolation has also been influential in creating a lack of language proficiency and educational achievement. Recommendations for student eligibility for the bilingual program in ESEA Title VII include: identification of limited English proficient students by teacher recommendations and testing; documentation of community language and cultural influences by languages other than English; and description of historical community cultural contribution to the limited English proficiency of target students.

U.S. Bureau of Indian Affairs. (1976). *Young Native Americans and their families: Educational needs assessment and recommendations.* Washington, DC: Author. (ERIC Document Reproduction Service No. ED127021)
This report presents findings and recommendations based on a detailed assessment of the educational needs of young Native American children and their families. The project had three major objectives: (1) to conduct an assessment of the educational needs of Native American children (prenatal to age 8) and their families; (2) to describe and report on the types of programs currently available to these children and their families; and (3) on the basis of the assessment of needs, and in the context of programs available, to draw conclusions and make specific recommendations for programs which will have the maximum potential for meeting the identified developmental and educational needs. Discussed are: economic conditions; health and nutrition; social problems and issues; emotional problems and mental health issues; early development and education; school learning and intellectual development; education for Indian and Eskimo children, bilingual programs; and program recommendations. Appendices include an evaluation of two parent-child development programs, detailed cost estimates, and

interview guides and data sheets for classroom and school visits.

Vadas, R. E. (1995). Assessing the relationship between academic performance and attachment to Navajo culture. *Journal of Navajo Education, 12*(2), 16-25. (EJ518690)
A survey of 185 Navajo students in grades 7 and 11 examined the relationship between their identification with attributes of traditional Navajo culture and their achievement level on standardized tests. Results suggest that student identification with Navajo language, culture, and tradition helps develop student self-esteem and cultural identity in ways that promote academic success. (Contains 47 references.)

Watahomigie, L. J. (1995). The power of American Indian parents and communities. *Bilingual Research Journal, 19*(1), 189-94 (EJ499407)
Discusses the role that schools, communities, and parents can play in transmitting American Indian culture and language to Indian children, focusing on the experiences of the Hualapai Indians and Peach Springs School District in Arizona.

Watahomigie, L. J., & McCarty, T. L. (1994). Bilingual/bicultural education at Peach Springs: A Hualapai way of schooling. *Peabody Journal of Education, 69*(2), 26-42. (EJ490166)
The Hualapai (Arizona) Bilingual/Bicultural Program is nationally recognized for its achievements in Native language literacy and bilingual/bicultural curriculum development. The article presents information on how the program evolved, the role of Indigenous educators, community involvement, and biliteracy education in a community with a previously unwritten language.

Watson-Gegeo, K. A. (1989). *The Hawaiian language immersion program: Classroom discourse and children's development of communicative competence.* Paper presented at the Annual Meeting of the National Council of Teachers of English, Baltimore, MD. (ERIC Document Reproduction Service No. ED321561)
In its first year, the Hawaiian Language Immersion Program combined kindergarten and first-grade students in two classes. About half of the students had no speaking knowledge of Hawaiian; the remainder had attended Hawaiian-language preschools and/or spoke Hawaiian at home. Both teachers, fluent speakers of Hawaiian, were new to teaching. The teachers spoke only Hawaiian after the first 2 days of school, and students were reminded to speak in Hawaiian. By spring, lapses into English or pidgin became infrequent. Visiting parents were impressed with the warm relationships evident between children and teachers. Classroom organization combined adaptation to Hawaiian values and cultural practices with practices common to other elementary classrooms. While occasionally correcting students' Hawaiian, teachers more commonly modeled correct form or set up repeating routines to support student learning. Teachers treated students as true conversational partners, focusing primarily on content comprehension, with brief but significant instructional sequences inserted. Language learning in peer-peer interactions was encouraged. The students were found to take their work seriously, and were on task a high proportion of the time.

West, D. K. (1988). Comparisons of career maturity and its relationship with academic performance. *Journal of American Indian Education, 27*(3), 1-7. (EJ382740)
Examines career maturity and academic achievement between 30 American Indian and 39 non-Indian college students. Finds strong positive correlations between grade point average and career maturity for freshman and sophomore Indians and freshman non-Indians, but not for the total sample or either ethnic group overall. (Contains 19 references.)

Wescott, J. R. (1974). *The effects of the Distar reading program on selected disadvantaged children of South Dakota.* (Doctoral dissertation, University of South Dakota, 1974.) (ERIC Document Reproduction Service No. ED109613)
The purpose of this study was to determine the effect of the Distar reading program on the reading achievement of fifth-grade students in three schools on the Rosebud Reservation in South Dakota. Distar programs were developed to help overcome some of the problems of disadvantaged children. The program is a highly structured one, designed to compensate for the language and reading problems of these children. Several tests were used to determine the effectiveness of the Distar reading program, including a diagnostic reading test, a reading comprehension test, and a self-concept test. The results showed that pupils in a larger mixed-population center exhibited greater reading comprehension and a larger vocabulary than pupils in more remote Indian communities, whether they leamed to read in the Distar program or not; Distar pupils in a larger community also showed a greater facility in syllabication than the Distar pupils in the smaller Indian communities; Distar pupils showed less reading comprehension, a smaller vocabulary, and poorer sound discrimination than non-Distar pupils; and there was a positive correlation between reading achievement and self-concept for all pupils in all schools.

Willeto, A. A. A. (1999). Navajo culture and family influences on academic success: Traditionalism is not a significant predictor of achievement among young Navajos. *Journal of American Indian Education, 38*(2), 1-24. (EJ605532)
A study of 451 Navajo youths attending 11 high schools in the Navajo Nation found no relationship between their academic achievement and their cultural attachments and practices. Families modestly influenced educational outcomes, but being female was a stronger predictor of academic success. An appendix describes study variables. (Contains 42 references.)

Williams, E., Radin, N., & Coggins, K. (1996). Paternal involvement in childrearing and the school performance of Ojibwa children: An exploratory study. *Merrill-Palmer Quarterly, 42*(4), 578-95. (EJ533053)
Examined Ojibwa families for relationship between quantity and quality of father involvement in child rearing and children's academic and social performance. Found that more time spent by fathers was associated with better academics and social development for boys, while greater nurturance was associated with poorer academic performance. Found that participation of father's father was an antecedent of involvement.

Wilson, J. G. (1983). *Wisconsin Indian opinions of factors which contribute to the completion of college degrees. Program report 83-13.* Madison: Wisconsin Center for Education Research, Madison. (ERIC Document Reproduction Service No. ED237274)
Opinionnaires were mailed to 860 Wisconsin Indian college students and graduates, 189 of whom were also interviewed, to identify positive factors contributing to completion of college degrees by Wisconsin Indian people. The opinionnaire used for current students and those graduated from 1977 to 1982 differed from that used with pre-1977 graduates; the latter provided more open-ended questions. Usable opinionnaires (214) were 27.8% of those distributed. Financial aid ranked first as a factor contributing to college completion, followed by family support, having a personal goal, determination, and intelligence. Seven composite profiles of Wisconsin Indians who completed college degrees, derived from the opinionnaires and interviews, showed a number of commonalities: a parent or parents who understood the value of a college education, no perception of discrimination before the high school level, discovery that college was more difficult than high school and less personal, pride in being Indian, and sense of purpose. Detailed recommendations from opinionnaire respondents discussed six sources that could encourage Indian students: parents, pre-college schools, tribes, colleges and universities, students themselves, and older Indian college students. A specific recommendation called for a state-wide conference on Indian education, followed by practical on-site workshops to help implement the study's recommendations. Appendices include opinionnaires, maps, and supporting letters.

Wilson, P. (1997). Key factors in the performance and achievement of minority students at the University of Alaska-Fairbanks. *American Indian Quarterly, 21*(3), 535-44. (EJ578167)
Realization of high failure rates among Native students sparked a study of professor/student relationships at the University of Alaska-Fairbanks. On the Personal Learning Styles Inventory, minority (Native and Hispanic) students scored highest on active experimentation and concrete experience. Indigenous students also rated professor accessibility, approachability, availability, genuineness, and caring, as necessary for learning success. (Contains 22 references.)

Wright, S. C., & Taylor, D. M. (1995). Identity and the language of the classroom: Investigating the impact of heritage versus second language instruction on personal and collective self-esteem. *Journal of Educational Psychology, 87*(2), 241-52. (EJ509335)
The connection between heritage language instruction and self-esteem was investigated for 64 Inuit, 13 white, and 36 mixed-heritage children. Children educated in their heritage language showed an increase in self-esteem after one year, but Inuit and mixed-heritage children educated in a second language did not.

Wright, S. C., Taylor, D. M., Ruggeiro, K. M., MacArthur, J., & Elijassiapik, M. (1996). *The Jaanimmarik school language-testing project.* Montreal, Quebec: Kativik School Board.

In the fall of 1989, Jaanimmarik School in northern Quebec began offering kindergarten classes in Inuttitut, English, and French. This document contains three reports of participant testing in grades K-2. "Examining the Potential for Academic Achievement: An Analysis of the Children's Performance on the Raven Coloured Progressive Matrices Test" shows that Inuit and mixed-heritage children's intellectual potential or "analytic intelligence" was superior to that of U.S. children in general, as well as African American, Mexican American, and Navajo children. "Identity and Language of Instruction: The Effects of Heritage Language versus Second Language Instruction on Personal Self-Esteem and Collective Self-Esteem" found that all kindergarten children at the school–Inuit, White, and mixed-heritage–had high personal self-esteem. Self-esteem increased for all students who went to kindergarten in their heritage language, but did not increase for Inuit children who went to kindergarten in English or French. "Heritage Language Maintenance and Second Language Learning: Early Inuttitut Instruction and Additive or Subtractive Bilingualism in Nunavik" reveals that by grade 2, Inuit children in the Inuttitut program had developed strong academic and conversational skills in their heritage language, those in the English and French programs had not developed strong academic skills in any language, and those in the English program were beginning to show signs of subtractive bilingualism. Among mixed-heritage children, those educated in English did well in English but developed little skill in the other languages, while those educated in Inuttitut developed Native-like ability in Inuttitut and maintained strong conversational ability and some academic ability in English.

Yagi, K. (1985). *Indian education act project in the Portland public schools. 1984-85 evaluation report.* Oregon: Portland Public Schools. Evaluation Department. (ERIC Document Reproduction Service No. ED268168)
The Portland Indian Education Act Project (IEAP), completing its 11th year, serves American Indian students from preschool through high school. Eligibility for services is established according to federal guidelines. Objectives set for the project concentrate on increasing academic achievement and school attendance, and reducing early school attrition. The main activities are tutoring/counseling, attendance monitoring, cultural education, and hardship assistance. Data are collected and maintained to evaluate the project's progress annually, as well as longitudinally. This evaluation report is divided into four major sections: introduction, program description, evaluation of objectives, and comments and conclusions. The plan used in the evaluation of objectives consists of evaluation questions related to each of the three objectives. District statistical data compiled over five years shows a decline in attrition while also showing an increase in attendance and achievement among American Indian students. Efforts of the IEAP staff emphasize significant use of resources, sometimes community resources, in these areas. Data accumulated and compiled for IEAP evaluation purposes continue to show educational needs for American Indian students in Portland. Funding restrictions pose a threat to program quality and make it increasingly more difficult

for the project to design and implement a comprehensive program.

Yamauchi, L. A., & Ceppi, A. K. (1998). A review of Indigenous language immersion programs and a focus on Hawai'i. *Equity & Excellence in Education, 31*(1), 11-20. (EJ565885)
Reviews American educational policy and Indigenous language loss, the importance of language revitalization, and various models of language-immersion studies. A case study reports on Papahana Kaiapuni, the Hawaiian language immersion program established in 1987. This program is an example of a Native community's efforts to revitalize its language.

Yamauchi, L. A., & Ceppi, A. K., & Lau-Smith, J. (2000). Teaching in a Hawaiian context: Educator perspectives on the Hawaiian language immersion program. *Bilingual Research Journal, 24*(4), 333-51.
Papahana Kaiapuni is the nation's only K-12 program taught entirely in Hawaiian. Focus groups and interviews with 37 teachers and 4 principals examined their roles and experiences in the program. Teachers integrated Hawaiian culture into the curriculum and viewed the program as a model of school reform for Native Hawaiians. The program also transformed many teachers' views of themselves as teachers and as members of the Hawaiian community.

Bibliography of Footnoted Material

Note: The following articles, legislation, literature reviews, and other resources were cited in footnotes, but not included in the annotated bibliography. The annotated bibliography includes only reports of studies involving Native Americans and other Indigenous peoples.

Alaska Governor's Interim Commission on Children and Youth. (1988). *Our greatest natural resource: Investing in the future of Alaska's children.* Juneau, AK: Governor's Interim Commission on Children and Youth, Office of the Governor.

Bowman, B. T., Donovan, M. S., & Burns, M. S. (Eds.). (2001). *Eager to learn: Educating our preschoolers.* National Research Council, Committee on Early Childhood Pedagogy, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Begley, S. (1996, February 19). Your Child's Brain. *Newsweek*, 55-62.

Benard, B. (1995). *Fostering resilience in children* (ERIC Digest). Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED386327)

Butterfield, R. A., & Pepper, F. C. (1991). Improving parental participation in elementary and secondary education for American Indian and Alaska Native students. In *Indian nations at risk task force commissioned papers.* Washington, DC: U.S. Department of Education. (ERIC Document Reproduction Service No. ED343763)

Cotton, K. (1995). *Effective schooling practices: A research synthesis, 1995 update.* Portland, OR: Northwest Regional Educational Laboratory.

Cummins, J. (1986). Empowering minority students: A framework for intervention. *Harvard Educational Review, 56*(1), 18-36.

Cummins, J. (1992). The empowerment of Indian students. In J. Reyhner (Ed.), *Teaching American Indian students* (pp. 3-12). Norman: University of Oklahoma Press.

Darnell, F., & Hoem, A. (1996). *Taken to extremes: Education in the far North.* Cambridge, MA: Scandinavian University Press North America. (ERIC Document Reproduction Service No. ED453998)

Deloria, V., Jr. (1975). *Legislative analysis of the federal role in Indian education.* Washington, DC: U.S. Department of Education, Office of Indian Education.

Demmert, W. G., Jr. (1974). *Critical issues in Indian education: 1972-1973.* Ann Arbor, MI: University Microfilms.

Demmert, W. (1995). Indian nations at risk: An educational strategy for action. In L. I. Rendon, R. O. Hope, & Associates (Eds.), *Educating a new majority* (pp. 231-62). San Francisco, CA: Jossey-Bass Publishers.

Deyhle, D., & Swisher, K. G. (1997). Research in American Indian and Alaska Native education: From assimilation to self-determination. In M. W. Apple (Ed.), *Review of research in education* (Vol. 22, pp. 113-194). Washington, DC: American Education Research Association.

Executive Order Working Group, Strang, W., & von Glatz, A. (2001). *American Indian and Alaska Native research agenda.* Washington, DC: U.S. Department of Education. Retrieved January 8, 2002, from http://www.indianeduresearch.net/index.htm

Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century.* New York: Basic Books.

Indian Nations At Risk Task Force. (1991). *Indian nations at risk: An educational strategy for action. Final report.* Washington, DC: U.S. Department of Education. (ERIC Document Reproduction Service No. ED339587)

Meriam, L., Brown, R. A., Cloud, H. R., Dale, E. E., Duke, E., Edwards, H. R., McKenzie, F. A., Mark, M. L., Ryan, Jr., W. C., & Spillman, W. J. (1928). *The problem of Indian administration.* Report of a survey made at the request of Honorable Hubert Work, Secretary of the Interior, and submitted to him, February 21st. Baltimore, MD: Johns Hopkins Press.

National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future.* New York: Author. (ERIC Document Reproduction Service No. ED395931)

Reyhner, J. (1989). *Changes in American Indian education: A historical retrospective for educators in the United States.* ERIC Digest. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED324228)

Sousa, D. A. (1998, December 16). Is the Fuss About Brain Research Justified? *Education Week, 18*(16), pp. 35, 52.

U.S. Bureau of the Census. (2001). *Poverty in the United States: 2000.* Report No. P60-214. Washington, DC: U.S. Department of Commerce. Retrieved February 21, 2002, from http://www.census.gov/prod/2001pubs/p60-214.pdf

U.S. Senate Special Subcommittee on Indian Education. (1969). *Indian education: A national tragedy—A national challenge.* Senate Report No. 91-501. 1969 report of the Committee on Labor and Public Welfare, United States Senate. Washington, DC: U.S. Government Printing Office. (ERIC Document Reproduction Service No. ED034625)

Viadero, D. (1998, November 11). Research notes on 'triarchic' intelligence. *Education Week, 18*(11), p.28

Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth.* New York: McGraw-Hill.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High-risk children from birth to adulthood.* Ithaca: Cornell University Press. (ERIC Document Reproduction Service No. ED344979)

White House Conference on Indian Education. (1992). *The final report of the White House conference on Indian education (executive summary).* Washington, DC: Author. (ERIC Document Reproduction Service No. ED353124)