

Research on the Closing the Achievement Gap for Native American Students

American Indian students continue to be disproportionately characterized by low educational attainment. These students often enter school unprepared to learn and after entering school, their rate of achievement is often lower than other students (Beaulieu, 2000).

Until approximately 15 years ago, most of the research that concerned American Indian education was conducted on American Indians with little input from the American Indian community. This research had little effect on improving educational outcomes for students.

This summary highlights findings of some of the more recent rigorous research studies conducted related to closing the achievement gap for American Indian students. It must be emphasized that the great majority of research found in the subject area was either older than 10 years or involved case studies or descriptive studies. Studies in the summary include some case studies and descriptive studies in addition to several experimental/quasi-experimental studies.

Factors Contributing to the Achievement Gap

Beaulieu (2000) identified various factors that are related to the achievement gap. These included:

- High student and staff mobility in schools;
- Students disproportionately affected by violence and substance abuse; and
- Lack of appropriate knowledge base for providing professional development and curricular development to meet students' cultural and language needs.

Leveque (1994) identified two factors associated with the achievement gap: differing views on the purpose of education; and a lack of Native American values reflected in educational system. Gilbert's (2000) review (pp. 2-3), identified several influential factors related to the failure of American Indian/Alaska Native education, including:

- Low socioeconomic status of the students;
- Learning style differences among students;
- Inappropriate curriculum being delivered by teachers;
- Lack of teacher and administrator training;
- Lack of adequate funding for schools;
- Lack of student motivation;
- Lack of parent motivation;
- Lack of understanding by teachers of cultural differences at the school;
- Low student self-concept; and
- Testing bias.

Research on Effective School- and District-based Interventions

Curriculum Based on Traditional Culture

Traditional culture was found to act as a protective mechanism for students when it was used to guide curriculum (Goddard and Shield, 1997). Whitbeck, Hoyt, and Stubben (2001) studied the effects of traditional culture on academic success of 5th-8th grade students from three reservations in the Midwestern United States. Findings indicated that enculturation (involvement in traditional American Indian activities, identification with American Indian culture, and traditional spiritual involvement) and maternal warmth and support were positively associated with school success.

Zwick and Miller (1996) found that when a culturally-sensitive activity-based outdoor science curriculum was implemented with fourth grade students, the American Indian students had significantly higher achievement scores than students in a control group who did not receive the culturally-sensitive curriculum. There was no difference in the achievement scores between the American Indian students and non-Indian students in the culturally-sensitive curriculum group.

Powers, Potthoff, Bearinger, and Resnick (2003) studied the direct and indirect effects of motivation, ability and prior achievement, quality of instruction, parental involvement, school climate, family income, and cultural programming on the educational outcomes of urban Native American youth. Their results indicated some support for the premise that culturally based educational programs enhance conditions for success of American Indians. The effect of school climate (e.g., teacher support, safe and drug free school) on school success was higher than the effect of culturally based programs.

Gilbert (2000) conducted a study of a five-week summer intensive and culturally appropriate curriculum based program for sophomore and junior students on Native American reservations in Arizona and New Mexico. The curriculum addressed English/language arts, mathematics, and career development. Findings indicated a significant improvement in English/language arts scores from pretest to posttest for all students. Sherman (2002) reported a narrowing of the achievement gap between white and American Indian students when a school reform model was implemented that focused on cooperative learning and celebration of American Indian culture.

After three years of implementing pedagogical practices that incorporated knowledge systems of indigenous people into the science and mathematics curricula, researchers found that the schools involved in the Alaska Rural Systemic Initiative (AKRSI) had a higher percentage of students who were performing in the top quartile on the eighth grade standardized mathematics test and a decrease in the percentage of students in the lower quartile when compared to test results of students from non-AKRSI rural schools. The AKRSI schools historically had the lowest student achievement levels in the state. In addition, the percentage of students from participating AKRSI schools who enrolled as first time freshmen at the University of Alaska increased by 19% from the previous

year's enrollment while first time freshmen enrollment by students from non-AKRSI schools decreased by 12% (Alaska Native Knowledge Network, 1998).

Demmert (2001) conducted a literature review of research-based information on educational approaches and programs associated with improving American Indian academic performance. Findings indicated that Native language and cultural programs in schools were associated with improved academic performance.

Use of Heritage Languages

Holm and Holm (1995) studied bilingual education on the Navajo Reservation and reported on the "two-language" programs at Rock Point Community School and at Fort Defiance Elementary School in northern Arizona. The academic performance of students at all grade levels at Rock Point in the Navajo-English bilingual program was higher than comparable students at nearby schools. In addition, students had more pride and more self-confidence. At the Fort Defiance Elementary School, third and fourth grade students in the Navajo immersion program achieved as well on tests of English language as monolingual English students. Navajo immersion students performed better on local assessments of writing and on mathematics in the computer lab than the monolingual English students. McCarty (2003) examined three language immersion programs (Navajo, Hawaiian, Keres) in six American Indian school sites. Findings indicated that immersion programs promoted students' success in school as well as revitalized endangered languages.

Parent and Community Involvement

Kratochwill, McDonald, Levin, Bear-Tibbets, and Demaray (2004) studied a multi-family group program implemented in three American Indian Nations in Wisconsin. The activity based program, called Families and Schools Together (FAST), focused on children ages 4-9 and was aimed toward increasing academic performance and reducing classroom behavior problems. Students from families involved in the FAST program, after a one year, indicated greater improvement in academic competence than comparison students not involved in the program. A study conducted by Leveque (1994) also indicated a relationship between American Indian student achievement and parental involvement.

Willeto (1999) conducted a study to examine the relationship between academic achievement and Navajo students' involvement in Navajo culture and the importance of family to academic achievement. Modest effects were found between involvement in culture and school commitment. In recognition of the importance of the mother in Navajo culture, those students who identified with their mother had better grades and were more strongly committed to school.

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