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ABSTRACT

This study was designed to ascertain the dropout rates among American Indian students in three local secondary schools on the Northern Cheyenne reservation in Lame Deer, Montana and to identify factors that contributed to school completion or noncompletion. The researchers collected data on three cohorts of students (1987-89, N=698) from Colstrip public school, St. Labre Catholic school, and Busby tribal school. Data sources were attendance records, transcripts, yearbooks, students files, and information from guidance counselors and other school personnel who had direct contact with the students. Findings on student characteristics and school experiences related to school performance and completion are: (1) Indian students had a higher dropout rate (40%) than non-Indian students (8%); (2) Indian girls dropped out more often than boys; (3) Indian students had lower performance levels than non-Indian students overall; and (4) students who graduated tended to utilize school remedial resources more often, to participate in more extracurricular activities, and to have higher levels of performance. Multivariate analysis of school completion examined influences of residence and gender on choice of schools, grade point average, and dropping out. Comparisons are made by school and gender. This document contains numerous tables and 44 references. (KS)

# Northern Cheyenne Dropout Research Project

## Final Project Report
## PR/Award #R117E80107

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## Introduction to the Northern Cheyenne Dropout Research Report

The Northern Cheyenne Education Commission.

The Northern Cheyenne Education Commission is an organization located on the Northern Cheyenne reservation, in Lame Deer, Montana. The Education Commission is comprised of representatives from six school districts and the tribal community college serving Northern Cheyenne children and adults in the southeastern Montana area, and was organized in 1983 as the educational arm of the Tribal Council. As such, it was given the authority and responsibility for addressing the educational needs of the Northern Cheyenne tribe. In particular, the purposes of the Commission are

> "... to conduct studies and research on educational problems facing the reservation-wide educational system(s), to identify major problems, to compile data and information, to seek alternative solutions and make recommendations to the Tribal Council in accordance with findings and possible solutions for long-range systematic, functional and improved educational systems on the reservation" (Northern Cheyenne Tribal Resolution No. 33 (83)).

Since the passage of this resolution, the Commission members have met once a month during the school year to share information on the educational needs and problems of the students as well as to develop ways of collecting information on the problems and working individually and together to meet the identified needs. The six school districts providing for the education of the Northern Cheyenne children as well as others in the southeastern part of Montana include Lame Deer Elementary School, Busby Tribal School, Colstrip Public School, Ashland Public School, Hardin Public School and St. Labre Catholic Indian School. Combined, these school districts serve approximately 2,600 students. Of this number, more than half of the students are Indian,

predominantly Northern Cheyenne. The tribal college, Dull Knife Memorial College, has an enrollment of approximately 200 students from both the reservation and surrounding areas. Thus, the Education Commission membership represents a diverse group of schools including elementary, secondary and post-secondary education, and public, private and religious schools operating both on and off the reservation. And yet all have the common purpose of serving the rural population of the Northern Cheyenne reservation and Rosebud and Big Horn counties. Since Dull Knife is the only college within a 100-mile radius, it provides for an even larger service area than the elementary and secondary schools.

Since its inception the Education Commission has recognized the seriousness of the problems of truancy and dropout among the Indian students attending local schools. One of the first indications of these problems for elementary and secondary education was a report prepared for the Education Commission in 1985 based on a survey designed to ascertain residents' views of the educational systems serving reservation children. A significant finding of the study was that the majority (67%) agreed that there is a problem with "student dropout" in schools that serve the reservation, and (74%) that there is a problem with "student attendance" in the schools that serve the reservation. These problems also came to the attention of the Commission as a result of requests to help with the location of individual students for whom records showed that they were absent from the schools in which they were enrolled. Additionally, a report was presented to the Education Commission in April of 1987 which verified the extensiveness of the dropout problem. This report, prepared by Silvertip Associates, provided evidence

that 183 (37.9%) of 483 high school aged Northern Cheyenne tribal members living on the reservation were not in school as of October, 1986.

Using this information, the Education Commission planned several actions to address the problem:

1) three schools developed a plan for sharing the costs of hiring a single truant officer,
2) the Education Commission members worked together to develop a consistent truancy policy which could be adopted by all the schools,
3) the Education Commission has worked more closely with agencies of the tribal government, specifically the law enforcement and court systems, to identify truant students and dropouts,
4) part of the agenda of each Education Commission meeting is devoted to presentations of programs or activities which are currently being used by local schools to address educational or other needs of the students.

As a result of these efforts during the last several years, the Education Commission members have had access to improved information on Indian truant and dropout students and have begun to see some improvement in the development of assistance for truant students and dropouts and their families, and have learned more about possible programmatic solutions to these problems. In spite of these gains, however, the members of the Education Commission continued to experience frustration regarding their lack of knowledge in two areas, specifically, the nature and extent of the dropout problem and factors contributing to truancy and dropping out of school, and the kinds of programs and activities most effective for addressing these problems.

The Northern Cheyenne Dropout Project.

To address the first need for more information related to the educational problems

of local students, Dull Knife Memorial College applied for and received funding for a research project in 1988-89 designed to clarify the dropout rates among three cohorts, or classes, of students in three local secondary schools and to identify factors which contributed to school completion or non-completion.

Data sources and variables.

This project involved collection of data on three cohorts of students (1987, 1988 and 1989) from three local secondary schools, Colstrip public school, St. Labre Catholic school, and Busby Tribal school. Information gathered from these schools relates specifically to the aspects of students' school experiences which previous research findings indicate are relevant to understanding school completion. The data collection procedures used for this project strictly followed the guidelines established in the Family Educational Rights and Privacy Act, 1980, which protects the confidentiality of the students and their families. There were approximately 230 students for each of three cohorts. A cohort includes graduating seniors as well as those students who would have graduated had they completed the regular sequence of courses or curriculum normally taken to meet high school graduation requirements over a four year period. Cohorts include students for all of the three schools combined; data were collected for a total of 698 students who comprise the total population of students for these cohorts. Information for each student was collected directly from the school records at each high school: attendance records, transcripts, yearbooks, students files, and from guidance counselors and other school personnel who had direct contact with the students.

Graduation from high school is the schoc ling outcome of primary interest in this study.

Consequently, the operational definitions of graduate, dropout and transfer are of special importance. While the definition of "graduate," i.e., a student who completed high school and received a diploma conferring this status, was not problematic, definitions of the other terms presented more of a challenge. The term "dropout" has not been defined uniformly across either local school districts or by most school districts across the country. In fact, calculations of dropout rates vary considerably from one district and state to the next. According to Chris Pipho of the Education Commission of the States (1988), "Currently, what constitutes a dropout rate in one district or in one state may be completely different in another district or state. Unless a state uses one uniform definition and one uniform system for reporting dropout students, it is likely that even state statistics will be unreliable." Definitions of dropout from a recent survey of school districts reported by the Center for Policy Research in Education generally states that "...a dropout is an individual who leaves school either prior to high school graduation or before completing a program of study without transferring to a private or public school or other educational institution." However, definitions may vary by such criteria as the grade levels for the baseline population, age range of students, accounting periods, time periods for the unexplained absences, and the educational alternatives counted as an equivalent course of study.

Because we were most interested in the completion or non-completion of high school and we did not want to over-estimate the dropout population for this study, a definition was used which would represent the non-completion of high school. A dropout is defined as a high school student who was enrolled in one of the relevant cohorts in a participating high school who left and did not graduate for any reason except death. The failure to graduate

was confirmed by the participating schools. Because this definition does not put a limit on the number of days of unexplained absences before a student is classified as a dropout, it may actually undercount dropouts. That is, this definition may exclude students who missed a larger number of days than technically allowed by the school, but such students were not officially dropped by the school. A student is classified as a dropout from a particular school by virtue of their attendance at that school just prior to dropping out. Therefore, students who switched to another school, that is left one school and enrolled in another, are not classified as dropouts.

The definition of "transfer" for this study refers to a specific status of students whose educational outcomes precluded their eligibility for being included in our dropout analyses. Transfers are defined as students who left a participating school but their subsequent enrollment and graduation status could not be determined. If we were able to determine the graduation status of students who left one school and enrolled in another, they were included in either the graduate or dropout categories. Again, only students for whom we could not determine a graduation status are treated as transfers. This convention was established specifically because we were interested in determining the graduation status of students in the study. We will use this definition in Part I of the report in relation to students' graduation status. Another treatment of transfers will be included in the analyses of the role of school experiences in dropping out which address the number of times that students "switch" (or transfer) between schools. This, of course, applies only to students for whom we have graduation status data.

The graduation status of Indian students that schools reported to have dropped out

was confirmed with a second source, the Northern Cheyenne Adult Education Center's programs for Adult Basic Education or the GED program, and information was obtained about their educational history and the reason(s) they left school. The Talent Search programs, funded through the State of Montana to serve the Crow and Northern Cheyenne reservations by providing educational advising and assistance to Indian high school students in the local high schools and junior highs, provided information about graduation status as well.

A source of socioeconomic background information on Indian students was the Northern Cheyenne Educational Census which was completed by approximately 80% of the households on the reservation. The educational census contained information for each member of the household and included socioeconomic data for adults in the household. Comparable information for the Crow students from St. Labre was provided by educational personnel from the Crow Talent Search program who had direct contact and knowledge of these students and their families.

The development of specific data items for this project utilized as an important resource the data collection methods for the national High School and Beyond (HSB) study for the base year, 1980, and subsequent follow-ups in 1982, 1984 and 1986. This national study provides the single best source of information and guidance for studies of dropouts which are concerned with the cohort dropout rate, i.e., a rate which measures what happens to a single group (or cohort) of students over a certain period of time. Figure 1 lists the data items for students in the study which will be discussed in this report. Descriptive information for these variables will be presented in tables and charts that follow in Part I.

Figure 1: Definitions of Variables Used in Tables

| | |
|---|---|
| Educational outcomes | |
| School Completion | |
| Graduate | Received high school diploma. |
| Dropout | Did not graduate from high school. |
| Transfer | Left local school to attend another school and did not return. |
| School Performance | |
| GPA | Grade Point Average for specific subjects (English, math, science, social studies) and for all subjects, by grade level. |
| Test Percentile | Percentile ranking on standardized tests in math, reading, language, science and social studies by grade level. |
| Student Characteristics | |
| Ethnicity | American Indian or non-Indian. |
| Gender | Sex. |
| Cohort | Year student did or would have graduated: 1987, 1988, 1989. |
| School attended | School from which student graduated or last attended. |
| Between school transfers | Total number of transfers between schools during high school. |
| Special courses | Total number of special education courses or programs in which student participated in high school. |
| Days missed | Total number of days missed during high school. |
| Suspensions | Total number of in-school and out-of-school |

Multivariate analyses utilizing these data items as well as additional background factors will be presented in Part II.

Dependent variables include educational outcomes which refer to both school completion and educational performance. The first outcome is a variable which identifies whether or not students graduated from high school or dropped out and did not graduate as defined in the previous discussion. The second educational outcome includes two variables measuring the student's school performance: national percentile on subjects of the standardized achievement tests administered in high school, and mean grade point average (GPA) for all subjects and years of high school. Subjects to be included in the analyses of percentiles on standardized tests are language, reading, math, and science.

Independent variables include primarily characteristics of the student and their experiences in school. Student characteristics include school experiences which relate to school involvement, i.e., the number of days missed across all high school years, the number of in-school and out-of-school suspensions during high school, the number of extracurricular activities in which the student was involved during high school, the number of transfers between schools and students' participation in special remedial programs.

Other variables include students' ethnicity (i.e., Indian and non-Indian), cohort in school, school last attended (i.e., Colstrip, St. Labre, Busby) and sex.

Limitations of the Data.

The data collected for this study are limited partially by the nature of the study itself. First, rather than collect information directly from students, information was collected primarily from school records. Therefore, we are limited to the information contained in

and accessed from these records. In the case of standardized tests, if no test scores were available in the student's files, then we have no test data for that student. Since schools administer different tests, percentiles were used as a measure of performance so that we could compare the students' ranking rather than their actual score. Colstrip uses the CTBS, St. Labre the SRA and Busby the CATB. Schools administer tests several times a year, but if students miss the tests, they may not be made up. Consequently, there are a lot of missing data for standardized tests. In fact, although standardized test scores were most likely to be available for students in their ninth and eleventh grades, more than half of the students (54-58%) did not have standardized test scores for these two grade levels. Because of the limited availability of these data, percentiles for standardized tests are presented in the descriptive tables in Part I of the report, but are not used in the statistical analyses in Part II.

Secondly, information on school completion is limited by what is available from the schools based on their records of requests for transcripts from other schools to which students may transfer. Thus, schools often did not have follow-up data on students who left school which we needed to determine graduation status, etc. Third, schools vary in the records they keep on extracurricular activities. Much of the information on extracurricular activities was assembled from school yearbooks and similar sources.

Uses of the Project Results.

The Education Commission as well as the individual participating schools have identified several important uses of the project results and student databases. First, of course, analyses of the combined data for all schools will be used to produce information

specifically about the factors and processes affecting school completion and non-completion which will, then, provide the basis for planning intervention activities for students that drop out or are at risk of dropping out. Second, the data provide a baseline for evaluating these new programmatic efforts over the next few years. Third, if updated each year, the database for each school provides the means for school personnel to maintain comprehensive individual student data in a single, accessible location that can be used in counseling with students and parents as the need arises. And fourth, the databases give the schools the opportunity to monitor the progress of their students overall as well as various groups within the student population, in particular, the Indian students. This will allow the schools serving the Northern Cheyenne reservation to act both collectively and individually to evaluate the effectiveness of their curricula and services for specific groups and to help ensure equal opportunity for learning for all students. In connection with the last of these purposes, the dropout research project has had a significant impact on the local schools as well as schools across the state.

This group of schools is now leading the way among all the school districts in the state in the development of data collection procedures for monitoring student educational achievement and completion. Recently, the state of Montana received one of eight Ford Foundation grants awarded nationally to develop a state-wide educational tracking system and network for Indian students. Since the dropout research project has already tested some data collection procedures for the kinds of secondary school information that the state's project is interested in, we were asked to provide information to the state's planning and development efforts. As a result, we have participated in a number of meetings at the state

capitol with a Special Task Force on Indian Education to provide assistance with the state's database planning. It has been an unexpected and very exciting development, and we have been especially pleased that the dropout research project is able to provide input into the state's efforts to assess Indian students' educational achievement. Since the state's interests in comprehensive data on student progress coincide with the interests of the Education Commission and local schools, we are in a unique position among schools state-wide to respond to the state's information needs related to assessing student progress.

Dropout Project Purposes.

The specific purposes of the research project include the following:

*First, the project was designed to verify and quantify the extent of school completion as well as the dropout problem among students attending three local schools serving the Northern Cheyenne Reservation and surrounding areas.* Findings from previous studies of the school completion among American Indian students nationally, and Northern Cheyenne students locally, showed that the school completion rate was found to be as low as 55-60%. Therefore, the study will help to determine if the actual completion rates for students attending these schools are at the expected levels.

*Second, the study was designed to identify both individual characteristics and school experiences associated with high school completion.* Reviews of the literature on school completion and achievement suggest that individual characteristics and experiences associated with school completion include indicators of engagement with school: academic performance levels, discipline problems, attendance, and participation in extracurricular activities. Other background characteristics found by previous research to be associated with

school completion include parents' ethnicity, socioeconomic status and family structure. This purpose addresses the need to consider factors that are social as well as individual for understanding school completion. Therefore, this study specifically intends to identify aspects of each type of factor that are most closely associated with school completion for this student population.

*Thirdly, the project purposes included identification of the effects of the type of school attended on school completion by Indian students.* Recent research by James Coleman and Thomas Hoffer (1987) on differences in student achievement and completion between private and public high schools suggested that there is a hierarchy of effectiveness among schools in their ability to retain students to graduation. Specifically, Catholic schools were the most effective for minority or "disadvantaged" students. This study, therefore, was designed to assess the effects of the three types of schools serving the reservation students on school performance and completion.

*Finally, the research effort was designed to compare different ethnic groups on the influences of the factors identified above which are suspected to be associated with school completion.* Previous research has suggested that the processes that affect school completion may be different for members of different ethnic or racial groups. Thus, we would expect that the importance or degree of influence of specific factors may work differently for the groups included in the analyses. Since the student population for this study of three high schools includes both Indian and non-Indian students, the comparisons will include these groups. Understanding differences in the relative influence of different factors associated with school completion for each group will provide the basis for evaluating the potential

effectiveness of programmatic solutions targeting different groups of students.

Overview of the Northern Cheyenne Reservation Community.

Before turning to the data on school completion, it is useful to consider some information on the community context in which the school completion process occurs. Although information about American Indian populations nationally is useful for describing the processes affecting this ethnic group at a general level, specific details about the operation of structural, individual and contextual forces in a specific setting illuminates the mechanisms by which these influences work and their effects on individual students. The description of this specific case provides for more in-depth understanding of the responses and actions of both individuals and communities to the circumstances in which they are located.

The Northern Cheyenne tribe has structural similarities to many other Indian tribes especially in relation to its experiences with federal policies toward reservations and the assimilation of Indian populations. However, the Northern Cheyenne also have their own unique circumstances encompassing their culture, history, resources and social organization which have shaped their adaptation to the constraints imposed by the reservation system. These factors have affected the education outcomes for students as they have influenced the availability of schools, the resources and organization of the schools, and their receptivity or acceptance by Northern Cheyenne community members.

The Northern Cheyenne reservation was established in southeastern Montana in 1884 by Executive Order which set aside 371,200 acres. With subsequent modifications to this land base, the reservation now includes 447,000 acres spanning 36 miles from east to west

and 23 miles from north to south. It is located in both Rosebud and Big Horn counties. A description by Steve Chestnut (1979) captures the essence of the terrain of the reservation

> The reservation lies within the northern Great Plains region. It consists of grassy, high plains capped by sandstone ridges. There is a thin and fragile covering of topsoil. About one-third of the reservation consists of low hills covered by irregular stands of pine, while the streams are bordered by cottonwood. The reservation landscape is a composite of ridges, plains, hillsides, valley bottoms, and stream courses resulting from thousands of years of natural weathering erosion, without interference by man. The result is a balanced natural landscape, sufficient to provide life-support to its human and animal populations. ...A recent report estimates that a total of 23 billion tons of coal, in seven coal beds, lies beneath the reservation. Of these, perhaps 5 to 10 billion tons are suitable for stripping. This deposit constitutes a portion of the Fort Union formation. The value of the Northern Cheyenne coal reserve is reckoned in terms of billions of dollars. ...However, , there has been no commercially significant coal mining on the reservation.

The social organization of the Tribe refers to the ways that organize how people in the community relate to each other. Several characteristics of communities that have been found to be useful in describing a social organization include diversity and complexity, outside ties, distribution of resources, coordination and cooperation among residents, and patterns of personal interaction (Feeney, et al.,1986). In the following paragraphs we briefly describe some of the basic aspects of Northern Cheyenne social organization.

Northern Cheyenne tribal members have been reported to have a strong sense of tribal identity based on shared language, culture, history, political organization, social organization and values. An important contributor to the maintenance of this identity is the physical isolation of the reservation. However, several changes in reservation life have also contributed to the increasing diversity of the population. These include improved roads, increasing availability of television via satellite and cable, and increases in the regional

population. Additionally, Northern Cheyenne tribal members have become more mobile; it is very commonplace for many people to leave the reservation for extended periods to pursue military service, work and education opportunities. Most people also leave for short trips for recreation and shopping. Both of these increase interaction with people off the reservation. In spite of the increased presence of non-Indians and members of other Tribes on the reservation over the last few years, Northern Cheyennes still make up the majority of the reservation population. According to community studies included in an Environmental Impact Statement by the Bureau of Land Management, Department of Interior (1988), there is nowhere else in the country where this is the case. The result is that Northern Cheyennes have more opportunities for interaction with members of their own Tribe than do most other Tribes.

Kinship remains a central element shaping the social relationships of Northern Cheyenne tribal members. Members of extended families still choose to live close to each other although families are more scattered now than ever before (BLM,1988). Many more families are typical of the nuclear family living in a single-family residence. However, even in these cases, individuals often maintain close ties with extended family that they do not live with.

Social diversity now characterizes the reservation population more than ever as a result of influences such as greater experience off the reservation and changes in organizations and institutions located on the reservation. This can be seen in the various degrees of attachment they have to traditional institutions such ceremonies, tribal social events, religious affiliations and use of traditional medicines as well as new institutions such as government,

education and the work force (BLM, 1988). Tribal members often rely more on new community institutions such as social services and tribal court to help resolve disputes and change behaviors than they use traditional methods of social pressure. There is a wide variety of social groups to which people may belong based on their interests and participation in traditional and non-traditional activities. Sub-groups on the reservation which have different social statuses include those based on blood quantum (e.g., full-blood, mixed, etc.) employment status (e.g., employed, unemployed) and traditionality (traditional, non-traditional).

An additional dimension of diversity is related to community of residence. The Northern Cheyenne population is distributed among five districts or communities on the reservation: Ashland, Birney, Busby, Lame Deer and Muddy Creek. These communities are different in size as well as character. For example, Busby, located in the western part of the reservation, includes both the town of Busby and Kirby, a residential area south of Busby. Busby is known for its community cohesion and is the home of Busby Tribal School. Ashland is located on the eastern edge of the reservation and is the home of the St. Labre Catholic Mission which includes a high school. Birney is located on the southern edge of the reservation, is very small and is known for being a traditional community. Muddy Creek is between Lame Deer and Busby and is a small residential area. Lame Deer is in the center of the reservation and is the largest, most diverse community. It is the location of the Tribal government, the Indian Health Service clinic and programs, the Bureau of Indian Affairs agency office, other Tribal facilities and various small businesses and services. Several Head Start Centers, Lame Deer Public School, which includes K-8, and Dull Knife Memorial

College are also located in Lame Deer.

The social characteristics of the current Northern Cheyenne population provide additional insights as to social conditions on the reservation. The 1989 Educational Census of the Northern Cheyenne Reservation provides valuable information related to the current social characteristics of the reservation community in which most Indian students attending local schools reside. The census data, which represents about 80% of the reservation population estimated to be approximately 3,200 in 1989, reveal that about 47% of the population are 18 years of age or younger. The relative youth of the population can be seen in the age distribution data which show an increasing number of persons in the younger age categories. Members of the Northern Cheyenne Tribe comprise about a quarter to a third of the population of Rosebud County and a much smaller part of Big Horn County.

Regarding the educational attainment of the Northern Cheyenne reservation residents, the census data show that approximately 53% of persons over 18 years of age have received a high school diploma and about 18% have received a GED certificate; 29% did not receive either one. About 40% of the adults have attended college although only about 25% of these persons have finished a degree program. Within each of the communities, the highest percentages of high school/GED graduates on the reservation are found in Muddy district (84%), Busby (75%) and Ashland (71%). The lowest percentages of high school/GED graduates are found in Birney (54%) and Lame Deer (68%).

Among adults on the reservation, approximately 50% are employed. Of the adults that are employed, over half (56%) earn $12,000 or less. Over 41% of the employed persons work in educational institutions with an additional 35% employed by tribal or federal

agencies. In relation to income, more than half of the low income persons on the reservation live in Lame Deer. Although Lame Deer also has a large percentage of the highest income earners, Muddy district has the largest proportion overall.

While a fairly substantial proportion of the people on the reservation still speak and/or understand their native language (38%), this varies both by age group and by community. The oldest age groups have the highest percentage who speak Cheyenne, and the largest percentages of Cheyenne speakers are found in Ashland and Busby.

Such information helps to establish several important attributes of the communities of origins of the students included in the research efforts: they include a large population of children and young people, large numbers of unemployed people, people with low incomes as well as people who have not received educational credentials, and large segments of the population who continue their Cheyenne cultural ways such as speaking their native language. In spite of the large proportions of people with little educational or economic resources, there are still fairly substantial percentages who have attended post-secondary training and who work especially for schools and educational programs. Overall, there is substantial support for educational achievement.

Generally between a third and a half of the students attending St. Labre Catholic Mission School are from the Crow reservation which is adjacent to the Northern Cheyenne reservation on the west. It occupies a substantial part of Big Horn county and a smaller part of Yellowstone County. Crow students come from a reservation in which the culture and social organization differ from the Northern Cheyenne. Although some aspects of social organization share some similarity, such as access to off-reservation experiences (e.g., for

work, education and military service) and the presence of non-Indians and other tribal members, as well as new institutions providing for the needs of the Crow Tribe, there are some important differences. For example, the Crow Tribe is somewhat bigger with a reservation population of about 7,600 in 1987 (BLM, 1988). In fact, the Crow people comprise at least 50% of the population of Big Horn County. In terms of cultural differences, a larger percentage of the Crow Tribe speaks their native language fluently, and students often receive their early academic instruction in their own language in reservation schools. Additionally, family organization is clan based and matrilineal providing for large extended families. Unlike the Northern Cheyenne, the Crows have a substantially larger reservation, but the tribal members are in the minority within its boundaries. Also, unlike the Northern Cheyenne, the Crow Tribe has chosen to exploit their coal reserves resulting in additional revenues for the Tribe. However, unemployment and poverty remain serious problems for members of this Tribe as well (BLM, 1988).

Description of the Secondary Schools Participating in the Project.

Six school districts or organizations provide services to the Northern Cheyenne Indian Reservation: Hardin Public School District, Busby School of the Northern Cheyenne Tribe, Lame Deer Public School District, Ashland Public School District, St. Labre Catholic Indian School, and Colstrip Public School District. Of these schools, four (Hardin, Busby, St. Labre, Colstrip) maintain high schools. Among the four high schools, Hardin has not participated extensively in the Northern Cheyenne Education Commission and provides the least services to the Northern Cheyenne Reservation; consequently, Hardin was not included in the study.

Colstrip Public School.

When public schools were allowed to provide for the education of the Northern Cheyenne, many reservation students attended the public school district in Colstrip, Montana just north of the reservation. While there has been a settlement in one form or another at Colstrip since early in the century, the modern town has been built, for the most part, since the energy boom of the early 1970s. Although residents naturally resist the description of Colstrip as a "company town," it is nevertheless true that the town was primarily planned and built by the Montana Power Company to provide a comfortable, attractive, and model community for its employees. Once the recipient of a municipal planning award, Colstrip boasts carefully manicured parks, scrupulously clean streets, and an active and positive community spirit. It also maintains one of the wealthiest school districts in the state which prides itself on an abundance of academic and athletic facilities and a wide variety of learning opportunities for its students. Faculty and community residents alike are proud that this school district is known for its "state of the art" instructional programs. Colstrip itself is composed primarily of white, working class families. However, the school district serves not only the town itself, but also the Northern Cheyenne Indian Reservation and remote ranching communities. Some students live as far as 75 miles from the school. Within the school district, about a third of the student body is composed of Indian students. While a minority at Colstrip, this group, nevertheless, represents the largest single concentration of Indian students of the three schools that primarily serve the Northern Cheyenne reservation. Colstrip school is governed by a six member school board which is elected district-wide. One member is elected from the Northern Cheyenne reservation. Staff composition in 1985

included 51 teachers and staff in the high school. Three Native Americans worked for the school district, one as a counselor, one as the Home School Coordinator, and one as an elementary teacher (Silvertip Associates, 1985). Since that time, at least two other Indian personnel have been hired by Colstrip school district.

The budget for Colstrip high school was as high as $2,785,472 in 1985. Funds for Colstrip school are made available as a result of Public Law 874, which provides funds for students from the reservation in lieu of taxes, and from the Johnson-O'Malley program which provides special Indian education funding to school districts with Indian student enrollments (Silvertip Associates, 1985).

Enrollment of Indian students in the high school increased from 47 in the 1987 graduating class or "cohort" to 63 in the 1989 cohort. These numbers comprised from 28% and 39% of the total number of students in these two cohorts. Unlike the Indian student enrollment, total enrollment in Colstrip high school declined sharply over the period 1982 to 1989. The decline in students reflected primarily the loss of population from the Colstrip area with the end of construction activities on the power plants in the mid-1980s. The total high school enrollment was as high as 507 in 1987-88, but decreased to 438 in 1989-90.

St. Labre Catholic Mission School.

St. Labre Catholic Indian School is located adjacent to the eastern border of the reservation in Ashland, Montana. In the past, St. Labre has also served nearby ranching families, but this part of the service population now attends schools in Colstrip and Broadus. St. Labre serves both day and boarding students drawn from the Northern Cheyenne and Crow reservations.

St. Labre Catholic Mission School is still part of the St. Labre mission founded a century ago. It is a privately administered Roman Catholic school which serves an almost exclusively Indian population. St. Labre is probably the best known of the schools serving the reservation as a result of its successful and long-standing, national direct mail fund-raising activities. Once an impoverished mission, it has built a large and relatively stable endowment over the last thirty years. The school does not accept federal funding and depends exclusively on the contributions made by donors responding to mass mailings.

As a Catholic school, St. Labre has emphasized spiritual as well as academic development. The history of St. Labre is interesting in that it closely parallels national priorities in Indian policy. In the earlier years of its history, missionaries at St. Labre appear to have favored an assimilationist perspective in their dealings with Indians. Older Indians on the Northern Cheyenne reservation relate how some Cheyennes, inspired by the sermons of St. Labre missionaries, roamed the reservation on horseback, roping and pulling down sweat lodges (Ted Risingsun, 1988). Today, St. Labre staff emphasize an integration of the values of their Roman Catholic sponsorship with respect for the traditions of the community. It is not uncommon for St. Labre clergy to participate in sweat lodge activities with members of their Indian congregation.

Due to its commitment to provide educational programs with private funding, the school has not allowed federally funded special education programs to be offered. However, it does provide for some remedial instruction with the intent to mainstream students as quickly as possible. Also in line with its commitment to assist Indian students, St. Labre has made an unprecedented effort among local schools to provide social services and other

activities designed to help students who have problems with chemical dependency, either personally or in relation to their families. Acknowledging that the staff and faculty may also need help with such problems, it initiated the first employee assistance program among the local schools.

An important part of the history of the school is the change in governance of the school in 1975. From 1975 through 1985 St. Labre school was also a contract school with the Bureau of Indian Affairs. During that time, the school was governed by a community-elected school board and the facilities were leased from the St. Labre mission. The contract school was discontinued in 1985, however, and the governance was again assumed by the Catholic diocese of Great Falls, Montana. A community advisory board elected from the reservation area and including one member from the Crow Tribe provides some oversight in the administration of the school. Accompanying the change in status of the school were declining enrollments: in 1985, the enrollment of high school students was 140. In the 1987 graduating class or cohort, there were 27 students. In 1988 and 1989, however, the cohorts increased to 39 and 57 respectively.

Funding for the school changed radically when it became a private Catholic school again. As a contract school, it received federal monies amounting to about $400,000 per year, but with the change to private status, its budget increased to close to two million dollars (Silvertip Associates, 1985). St. Labre charges a minimal tuition fee of $25 per student, but family members of students enrolled are charged only $10. There is also a scholarship program. Staff and faculty have been primarily non-Indian (Silvertip Associates, 1985). Since the mid-1980s there have been at least one Northern Cheyenne teacher, one

Sioux teacher, a Northern Cheyenne counselor as well as fifteen Northern Cheyenne para-professionals at the high school.

Busby Tribal School.

Busby School of the Northern Cheyenne is located on the reservation itself in the village of Busby. Busby School was originally a boarding school administered by the Bureau of Indian Affairs. During the early 1970s, the Northern Cheyenne Tribe was one of the first Tribal governments to contract with the Bureau of Indian Affairs for the administration of its own school. Thus, the Tribe transformed the BIA boarding school at Busby, called the Tongue River Reservation Boarding School, to Busby Tribal School (Silvertip Associates, 1985). In its early years as a boarding school administered by the BIA, Busby school's history included strict and sometimes abusive policies directed at the boarding school students. Today, there are no longer boarding facilities, but the school continues to be affected by the negative image resulting from the early assimilationist policies of the school. Memories of experiences at Busby boarding school are still strong for older Northern Cheyennes. Ted Risingsun recalls the effect of attending the school,

> I remember Busby School and how it used to be because I went there as a child. Everything was like in the military. I was a little boy, and with the other little boys, we would get up when the whistle blew, dress when the whistle blew, go out and "police" the grounds picking up little pieces of paper and things so we would learn to be "responsible." We went to breakfast when the whistle blew, and we stood behind our chairs and couldn't sit down until the whistle blew. We were punished if we spoke to each other in Cheyenne and we were made to feel ashamed that we were Indians, and ashamed of our families. When I got a chance to go home, I cried that I did not want to come back. But my family said that I must go back. So I became deaf. I have been told that it was not a physical problem, but hysterical deafness. But I could not hear and my family could not send me back to the school. I still, today, have trouble with my hearing sometimes. I think it goes back to what happened to me as a child. The Indian schools have done terrible things to Indian children.

Mr. Risingsun also describes his experience in relation to being forbidden to speak his native language this way,

> I'd never spoken English, but at school I was expected to use it. I didn't even know that my name [in English] was Ted Risingsun. I hung my head. If there had been a bilingual [or multicultural] teacher there, things would have been different (Education Week, 1987).

While Busby school has changed a great deal since the 1930s when Mr. Risingsun attended the boarding school, it has had many other problems stemming from its legacy of BIA origins and recent funding pattern. Among the three schools serving the reservation, Busby has the smallest resource base with which to provide comprehensive services for grades K through 12 (Silvertip Associates, 1985). In the 1985-86 school year, Busby received about $650,000 from the BIA for administration of the school. It also received about $332,000 in federal grants for special programs such as bilingual education, Chapter I, special education and Title IV Indian education (Silvertip Associates, 1985). Busby School's budget fluctuates with its changing enrollment and the federal funds available for Indian-controlled schools.

Busby Tribal School's enrollment has declined drastically since 1972: in its first year, there were 207 high school students. In contrast, Busby had a high school enrollment of 80 in 1985. There were 30 students in the graduating class or cohort of 1987, 18 in 1988 and 30 again in 1989. Part of the reason for the sharp decline is related to the necessity of closing the high school in 1983 when the school board was forced to suspend operations of the program because of an inadequate facility; the building was assessed as hazardous due

to its lack of maintenance because of funding cutbacks (Silvertip Associates, 1985). Busby School is governed by a five-person board of directors elected within the boundaries of the portion of the reservation located within Big Horn county, the western portion of the reservation.

Overview of Parts I and II of the Final Report.

The results presented in Part I of the Final Report are related to the first three purposes of the project. This information provides descriptive statistics relevant for understanding the educational outcomes, school performance and completion of high school students at the three high schools that primarily serve the Northern Cheyenne reservation.

Statistical analyses of the student data included in Part II will provide additional information for addressing the second, third and fourth purposes. They will examine the relative importance of both individual and social background variables in the patterns of Indian students' school completion patterns identified in Part I. Specifically, the analyses will utilize individual characteristics and background information on parents of Indian students such as educational achievement, employment status and other factors which have been found to be closely associated with students' school achievement in other education studies. These analyses will be important for evaluating the relative importance of each type of influence on school performance and completion. These analyses will also provide for comparison of influences on school performance and completion of both Indian and non-Indian students. Part II will begin with a review of the relevant literature related to the purposes of the project research and will conclude with some interpretations and

recommendations designed to be of use to local schools serving the students involved in the research project.

**Part I: Student Characteristics and School Experiences related to School Performance and Completion.**

The information presented in this section of the report will be organized in the following topics: student characteristics, a summary of overall school graduation and dropout results, profiles of graduates and dropouts, patterns of school involvement, school performance and graduation status. In the first four sections, the intent is to provide an overview of some of the important aspects of student characteristics and their experiences which affect school outcomes. The last two sections address questions regarding the school performance patterns of students with different graduation statuses overall, as well as among the three schools, by sex and for Indian and non-Indian students.

*Student characteristics.*

Descriptive findings of the dropout project research provide specific insight into the school completion and performance levels of high school students. Data are presented for 698 students from the three schools: 130 from St. Labre, 489 from Colstrip and 79 from Busby. These numbers include students who graduated, dropped or transferred during their high school years which should have concluded in 1987, 1988 or 1989. The Indian students, numbering 366, comprise 52% of the total student population from the three schools. The

majority of Indian students last attended Colstrip (45%) while 34% of the Indian students attended St. Labre, and 21% attended Busby. At St. Labre and Busby, more than 95% and 99% of the students respectively are Indian while about a third, or 34%, of the students from Colstrip are Indian. Table 1 shows the gender characteristics of Indian and non-Indian students as well as figures on the size of the cohorts included in the research project. Among the Indian students at St. Labre, about 54% are female while at Busby only 33% of the students are female. Among the Colstrip students, 51% of the Indian students are female and 49% male while for the non-Indian students, 52% are female and 48% male. Looking at the numbers of students in each cohort, we see that the largest cohort is 1989 with 252 students (36%) from all three schools, and the second largest is 1987 with 228 or 33% of the total number of students. The drop in the number of students in the second, or 1988, cohort can be traced to declines at both Colstrip and Busby. St. Labre, however, had an increase in its high school enrollment of about 30% in 1988 as well as in 1989.

*School Completion.*

Our analyses of the project data are primarily concerned with identifying the conditions associated with the specific educational outcomes of interest for Indian and non-Indian students, school completion and performance. The first outcome is a variable which identifies "graduates" as those who completed high school, and "dropouts" as those who left high school and did not graduate. This variable does **not** identify a student as a "dropout" if he or she left school and subsequently returned to finish high school, but **does** include GED students or graduates in the dropout category. In the descriptive data presented

TABLE 1: Characteristics of Students: Gender and Cohort by School

| | INDIAN | | | NON-INDIAN | | | ALL STUDENTS | | |
|---|---|---|---|---|---|---|---|---|---|
| | # | Row% | Col% | # | Row% | Col% | # | Row% | Col% |
| **Colstrip** | | | | | | | | | |
| **Gender** | | | | | | | | | |
| Males | 81 | 34% | 49% | 156 | 66% | 48% | 237 | 100% | 48% |
| Females | 84 | 33% | 51% | 168 | 67% | 52% | 252 | 100% | 52% |
| Sub-total | 165 | 34% | 100% | 324 | 66% | 100% | 489 | 100% | 100% |
| **Cohort** | | | | | | | | | |
| 1987 | 47 | 28% | 28% | 121 | 72% | 37% | 168 | 100% | 34% |
| 1988 | 55 | 35% | 33% | 103 | 65% | 32% | 158 | 100% | 32% |
| 1989 | 63 | 39% | 38% | 100 | 61% | 31% | 163 | 100% | 33% |
| Sub-total | 165 | 34% | 100% | 324 | 66% | 100% | 489 | 100% | 100% |
| | | | | | | | | | |
| **St. Labre** | | | | | | | | | |
| **Gender** | | | | | | | | | |
| Males | 56 | 97% | 46% | 2 | 3% | 29% | 58 | 100% | 45% |
| Females | 67 | 93% | 54% | 5 | 7% | 71% | 72 | 100% | 55% |
| Sub-total | 123 | 95% | 100% | 7 | 5% | 100% | 130 | 100% | 100% |
| **Cohort** | | | | | | | | | |
| 1987 | 27 | 93% | 22% | 2 | 7% | 29% | 29 | 100% | 22% |
| 1988 | 39 | 93% | 32% | 3 | 7% | 43% | 42 | 100% | 32% |
| 1989 | 57 | 97% | 46% | 2 | 3% | 29% | 59 | 100% | 45% |
| Sub-total | 123 | 95% | 100% | 7 | 5% | 100% | 130 | 100% | 100% |
| | | | | | | | | | |
| **Busby** | | | | | | | | | |
| **Gender** | | | | | | | | | |
| Males | 52 | 100% | 67% | 0 | 0% | 0% | 52 | 100% | 66% |
| Females | 26 | 96% | 33% | 1 | 4% | 100% | 27 | 100% | 34% |
| Sub-total | 78 | 99% | 100% | 1 | 1% | 100% | 79 | 100% | 100% |
| **Cohort** | | | | | | | | | |
| 1987 | 30 | 97% | 38% | 1 | 3% | 100% | 31 | 100% | 39% |
| 1988 | 18 | 100% | 23% | 0 | 0% | 0% | 18 | 100% | 23% |
| 1989 | 30 | 100% | 38% | 0 | 0% | 0% | 30 | 100% | 38% |
| Sub-total | 78 | 99% | 100% | 1 | 1% | 100% | 79 | 100% | 100% |
| | | | | | | | | | |
| **All Students** | | | | | | | | | |
| **Gender** | | | | | | | | | |
| Males | 189 | 54% | 52% | 158 | 46% | 48% | 347 | 100% | 50% |
| Females | 177 | 50% | 48% | 174 | 50% | 52% | 351 | 100% | 50% |
| Sub-total | 366 | 52% | 100% | 332 | 48% | 100% | 698 | 100% | 100% |
| **Cohort** | | | | | | | | | |
| 1987 | 104 | 46% | 28% | 124 | 54% | 37% | 228 | 100% | 33% |
| 1988 | 112 | 51% | 31% | 106 | 49% | 32% | 218 | 100% | 31% |
| 1989 | 150 | 60% | 41% | 102 | 40% | 31% | 252 | 100% | 36% |
| Total | 366 | 52% | 100% | 332 | 48% | 100% | 698 | 100% | 100% |

below, "transfers" comprise the third category of school completion, i.e., those students who left a local high school to attend school elsewhere and did not return. The second educational outcome of interest includes two variables measuring the student's school performance: percentile ranking on subjects of the standardized achievement tests administered in high school, and grade point average (GPA) for several subject. in high school. Subjects for which there are percentiles on standardized tests are language, reading, math, science and social studies while subjects for which there are GPAs are English, math, science and social studies.

Turning first to an overview of high school completion, in the tables which follow we have distinguished the graduates from non-graduates in order to determine the overall high school gradu[illegible]n rate for students from the three high schools. The results verify the magnitude of the dropout problem. For all students who were in the 1987, 1988 and 1989 cohorts, the total percentage of graduates is 55%. The dropout rate for the total student population is 25% while the percentage of transfers is 20%. The size of the transfer group suggests the magnitude of the "switching" problem, or movement among schools. The graduation rate for Indian students was 47% overall, with a dropout rate of 40% and a transfer rate of 13%. By comparison, non-Indian students completed high school at a rate of 63%, dropped out at a rate of 8%, and transferred at a rate of 29%. As mentioned earlier, the calculation of transfers in this table includes only those who left a school participating in this study and did not return. Calculations of the true "switching" problem, however, should address how many times the students changed schools prior to finishing or dropping out. Additional information of this type on transfers between schools by students

TABLE 2: Graduation Status by School

| | Indian | | | | | | | | | Nonindian | | | | | | | | | Total | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | | Female | | | Total | | | Male | | | Female | | | Total | | | Male | | | Female | | | Total | | |
| Status by School | # | Row% | Col% | # | Row% | Col% | # | Row% | Col% | # | Row% | Col% | # | Row% | Col% | # | Row | Col% | # | Row% | Col% | # | Row% | Col% | # | Row% | Col% |
| **Celstrip** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Graduate* | 37 | 50% | 46% | 37 | 50% | 44% | 74 | 26% | 45% | 95 | 46% | 61% | 111 | 54% | 66% | 206 | 74% | 64% | 132 | 47% | 56% | 148 | 53% | 59% | 280 | 100% | 57% |
| *Dropout* | 24 | 44% | 30% | 30 | 56% | 36% | 54 | 71% | 33% | 7 | 32% | 4% | 15 | 68% | 9% | 22 | 29% | 7% | 31 | 41% | 13% | 45 | 59% | 18% | 76 | 100% | 16% |
| *Transfer* | 20 | 54% | 25% | 17 | 46% | 20% | 37 | 28% | 22% | 54 | 56% | 35% | 42 | 44% | 25% | 96 | 72% | 30% | 74 | 56% | 31% | 59 | 44% | 23% | 133 | 100% | 27% |
| Sub-total | 81 | 49% | 100% | 84 | 51% | 100% | 165 | 34% | 100% | 156 | 48% | 100% | 168 | 52% | 100% | 324 | 66% | 100% | 237 | 48% | 100% | 252 | 52% | 100% | 489 | 100% | 100% |
| **St. Labre** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Graduate* | 29 | 45% | 52% | 35 | 55% | 52% | 64 | 97% | 52% | 0 | 0% | 0% | 2 | 100% | 40% | 2 | 3% | 29% | 29 | 44% | 50% | 37 | 56% | 51% | 66 | 100% | 51% |
| *Dropout* | 23 | 45% | 41% | 28 | 55% | 42% | 51 | 93% | 41% | 1 | 25% | 50% | 3 | 75% | 60% | 4 | 7% | 57% | 24 | 44% | 41% | 31 | 56% | 43% | 55 | 100% | 42% |
| *Transfer* | 4 | 50% | 7% | 4 | 50% | 6% | 8 | 89% | 7% | 1 | 100% | 50% | 0 | 0% | 0% | 1 | 11% | 14% | 5 | 56% | 9% | 4 | 44% | 6% | 9 | 100% | 7% |
| Sub-total | 56 | 46% | 100% | 67 | 54% | 100% | 123 | 95% | 100% | 2 | 29% | 100% | 5 | 71% | 100% | 7 | 5% | 100% | 58 | 45% | 100% | 72 | 55% | 100% | 130 | 100% | 100% |
| **Busby** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Graduate* | 26 | 74% | 50% | 9 | 26% | 35% | 35 | 97% | 45% | 0 | 0% | 0% | 1 | 100% | 100% | 1 | 3% | 100% | 26 | 72% | 50% | 10 | 28% | 37% | 36 | 100% | 46% |
| *Dropout* | 25 | 60% | 48% | 17 | 40% | 65% | 42 | 100% | 54% | 0 | 0% | 0% | 0 | 0% | 0% | 0 | 0% | 0% | 25 | 60% | 48% | 17 | 40% | 63% | 42 | 100% | 53% |
| *Transfer* | 1 | 100% | 2% | 0 | 0% | 0% | 1 | 100% | 1% | 0 | 0% | 0% | 0 | 0% | 0% | 0 | 0% | 0% | 1 | 100% | 2% | 0 | 0% | 0% | 1 | 100% | 1% |
| Sub-total | 52 | 67% | 100% | 26 | 33% | 100% | 78 | 99% | 100% | 0 | 0% | 0% | 1 | 100% | 100% | 1 | 1% | 100% | 52 | 66% | 100% | 27 | 34% | 100% | 79 | 100% | 100% |
| **Total** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Graduate* | 92 | 53% | 49% | 81 | 47% | 46% | 173 | 45% | 47% | 95 | 46% | 60% | 114 | 55% | 66% | 209 | 55% | 63% | 187 | 49% | 54% | 195 | 51% | 56% | 382 | 100% | 55% |
| *Dropout* | 72 | 49% | 38% | 75 | 51% | 42% | 147 | 85% | 40% | 8 | 31% | 5% | 18 | 69% | 10% | 26 | 15% | 8% | 80 | 46% | 23% | 93 | 54% | 28% | 173 | 100% | 25% |
| *Transfer* | 25 | 54% | 13% | 21 | 46% | 12% | 46 | 32% | 13% | 55 | 57% | 35% | 42 | 43% | 24% | 97 | 68% | 29% | 80 | 56% | 23% | 63 | 44% | 18% | 143 | 100% | 20% |
| Sub-total | 189 | 52% | 100% | 177 | 48% | 100% | 366 | 52% | 100% | 158 | 42% | 100% | 174 | 52% | 100% | 332 | 48% | 100% | 347 | 50% | 100% | 351 | 50% | 100% | 698 | 100% | 100% |

is presented below in Table 3.

Table 2 provides detailed information on high school graduation by ethnic group, gender and school. These data reveal that percentages of students completing high school ranges from 46% at Busby to 51% at St. Labre and 57% at Colstrip. An important project finding is that Busby has the highest dropout rate at 53%. St. Labre has the next highest dropout rate at 42%, while Colstrip has an overall dropout rate of 16%. Looking at the dropout rates by group at Colstrip, however, shows that 33% of the Indian students dropped out while the dropout rate is only 7% among non-Indian students. Considering the information on transfers for all students, the smallest transfer rate is found at Busby with 1% while St. Labre has a transfer rate of 7%, and Colstrip had a transfer rate of 27%. Again, looking at the latter figure for Indian and non-Indian students overall shows that a higher percentage of non-Indian students transferred (29%) than did Indian students (13%).

Comparing males to females in terms of high school completion reveals that, overall, girls graduated at a slightly higher rate (56%) than boys (54%). However, girls also dropped out at a rate of 26% compared to 23% for boys. Boys also transferred at the same rate or 5% higher than girls (18%). In contrast, figures in Table 2 show that high school completion among Indian students overall is quite different: boys graduated at a higher rate (49%) than girls (46%). However, similar to the pattern for all students, Indian girls dropped out at a higher rate (42%) than boys (38%). The transfer rates for Indian students overall are about the same for boys (13%) and girls (12%). Comparatively, non-Indian students showed consistently higher graduation rates: girls graduated at a rate of 66% while 60% of the boys graduated. Dropout rates for non-Indian students are also lower than for Indian students:

boys had the lowest dropout rate at 5% while girls dropped out at a rate of 10%. Unlike the transfer pattern shown for Indian students, non-Indian students had the highest rate of transfer, with boys transferring at a rate of 35%, 11% higher than the rate for girls (24%).

Graduation rates for the three schools also show some distinct differences by gender. For example, at two of the three schools, dropouts are more likely to be girls: 56% of the dropouts at Colstrip are girls and 55% are girls at St. Labre. However, at Busby, boys are more likely to leave school since they comprise 60% of the dropouts. Looking at the rate of completion for Indian girls by school, however, shows that more than half graduate at St. Labre (52%) while a smaller percentage of girls graduate at Colstrip (44%) and Busby (35%). Among boys, however, at least half graduate at Busby (50%) and St. Labre (52%) while 46% graduate at Colstrip. The highest transfer rate among both boys and girls occurs at Colstrip where 25% of the boys and 20% of the girls transfer to other schools.

*Profiles of Graduates and Dropouts.*

In Table 3 profiles of the dropouts and graduates are presented which summarize some characteristics of each group: average or mean GPA for all high school years, average total extracurricular activities in which students participated in high school, average total transfers or moves to another school, average total special remedial courses attended, average total number of days missed in high school and average total number of suspensions during high school. These data are presented for Indian and non-Indian students. Please note that in the following discussions of Tables 3 and 3a, we report the differences between graduates and dropouts for most of the items listed including number of days missed.

TABLE 3: Dropout and Graduate Profiles for All High School Years

| | Indian | | Non-Indian | | Total | |
|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female |
| **GRADUATES** | | | | | | |
| Total GPA | 2.31 | 2.45 | 2.45 | 2.92 | 2.38 | 2.73 |
| Av Extra Curricular | 4.32 | 4.74 | 5.85 | 8.72 | 5.10 | 7.07 |
| Av Transfers | 1.26 | 1.06 | 0.43 | 0.26 | 0.84 | 0.60 |
| Av Special Courses | 1.92 | 1.62 | 1.54 | 1.03 | 1.73 | 1.27 |
| Av Days Missed | 43.42 | 57.15 | 35.93 | 42.90 | 39.62 | 48.82 |
| Av No. Suspensions | 2.14 | 1.56 | 2.53 | 0.52 | 2.34 | 0.95 |
| **DROPOUTS** | | | | | | |
| Total GPA | 1.87 | 1.92 | 2.22 | 1.89 | 1.92 | 1.91 |
| Av Extra Curricular | 0.29 | 0.27 | 1.88 | 0.67 | 0.45 | 0.34 |
| Av Transfers | 1.13 | 1.25 | 1.13 | 1.17 | 1.13 | 1.24 |
| Av Special Courses | 1.36 | 0.95 | 1.75 | 0.94 | 1.40 | 0.95 |
| Av Days Missed | 29.28 | 22.23 | 22.50 | 27.56 | 28.60 | 23.26 |
| Av No. Suspensions | 2.08 | 0.95 | 2.13 | 2.28 | 2.09 | 1.20 |

However, we emphasize the more salient comparison within groups of graduates and groups of dropouts since these groups have more comparable periods of school enrollment.

Findings of the dropout research shown in Table 3 shed some light on the reasons for students' non-completion of school. Overall, students who did not complete high school are characterized by the following: lower GPAs, lower participation in special remedial courses, much less participation in extracurricular activities, and fewer days missed. Boys who dropped out had more transfers to other schools during high school than boys who graduated, but slightly fewer transfers than girls who dropped out. This pattern generally characterizes non-Indian students. In contrast, among Indian students the number of transfers for girls and boys did not differ that much between graduates and dropouts; Indian graduates had the highest levels of transfers overall.

Another finding for Indian students is that they generally missed more days of school than the non-Indian students, both graduates and non-graduates. One exception is that Indian girls who dropped out missed the fewest average number of days of school. Interestingly, the data indicate that Indian graduates participated in remedial programs (such as Chapter 1, remedial courses and Special Education) more often than Indian students who did not graduate. The reverse was the case for non-Indian boys: non-Indian boys who dropped out participated in special programs or courses more often than graduates. However, among girls, the graduates received more help from special courses than did the dropouts. Regarding the number of suspensions, non-Indian boys who dropped out had fewer suspensions than graduates while non-Indian girls who left school had a much larger number of suspensions than girls who graduated.

Comparison of the profiles of Indian students with non-Indian students reveals some similar patterns but some differences as well. Like the Indian dropouts, non-Indian students who did not finish school had lower GPAs, less participation in extracurricular activities, and these students missed fewer days of schools than the students who graduated. Compared to Indian dropouts, non-Indian dropouts participated in a larger number of special courses although Indian and non-Indian girls who dropped out participated at about the same level in special courses. Comparing Indian and non-Indian students on the number of days missed, Indian graduates missed more days of school than non-Indian graduates. However, while male Indian dropouts missed more school than non-Indian dropouts, non-Indian girls missed more days than Indian girls who dropped out.

Overall the two groups of dropouts showed the most similarity in terms of mean GPA, extracurricular participation and the numbers of days missed. Differences in the profiles occurred in relation to transfers, participation in special courses and suspensions which showed some discrepancies between girls and boys. Also, there is a much greater discrepancy between GPAs for the Indian graduates and non-graduates than for the non-Indian students. Comparing Indian and non-Indian students by gender shows that females of each school completion group tended to be alike except in relation to suspensions while male graduates differed on transfers and male dropouts and graduates differed in their participation in special programs.

This information suggests that key elements of the experience of the non-graduating Indian students were poor performance and less involvement with school activities. Indian non-graduates participated less in special courses (Chapter 1, special education and remedial

courses) which could assist them in improving their school performance. While non-Indian dropouts also had lower GPAs and less involvement in extracurricular activities, they had better attendance, and boys participated more often in special courses. However, they were more likely to have transferred to other schools than graduates. These profiles suggest that the school experiences of Indian and non-Indian students may be different. Larger numbers of transfers, or moves to other schools, distinguishes non-Indian males who did not graduate along with their participation in special courses. Non-Indian graduates transferred less overall, and while boys had more suspensions than any other group, they participated in remedial courses and programs more than girls who graduated. Larger number of transfers as well as more participation in special courses seems to be distinctive for Indian graduates, along with their high level of absences from school and higher number of suspensions. In contrast, Indian dropouts also had a relatively high transfer rate but took less advantage of special courses.

*School Involvement.*

Table 3a shows some additional information about dropouts and graduates by school, gender and by ethnic group. Figures presented again show averages for the number of special courses attended in high school, total days missed during high school, total number of suspensions during high school, and total number of extracurricular activities in which students participated in high school. These data help to provide an overall profile of the students' school involvement at each school. For example, Indian graduates at Colstrip attended more special remedial courses than did students at either St. Labre or Busby.

TABLE 3a: School Involvement of Graduates and Dropouts by Ethnic Group, Gender and School

| | Indian | | | Non-Indian | | | | Indian | | | Non-Indian | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Graduates** | Male | Female | Total | Male | Female | Total | **Dropouts** | Male | Female | Total | Male | Female | Total |
| **Colstrip** | | | | | | | **Colstrip** | | | | | | |
| Special Courses | 2.27 | 2.70 | 2.49 | 1.54 | 1.04 | 1.27 | Special Courses | 2.00 | 1.27 | 1.59 | 2.00 | 1.33 | 1.41 |
| Days Missed | 43.35 | 59.32 | 51.34 | 35.93 | 42.88 | 39.68 | Days Missed | 36.54 | 34.33 | 35.32 | 23.29 | 32.20 | 29.36 |
| Suspensions | 4.14 | 2.84 | 3.49 | 2.53 | 0.53 | 1.45 | Suspensions | 3.13 | 1.77 | 2.37 | 2.43 | 2.73 | 2.64 |
| Extracurricular | 5.38 | 4.54 | 4.96 | 5.85 | 8.78 | 7.43 | Extracurricular | 0.42 | 0.13 | 0.26 | 2.14 | 0.73 | 1.18 |
| **St. Labre** | | | | | | | **St. Labre** | | | | | | |
| Special Courses | 1.48 | 0.51 | 0.95 | 0.00 | 0.00 | 0.00 | Special Courses | 0.95 | 0.68 | 0.80 | 0.00 | 0.00 | 0.00 |
| Days Missed | 36.93 | 55.60 | 47.14 | 0.00 | 44.00 | 44.00 | Days Missed | 37.65 | 15.57 | 25.53 | 17.00 | 4.33 | 7.50 |
| Suspensions | 0.93 | 0.57 | 0.73 | 0.00 | 0.00 | 0.00 | Suspensions | 0.83 | 0.61 | 0.71 | 0.00 | 0.00 | 0.00 |
| Extracurricular | 5.83 | 6.06 | 5.95 | 0.00 | 10.00 | 10.00 | Extracurricular | 0.26 | 0.57 | 0.43 | 0.00 | 0.33 | 0.25 |
| **Busby** | | | | | | | **Busby** | | | | | | |
| Special Courses | 1.92 | 1.44 | 1.80 | 0.00 | 2.00 | 2.00 | Special Courses | 1.12 | 0.82 | 1.00 | 0.00 | 0.00 | 0.00 |
| Days Missed | 50.77 | 54.22 | 51.66 | 0.00 | 43.00 | 43.00 | Days Missed | 14.60 | 11.82 | 13.48 | 0.00 | 0.00 | 0.00 |
| Suspensions | 0.65 | 0.11 | 0.51 | 0.00 | 0.00 | 0.00 | Suspensions | 2.24 | 0.06 | 1.36 | 0.00 | 0.00 | 0.00 |
| Extracurricular | 1.12 | 0.44 | 0.94 | 0.00 | 0.00 | 0.00 | Extracurricular | 0.20 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |

While Indian graduates at Colstrip missed more school on average than students at the other schools and had more in and out-of-school suspensions, they were also involved in more extracurricular activities than Busby students although not as many as St. Labre students. While St. Labre Indian graduates participated the least in special remedial courses, they generally missed fewer days, had fewer suspensions than Colstrip students, and had the highest participation in extracurricular activities. Comparatively, Busby graduates missed the highest number of days of school, had the lowest number of suspensions, participated in special courses more often than St. Labre students, but also participated in the least number of extracurricular activities. In contrast to Indian students at Colstrip, non-Indian graduates generally missed fewer days, participated less often in special courses, had fewer suspensions than Indian students (but more than students at either St. Labre or Busby) and had the highest level of participation of any group in extracurricular activities.

Both Indian and non-Indian dropouts at Colstrip show fewer days missed than graduates from Colstrip as well as much less involvement with extracurricular activities. However, while Indian dropouts attended fewer special courses than Indian graduates, non-Indian dropouts attended more special courses than non-Indian graduates. Similarly, Indian dropouts had fewer suspensions during high school than Indian graduates, but non-Indian dropouts had a higher average number of suspensions than did the non-Indian graduates. Comparing Indian dropouts from the three schools, the group with the largest involvement with special courses is again the Colstrip students who also have the largest number of days missed, and the highest number of suspensions. Only dropouts from Busby show less involvement with extracurricular activities.

Looking at differences between girls and boys who graduated, Table 3a shows that Indian girls who graduated tended to miss more days of school than did boys who graduated but they had fewer suspensions. This is also true for non-Indian girls who graduated. In contrast, Indian girls who dropped out missed fewer days of school than boys who dropped out, but they also had fewer suspensions than boys at each school. Only Indian girls at Colstrip participated more often in special courses than boys while only at St. Labre did girls participate more often in extracurricular activities than boys. Among dropouts, Indian boys tended to participate more often in special courses at each of the three schools as well as miss more days of school and have more suspensions than girls. At St. Labre, girls who dropped out had a somewhat higher level of participation in extracurricular activities than boys, but the reverse occurred at the other schools.

*School Performance: Comparisons of Indian and Non-Indian Students and Local Schools.*

Grade Point Average by Ethnic Group.

In addition to our interest in school completion as an important educational outcome, the project is also concerned with school performance. Data presented in tables and graphs in this section provide more detailed information on two measures of school performance: mean or average Grade Point Average (GPA) and mean percentile rankings on standardized tests administered by each school. In Table 4, the performance levels of the students in each ethnic group are shown as measured by GPA. Data on mean GPA by grade level show that the mean GPAs among Indian students are consistently lower than those of the non-Indian students throughout the high school years. However, at the freshman level, differences

TABLE 4: Mean GPA By Grade and By Subject for Indian and Non-Indian Students

| | Indian | | | Non-Indian | | |
|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total |
| **Grade Level** | | | | | | |
| 9 | 2.04 | 2.03 | 2.03 | 2.46 | 2.71 | 2.59 |
| 10 | 2.05 | 2.21 | 2.13 | 2.40 | 2.79 | 2.61 |
| 11 | 2.27 | 2.39 | 2.32 | 2.43 | 2.88 | 2.68 |
| 12 | 2.48 | 2.70 | 2.58 | 2.56 | 3.08 | 2.84 |
| Total GPA | 2.13 | 2.19 | 2.16 | 2.51 | 2.80 | 2.66 |
| | | | | | | |
| **Subject** | | | | | | |
| English | 2.04 | 2.28 | 2.16 | 2.64 | 3.03 | 2.84 |
| Math | 2.12 | 2.12 | 2.12 | 2.44 | 2.69 | 2.57 |
| Science | 1.90 | 2.08 | 1.99 | 2.51 | 2.83 | 2.68 |
| Social Studies | 1.96 | 2.25 | 2.10 | 2.60 | 2.93 | 2.78 |

between the means for the two groups is .56 while by grade 12 the difference has decreased to .26. The gap between the two groups decreases by .30 by the senior year. For both groups, the mean GPA increases as students progress through the high school years. GPAs by subject area in the lower part of the table also show differences in the average overall performance levels of the two groups. The mean GPA for Indian students for all English courses taken in high school is 2.16 while the mean for non-Indians is .68 higher at 2.84. Differences in the mean GPA for science and social studies courses are .69 and .68 while the difference in means for the two groups in math is only .45.

GPAs for Indian students by School.

GPAs for Indian students by school also show some important differences and similarities among the students. Data presented in Table 5 show the same overall pattern as seen in Table 4 regarding the increase in mean GPA by year of high school. Focusing on differences by school, however, shows that students at Colstrip and Busby do not perform quite as well as students at St. Labre on this measure. Indian students attending Colstrip during their freshman year showed the lowest mean GPA at 1.99 while students at Busby and St. Labre had mean GPAs of 2.07 and 2.09. The mean GPA for sophomore students at Colstrip increased to 2.03 while at the other two schools students' GPAs increased to 2.27 at St. Labre and 2.08 at Busby. The same pattern held for the junior and senior mean GPAs, with St. Labre students finishing high school with the highest mean GPA at 2.92. Busby students finished with a mean GPA of 2.58 and Colstrip students finished with a mean GPA of 2.31. St. Labre students gained an average overall of .83 point in GPA while Busby and Colstrip students gained .51 and .32 points in the overall average GPA by the end of

TABLE 5: GPA-by Grade and by Subject for Indian Students by School

| Grade Level | Colstrip | | | St. Labre | | | Busby | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| 9 | 1.99 | 1.98 | 1.99 | 2.14 | 2.04 | 2.09 | 2.10 | 2.16 | 2.07 |
| 10 | 1.99 | 2.07 | 2.03 | 2.15 | 2.37 | 2.27 | 2.04 | 2.15 | 2.08 |
| 11 | 2.04 | 2.19 | 2.10 | 2.54 | 2.50 | 2.52 | 2.39 | 2.75 | 2.49 |
| 12 | 2.28 | 2.34 | 2.31 | 2.74 | 3.07 | 2.92 | 2.51 | 2.76 | 2.58 |
| MEAN | 2.04 | 2.05 | 2.04 | 2.26 | 2.34 | 2.30 | 2.16 | 2.29 | 2.21 |
| **Subject** | | | | | | | | | |
| English | 2.11 | 2.31 | 2.21 | 2.01 | 2.30 | 2.17 | 1.96 | 2.13 | 2.02 |
| Math | 2.06 | 2.10 | 2.08 | 2.05 | 2.05 | 2.05 | 2.32 | 2.40 | 2.35 |
| Science | 1.85 | 2.03 | 1.94 | 1.87 | 2.06 | 1.97 | 2.01 | 2.35 | 2.12 |
| Social Studie | 1.95 | 2.07 | 2.01 | 2.03 | 2.40 | 2.23 | 1.90 | 2.43 | 2.05 |

high school.

Table 5 also shows the differences among the three schools in the mean GPAs of Indian students by subject area. Mean GPAs for Colstrip students reveal that they out-perform the students at St. Labre and Busby in English but fall behind students from the other two schools in other subjects. In English, the Colstrip mean GPA of 2.21 was .04 point higher than St. Labre students (2.17) and .19 higher than the mean GPA for Busby students. In science, the mean GPA of the Colstrip students was similar to the mean GPA for the St. Labre students (1.94 and 1.97 respectively), but both of these were lower than the mean GPA of the Busby students (2.12). Mean GPAs in math followed a similar pattern with Busby students showing a score of 2.35 followed by Colstrip students (2.08) and St. Labre students (2.05). The mean GPA for social studies, however, showed a different pattern: St. Labre students showed the highest score (2.23) with Busby and Colstrip students following with mean GPAs of 2.05 and 2.01 respectively.

An interesting pattern to note about the performance levels shown in Table 5 is that in most cases, whether the comparison is by grade level or subject, girls generally show a higher GPA than boys. This pattern holds true for each of the three schools.

Standardized Tests by Ethnic Group.

Table 6 shows performance levels for the two groups, Indian and non-Indian students, but utilizes the data for mean percentiles on standardized tests as the measure of school performance. Two areas most often observed in using standardized tests, reading and math, show similarities in performance levels within each of the two ethnic groups. In math, Indian freshman students have an average mean percentile of 37 or 28 points below the non-Indian

TABLE 6: Mean Percentile on Standardized Tests for Indian and Non-Indian Students

| Subject by Grade | Indian | | | Non-Indian | | |
|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total |
| **Math** | | | | | | |
| 9 | 36.11 | 38.18 | 37.20 | 57.51 | 70.52 | 65.14 |
| 10 | 32.49 | 35.19 | 33.88 | 60.74 | 69.88 | 66.32 |
| 11 | 32.68 | 32.32 | 32.51 | 54.03 | 63.28 | 59.29 |
| 12 | 31.12 | 31.70 | 31.41 | 44.84 | 58.80 | 52.34 |
| **Reading** | | | | | | |
| 9 | 36.14 | 37.16 | 36.67 | 59.15 | 66.26 | 63.20 |
| 10 | 30.85 | 33.81 | 32.38 | 60.02 | 65.52 | 63.35 |
| 11 | 28.87 | 30.97 | 29.86 | 50.80 | 62.31 | 57.54 |
| 12 | 25.16 | 32.74 | 28.85 | 39.92 | 62.94 | 52.06 |
| **Language** | | | | | | |
| 9 | 33.00 | 45.45 | 39.49 | 50.56 | 71.11 | 62.56 |
| 10 | 31.18 | 45.30 | 28.30 | 59.05 | 72.50 | 67.19 |
| 11 | 27.61 | 38.12 | 32.58 | 45.48 | 64.57 | 56.46 |
| 12 | 24.93 | 41.46 | 33.12 | 34.63 | 64.37 | 50.53 |
| **Science** | | | | | | |
| 9 | 42.02 | 35.14 | 38.39 | 59.64 | 66.27 | 63.49 |
| 10 | 39.22 | 35.69 | 37.39 | 66.88 | 70.24 | 68.94 |
| 11 | 38.91 | 32.54 | 35.80 | 56.45 | 59.64 | 58.24 |
| 12 | 31.49 | 31.91 | 31.71 | 35.87 | 55.49 | 46.47 |
| **Social Studies** | | | | | | |
| 9 | 37.24 | 39.61 | 38.48 | 56.97 | 68.25 | 63.56 |
| 10 | 37.14 | 36.41 | 36.76 | 58.50 | 68.68 | 64.68 |
| 11 | 35.54 | 34.69 | 35.13 | 49.70 | 62.02 | 56.70 |
| 12 | 29.13 | 33.13 | 31.30 | 33.65 | 57.11 | 46.10 |

students whose mean percentile is 65. Similarly, Indian students' average percentile ranking in reading is almost 37, or 26 points below the non-Indian freshmen. Although the mean percentiles for non-Indian students increase slightly for the sophomore year in these two subjects, the mean percentiles for Indian students begins a steady decline. This same decline is seen among non-Indian students as well by the junior and senior years. By the twelfth grade, the average percentiles for math and reading among non-Indian students has declined by 13 and 20 points for these two subjects respectively. Among Indian students, the average percentiles for math and reading have declined by only 6 and 8 points by the twelfth grade. However, in their senior year Indian students remain 21 points below non-Indian students in math and 23 points below in reading.

Similar patterns can be seen in the areas of language, science and social studies. In each of these areas, Indian students' mean percentiles fall at least 15 points below that of the non-Indian students in the freshman year, and continue to decline through the senior year. For these three subjects, however, declines in the mean percentile rankings between the freshman and senior years do not exceed 7 points for Indian students. Differences between Indian and non-Indian percentiles by the senior year range from 15 points in social studies to 17.4 points in language. For non-Indian students, however, mean percentiles in these three subject areas increase in the sophomore year by up to 5 points and then drop in the junior and senior years. Subsequent declines in the mean percentiles range from 17 to 22 points from the sophomore to senior years for non-Indian students.

These data show that while mean percentiles for Indian students are lower at each grade level than those of the non-Indian students in these subjects of the standardized tests,

the decline in mean percentile rankings by the end of high school is not as steep for Indian students as for non-Indians. While Indian students lose from 6 to 8 points, non-Indian students lose from 11 to 17 points between the freshman and senior years. Thus, even though the non-Indian students have higher average performance levels at both the beginning and end of high school, they showed higher proportionate losses in the mean percentiles in some subjects than the Indian students. For example, in language, science and social studies, non-Indian students' mean percentiles declined by 19-27% while Indian students' percentiles dropped by 15-18% in these three subjects. It is also in these three areas that the Indian students' mean percentiles compare the best with those of the non-Indian students: Indian students' mean percentiles in their senior year were 66%, 67% and 67% of mean percentiles of the non-Indian students in language, science and social studies. This is considerably better than the comparisons of scores for the two groups in math and reading. Indian students' mean percentile in math was 57% of the mean percentile for non-Indian students, and 54% of the non-Indian mean percentile in reading.

Standardized Tests for Indian Students by School.

Comparisons of the Indian students' performance using standardized test measures by school in Table 7 show some interesting differences among school populations as well as between the two measures of school performance. First, the mean percentiles for Colstrip students overall are higher in all areas than those of Indian students from the other two schools. In the areas of math and reading, Colstrip seniors have mean percentiles of 18 and 22 points higher than seniors from St. Labre and Busby schools. Mean percentile differences in language between Colstrip and St. Labre students range from 7 to 12 points, and 11 to

TABLE 7: Mean Percentiles on Standardized Tests By School

| | Colstrip | | | Labre | | | Busby | | |
|---|---|---|---|---|---|---|---|---|---|
| Subject by grade | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Math** | | | | | | | | | |
| 9 | 53.90 | 63.84 | 59.44 | 22.33 | 40.57 | 33.06 | 39.20 | 28.50 | 33.36 |
| 10 | 54.67 | 59.30 | 57.30 | 25.85 | 41.26 | 34.55 | 20.25 | 31.83 | 25.21 |
| 11 | 50.31 | 57.09 | 53.93 | 28.79 | 35.74 | 32.60 | 22.06 | 21.56 | 21.88 |
| 12 | 45.42 | 51.56 | 48.69 | 28.81 | 32.46 | 30.46 | 26.28 | 25.80 | 26.12 |
| **Reading** | | | | | | | | | |
| 9 | 52.95 | 59.96 | 56.75 | 33.00 | 40.43 | 37.37 | 33.40 | 21.00 | 26.69 |
| 10 | 51.40 | 55.52 | 53.72 | 27.00 | 41.26 | 35.05 | 28.14 | 28.71 | 28.43 |
| 11 | 46.10 | 56.79 | 51.92 | 22.97 | 30.92 | 27.37 | 25.69 | 26.50 | 26.00 |
| 12 | 39.19 | 53.98 | 46.96 | 21.83 | 34.71 | 28.78 | 22.88 | 25.03 | 23.57 |
| **Language** | | | | | | | | | |
| 9 | 45.58 | 65.11 | 56.37 | 30.50 | 49.93 | 41.71 | 38.75 | 38.83 | 38.80 |
| 10 | 52.19 | 64.56 | 59.18 | 26.78 | 51.26 | 40.60 | 21.11 | 27.40 | 23.36 |
| 11 | 41.22 | 59.55 | 51.09 | 24.69 | 39.63 | 32.86 | 24.56 | 29.60 | 26.50 |
| 12 | 34.11 | 57.72 | 46.80 | 22.46 | 45.09 | 34.71 | 24.41 | 29.40 | 26.14 |
| **Science** | | | | | | | | | |
| 9 | 55.54 | 60.52 | 58.27 | 35.00 | 34.00 | 34.39 | 46.50 | 26.67 | 34.60 |
| 10 | 59.32 | 61.39 | 60.49 | 32.70 | 40.26 | 36.97 | 70.00 | 16.50 | 34.33 |
| 11 | 52.31 | 54.16 | 53.28 | 35.63 | 31.71 | 33.55 | 20.50 | 35.33 | 29.40 |
| 12 | 38.12 | 48.31 | 43.36 | 26.96 | 33.49 | 30.49 | missing | 26.30 | 26.30 |
| **Social Studies** | | | | | | | | | |
| 9 | 54.22 | 63.51 | 59.34 | 24.75 | 38.83 | 33.20 | 15.00 | 23.67 | 20.20 |
| 10 | 52.62 | 61.65 | 57.68 | 32.89 | 36.82 | 35.82 | 43.00 | 30.50 | 34.67 |
| 11 | 47.46 | 56.94 | 52.46 | 28.76 | 34.18 | 31.68 | 21.50 | 32.50 | 27.00 |
| 12 | 33.03 | 52.43 | 42.87 | 28.07 | 31.44 | 29.95 | missing | 35.90 | 35.90 |

24 points in science and social studies. Busby students lag behind Colstrip by as much as 41 points in language. Comparing the mean percentiles of the other two schools, St. Labre students show mean percentiles above those of the Busby students in reading and language. The largest differences are in the areas of math, reading and language with differences ranging from 1 to 12 points. In math and science Busby students have percentiles closer to those of St. Labre students although the latter are slightly higher by the senior year in science. Only in social studies do Busby students out-perform St. Labre students by the end of high school.

Comparing the mean percentiles for males and females, we see the same pattern here that was mentioned above in relation to mean GPAs. Girls generally out-perform boys in each of the subject areas. While this pattern is again true for Colstrip and St. Labre students, there are some exceptions among Busby students: in math, reading, science and social studies in the first two years of high school, boys' mean percentiles are generally somewhat higher than those of girls. For students from Colstrip and St. Labre, girls maintain the greatest gain over boys' percentiles in language during each year of high school.

Regarding the previous finding that mean percentiles declined during the high school years, this table also shows declines in mean percentiles for each subject. Losses for Colstrip students are higher than those for St. Labre students, however. While Colstrip students' mean percentiles decline by at least 10 points in all subjects, there are only slight drops in math, science and social studies by the senior year for St. Labre students. Declines were the greatest in reading and language with losses of 9 and 7 points in these areas. Finally, Busby students showed losses of 7 to 12 points in the areas of math, reading, language and science

from the freshman to the senior years. Due to missing data, losses in mean percentiles for males by the end of high school are not known for the areas of science and social studies. In the latter subject, Busby students showed a gain of about 15 points overall by the twelfth grade.

*School Performance and Completion: Comparison of Indian and non-Indian students by Graduation Status and Local Schools.*

Grade Point Average and Graduation Status by Ethnic Group.

The connections between students' performance and graduation status can be seen using data shown in Table 8. Looking first at students who graduated, Indian graduates have a lower overall mean GPA than non-Indian students by about .33 point. Similarly, Indian dropouts have a lower mean GPA than their non-Indian counter-parts, but the difference is only .11 point. Turning to gender differences, we see that female Indian students out-perform Indian males with higher GPAs in both the dropout and graduate categories. However, non-Indians show a different pattern. While female non-Indian graduates show a higher mean GPA than male graduates, among dropouts non-Indian males have a higher mean GPA by .33 point.

Comparing mean GPAs for specific subject areas (Table 8) for dropouts and graduates of each group is also instructive. First, the pattern of differences between Indian and non-Indian students is apparent once again. Indian graduates have lower mean GPAs than non-Indian graduates in each of the subject areas, English, math, science and social studies. However, among non-Indian students, the pattern is less consistent: graduates have higher

TABLE 8: GPA-By Graduation Status for Indian and Non-Indian Students

| | Indian | | | Non-Indian | | |
|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total |
| **GRADUATES** | | | | | | |
| **Mean GPA** | 2.31 | 2.45 | 2.38 | 2.45 | 2.92 | 2.71 |
| **English** | 2.27 | 2.52 | 2.39 | 2.57 | 3.20 | 2.91 |
| **Math** | 2.30 | 2.21 | 2.26 | 2.35 | 2.77 | 2.58 |
| **Science** | 2.07 | 2.34 | 2.20 | 2.47 | 2.95 | 2.74 |
| **Soc Studies** | 2.19 | 2.44 | 2.31 | 2.56 | 3.07 | 2.84 |
| **DROPOUTS** | | | | | | |
| **Mean GPA** | 1.87 | 1.92 | 1.90 | 2.22 | 1.89 | 2.01 |
| **English** | 1.70 | 2.01 | 1.86 | 2.68 | 2.26 | 2.39 |
| **Math** | 1.86 | 2.08 | 1.97 | 2.33 | 2.22 | 2.26 |
| **Science** | 1.62 | 1.88 | 1.75 | 1.99 | 2.12 | 2.08 |
| **Soc Studies** | 1.55 | 2.00 | 1.76 | 2.50 | 2.07 | 2.19 |

GPAs in all subject areas overall, but differ by gender. Male dropouts show a higher mean GPA than male graduates in English and about the same in math and science. Overall differences in the mean GPAs for the two groups of graduates by subject area range from .3 point in math to .5 point in three subjects, English, science and social studies.

Comparing the two groups of dropouts, Indian and non-Indian dropouts differed in their mean GPAs in math and science by .29 and .33 points respectively. Differences between Indian and non-Indian dropouts for English and social studies mean GPAs were somewhat higher at .53 and .43 points. Looking at mean GPA differences by gender, Table 8 shows that Indian girls consistently show higher mean GPAs than boys. However, for non-Indian students, females out-perform boys in only one subject: science. Male dropouts have a higher mean GPA in all other subjects than girls.

GPAs and Graduation Status for Indian Students by School.

Table 9 shows that Indian students who graduated from high school had the highest GPAs at St. Labre (2.5), with Busby and Colstrip students following with mean GPAs of 2.3 and 2.26 respectively. The mean GPAs for dropouts show the same pattern. Comparing the mean GPAs by gender, girls generally had higher mean GPAs than boys. However, two exceptions include Colstrip graduates and St. Labre dropouts. Colstrip male and female graduates both had mean GPAs of 2.26 while male dropouts from St. Labre had a slightly higher mean GPAs than the girls: 1.99 vs. 1.95.

Table 9 also shows how well Indian graduates and non-graduates performed by school in four subjects, English, math, science and social studies. In the first subject, English, Indian graduates from Colstrip showed the highest mean GPA at 2.78 with St. Labre students

TABLE 9: GPA by Subject, School and Gender for Graduates and Dropouts

| | Colstrip | | | St. Labre | | | Busby | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Graduates** | | | | | | | | | |
| **Total GPA** | 2.26 | 2.26 | 2.26 | 2.41 | 2.61 | 2.52 | 2.26 | 2.59 | 2.35 |
| **English** | 2.51 | 3.02 | 2.78 | 2.35 | 2.61 | 2.49 | 2.08 | 2.49 | 2.18 |
| **Math** | 2.32 | 2.64 | 2.49 | 2.25 | 2.25 | 2.25 | 2.50 | 2.23 | 2.42 |
| **Science** | 2.37 | 2.79 | 2.59 | 1.91 | 2.41 | 2.20 | 2.20 | 2.43 | 2.26 |
| **Social Studies** | 2.47 | 2.87 | 2.68 | 2.24 | 2.61 | 2.50 | 2.09 | 2.49 | 2.20 |
| **Dropouts** | | | | | | | | | |
| **Total GPA** | 1.74 | 1.85 | 1.80 | 1.99 | 1.95 | 1.97 | 1.95 | 2.03 | 1.99 |
| **English** | 1.95 | 2.13 | 2.06 | 1.67 | 2.05 | 1.88 | 1.82 | 1.89 | 1.85 |
| **Math** | 1.85 | 2.05 | 1.97 | 1.85 | 2.03 | 1.95 | 2.10 | 2.50 | 2.26 |
| **Science** | 1.48 | 1.95 | 1.75 | 1.77 | 1.83 | 1.80 | 1.78 | 1.12 | 1.92 |
| **Social Studies** | 1.55 | 1.76 | 1.68 | 1.72 | 2.23 | 1.99 | 1.63 | 2.28 | 1.84 |

following with a mean GPA of 2.49. In math Colstrip and Busby graduates had similar mean GPAs at 2.42 for Busby and 2.49 for Colstrip students. In science and social studies, Colstrip students led again with St. Labre students following closely and Busby students having the lowest mean GPAs.

Dropouts from Busby and St. Labre showed similar performance levels in the area of English with a difference in mean GPAs at .03 point. In English, Colstrip Indian dropouts showed a mean GPA higher than either of the other two schools (2.06), but these students were outperformed in social studies by students from the other schools. In math and science, Busby dropouts showed higher levels of performance (2.26 in math and 1.92 in science) than dropouts from both the other schools. Colstrip and St. Labre dropouts showed similar mean GPAs in math and science.

Comparisons of the performance of girls to boys at the three schools show some interesting differences. Again, girls generally out-perform boys with exceptions in two schools: St. Labre and Busby. At St. Labre, girls and boys who graduated from high school performed about the same in math with mean GPAs at 2.25. At Busby, boys who graduated had higher mean GPAs in math than girls. Among dropouts from Busby, boys out-performed girls in science and did approximately as well in English.

Standardized Tests and Graduation Status by Ethnic Group.

In Table 10 data on the students' mean percentiles on standardized tests provide another measure of educational performance for comparison of graduates and non-graduates among Indian and non-Indian students. Comparing first the graduates of each ethnic group, the data reveal again the discrepancy between non-Indian and Indian students' performance

TABLE 10: Mean Percentile on Standardized Tests by Graduation Status, Subject, Grade for Indian and Non-Indian Students

| Graduates | Indian | | | Non-Indian | | | Dropouts | Indian | | | Non-Indian | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | | Male | Female | Total | Male | Female | Total |
| Math | | | | | | | Math | | | | | | |
| 9 | 36.90 | 42.93 | 40.02 | 57.97 | 71.04 | 65.70 | 9 | 35.42 | 28.31 | 31.36 | 41.00 | 44.50 | 43.33 |
| 10 | 38.03 | 35.39 | 36.62 | 62.17 | 70.59 | 67.27 | 10 | 23.13 | 35.93 | 29.53 | missing | 55.00 | 55.00 |
| 11 | 33.94 | 34.04 | 33.98 | 53.70 | 64.09 | 59.56 | 11 | 28.78 | 21.63 | 25.41 | 77.00 | 38.67 | 48.25 |
| 12 | 30.78 | 32.45 | 31.59 | 44.84 | 58.80 | 52.34 | 12 | 40.50 | 19.00 | 27.60 | missing | missing | missing |
| Reading | | | | | | | Reading | | | | | | |
| 9 | 36.56 | 40.89 | 38.83 | 59.30 | 66.45 | 63.41 | 9 | 33.79 | 26.81 | 30.07 | 42.00 | 57.00 | 52.00 |
| 10 | 32.30 | 34.65 | 33.56 | 61.12 | 65.68 | 63.86 | 10 | 29.57 | 30.67 | 30.13 | missing | 62.00 | 62.00 |
| 11 | 31.02 | 34.16 | 32.48 | 50.38 | 62.80 | 57.61 | 11 | 17.40 | 16.30 | 16.85 | 80.00 | 46.67 | 55.00 |
| 12 | 24.86 | 33.96 | 29.23 | 39.92 | 62.94 | 52.06 | 12 | 34.00 | 12.00 | 20.80 | missing | missing | missing |
| Language | | | | | | | Language | | | | | | |
| 9 | 33.20 | 49.21 | 41.58 | 50.81 | 71.64 | 63.08 | 9 | 33.36 | 35.88 | 34.70 | 16.00 | 45.00 | 35.33 |
| 10 | 34.93 | 46.46 | 41.02 | 60.43 | 73.46 | 68.25 | 10 | 24.73 | 41.00 | 32.59 | missing | 52.33 | 52.33 |
| 11 | 29.16 | 39.93 | 34.18 | 44.99 | 65.41 | 56.64 | 11 | 18.40 | 28.40 | 23.40 | 80.00 | 38.67 | 49.00 |
| 12 | 25.09 | 43.30 | 33.93 | 34.63 | 64.37 | 50.53 | 12 | 20.50 | 18.50 | 19.17 | missing | missing | missing |
| Science | | | | | | | Science | | | | | | |
| 9 | 42.74 | 40.95 | 41.80 | 59.91 | 66.48 | 63.78 | 9 | 37.18 | 21.29 | 28.28 | 14.00 | 46.00 | 30.00 |
| 10 | 42.05 | 37.73 | 39.70 | 67.90 | 70.49 | 69.47 | 10 | 40.00 | 25.20 | 32.60 | missing | 65.00 | 65.00 |
| 11 | 41.21 | 35.39 | 38.36 | 55.89 | 60.05 | 58.20 | 11 | 27.63 | 18.71 | 23.47 | 96.00 | 47.67 | 59.75 |
| 12 | 31.72 | 32.48 | 32.13 | 35.87 | 55.49 | 46.47 | 12 | 23.00 | 8.00 | 15.50 | missing | missing | missing |
| Social Studies | | | | | | | Social Studies | | | | | | |
| 9 | 38.59 | 45.78 | 42.23 | 57.33 | 68.16 | 63.71 | 9 | 35.11 | 25.43 | 29.22 | 39.00 | 72.50 | 61.33 |
| 10 | 40.41 | 39.23 | 39.78 | 59.34 | 69.48 | 65.48 | 10 | 31.40 | 24.10 | 27.75 | missing | 52.00 | 52.00 |
| 11 | 38.25 | 37.63 | 37.95 | 49.55 | 62.47 | 56.83 | 11 | 20.38 | 17.00 | 18.93 | 60.00 | 48.67 | 51.50 |
| 12 | 29.41 | 33.35 | 31.53 | 33.65 | 57.11 | 46.10 | 12 | 19.00 | 28.50 | 25.33 | missing | missing | missing |

on standardized tests. Indian students who graduated showed mean percentiles from 21 to 25 points less in their freshman year than non-Indian graduates from high school. By the time these students were in their senior year, the range of differences in mean percentiles, however, had declined to 14 to 23 points across the subject areas. Subjects which showed the greatest continual difference between the two groups were reading and math. In reading, mean percentiles for the two groups remained at least 23 points apart through the high school years, and in math the differences remained at least 20 points from the freshman to the senior year. In both areas, the differences between the percentiles of the two groups actually increased to about 30 points in the sophomore year and 25 points in the junior year. The smallest differences between Indian and non-Indian graduates' mean percentiles were in the area of science. Although the difference between freshmen in the two groups was 22 points, the difference between graduating seniors was only 14 points. As with reading, however, differences between the two groups' mean percentiles increased dramatically in the sophomore and junior years.

Now turning to the mean percentiles of the dropouts from the two groups, we can see that the differences in the mean percentiles were not as great as between the two groups of graduates overall. For example, the differences in mean percentiles of dropouts in math and reading were as little as 12 and 22 points in the freshman year. In other subjects, the differences were even lower: Indian and non-Indian freshmen who eventually dropped out differed in mean percentiles in language by only 1 point and in science by only 2 points. However, in each of the subjects shown, differences between mean percentiles of Indian and non-Indian dropouts increased with each year of school although, generally, not as much as

the students who graduated. While data are not available for dropouts' performance on standardized tests in their senior year, the range of differences between Indian and non-Indian students in mean percentiles was 23 to 39 points in the four subject areas by the junior year. The greatest difference between Indian and non-Indian dropouts can be seen in the mean percentile for reading in the junior year in which the difference was 39 points.

Another way of assessing the progress of students is by looking at their comparative losses or gains in educational performance. Similar to our discussion of data show in Tables 6 and 7, we may determine how Indian and non-Indian students' performance fared by the end of their high school experience, this time distinguishing between graduates and non-graduates. Looking first at the students who graduated, the data show a different pattern for Indian graduates than for non-Indian graduates. Indian graduates lost from 8 to 11 points in their mean percentiles on standardized tests from their freshman to their senior years. The distinctive aspect of their experience, however, is that in not one subject area did they experience a gain in mean percentile from one year to the next. Non-Indian graduates, however, showed increases from the freshman year to the sophomore year in every subject prior to showing declines through the junior and senior years. Among non-Indian graduates, the total losses in mean percentiles were greater than those of the Indian graduates: the smallest loss was in the area of reading (11 points) and the greatest was in social studies (17.61 points).

By comparison, the dropouts within each group fared much better in terms of their overall gains and losses in mean percentiles on standardized tests. Indian students who eventually dropped out of school lost from 4 to 20 points overall. Unlike the Indian

graduates, Indian dropouts showed increases at the tenth grade in two subjects: reading and science. Indian female dropouts showed increases in their sophomore mean percentiles more often than did Indian males, however, but by the twelfth grade, this group showed the lowest mean percentiles of all groups in all subjects except social studies. The greatest single decrease in mean percentiles for Indian dropouts was in the area of science with a loss of 15 points by the senior year. Despite the missing data for non-Indian dropouts, the table shows that this group gained points from the freshman to the junior year overall, but they were not able to sustain their increases. Increases overall ranged from 5 points in reading to 18 points in science.

An interesting comparison of differences in mean percentiles by gender among dropouts reveals a different pattern than seen earlier on the standardized tests. Although Indian females showed higher performance levels in language at each grade level, males did somewhat better in the areas of science and social studies as well as in math and reading in the freshman year and in the last two years of high school. In fact, male dropouts out-performed females in all subjects except social studies at the twelfth grade level. The extent of missing data for non-Indian dropouts prevents similar comparisons by gender for this group. Turning to gender comparisons among students who graduated, however, again confirms the earlier pattern that girls performed better than boys on standardized tests. Non-Indian girls who graduated consistently had higher mean percentiles than boys in all subjects. However, among Indian graduates, girls generally out-performed boys in reading, language and math, but fell behind Indian boys in science and social studies, especially in the tenth and eleventh grades.

Overall comparisons of Indian and non-Indian dropouts' performance on standardized tests showed that non-Indian dropouts had higher mean percentiles than Indian dropouts. In all subjects mean percentiles for non-Indian dropouts were higher than the mean percentiles for Indian students who eventually dropped out. Table 10 also reveals some anomalies for non-Indian students that are probably due to the very small number of non-Indian dropouts for whom there were data in some of the subject areas. In all subject areas, data for non-Indian dropouts in the eleventh grade show mean percentiles higher than the mean percentiles for the non-Indian graduates.

Standardized Tests and Graduation Status for Indian Students by School.

Table 11 shows the differences in performance of Indian graduates and dropouts by gender, subject and school. Looking first at the graduates, the figures for all students for each school indicate that Colstrip students had higher mean percentiles in all subjects by the twelfth grade than the students from the other two schools. Although mean percentiles for Colstrip students in the freshman year were lower in reading, science and social studies than the mean percentiles for students at St. Labre, Colstrip students' performance declined in the tenth grade but then improved in the junior and senior years. In math and language, the mean percentiles in the twelfth grade reached levels higher than the freshman year, something which has not been seen in any of the previous tables. Increases in mean percentiles from the freshman to the senior year are shown for boys in math and for girls in language. At St. Labre, the only increase in performance is for boys in social studies while Busby males showed increases in reading. Busby graduates consistently had the lowest mean percentiles in all subjects. However, differences between the mean percentiles of

TABLE 11: Mean Percentile on Standardized Tests by Graduation Status, Subject, Grade Level for Indians from Each School

| | Colstrip | | | Labre | | | Busby | | | | Colstrip | | | Labre | | | Busby | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Graduates** | | | | | | | | | | **Dropouts** | | | | | | | | | |
| Math | | | | | | | | | | Math | | | | | | | | | |
| 9 | 42.30 | 40.65 | 41.54 | 27.97 | 44.25 | 37.84 | 22.50 | 69.00 | 58.00 | 9 | 56.33 | 34.75 | 44.00 | 17.50 | 30.29 | 24.39 | 50.33 | 20.40 | 31.63 |
| 10 | 43.10 | 31.86 | 37.35 | 34.94 | 37.96 | 36.72 | 19.00 | 54.00 | 27.75 | 10 | 38.50 | 26.50 | 34.50 | 14.67 | 43.63 | 31.21 | 21.00 | 27.40 | 24.20 |
| 11 | 42.65 | 32.71 | 38.31 | 27.95 | 38.04 | 33.65 | 21.42 | 19.00 | 20.88 | 11 | 47.00 | 31.00 | 39.00 | 29.00 | 23.50 | 26.25 | 24.00 | 16.00 | 20.57 |
| 12 | 46.73 | 38.47 | 41.96 | 27.19 | 30.67 | 29.02 | 26.18 | 26.33 | 26.22 | 12 | missing | missing | missing | 53.00 | 7.00 | 30.00 | 28.00 | 25.00 | 26.00 |
| Reading | | | | | | | | | | Reading | | | | | | | | | |
| 9 | 38.52 | 40.42 | 39.41 | 36.42 | 41.75 | 39.75 | 11.00 | 35.00 | 19.00 | 9 | 33.00 | 32.00 | 32.56 | 27.17 | 30.00 | 28.69 | 48.33 | 18.20 | 29.50 |
| 10 | 33.95 | 29.86 | 31.91 | 29.81 | 39.00 | 35.33 | 34.00 | 31.00 | 33.25 | 10 | 41.00 | 29.00 | 37.00 | 25.83 | 33.14 | 29.77 | 23.75 | 28.33 | 26.50 |
| 11 | 38.22 | 35.63 | 37.11 | 21.75 | 33.63 | 28.57 | 27.25 | 30.00 | 28.06 | 11 | 3.00 | 14.00 | 8.50 | 17.40 | 16.80 | 17.10 | 21.00 | 16.25 | 18.63 |
| 12 | 37.46 | 37.87 | 37.69 | 21.54 | 32.87 | 27.49 | 21.94 | 29.00 | 23.62 | 12 | missing | missing | missing | 30.00 | 9.00 | 19.50 | 38.00 | 13.50 | 21.67 |
| Language | | | | | | | | | | Language | | | | | | | | | |
| 9 | 33.65 | 45.17 | 39.06 | 34.69 | 53.10 | 45.85 | 2.00 | 64.00 | 33.00 | 9 | 33.80 | 36.00 | 34.78 | 24.17 | 37.29 | 31.23 | 51.00 | 33.80 | 40.25 |
| 10 | 39.67 | 43.55 | 41.65 | 31.00 | 49.91 | 42.15 | 25.75 | 31.00 | 26.80 | 10 | 31.50 | 47.50 | 36.83 | 26.33 | 46.63 | 37.93 | 17.40 | 26.50 | 21.44 |
| 11 | 34.06 | 41.00 | 37.11 | 22.55 | 40.81 | 32.87 | 27.08 | 30.00 | 27.94 | 11 | 7.00 | 34.00 | 20.50 | 21.80 | 31.60 | 26.70 | 17.00 | 23.00 | 20.00 |
| 12 | 32.70 | 47.00 | 41.28 | 22.82 | 43.00 | 33.44 | 24.19 | 34.00 | 26.52 | 12 | missing | missing | missing | 13.00 | 23.00 | 18.00 | 28.00 | 17.00 | 19.75 |
| Science | | | | | | | | | | Science | | | | | | | | | |
| 9 | 47.41 | 41.73 | 44.86 | 31.30 | 40.10 | 37.17 | 31.00 | missing | 31.00 | 9 | 33.75 | 22.75 | 28.25 | 35.33 | 15.35 | 26.08 | 62.00 | 26.67 | 35.50 |
| 10 | 43.67 | 37.55 | 40.68 | 39.94 | 37.88 | 38.70 | missing | missing | missing | 10 | 51.67 | 9.00 | 41.00 | 29.17 | 12.60 | 29.62 | 70.00 | 16.50 | 34.33 |
| 11 | 45.81 | 36.12 | 41.56 | 34.19 | 34.69 | 34.47 | missing | missing | missing | 11 | 10.00 | 1.00 | 5.50 | 34.00 | 11.48 | 27.11 | 20.50 | 28.00 | 24.25 |
| 12 | 42.82 | 32.17 | 37.26 | 26.84 | 32.60 | 29.98 | missing | missing | missing | 12 | missing | missing | missing | 23.00 | 8.00 | 15.50 | missing | missing | missing |
| Social Studies | | | | | | | | | | Social Studies | | | | | | | | | |
| 9 | 44.41 | 46.50 | 45.30 | 25.55 | 45.05 | 38.13 | 25.00 | missing | 25.00 | 9 | 68.50 | 37.50 | 47.83 | 29.00 | 19.29 | 23.77 | 5.00 | 23.67 | 19.00 |
| 10 | 42.19 | 43.00 | 45.59 | 38.06 | 35.96 | 36.82 | missing | missing | missing | 10 | 33.67 | 22.00 | 30.75 | 28.33 | 22.57 | 25.23 | 43.00 | 30.50 | 34.67 |
| 11 | 43.66 | 39.57 | 41.95 | 29.60 | 35.92 | 33.17 | missing | missing | missing | 11 | 25.00 | 3.00 | 14.00 | 19.00 | 21.00 | 19.89 | 21.50 | 15.00 | 19.33 |
| 12 | 31.73 | 45.00 | 38.65 | 28.42 | 28.84 | 28.65 | missing | missing | missing | 12 | missing | missing | missing | 19.00 | 7.00 | 13.00 | missing | 50.00 | 50.00 |

graduates from St. Labre and Busby differ by only 3 points in math, 4 points in reading and 7 points in language by the twelfth grade. Since Busby students are not routinely tested in the areas of science and social studies, comparisons cannot be made with students from other schools in these subjects.

Overall, the data in this table show the performance of Indian graduates generally to decline, although the sharper declines appear among students at St. Labre and Busby rather than among Colstrip students. For example, the largest decline in mean percentiles at Colstrip is 7 points in social studies and science, while mean percentiles for St. Labre graduates declined by 8 points in science and math, 10 points in social studies and 12 points in reading and language. Busby students' mean percentiles declined by 7 points in language and 12 points in math.

The performance levels of dropouts show some interesting differences among schools. Among dropouts, at the freshman level Colstrip students show higher mean percentiles than students at the other schools in all subjects. By the eleventh grade, however, Colstrip dropouts have the lowest mean percentiles in reading, science and social studies. Busby students show the next highest mean percentiles in all subjects at the freshman level except social studies. Although St. Labre dropouts show some increases over the Busby students at the sophomore and junior levels, by the twelfth grade Busby dropouts again show higher performance levels in most subjects.

Comparing dropouts with graduates by school reveals that even though Colstrip Indian dropouts did not perform as well overall as the graduates, at some grade levels they did better on standardized tests than Indian graduates in math, reading and science. For

example, in the area of math, the mean percentiles for dropouts in the freshman and junior years are higher by 1 to 3 points than the mean percentiles for the Indian graduates. In reading and science, the percentiles are higher for dropouts in the tenth grade but fall well behind the graduates in the other grade levels. In social studies, at the freshman level students who eventually dropped out had a higher mean percentile than graduates in this subject. Comparing the performance of Indian males who graduated and dropped out, this pattern is even more distinctive: Indian boys who dropped out had a higher mean percentile than graduates by about 14 points in math and by 24 points in social studies in the freshman year. By contrast, girls showed the same or higher mean percentiles only in the tenth grade in reading and language. A similar pattern can be seen at St. Labre for male dropouts in math and reading in the senior year, and in science and social studies in the freshman year: mean percentiles in these subjects are from 4 points higher in the latter two subject to 26 points higher in math. Again, at St. Labre as at Colstrip, girls show higher scores only in one area, math, in the tenth grade. And finally, the most dramatic differences between dropouts and graduates can be seen at Busby where boys who dropped out had mean percentiles higher than Busby graduates in math by an average of 36 points in the freshman year in all subjects except social studies. By the twelfth grade, Busby male dropouts still showed higher mean percentiles than graduates in math, reading and language. This pattern, however, did not occur among girls at Busby school who dropped out.

**Summary.**

The data presented in this report suggest some interesting findings about school performance and completion among Indian and non-Indian students attending three high

schools serving the Northern Cheyenne Reservation. Among the notable findings of the data presented in Part I of the project report are the following:

1) Of the 698 students included in the study, 52% were Indian and 48% were non-Indian. The majority of Indian students in the three cohorts identified for the study last attended or graduated from Colstrip public high school (45%), while 34% attended St. Labre Catholic Mission school, and 21% attended Busby Tribal School.

2) Indian students had a higher dropout rate than non-Indian students, and the dropout rate for students at the three high schools was very similar to the dropout rate identified nationally for Indian students at about 40%, compared to 8% for non-Indians locally. Indian students dropped out of Busby School most often (54%), with St. Labre next (41%) and Colstrip last (33%).

3) Indian girls dropped out more often than boys: 42% and 38% respectively.

4) Information on academic performance as measured by GPAs and percentiles on standardized tests showed that Indian students had lower performance levels than non-Indian students overall.

5) While GPAs increased with each year for both Indian and non-Indian students, percentiles on standardized tests generally declined to levels below that of the ninth grade.

6) Students who graduated tended to utilize school remedial resources more often, be more involved in extracurricular activities, and had higher levels of performance. This pattern held for Indian and non-Indian students.

7) Indian graduates tended to miss more days of school and had more suspensions than non-Indian graduates, but they also were more likely to take advantage of remedial courses and be more involved with extracurricular activities.

8) Indian dropouts were characterized by their poorer school performance and less involvement with both special remedial courses and extracurricular activities although they may have had fewer suspensions and absences than graduates.

9) Non-Indian dropouts also showed poorer performance levels and less involvement with remedial resources and extracurricular activities, but they had more suspensions than non-Indian graduates.

10) Indian graduates showed the best school performance levels on standardized tests overall at Colstrip and St. Labre while they had higher GPAs overall at St. Labre and Busby.

11) While the school performance of dropouts was lower than that of graduates, they often started high school with levels of performance as high as Indian students who graduated.

12) Students who dropped out of Colstrip, St. Labre and Busby had similar performance levels overall, but Colstrip students showed somewhat higher levels of performance than dropouts from other schools in relation to standardized tests while Busby students had the highest mean GPAs.

# Part II: Multivariate Analyses of School Completion

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## Part II: Multivariate Analyses of School Completion.

### Introduction.

Twenty years ago American Indian education was called "a national tragedy" by the Special Senate Subcommittee on Indian Education in its summary report (1969). Today, many would say that despite vast changes in federal policy and resources for education, vestiges of the "tragedy" of Indian education can still be seen in the educational attainment patterns of members of this group. Virtually all of the research findings to date which address American Indian educational or occupational attainment suggest that this group remains well below most other groups to which they are compared. However, while such indicators tell us important facts about the relative accomplishments of American Indians, there is little understanding of the reasons for lower educational attainment among members of this group.

Education plays an important role in the life chances or quality of life attained by members of ethnic and racial groups in the United States. The importance of education is related to the connections between educational credentials and access to and participation in the labor market. In fact, levels of educational achievement affect not only entry into the labor market but also progression up various career ladders during the course of a person's work during his or her life-time. A person's labor force participation determines, to a large extent, how well he or she does in terms of social status, occupational prestige and wealth, three elements of socioeconomic status. Thus, comments about the tragedy of American Indian education refer to the inability of many members of this group to attain the education levels which lead to desired social statuses and rewards.

This study addresses educational attainment as a prerequisite to participation in the

labor force. The central concern is with high school completion. The problem of school completion is a serious one because of the consequences for both individuals and society. Costs associated with dropping out before completion of high school have been measured, for example, in terms of lost income: the difference between life-time earnings of dropouts and graduates is $260,000 for males and $170,000 for females (Wagenaar, 1987). For states and other governments, this means losses of billions of dollars in tax revenues. In addition, welfare expenditures and crime costs attributable to inadequate education exceed $30 billion each year (Research Triangle Institute, 1985; Levin, 1972). Other costs could be measured at a more personal level, such as the loss in self-esteem or prestige.

Recent analyses of school completion among American students show that minority students face the costs associated with dropping out more often than majority students. Reports using the High School and Beyond study and other sources, for example, show the high school dropout rate among American Indians and Alaska Natives compared to other groups in the 1980s. Recent national dropout rates of minority group cited by Kunisawa (1988) reveal that the dropout rate for American Indians and Alaska Natives is 42% while the dropout rate for Hispanics is 39.9%. For blacks, the dropout rate is 24.7%, and for whites it is 9.6%. Analyses of the High School and Beyond data on American Indian students by cohorts reveal that this group had the highest dropout rate at 35% in 1988 (Frase, 1989).

Among American Indian and Alaska Natives, dropout rates vary by place of residence. Snipp (1989) used census data to examine "school progress" for Indian students, identifying enrollment by grade level in school for each age group. 1980 Census data

showed that with each additional year the percent of students who were behind in grade increased most dramatically. In reservation and nonmetropolitan areas, for example, 6% of the 7 and 8 year olds were behind in school, while by ages 11 and 12, 15% were behind in school. The impact of dropout behavior was most acutely felt at ages 15 and 16 and older: in rural and reservation areas, over 25% of 15 and 16 year olds were behind in school while 41% of 17 and 18 year olds were behind in school. The figures for school progress showed that falling behind and dropping out occurred less frequently in metropolitan and nonreservation areas. In these areas a third of the students who should have been juniors or seniors in high school were below this grade or had dropped out altogether.

Among American Indian and Alaska Native adults aged 25 and over, persons residing in nonmetropolitan and reservation areas generally had lower levels of education in 1980 than residents of more urbanized areas. However, rates of school completion also varied by region of the country and gender among persons residing on or near reservations. For example, the lowest percent of reservation males with 12 years of school or more was found in the West North Central states where only 49% had 12 or more years of school compared to 70.6% of males from the West South Central states. Among females residing on or near reservations, about 41% had 12 years or more of schooling in the East South Central states compared to 69% from West South Central states.

Findings of the research project presented in this report are designed to increase our understanding of the higher dropout rates among American Indian students compared to other students, and particularly among Indian students in reservation areas. Specifically, this study is concerned with identifying the factors associated with high school completion in a

particular reservation population. In the following sections we will present a review of the literature on education issues relevant to our purpose of examining high school performance and completion among students attending three high schools serving the Northern Cheyenne reservation. Next, pertinent statistical analyses will be presented which evaluate the relative influence of several types of variables on students' school performance and completion. In particular, the analyses focus on the effects on school completion which may be attributed to individual student characteristics, school experiences and family background factors as well as the type of school attended. The concluding section of the report will address questions regarding the interpretation of these results. The purpose of this final discussion is to provide educators and concerned communities with information that will be useful in serving the needs of students.

*The Effects of Student Characteristics and School Experiences on School Completion.*

Research on school completion has identified a number of influences on students' decisions to stay in school through graduation or to leave school early. The literature identifies school-related and personal reasons given by students for leaving school early. Among the school-related reasons are poor performance, disliking school and expulsion or suspension. Personal reasons include the need to work, home responsibilities, pregnancy or marriage (Rumberger, 1983; Wagenaar, 1987). Also of importance are the individual characteristics of students such as ethnicity or race and gender (Rumberger, 1987). In relation to these variables, racial and ethnic minorities have been found to have higher dropout rates than white students although males are only slightly more likely to dropout

than females. Although some studies show girls to do more poorly overall academically than boys, recent studies also show a decline in gender differences which could account for the smaller differences in dropping out (Jacobs, 1989). Additionally, urban students are more likely to dropout than rural.

Some of the most commonly found characteristics and conditions associated with dropping out of school are those which suggest a lack of integration by students into the school (Ekstrom et al., 1986). Additionally, the best individual predictors of dropping out have been found to include not only performance in school but behavioral problems, absenteeism, truancy, discipline problems and drug and alcohol abuse (Wehlage and Rutter, 1986; Mensch and Kandel, 1988).

Research on American Indian populations has also identified individual characteristics important for understanding the school completion behavior of Indian students. Examining the dropout problem, authors of the 1983 report of the evaluation of Title IV, Part A Indian Education projects (Development Associates, 1983) first looked to previous research on Indian education for important individual-level variables. LaFromboise and Rudes (1983) found that previous studies showed the characteristics of Indian dropouts to be similar to those of non-Indian dropouts, although there appeared to be an equal prevalence among Indian males and females. The typical profile included the following characteristics: 17.5 years of age with 6.4 siblings (one previously a dropout), single rather than married, between the tenth or eleventh grade, arrested one or more times, and never contacted or helped by a social service agency after leaving school (Davids, 1963; Scott, 1967). Analyzing the Title IV data, LaFromboise and Rudes identified an average dropout rate of 16% among the

study subjects (i.e., Title IV program participants) from five cohorts between 1970 and 1979. This excluded 3% who had earned a General Equivalency Degree (GED). Between 1970 and 1979, the dropout rate varied between 14% and 20%, thus showing no significant change. Characterization of the dropouts showed that they were more likely to come from reservation, rural and large urban schools than schools in metropolitan areas. Follow-up data showed that most of the dropouts were unemployed (20%) or homemakers (33%), while others were in the armed services (4%) or in full or part-time work (50%). Only 2% were in either vocational, technical or academic training.

LaFromboise and Rudes concluded that Indian dropouts demonstrate many of the same characteristics and motives as their non-Indian counterparts. However, the situation faced by many Indian students is complicated by culture-specific factors which influence their decisions to leave school. Such factors may include lack of relevance of the curriculum (Szasz, 1974), family mobility (Antell, 1979), family instability (Brown, 1973) and perceptions of the lack of reward for high school completion (Kleinfeld, 1973). Comparisons of Indian with national dropout rates between 1959 and 1981 show that the rates for Indian students tended to be higher, although there was some reduction during the 1960s and 1970s. Additionally, LaFromboise and Rudes suggest that the diversity of Indian schools and communities should be examined in order to understand Indian dropout rates. For example, Antell (1979) found that Indian dropouts occurred at a higher rate in public schools (30%) where seventy percent of Indian children were educated, than in BIA schools (6.5%) or private schools (1.9%).

Other analyses of Indian students' academic achievement from the Title IV evaluation

study provide information concerning the pattern of student performance in public schools over a forty-year period. Day (1983) comments that the expectation for the analyses was to find a steady improvement in achievement measures due to the establishment of special programs targeting disadvantaged students. However, the results of the analyses of student data showed, instead, that progress has been irregular. The favorable academic achievement levels of the 1950s deteriorated in the 1960s and 1970s, but the indicators for the 1980s again approached those of the 1950s. One possible explanation for the drop in achievement levels during the 1960s and 1970s, compared to the 1950s, is that Indians in public schools in the 1950s were self-selected and academically superior to their non-public school counterparts. With the availability of more educational opportunities through the entitlement programs in the 1960s and the closing of the federal BIA schools in the 1970s, more students from parochial and federal schools entered public schools which may have subsequently resulted in depressing achievement scores. Whatever the reasons for the apparent drop and recent upsurge in achievement scores, the data demonstrate that despite recent increases, achievement scores overall as well as for math and reading remain well below national norms.

In an attempt to understand more about the reasons for Indian students' poor performance, Dodd (1989) identifies several types of learning problems which Indian students exhibit. These include problems with language and temporal orientation, and learned helplessness, which may result from cultural differences rather than physical handicapping conditions. Additionally, differences between non-Indian and Indian students have been found in attitudes toward or commitment to success in school, discipline, their

orientation toward group vs. individual learning processes and views of and responses to teachers' authority, all of which may be related to the degree of involvement in their native culture (Scott, 1986; Greenbaum, 1985; Philips, 1983; Fuchs and Havighurst, 1970). These observed differences in orientation affect the learning process for students such that they have negative or less successful school experiences. Such differences also may contribute to the development of poor academic skill levels, communication skills, and listening and memory as well as withdrawal, developmental lags in learning and other problems often associated with a broad range of learning disabilities (Dodd, 1989).

According to a 1987 study prepared by Northern Arizona University Native American Research and Training Center (O'Connell, et al., 1987), American Indians have the highest percentage (9.9%) of students labeled with handicapping conditions of any minority group except blacks (10.3%). Data on Indian students with handicapping conditions by state reveal that fifteen states account for about 90% of all Indian students with handicapping conditions enrolled in public schools. The top eleven of these states have at least 500 Indian students: Alaska, Arizona, Minnesota, **Montana**, North Carolina, North Dakota, Oregon, South Dakota, Utah, Washington, and Wisconsin.

Data collected for a sample of public school children by the Department of Education, Office of Civil Rights in 1984 were used to project the total number of students with handicapping conditions. These calculations show that 50% of the Indian students with handicapping conditions have learning disabilities, 25% are speech impaired, and 11.26% are educable mentally retarded. Almost 5% are seriously emotionally disturbed, 3.44% are multiply handicapped, and 2.91% are trainable mentally retarded. Comparisons of

percentages for five ethnic groups on these handicapping conditions show that American Indian students have the highest percentage of specific learning disabilities (5.28%) compared to Asians (1.66%), Hispanics (4.14), Blacks (4.26%) and whites (4.14%). Only white students had a larger percentage of speech impairments (2.50%) compared to 2.33% for American Indian students, while only blacks had a larger percentage of educable mental retardation (2.62%) compared to 1.34% among American Indian students. Data for BIA schools also show a large percentage of Indian students with handicapping conditions (8.72%).

One of the most important characteristics of many Indian students remains their lack of appropriate language skills. Since many Indian students start school with limited English proficiency, they cannot participate fully, at least initially, in the learning process, are often placed in lower ability groups, and then suffer the regressive effects that this practice may entail. Snipp (1989) reports that a large percentage of Indians still speak their native language although progressively smaller percentages of the younger age groups speak their native language exclusively. Most Indian people are English speakers (over 70% of both males and females from 11 to 20 years) while a substantial proportion speak both English and their native language (over 23% of both males and females). Although the 1980 census data suggest that there is a link between educational attainment and English fluency, Snipp cautions that the process is a complex one: "...it is not clear whether more schooling results in English monolingualism or whether English monolingualism promotes school success" (p. 181). Age and place of residence are two important considerations since older people and those in rural areas tend to be less educated and more likely to speak their native language.

However, what is clear is that Indians who speak English only are more likely to be better educated, actively participate in the labor force and have higher income levels.

Indian students also often enter school ill-equipped for integration in the school environment. Both Greenbaum (1985) and Philips (1982) found that Indian children were more successfully integrated into school when instruction provided for some continuity with their heritage culture and language. Information from Title IV Indian education programs about the effects of elementary Indian students' participation in cultural and other extracurricular activities showed that such participation had a positive effect on school performance, reading, in particular (Development Associates, 1983). Scott (1986) found at the post-secondary level that Indian students who were not integrated into academic life were less likely to succeed in school and complete degrees.

Recent research on Indian youth addresses factors which affect their involvement with schooling: the participation of Indian students in drinking behaviors, and the relationship of these behaviors to the drinking behaviors exhibited by family members and peers. In their study of Indian adolescent drinking patterns, Takie, Lynch, and Charleston (1988) found, first, that there is considerable variation among types of Indian communities in reported drinking behaviors. Second, they found that the degree of attachment to either parents or friends and the extent of drinking among parents and friends are directly related to drinking behaviors among both teenagers and their younger siblings. Data on attitudes among these youth revealed that despite the fact that they drank, the majority assessed drinking negatively among both youth and adults. The authors suggest that this anomaly may be explained by the contradictory norms attached to drinking: since drinking is legally

restricted for youth, it is an "adult" thing to do which confers higher status on those youth who participate. In fact, societal norms attached to adult independence and drinking may provide youth with the incentive to drink. Community norms concerning drinking strongly affected the drinking attitudes and behaviors of the Indian youth participating in the research.

To summarize, there is a wide range of personal characteristics and experiences which affect students' school performance and decisions to complete school or not. While many studies point to the importance of school performance measures, other important characteristics found among students at risk of dropping out include discipline problems, excessive absences and a lack of participation in extracurricular activities which indicate a lack of engagement or involvement in school. Studies in Indian education suggest that there are factors which may act to either push or pull Indian students out of school. These include the health and language problems as well as alternative cultural values about participation in school. Influences originating from interaction in Indian communities, with family and peers may also encourage attitudes in Indian students which work against school completion. For example, students may perceive participation in alternative activities which detract from school involvement as positive, such as traditional Indian activities or drinking behaviors. Alternatively, students' lack of interest or motivation for schooling may be their response to a lack of well-defined encouragement for participation and success in school. A more detailed discussion of the effects of community context on students' school completion is presented below.

*The Effects of School and Community Contexts on School Completion.*

While students' individual characteristics and experiences have been found to have a profound influence on their performance at school (Hauser, Tsai and Sewell, 1983; Jencks, Crouse, and Mueser, 1983), other factors have important influences on educational outcomes as well. Such variables represent the effects of social interaction of students with others within home and educational settings. In particular, these influences come from significant others such as parents, peers and teachers (Jencks, Crouse and Mueser, 1983; Looker and Pineo, 1983) and attributes of the school population and climate as well as the community (Coleman and Hoffer, 1987). Influences from parents include indicators commonly associated with social class such as educational attainment of parents, income level, and occupation. Other important influences include the language spoken at home, number of siblings, and aspirations of parents for their children (Rumberger, 1987; Wagenaar, 1987). Recent research by Astone and McLanahan (1991) confirms the importance of family structure for the academic achievement of students. Specifically, children from single-parent families are more likely to exhibit signs of early disengagement from school and less likely to complete high school. Ogbu (1987) suggests the importance of students' perceptions of the usefulness of schooling for future labor market participation which is learned from family and community members while Erickson (1989) adds to this the crucial effect of how students interact with teachers and students at school.

Of special interest are variables indicating the social and organizational contexts in which student ability and aspirations are formed and pursued. School processes which label and track students according to ability levels have profound influences on student

achievement (Oakes, 1985; Eder, 1981; Gamoran and Mare, 1989). An important source of information relevant to school processes is the recent work of James Coleman and Thomas Hoffer, Public and Private Schools (1987). In this well-known study based on data from the national High School and Beyond study, the different effects of school and community environments on school achievement are examined. Among the findings of interest here are Coleman and Hoffer's results concerning the differences in high school achievement and dropping out among minority disadvantaged students attending public and private high schools. A particularly relevant finding was that the Catholic school contexts positively affected disadvantaged students, or those who were from families of lower socioeconomic status and racial and ethnic groups (black and Hispanic). In fact, Catholic schools had a lower dropout rate than other private and public schools. The authors' explanations of the results for disadvantaged students include the better abilities of Catholic schools to provide strong support for students whose families were deficient in providing important resources and support.

The research by Coleman and Hoffer (1987) suggests the strength of the effects of school context as well as relations within the family and the community on students' educational outcomes. Dropouts as well as students staying in school were positively affected by the orientation of the school when that orientation was strongly supported by parents and families or community of the students. In particular, the orientation of the Catholic school was such that it helped to decrease the likelihood of dropping out of school by students from traditionally disadvantaged families, or those of minority groups or lower SES, as well as from families "deficient" in certain characteristics referred to as social capital,

i.e., families with single parents or two working parents. At-risk students, or those with poor academic performance, frequent absences and disciplinary problems were much more likely to drop out of school if they attended either public schools with no strong orientation, or to a lesser extent, other private high schools with weaker orientations than Catholic schools.

Turning now to empirical studies of Indian education, the following discussion will identify specific social and school processes found to affect Indian students' educational performance and achievement. School processes will be discussed first followed by information on relevant family and social factors.

In spite of the changes which have provided a larger role in schools among members of Indian communities and have allowed for cultural differences to be acknowledged in the curriculum, Indian students still experience the vestiges of long-term policies which have denigrated and handicapped them: lack of identification with the school personnel or students, the school curriculum, and the demands of school life or perceptions of prejudice from school personnel and students. Many Indian students on reservations still attend schools where the teachers are non-Indians and know little, if anything, about the culture or language of the students; where instructional practices are unfamiliar to the students; and where parents have little influence or involvement (Kroskrity, 1986). The effects of these circumstances have been documented by research on Indian classrooms: Greenbaum (1985) reports that Indian students in the regular (non-Indian) classroom settings interacted very differently with the non-Indian teachers than did non-Indian students, the effects of which could be detrimental to learning. Similarly, Philips' study of Warm Springs Indians (1983) revealed that classroom contexts and practices were very different from the social settings

with which Indian children were familiar: the classroom demanded individualized performance and emphasized competition among peers. Indian children, on the other hand, performed more effectively when the classroom contexts were similar in organization to local Indian contexts in which cooperation and sociality were emphasized.

Crawford (1987), in a special report in **Education Week** on bilingual education discusses the importance of social factors in understanding the problems of language or cultural minority children in school. Quoting bilingual education expert Jim Cummins, "... power and status relations between minority and majority groups exert a major influence on school performance. The lower the status of a dominated group the lower the academic achievement" (p. 37). Minority children frequently react to messages about their inferior status by exhibiting "bicultural ambivalence": shame of the first culture and hostility toward the second. This makes interaction with educators especially important in either "empowering" or "disabling" minority students. Reports of the experiences of Indian college students also suggest the difficulties associated with the lack of familiarity with the cultural expectations and demands of college life when they enter higher education institutions away from their reservation communities. Experiences of Indian students include a kind of culture shock which often results in poor performance and dropping out (McDonald, 1978).

Since most American Indian students (82%) are now enrolled in state-run public schools, these schools have the responsibility to address language and cultural integration problems. However, O'Brien's analysis of "the demise of Indian education" (1990) suggests that the reality of the situation is that the public school system is not meeting the needs of Indian students as demonstrated by the high Indian dropout rate nationally (35.5%) reported

by the National Center for Education Statistics in 1988. A particular problem with public schools is the lack of "English as a second language" programs for Indian students who come to school with poor skills in English.

Other factors contributing to the educational stratification of American Indian students are related to the organization of instruction, in particular, the process of ability grouping. The data presented in the preceding section about the learning disabilities of Indian students compared to other cultural groups reveal that problems with learning, which result in channeling students to special education and remedial services, disproportionately affects Indian students. Dodd (1989) suggests that American Indian students are over classified as learning disabled due to an overlap of cultural differences with specific learning problems. He identifies the academic problems of students with learning disabilities as developmental lags in learning and/or rate, deficits in reading, writing, mathematical, and study skills, speaking and listening problems, and disorders of memory and attention. When such students encounter stress, other traits may become evident such as social immaturity, inadequate communication skills and maladaptive coping mechanisms, e.g., withdrawal. Although factors other than physical handicaps (e.g., cultural, environmental) may contribute to these conditions among American Indian students, the results are the same in that many Indian students require remediation or assistance to improve school performance.

Analyses of American Indian health conditions by the Northern Arizona University Native American Research and Training Center (O'Connell, et al.,1987) provide relevant information concerning some of the suspected health factors related to learning problems in Indian communities. Mortality data indicate that American Indians have greater health

problems than other groups. Death rates are 1.5 or more times the death rate for all races for most age categories. Deaths due to a set of alcohol and behavioral causes (alcoholism, accidents, suicide and homicide) are disproportionately high at young ages among American Indians (Indian Health Service, 1985). In addition, deaths due to pneumonia and influenza, diabetes mellitus, and tuberculosis are disproportionately high as well. To quote the report by O'Connell et al.,

> To the extent that death rate data can be used as a proxy measure of the living disabled population, these results suggest that the overall rate of disability among working age and younger American Indians is substantially higher than that for all races. They further indicate that disability rates are likely to be particularly high among American Indians in the areas of alcoholism and other psychological disorders, and disorders associated with poor sanitation and poor socio-economic conditions. (1987)

Due to the high incidence of alcoholism as well as the increasing birth rate among Indian populations, special education professionals have identified as important contributing factors to the high rate of handicapping conditions two conditions related to alcohol abuse: Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE). The most recent data from the Indian Health Service (IHS) for the Billings Service Area which includes Montana and Wyoming, an area with one of the highest rates of alcohol-related health problems, indicate that the rate of FAS is very high in this area. IHS reports that five of the six most common disabilities listed on the Billings Area IHS pediatric handicap register are all features associated with FAS and FAE. These disabilities include pulmonary disorders, developmental delay, language and speech delay, FAS itself, and cleft palate and cleft lip (O'Connell, 1987).

Such evidence suggests that despite the recent resources allocated to Indian schools and progress made in educational settings which could diminish the effects of specific difficulties facing Indian students, these improvements are still offset by contextual effects, in both the community and school, which may act as punishments or otherwise have negative effects for Indian students. The findings of research concerning the adjustment problems of language and cultural minority students point to an aspect of the educational completion process which is not often addressed in educational attainment research; social (including health) and cultural factors play a crucial part in the educational environment. Language and culture provide the media for meaningful instruction, but social relations within the school and community provide the underlying bases for how individuals and groups (especially language and minority) participate in schooling. The information presented above regarding the role of cultural and social factors in the classroom shows that Indian students participate in the educational setting with different degrees of interest or "tolerance" due to incongruity with the cultural traditions and experiences of their family and community. Additionally, Indian students may be disproportionately affected by health problems which mediate their level of participation. Indian students' divergent responses to schooling may, in turn, provide the basis for or reinforce educators' stereotypes of minority students and their behavior toward them at school. Thus, social relations between majority and minority cultural groups may directly affect students' integration into the school and their performance. This suggests that a potential explanation for the higher proportion of Indian students' decisions to leave school is that the reward-punishment ratio remains unacceptably high, and their tolerance for education is lowered.

Indian students often have influences on their academic aspirations, performance and completion that derive from the experiences of their parents and other family members. Although the impact of early Indian education policies was experienced primarily by earlier generations whose schools had sanctions against expressions of native language and culture, the repercussions of these policies are still felt by current students. As a result of the prohibitions carried out in early boarding schools and later in public schools, members of several generations of Indians (now parents and grandparents) were placed in educational settings in which they were neither fluent in the language of instruction nor familiar with the culture of the teacher or classroom. The repercussions were two-fold: first, parents' own educational achievement was slowed by this situation, and second, the adults affected later spoke only English at home because they did not want their children to experience the same learning difficulties they had. The result of this pattern is that many school-age Indian children today have developed only limited English proficiency prior to entering school, and they likewise often have little or no facility with the native language of their family and community. Crawford (1987) reports that this circumstance has severely limited the learning opportunities for many Indian children in the last twenty to thirty years.

Another aspect of the situation involves negative (or skeptical) views of the utility of schooling which have prevailed among some members of Indian communities (Wax, Wax, and Dumont, 1964). Such views have their sources in several circumstances. One is the specific practices of discrimination against Indians by non-Indian institutions, while a second is related to the practical experiences of Indian community members who did not receive the expected returns from their investment in education in the form of higher paying jobs

or status within the Indian or other communities. Finally, more traditional members of Indian communities may object to students leaving their families and communities and giving up their cultural ways. Indian students may observe that respect or status in the Indian community may not be connected to educational achievement.

In summary, school contexts for many Indian students have been shown to have several aspects which are detrimental to their learning. Specifically, the social contexts which Indian students face often reflect the nature of the relations between dominant and minority groups, resulting in interaction which may lower motivation for learning and achievement by Indian students. Additionally, illness, alcohol consumption and substance abuse in many Indian communities have negative effects on the health conditions of students as well as significant others in the family and community who may influence decisions regarding school performance and completion. Encouragement to complete high school from some significant others may be contradicted by others. One reason for lack of encouragement may be that graduation from high school results in the expectation that students will leave their home community and give up cultural values and traditions.

*Statistical Analyses of School Performance and Completion.*

From the previous review of research in education, we have seen that there are numerous influences which can affect the educational achievement and completion of students. In the following section, we will examine several sources of influences on students' school completion: individual attributes, family background, school experiences, school performance and type of school attended. Relevant research questions about these sources

of influence on school completion will be discussed in each section below. Hypotheses will be proposed regarding the effects of independent variables on educational outcomes and differences among school contexts. These hypotheses will be evaluated in light of statistical evidence presented.

From among the many variables suggested as relevant from the literature reviewed above, we will explore the effects of several types of independent variables on school performance and completion. Choices of variables were based on their theoretical and empirical relevance to the Indian population to be studied as well as practical considerations related to data availability. With regard to our substantive interests, variables were selected which indicate both individual and family characteristics. Individual characteristics include gender and home town residence. Although the Indian education literature suggests that gender may not make a difference in school outcomes, knowledge of the Indian students in the local school populations suggests the need to investigate the effects of gender on school performance and completion. From the descriptive data presented in Part I, we know that a larger proportion of girls in the study drop out of high school although their school performance levels are often higher. This suggests that gender is likely to be an important variable in a model of school completion.

Additionally, while we know that residence in urban or rural locations makes a difference in educational outcomes, we also suspect that residence in specific local communities may have an influence related to special cultural or family ties. Residence in reservation communities is a rough indication of background related to family settlement patterns and social and cultural groups within the reservation community. The selection of

this measure is based on local knowledge that communities differ, to some extent, in their cultural orientations, attachment to education and groupings of extended family. Finally, in terms of individual attributes, we selected a measure of reservation origin since the student population includes a number of students from the Crow reservation who attend St. Labre in addition to the students from the Northern Cheyenne reservation.

Family background indicators are related to socioeconomic status (SES) and family structure. While we did not have complete data on SES from the household census of the reservation, we were able to identify the educational levels of adults in the students' homes as well as their employment status. The latter was chosen rather than occupation since a large percentage of adults (49%) on the reservation do not work (Northern Cheyenne Educational Census, 1989). Obviously, these two indicators do not provide a complete specification of the social class structure on the reservation. However, they do provide an indication of the attachment of adults in the home to education and to the labor market, two aspects of social life found to be important in other studies of educational attainment. The other aspect of family background which we suspected to be relevant is related to family structure, specifically, whether or not the family is intact with two adults present to support the children.

In addition to individual and family characteristics, we are especially concerned with school experiences of students. School experiences are indicated by the extent to which students have had discipline problems as well as their levels of attendance and transferring among schools. Additionally, involvement with extracurricular activities indicates the students' participation in the social life of the school community while school performance

measures academic success. Indicators of these aspects of schooling address different dimensions of the engagement of students with school which has been found to be crucial in other studies of dropout behavior. Given the expected relevance of school context, specifically, attendance at a Catholic private school, other private or public school, we are interested in any effects related to the school students chose to attend. And finally, whether a student drops out or completes high school is the primary educational outcome in which we are interested.

Although tracking has been found to be of importance in recent studies of educational achievement and completion, we do not include this aspect of schooling in our analyses. First, the three schools do not officially track students although students are provided with information about college entrance requirements and relevant high school courses needed. However, Busby and St. Labre are such small schools that, like other private schools, tracking students by college bound or vocational areas is difficult. Since it is more likely that any tracking effect will be observed at the large public school at Colstrip, the separate analyses by school and for Colstrip alone will allow consideration of the possible role of this omitted variable.

Definitions of the variables used in these analyses are shown in Figure 1. Some modifications of the variables used in Part I of the report have been made to facilitate the statistical analyses. In the first group of variables are individual attributes of students including home town, reservation and gender. The home town variables indicate the effects of residence in Ashland, Busby or Lame Deer, the largest communities, compared to other communities on the Northern Cheyenne reservation, and the reservation variable indicates

Figure 1: Definitions of Variables used in Tables

| | |
|---|---|
| Hometown | |
| Ashland | Student's family lives in Ashland. |
| Busby | Student's family lives in Busby |
| Lame Deer | Student's family lives in Lame Deer. |
| Crow | Student's family lives on Crow Reservation. |
| Gender | Female. |
| Family Characteristics | |
| Non-Intact Family | Only one Adult in the family. |
| At least 1 adult employed | At least 1 adult in the family has full time work. |
| Primary adult HS Grad./GED | Primary adult received either high school diploma or GED certificate. |
| School Experiences | |
| Transfers | Total number of transfers between schools during high school. |
| Absences | Total number of days missed during the 9th and 10th grades. |
| Ever suspended | At least 1 in-school or out-of-school suspension during the 9th or 10th grades. |
| Extracurricular activities | Total number of extracurricular activities during the 9th and 10th grades. |
| School Choice | |
| Busby | Student last attended Busby. |
| Labre | Student last attended Labre. |
| School Outcomes | |
| Mean GPA | Average of all annual GPAs during high school. |
| Dropout | Student left school without graduating or receiving a diploma. |

the effects of being from the Crow reservation compared to Northern Cheyenne. In relation to gender, this variable shows the effect of being female compared to male. In the second group of variables are those related to home or family background: high school graduation of the primary adult in the home, full-time employment of at least one adult in the home, and the presence of only one adult in the home.

The variables in the third group represent several aspects of students' experiences during the 9th and 10th grades of high school, the years that most students remain in school. These include, for the first two years of high school, having one or more suspensions, the total number of absences, the total number of transfers (i.e., moves to other schools), and the total number of extracurricular activities in which students participated. Other school-related variables represent the effects of the school last chosen for enrollment prior to either dropping out or graduating: Busby (Tribal school) or St. Labre (Catholic mission school) compared to Colstrip (public school). Additionally, the two school outcome variables include mean Grade Point Average (GPA), the average of annual GPAs for all years of high school, and dropout, whether a student leaves high school without receiving a diploma or not. The mean GPA variable was chosen over standardized test measures due to the greater availability of data for mean GPA.

Analyses will examine, first, the school chosen for enrollment by Indian students among the three high schools serving the Northern Cheyenne reservation. That is, we will determine as much as possible about the selection process affecting the three school populations. Then we will examine models for school performance for all Indian students and by school, looking closely at the different sources of influence on levels of school

performance. Finally, we will discuss models of dropout behavior for all Indian students and by school, and will end with school performance and dropout models for students attending Colstrip High School, the only school in which there are both Indian and non-Indian students.

Ordinary least squares regression equations are used as a means of assessing the relative influence of multiple variables on school performance, an interval level measure. Where the outcome is dichotomous (i.e.,there are only two possible choices of interest) as in the case of high school completion (graduation or dropping out), or there are three categories of responses as in the case of school choice, other appropriate statistics, logistics for dichotomous and polytomous dependent variables, are used (Hanushek and Jackson, 1977). Missing data on variables used in the analyses were treated as follows: students with missing data were either assigned the mean or the median for that variable, or dummy variables were created for the missing data. Such use of dummy variables allows the effects of the actual variables to be distinguished from the effects of the missing data.

The population size for each analysis is shown in each table presented below. The size of the population varies for several reasons. First, the entire population of Indian students was included in the school choice analysis. However, since we were most interested in examining the schooling processes for Indian students residing on or near reservation communities, our subsequent analyses excluded students living primarily off the reservation. The exception is our separate analysis of the Colstrip school, in which we include all Indian and non-Indian students from this school. Additionally, cases were excluded where data were missing on the dependent variables.

Influences on Choice of School Attended: Individual Factors and School Experiences.

In this section, the analysis will address the effects of individual and family characteristics of students on the last school that students chose to attend either prior to leaving school or graduation. Since students may select any high school to attend, it is necessary to examine how student populations at the three schools are formed. Therefore, the intention of the analysis is to establish if there are important distinctions among the students attending the three schools in the study which would affect educational outcomes.

Table 1 presents the distribution of students' hometowns by school. The numbers of students for each town show that the largest numbers of students from the towns of Busby and Ashland choose to attend the school located in their respective communities. However, most Lame Deer students go to Colstrip school. Looking at the distribution of students within each school, an important consideration is that large proportions of the students at both Busby school and St. Labre are from Lame Deer: 47% at Busby school and 21% at St. Labre. All of the Crow students attend St. Labre. Given this distribution, we can expect that the residence of students will have a large effect on their choice of school to attend. In the analysis presented below we will examine this influence on school choice more closely to determine the effect of hometown residence compared to other individual and family background characteristics.

Table 2 presents logistic coefficients for regression equations which identify the effects on school choice of hometown, gender and three family background measures, family structure, and parents' education and employment status for students from the Northern Cheyenne reservation. The two models presented evaluate the influences on choosing Busby

Table 1. Student's Hometown Residence by School

| Hometown | Busby | St. Labre | Colstrip | Total |
|---|---|---|---|---|
| Ashland | 3 3.9 | 38 30.9 | 14 8.5 | 55 |
| Busby | 31 40.3 | 3 2.4 | 17 10.3 | 51 |
| Lame Deer | 36 46.8 | 26 21.1 | 103 62.4 | 165 |
| Crow | 0 0 | 46 37.4 | 0 0 | 46 |
| Other | 7 9.1 | 10 8.1 | 31 18.8 | 48 |
| Total | 77 100 | 123 100 | 165 100 | 365 |

Table 2. Logistic Coefficients for the Effects on Hometown, Gender and Family Characteristics on School Choice of Indian Students.

| Independent Variable | School Model | |
|---|---|---|
| | Busby | St Labre |
| Hometown/Reservation | | |
| Ashland | -.78 | 1.73*** |
| Busby | 1.36*** | -1.14** |
| Lame Deer | -.28 | -.72*** |
| Female | -.35** | .08 |
| Family Characteristics | | |
| Non-Intact Family | -.02 | -.37 |
| At Least 1 Adult Employed | -.43 | -.09 |
| Primary Adult HS Diploma | -.24 | .34 |
| n | 307 | |

* p<.10
** p<.05
*** p<.01

Tribal School and St. Labre Catholic Mission School over Colstrip Public School.

Using the first set of variables, we can examine the effects on school choice of living in Ashland, Busby and Lame Deer compared to any other community. The first coefficient indicates that residence in Ashland has no effect on choosing Busby over Colstrip, but does significantly affect choosing St. Labre which is located in Ashland. Similarly, residence in Busby has a strong, positive influence on choosing to attend Busby high school over Colstrip. However, Busby residence has a significant, negative influence on choosing St. Labre over Colstrip high school. Coefficients for residence in Lame Deer reveal that being from this town negatively influences choosing to attend St. Labre over Colstrip. On the other hand, Lame Deer residence has no influence on choosing Busby over Colstrip.

In relation to gender the findings indicate that being female has a negative influence on choosing to attend Busby over Colstrip. In contrast, being female has no effect on choosing St. Labre.

Coefficients for the last set of variables allow us to examine the effects of family background on students' enrollment choices. These variables include being from a home with only one adult present, having at least one adult in the home who is employed, and being from a home in which the primary adult has a high school diploma or GED. However, none of these influences has a significant effect on choice of either Busby or St. Labre schools over Colstrip.

From these analyses we can conclude that residence close to a high school is, in fact, the primary factor affecting school choice. That is, Busby residents tend to choose Busby high school over Colstrip, and Ashland residents tend to choose St. Labre over Colstrip.

However, Lame Deer residents tend to choose Colstrip over the other two schools. Only in the case of Busby high school is gender an important influence on school choice. Females tend to choose the other two schools over Busby. These analyses give no indication that socioeconomic characteristics of students' families have an influence on their choice of school to attend.

Influences on School Performance: Individual, Family, School Choice and School Experiences.

In the third table, the results of statistical analyses show the effects of several groups of factors on Indian students' mean Grade Point Average (mean GPA) in high school for all Indian students: individual attributes, family characteristics, school choice, and school experiences.

In the first column, which represents model 1, are presented regression coefficients showing the effects of the first three groups of variables on mean GPA. The second column presents coefficients for a model which indicates the effects of all four sets of influences, individual, family background, school choice and school experiences, on mean GPA. Null hypotheses for these models include the following:

1. Individual characteristics of students, home town residence and reservation origin and gender will not be associated with school performance.

2. Family background characteristics, having only one adult in the home, the completion of high school by one adult, and employment of at least one adult in the home will not be associated with students' school performance.

Table 3. OLS Coefficients for the Effects of Hometown, Gender, Family Characteristics, School Choice and School Experiences on Mean GPA.

| Independent Variable | Model | |
|---|---|---|
| | 1 | 2 |
| Hometown/Reservation | | |
| Ashland | .15 | .10 |
| Busby | .21* | .21* |
| Crow | -.29** | -.28** |
| Female | .06 | .09 |
| Family Characteristics | | |
| Non-intact Family | -.09 | -.05 |
| At least 1 Adult Employed | .13 | .09 |
| Primary Adult HS Diploma | .12 | .08 |
| School Choice | | |
| Busby | .13 | .21* |
| Labre | .35*** | .31*** |
| School Experiences | | |
| Transfers | | -.06** |
| Absences | | -.01*** |
| Ever Suspended | | -.18* |
| Extracurricular Activities | | .09*** |
| R-Square | .09 | .22 |
| n | 296 | 296 |

Note: Omitted category for hometown is Lame Deer. Controls not shown are for variables with missing data on family characteristics.

* p<.10
** p<.05
*** p<.01

3. School choice will not be associated with school performance.

4. School experiences, absences from school, suspensions from school, the number of transfers to other schools, and participation in extracurricular activities will not be associated with school performance.

In model 1 of Table 3, regression coefficients for the residence variables, Ashland and Busby, reveal that being from Busby has a significant, positive effect on GPA compared to being from Lame Deer or other areas. However, being from Ashland is not statistically significant. In contrast, being from the Crow reservation has a strong, negative effect on student performance compared to being from Northern Cheyenne. This coefficient is significant at the .05 level. The coefficient for gender shows that being female has no effect on mean GPA. Interestingly, the family background variables have no effects on school performance levels.

The school last attended by the student, the school choice variable, however, does show a significant, positive effect for St. Labre compared to Colstrip. This coefficient indicates that enrollment at St. Labre has a strong positive effect on school performance compared to enrollment at Colstrip. The coefficient for Busby is not significant.

By comparing the first column coefficients in Table 3 to those in the second column, we can see the effects of introducing into the model variables related to school experiences. In other words, model 2 coefficients show the relative influence of the first group of variables on mean GPA given the influence of the additional variables. In relation to residence, the second column coefficients show that home town continues to show a strong, positive influence for Busby compared to Lame Deer. The negative effect of being from

Crow also remains as strong as in model 1. Again, gender and family background variables continue to have negligible influence on school performance levels.

Once again in model 2 the school choice variables have strong, positive effects indicating that choosing to attend Busby and St. Labre over Colstrip have positive effects on mean GPA. Since both residence and school choice have important influences on mean GPA in model 2, we wanted to investigate further the effects of these variables. In particular, we wanted to see if there were any special effects related to choosing to attend a school other than the one closest to home, or the typical school choice for the community of residence. Therefore, we tested the effects on mean GPA of residence in Lame Deer and choosing Busby school (over Colstrip school), residence in Busby and choosing Colstrip school (over Busby school) and residence in Lame Deer and choosing St. Labre (over Colstrip). None of these interactions had significant effects on school performance. In fact, when we controlled for the combination of residence and school choice, the effects of both variables remained fairly stable in their influence on mean GPA.

The influences of the variables in the last group related to school experiences generally conform to expectations suggested by the literature reviewed above. The effects of suspensions from school, absences and transfers are to lower mean GPA. The coefficients for these variables show that the effects of these types of school experiences are statistically significant, especially transfers and absences. However, the extracurricular activities variable has a statistically significant positive effect on GPA. That is, this type of school involvement increases the mean GPA of Indian students. The R-square values shown at the bottom of the table indicate that adding the school experience variables to the analysis more than

doubles the variation in mean GPA that is explained by the model of the influences on school performance shown in column 2.

These results suggest an answer to the question, what factors influence the school performance levels of Indian students? They also provide the evidence needed to evaluate the hypotheses listed above. The first model reveals that among the individual, family and school choice variables, only the home town/reservation and school attended variables have important effects on school performance levels. The evidence presented does not indicate an association between either gender or family characteristics and school performance levels of Indian students.

The second model reveals the importance of home town/reservation, school choice and school experiences for explaining school performance. This model shows that Indian students' performance levels, after taking into account home town, reservation, gender, family background and school attended, are negatively affected by behaviors which appear to detract from their involvement in school. The effects of suspensions, absences and transfers, in particular, have important negative influences on students' mean GPA. On the other hand, the evidence also confirms that students' involvement with extracurricular activities has a significant, positive effect on mean GPA. Consequently, we can reject the hypotheses for no relationships between the school experience variables and school performance. Similarly, the choice of school positively influences school performance at Busby and St. Labre as does being from Busby. However, being from the Crow reservation negatively influences school performance. Therefore, we can reject the null hypotheses for the individual characteristics as well as school choice variables.

Influences on School Performance by School: Individual, Family and School Experiences.

In Table 4, regression coefficients are presented for three types of variables for Indian students at each school, Busby, Colstrip and St. Labre. In this analysis, we focus on the effects of individual attributes, family background, and school experiences on school performance among students within the three different schools. In this table are shown the coefficients for the effects of the full model shown in column 2 of Table 3. This analysis will focus attention on identifying differences in student performance related to school context. Hypotheses for this analysis include the following:

1. Relationships of individual, family and school experience variables to school performance (mean GPA) for each school will be the same as proposed for all Indian students.

2. The effects of individual characteristics on school performance will be the same for all three schools.

3. The effects of family characteristics on school performance will be the same for all three schools.

4. The effects of school experiences on school performance will be the same for all three schools.

Again, we first examine the effects of home town on students' performance levels. From the previous analysis of school choice, we know that residence does affect the school attended; for example, most Busby residents primarily attended Busby school while some attended Colstrip high school, few Ashland residents attended either Busby school or Colstrip school, and Lame Deer residents attended all three schools although most chose Colstrip school. Because of the greater variation in school choice among Lame Deer

Table 4. OLS Coefficients by School for the Effects of Hometown, Gender, Family Characteristics, and School Experiences on mean GPA.

| Independent Variable | School Model | | |
|---|---|---|---|
| | Busby | Labre | Colstrip |
| Hometown/Reservation | | | |
| Lame Deer | -.40* | -.27* | -.02 |
| Crow | | -.50*** | |
| Sex(Female) | .26 | .07 | .08 |
| Family Characteristics | | | |
| Non-Intact Family | -.07 | -.10 | -.17 |
| At least 1 Adult Employed | .22 | .10 | -.06 |
| Primary Adult HS Diploma | .02 | .33 | .08 |
| School Experiences | | | |
| Transfers | -.07 | .01 | -.10*** |
| Absences | .00 | .00 | -.01*** |
| Ever Suspended | -.17 | -.30 | -.19 |
| Extracurricular Activities | .05 | .13*** | .08*** |
| n | 52 | 107 | 137 |
| R-Square | .05 | .24 | .22 |

* p<.10
** p<.05
*** p<.01

residents, the salient consideration for this analysis is the effect of residence in Lame Deer compared to any other of the communities on the reservation within each of the three schools. The coefficient for Lame Deer residence shows that the effect of residence on mean GPA varies by school. At Busby school, residence in Lame Deer has a negative effect on mean GPA that is statistically significant. This same effect is seen at St. Labre as well. In relation to reservation origin, being from Crow also has a statistically significant, negative effect on student performance levels at St. Labre. In contrast, neither the home town variable nor reservation is significant within the Colstrip school.

Similar to the findings in Table 3, coefficients for the gender variable are positive, revealing that female students perform at higher levels than males. However, this variable is not significant at any of the schools. As in the previous table, the effects of family background variables on mean GPA are not significant.

Since the student populations are smaller when we look at the three schools separately (see Ns for each school in Table 4), and statistical significance is affected by population size, we must use some caution in interpreting these results. The findings suggest that the influence of individual and family background variables are somewhat different at the three schools. For example, being from the Crow reservation, in particular, is a meaningful distinction at St. Labre while this does not affect students at the other two schools where there are no Crow students. Also, residence in Lame Deer, compared to other places on the Northern Cheyenne reservation, has a particularly strong, negative effect at the two Indian schools but not the public school.

Looking at the coefficients for the three school models reveals some interesting

results as well in relation to school experiences: when individual and family factors are taken into account, school experiences have important influences on school performance. These results generally look very similar to those for the total Indian student population shown in Table 3. For example, coefficients for school suspensions, absences, and transfers tend to be negative. Also, involvement in extracurricular activities has a positive effect on school performance. However, transfers and absences are statistically significant at the .05 and .01 probability levels respectively only at Colstrip. Extracurricular activities have a significant effect at both St. Labre and Colstrip.

Because the Colstrip student population is relatively large, we can be reasonably certain that these statistical results are valid and meaningful. However, for St. Labre and Busby, we must be somewhat more careful. Looking at the effects of school experiences, coefficients for suspensions are negative effect in all three schools but are not statistically significant at any one. Similarly, absences and transfers have no effect on mean GPA at Busby and St. Labre. Also, at Busby extracurricular activity involvement has no effect. These findings suggest that although, in general, the school experience variables may affect school performance similarly at the three schools, it is more difficult to confirm this hypothesis due to the small populations for Busby and St. Labre.

Similar to the findings in Table 3, the effects of gender and family characteristics on mean GPA are not significant within any of the three school populations. Thus, we may confirm the hypotheses that these influences are similar for the three schools in their relationship to school performance.

These analyses help to answer questions about the effects of different school

environments on student performance as well as about the effects of individual attributes, family characteristics and school experiences within these different contexts. Although we must keep in mind the differences in student population size at each school that may affect the significance of the statistics presented for the smaller schools, we may first confirm generally the similarity of the relationships of the independent variables to school performance among the three schools compared to the effects observed for the Indian student population as a whole. However, we may also make several observations about student performance differences among the three school populations which may be related to differences in school context. Our observations include the following:

1. Within the context of the public school, school experiences dramatically affect Indian students' school performance. Specifically, having more than one transfer and being absent are two factors which indicate less engagement of students with school, and which are very influential in their effects on GPAs. Involvement in extracurricular activities, however, has a very positive and significant effect in the direction of improving GPAs. On the other hand, individual and family characteristics appear to have no influence on student performance levels.

2. While some similar statements may be made about St. Labre in relation to the effects of school experiences on school performance, there are some other implications of the data which are of interest. At St. Labre, performance levels of Indian students are negatively affected by being from the Crow reservation. There are two possible explanations of the difference between Crow and Northern Cheyenne students in terms of their performance levels. One explanation is that many Crow students attending St. Labre have attended

elementary schools on the Crow reservation in which instruction has been conducted in the Crow language. When these students have transferred to high school at St. Labre where instruction is in English, many students have faced difficulties which negatively affected their grades. Another factor relates to the history of Northern Cheyenne and Crow tribal relations. These two tribes have a long history of competition which dates back to the Custer battle and before in which members of the two tribes opposed each other. Since the two reservations share a common boundary, they have continued to interact, and even intermarry, in recent history. However, competition and strained relations may still characterize some social situations. Some sources suggest that jealousy and competition between members of the two tribes may affect the social climate of St. Labre school, although this is diminishing in recent generations. The outcome of such a competitive environment could be a social group of outsiders which, in this case, includes the Crow students.

3. There are also negative effects of being an outsider, specifically, being from Lame Deer or somewhere else on the reservation, in both Busby and St. Labre high schools. The outsider status, in this case, however, is related to membership in different family, cultural or socioeconomic groups rather than different tribal groups. Additionally, at Busby high school, extracurricular activities do not have the same positive effect on student performance as in the other two.

Influences on Dropping Out: Individual, Family, School Choice, School Experiences and School Performance.

The next analysis (shown in Table 5) addresses the influence of individual and family

Table 5. Logistic Coefficients for the Effects of Hometown, Gender, Family Characteristics, School Choice, School Experiences and School Performance on Dropping Out.

| Independent Variable | Model | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Hometown/Reservation | | | |
| Ashland | .19 | .10 | .23 |
| Busby | -1.62*** | -1.73*** | -1.23*** |
| Crow | .25 | -.06 | -.36 |
| Female | .24 | .08 | .27 |
| Family Characteristics | | | |
| Non-Intact Family | .74*** | .62* | .63* |
| At least 1 Adult Employed | .03 | .21 | .24 |
| 1 Adult HS Diploma | -.93*** | -1.28*** | -1.21*** |
| School Choice | | | |
| Busby | .96*** | .43 | .21 |
| Labre | -.04 | .09 | .43 |
| School Experiences | | | |
| Transfers | | .02 | .04 |
| Absences | | 0 | 0 |
| Ever Suspended | | .91*** | .71 |
| Extracurricular Activities | | -1.00*** | -.82*** |
| Mean GPA | | | -1.38*** |
| Model Chi Square | 53.05 | 120.82 | 163.88 |
| df | 12 | 16 | 18 |
| n | 317 | 317 | 317 |

* p<.10
** p<.05
*** p<.01

background, school choice and school experiences as well as school performance on graduation from high school for all Indian students. The first model examines the effects of individual and family characteristics as well as school attended on dropping out of high school. The second model adds into the analysis the effects of school experiences, i.e., transfers, absences, suspensions, and extracurricular activity involvement, and the third model identifies the relative effect of school performance on dropping out given the effects of all the other variables. Null hypotheses include the following:

1. Individual characteristics will not be associated with dropping out.
2. Family characteristics will not be associated with dropping out.
3. School choice will not be associated with dropping out.
4. School experiences will not be associated with dropping out.
5. Mean GPA will not be associated with dropping out.

The coefficients for variables in model 1 of Table 4 show some very interesting changes compared to their effects on performance levels. For example, earlier (in Table 3) we saw that the effect of residence in Busby on school performance was positive and statistically significant at the .10 level. In this analysis of dropout behavior, residence in Busby is even more significant in negatively influencing dropping of high school. However, unlike the earlier analysis in Table 2, the effect of being from the Crow reservation is no longer statistically significant. Also, as we saw in the previous tables, the effect of being female is not statistically significant.

An important development in this analysis can be seen in relation to the effect of family characteristics on dropping out of high school. While these variables had no effect

on school performance levels, they are very influential in relation to completion of schooling. For example, having a family with only one adult present has a positive and very significant effect on dropping out. That is, Indian students with only one adult at home are much more likely to drop out of high school. Although having one adult at home who works full-time has no effect on dropping out, the education of adults in the home has a very significant effect. When the primary adult in the home has graduated from high school or has received a GED, Indian students are more likely to finish high school rather than drop out. These effects of family structure and parents' attachment to the institution of education suggest the relevance of structural features of the students' home environment to school completion.

The final part of model 1 addresses the effects of school choice on dropping out of high school. The coefficients for Busby and St. Labre show that only enrollment in Busby school has a very strong influence on students' dropout behavior compared to Colstrip. The effect, which is to increase dropping out, is consistent with the high dropout rate at Busby School shown in the descriptive data presented in Part I. In contrast, attending St. Labre has no effect on dropping out.

Model 2 coefficients show a similar pattern to model 1 with only minor changes in the individual, family and school attended variables. A minor change concerns the family structure variable; in model 2, being from a home with only one adult present still has a significant effect on dropping out, but the level of significance has decreased to the .10 level. However, the addition of school experiences to the model has a more important effect on school choice: attending Busby is no longer significant. Two of the school experience variables, in particular, suspensions and extracurricular activity involvement, have statistically

significant effects on dropping out. While having one or more suspensions from school is positively related to dropping out, increases in the level of student involvement in extracurricular activities works in the opposite direction, to decrease dropout behavior.

Finally, model 3 adds the effect of mean GPA to the analysis. The addition of this variable to the model is important because it has the effect of changing the influence of other variables. For example, the effect of being from the town of Busby is still significant but only at the .05 level. Additionally, having one or more suspensions from school is no longer statistically significant in its effect on dropout behavior. However, the school performance variable, mean GPA, is significant at the .01 level and negatively affects dropping out. In other words, the lower the GPA, the more likely students are to drop out. The change in significance of the school experience variable with the addition of mean GPA suggests that school performance is an important intervening variable between school experiences and dropout behavior. That is, school experiences affect school performance which, in turn, affect dropping out or finishing school.

The final model for Indian students suggests that the following variables are important for understanding dropout behavior: residence in Busby compared to Lame Deer, being from a family with only one adult present, having an adult in the home with a high school diploma or a GED, involvement in extracurricular activities, and mean GPA. These results indicate that the hypothesis that gender will not affect dropping out is supported by the data. However, the hypothesis that home town residence will not affect dropout behavior is not supported by the data. Unlike the analysis of school performance, the hypothesis concerning the effects of family background can be rejected due to the significant

effects of the family structure variable and the high school completion of the primary adult. Again, in contrast to the previous analysis, the evidence on dropout behavior indicates that the school choice variables lose their impact when school experiences and performance levels are taken into account. Thus, the hypothesis concerning the effects of school choice is supported.

In relation to school experiences, only the extracurricular activity involvement variable is meaningful when the mean GPA variable is included in the full model. Consequently, hypotheses concerning the effects of transfers, absences and suspensions from school are supported by the results of this analysis. However, the evidence strongly confirms the effect of school performance levels on dropping out allowing us to reject the last hypothesis for this analysis.

Together the coefficients for the comprehensive model provide an answer to the question, what characteristics of students and their families and students' school experiences affect dropping out or completing high school? Except for the family structure variable, all of these variables negatively influence dropping out. The positive direction of the relationship of having a non-intact family to dropping out suggests that being from a single parent home increases the likelihood of dropping out of high school, and conversely, that students from homes with two adults present have a better chance of completing school. The variables that negatively influence dropping out suggest other key features of individual, family and school experiences. The influence of adults in the home who have graduated or received a GED appears to be crucial to students' finishing their schooling. In terms of school experiences, students actively involved in extracurricular activities are more likely to

complete high school as are those with higher school performance levels.

Influences on Dropping Out by School: Individual, Family, School Experiences and School Performance.

Before turning to models of dropout behavior by school, we will, first, investigate the possible effect of community residence on dropout and graduation behavior. Since we know that a proportion of students at all three schools is from Lame Deer, and that Lame Deer residence had a negative effect on mean GPA, we will determine the proportion of dropouts and graduates from each of the communities within each school. The distributions presented in Table 6 reveal that the largest percentages of dropouts at Busby and Colstrip are from Lame Deer. However, at St. Labre the dropouts are primarily from Ashland and Crow. These figures indicate that the residence factor will continue to be important in the dropout analyses by school. Additionally, they also suggest that evaluations of the school models should consider the characteristics of the student population carefully so that effects of residence will not be confounded with the effects of the schools on dropout behavior.

In Table 7, coefficients are presented for models of the influences on dropping out of high school for the three schools in which Indian students in the study were enrolled. The three models presented correspond to the full model shown in column 3 of Table 5 for all Indian students. These models will also identify the effects of individual characteristics, family background, school experiences as well as school performance on dropping out of high school. The intention of the analysis is to determine any differences in the effects of the variables of interest within the three different school contexts, thus suggesting an effect

Table 6. Student's Graduation Status by School and Hometown.

| Hometown & Graduation | Busby | | St. Labre | | Colstrip | |
|---|---|---|---|---|---|---|
| Ashland | | | | | | |
| Grad | 0 | 0.0 | 18 | 51.4 | 7 | 58.3 |
| Drop | 3 | 100.0 | 17 | 48.6 | 5 | 41.7 |
| Busby | | | | | | |
| Grad | 21 | 70.0 | 1 | 50.0 | 13 | 92.9 |
| Drop | 9 | 30.0 | 1 | 50.0 | 1 | 7.1 |
| Lame Deer | | | | | | |
| Grad | 10 | 27.8 | 17 | 65.4 | 50 | 58.1 |
| Drop | 26 | 72.2 | 9 | 34.6 | 36 | 41.6 |
| Other/NA | | | | | | |
| Grad | 4 | 57.1 | 28 | 53.8 | 4 | 25.0 |
| Drop | 3 | 42.9 | 24 | 46.2 | 12 | 75.0 |

Table 7. Logistic Coefficients by School for the Effects of Hometown, Gender, Family Characteristics, School Choice, School Experience and School Performance on Dropping Out.

| Independent Variable | Busby | Labre | Colstrip |
|---|---|---|---|
| Hometown/Reservation | | | |
| Lame Deer | .48 | .33 | 1.27* |
| Crow | | .20 | |
| Female | 1.75** | -.25 | .01 |
| Family Characteristics | | | |
| Non-Intact Family | 1.34* | .39 | .27 |
| 1 Adult Employed | -.90 | 1.39* | -.04 |
| Primary Adult HS Diploma | -1.64* | -4.21** | -.44 |
| School Experiences | | | |
| Transfers | .20 | -.27 | .01 |
| Absences | -.03* | 0 | .01 |
| Ever Suspended | 1.47 | .50 | .99 |
| Extracurricular | .16 | -1.36*** | -.95*** |
| Mean GPA | -1.23* | -1.64*** | -1.38** |
| Model Chi Square | 43.51 | 78.51 | 68.86 |
| df | 14 | 15 | 14 |
| n | 76 | 115 | 126 |

* p<.10
** p<.05
*** p<.01

related to type of school attended. Hypotheses for this analysis include the following:

1. Relationships of individual, family, school experience variables and school performance (mean GPA) to dropping out will be the same in each school as proposed for all Indian students.

2. The effects of individual characteristics on dropping out will be the same for all three schools.

3. The effects of family characteristics on dropping out will be the same for all three schools.

4. The effects of school experiences on dropping out will be the same for all three schools.

5. The effects of mean GPA on dropping out will be the same for all three schools.

In this analysis, we again use the home town variable which distinguishes between the effects of residence in Lame Deer and other locations on the reservation. The coefficients presented for the three schools show that residence in Lame Deer compared to other towns has a positive influence on dropping out in Colstrip school but has no effect at Busby and St. Labre schools. Unlike the analysis of students' performance by school, being from the Crow reservation also has no effect on dropping out at St. Labre. Another contrast between this and previous analyses is the effect of gender which has a statistically significant effect. Being female is positively associated with dropping out at Busby school. However, this effect does not occur within the other two schools. Therefore, we may conclude that the second hypothesis concerning the similar effects of individual characteristics at each of the schools is not supported by this analysis.

Interestingly, the effects of the family background characteristics on dropping out also

vary by school. Therefore, the second hypothesis is not supported by the evidence presented. Being from a single parent home is significant only at Busby and is positively associated with dropping out, as we observed in the analysis of all Indian students. Also significant for dropout behavior at Busby school is the high school completion of the primary adult at home. The effect of this variable is to negatively affect dropout behavior. The effect of high school completion by the primary adult in the home is even stronger at St. Labre although it has no effect on dropout behavior at Colstrip. This analysis also reveals a significant effect of the full-time employment of at least one adult in the household among St. Labre students. However, it has no effect on dropping out at the other two schools.

The effects of the school experience variables within the three schools are generally similar across the three schools and to the model for all Indian students. Thus, we can confirm the hypothesis concerning the similarity of the effects of school experiences on dropout behavior among the three schools. Again, involvement with extracurricular activities has a very significant, negative effect on dropping out. This effect is strong at both St. Labre and Colstrip but not at Busby. However, only at Busby is dropping out affected by absences.

Finally, mean GPA has a crucial effect on dropout behavior within each school, supporting the last hypothesis about the similar role of this variables across the different schools. While the effect is strongest at St. Labre and Colstrip, the relationship of school performance to dropping out is significant at the .10 level at Busby as well. In all three schools, mean GPA has a negative effect on dropping out.

These results provide answers to questions concerning the nature of the influences on dropout behavior within the three models and similarities and differences among the

three schools. First, these analyses indicate that the previously observed influences on dropping out are generally upheld in the three new models. That is, with few exceptions, variables important for the Indian student population as a whole are also meaningful for the three school contexts: the high school education of the primary adult in the home, student's extracurricular activity involvement and mean GPA. This supports the first hypothesis proposed. Additionally, the coefficients suggest that there are some overall similarities of the three schools with respect to the effects of school experiences and school performance on dropping out. Within each of the three schools, school performance strongly affects whether a student drops out or not. The better the performance, the less likely it is that students will drop out. Additionally, students' involvement in extracurricular activities is also crucial, although it is more important at St. Labre and Colstrip. The only other factor which has a somewhat consistent effect on dropout behavior at the three schools is the high school completion of adults in the student's home. The effect of at least one adult in a student's home having a high school education is to significantly decrease the likelihood of dropping out only at the two Indian schools, Busby and St. Labre.

Having identified these basic similarities across the three schools, we can identify some interesting differences as well. For example, only at Busby is the effect of being female strongly positive in its effect on dropout behavior. At this school, females are much more likely to drop out while this is not the case at the other two schools. Additionally, students at Busby who are from a single-parent home are much more likely to drop out. And finally, absences at Busby school negatively affect dropping out. In other words, excessive absences from school do not necessarily keep a student from graduating, nor do

they automatically result in a student's termination. Although this may be an artifact of the small population size for this analysis of Busby students, absences appear to even forestall dropping out. At the other two schools, absences have little effect on dropping out.

The analyses reveal that St. Labre is similar to Colstrip in several respects. As mentioned earlier, the major influences on dropping out which St. Labre shares with Colstrip are the significant impacts of extracurricular activities and mean GPA, both of which negatively affect dropout behavior. In fact, the only real difference between St. Labre and Colstrip schools is that Lame Deer residents (compared to students from other towns) have a more difficult time graduating at Colstrip than St. Labre. Being from Lame Deer has no effect on dropping out at either the Tribal school or the Catholic school, whereas it is significantly related to dropping out at the public school in Colstrip. This is a change from the previous analysis of school performance, however, in which Lame Deer residence had a significant, negative effect on school performance at both Busby and St. Labre. Additionally, being from the Crow reservation does not affect dropping out in the same way that it affected school performance levels at St. Labre. It appears, therefore, that home town and reservation origin do not have quite the same force for school completion as they do for performance.

One similarity between St. Labre and Busby school is the effect of education of the adults in the home mentioned above. It is interesting to note that this effect is seen only at the two Indian private schools and not at the primarily non-Indian public high school.

One final note on the differences among the three schools concerns the model for Colstrip. As mentioned above, family background variables play an important role in

dropout behavior at the other two schools, but not at Colstrip. In contrast, the only significant factor that influences school completion in the public school, besides extracurricular activity involvement and mean GPA, is students' residence in Lame Deer. Since most students from the reservation who attend Colstrip live in Lame Deer or the vicinity, this variable suggests that there may be something unusual about this group. One possible explanation is that the population from Lame Deer includes the highest proportion of poor people, those who are unemployed and likely to be receiving social services, and those who need treatment for health problems. Since Lame Deer is the location of most tribal government and federally supported services, residents of Lame Deer have easier access to these resources. To the extent that families in Lame Deer have special problems which affect the family and home environment, they may be less supportive of schooling for students.

An alternative explanation is related to a structural feature of the schooling of Indian students, that is, that Indian students at Colstrip, who also happen to reside mostly in the Lame Deer community, are different from other students in relation to school completion. Without more information on the specific nature of the school experiences of Indian students at Colstrip which would tell us possible sources of differences, we cannot elaborate further on how or why schooling may differ for Indian students within this context. This analysis only allows us to observe that students from Lame Deer are more likely than students from other locations to drop out of Colstrip high school.

From these discussions we may summarize our results concerning differences in the effects of the individual, family and school experience variables on the dropout behavior of

Indian students across the three schools. The effects of both individual and family background characteristics of students vary within the different school contexts. These two types of influences appear to be of greater importance overall within the context of the two private Indian schools. However, residence in Lame Deer has an important effect on dropping out within the primarily non-Indian public school. In contrast, the school experience and school performance variables were more similar across the schools in their effects on dropout behavior.

Influences on School Performance and Completion of All Students Attending Colstrip.

This analysis addresses questions raised in the previous section concerning the effect of ethnic group status, i.e., being Indian, on school performance and dropping out at Colstrip. In Table 8 coefficients are presented which indicate the effects of two categories of influences, individual characteristics and school experiences, on school performance or mean GPA for all students at Colstrip high school. The intent of this analysis is to determine the effects of our independent variables on school performance within a school context in which there are both Indian and non-Indian students. Moreover, we can examine the effect of ethnicity on educational outcomes relative to the other independent variables of interest. Hypotheses for this analysis include:

1. Relationships of individual and school experience variables to school performance will be the same for all Colstrip students as proposed for all Indian students at Colstrip.
2. Ethnicity of students will have no effect on school performance.

For this analysis, individual characteristics include both gender and ethnicity.

Table 8. OLS Coefficients for the Effects of Individual Characteristics and School Experiences on Mean GPA for all Students at Colstrip.

| Independent Variable | Model |
|---|---|
| Female | .12** |
| Indian | -.32*** |
| School Experiences | |
| Transfers | -.07** |
| Absences | -.01*** |
| Ever Suspended | -.35*** |
| Extracurricular Activities | .09*** |
| R-Square | 454 |
| n | .37 |

* p<.10
** p<.05
*** p<.01

Residence was not included since we already know, first, that most of the Indian students attending Colstrip live in Lame Deer and, second, that the effect of Lame Deer residence is not significant for mean GPA for Indian students (see Table 3). Additionally, we have excluded reservation origin since we know that Crow students attend St. Labre. Coefficients presented in Table 6 for individual characteristics of students show that these variables have a significant effect on school performance: being female has a strong, positive influence while being Indian has a strong, negative influence on school performance.

All of the school experience variables also have strong effects on school performance. Suspensions from school, absences and transfers have negative effects on mean GPA that are significant at the .01 level. In contrast, involvement in extracurricular activities has a strong, positive effect on school performance. These findings indicate that some of the influences on school performance which were observed in previous analyses also hold true in this analysis of the Colstrip student population. In particular, school experiences have crucial influences on how well all Colstrip students perform, and their influence is similar to that observed for Indian students at Colstrip. However, new findings from this analysis tell us that gender and ethnicity both have important influences within the context of a public school with a mixed student body. Unlike our previous findings, the personal attributes of students, in this case, being female and Indian, both have a negative impact on how well they do in school. In light of these findings, neither of the hypotheses proposed can be confirmed.

In Table 9, coefficients are presented for the effects of individual characteristics, school experiences and school performance on dropout behavior for all students. As we did

Table 9. Logistics Coefficients for the Effects of Individual Characteristics, School Experience and School Performance on Dropping Out for All Students at Colstrip.

| Independent Variable | Model |
|---|---|
| Female | .62* |
| Indian | 1.05*** |
| School Experience | |
| Transfers | .19 |
| Absences | 0 |
| Ever Suspended | .57 |
| Extracurricular Activities | -.71*** |
| Mean GPA | -1.28*** |
| Model of Chi Square | 154.50 |
| df | 8 |
| n | 356 |

* p<.10
** p<.05
*** p<.01

in the previous analysis, we will examine the effects of all the independent variables on dropping out, focusing on the relative effect of ethnicity given the effects of the other variables. Hypotheses include the following:

1. Relationships of individual, school experience and school performance variables to dropping out will be the same for all Colstrip students as proposed for all Indian students at Colstrip.

2. Ethnicity of students will have no effect on dropping out.

Coefficients presented in Table 9 show that some of the relationships observed between the independent variables and dropping out in the model presented for Colstrip Indian students (Table 7) are similar to this model of dropout behavior for all students at Colstrip. That is, two of the most important influences on dropping out of high school are mean GPA and involvement in extracurricular activities. Both of these variables are statistically significant and negatively affect dropping out. However, this analysis also finds that personal attributes, i.e., being female or Indian, strongly affect dropout out behavior; being female is statistically significant at the .10 level while being Indian is significant at the .01 level. Both of these variables are positively related to dropping out, suggesting that members of these groups are much more likely to drop out than males or non-Indians.

Similar to the pattern observed for Colstrip Indian students in Table 7, the effects of school experiences, suspensions, transfers and absences, do not affect on dropping out. Consequently, we cannot confirm the first hypothesis, but we can confirm the second one regarding the effect of ethnicity on dropout behavior.

The two analyses presented in Tables 8 and 9 indicate, first, that both personal

characteristics and school experiences have a lot to do with how well students do academically at Colstrip. Additionally, personal characteristics, school performance and involvement with school activities are crucial to school completion. These findings suggest that non-Indian and Indian students have similar experiences with schooling in terms of the effect of transfers, absences and suspensions on school performance: the more students experiences these types of problems, the more likely they will have lower levels of performance. On the other hand, students from both groups who are involved with extracurricular activities are more likely to have higher performance levels. Also, female students also are more likely to experience the higher levels of performance as measured by grades.

The data also strongly indicate that Indian students are more likely to have lower levels of school performance. Therefore, we may conclude that Indian students are among those who have the least positive school experiences in terms of academic success. However, activities which increase the engagement of students with school appear to have a positive effect on school performance, although not as much for Indian students as for non-Indians.

The analysis of influences on dropout behavior at Colstrip also indicates the positive impact of extracurricular activity involvement and higher grades on completing school. Although school experiences such as suspensions, absences and transfers have no effect on dropping out, again, personal characteristics do. Females and Indian students are more likely to drop out, even taking into account the performance levels of students and their participation in school activities.

The analyses presented suggest the following:

1. Indian and non-Indian students at Colstrip experience schooling differently in terms of their levels of academic success. Additionally, females and males have different levels of school performance with girls out-performing boys. To the extent that students experience problems which lead to transfers, suspensions and absences, they have less academic success. However, extracurricular activity involvement increases the probability of higher levels of school performance. Even taking this into account, Indian students are still more likely to have lower levels of school performance. Therefore, efforts to reduce school problems, improve academic performance and increase access to school activities are possible avenues for improving the school performance levels of students, particularly Indian students. 2. In relation to dropping out of high school, Indian students and girls are much more likely to make such a decision, although involvement with school activities and higher grades do make a difference. Therefore, efforts geared to increasing school activity involvement may not only lead to greater engagement with school and higher grades, but may also help to keep students in school through graduation. In particular, activities accessible to Indian students and girls are likely to make a difference in dropout behavior.

**Summary and Conclusions.**

We can now consider the overall research findings and policy recommendations in light of these results. First, we will summarize the findings related to school performance followed by consideration of the dropout behavior results.

School Performance.

We may make the following summary statements about the school performance results:

1. For all Indian students, school performance levels are affected by home town and reservation origins, school choice and school experiences. In particular, residence in Busby (compared to Lame Deer) positively influences school performance while being from Crow (compared to Northern Cheyenne) has a negative effect. Choosing to attend St. Labre and Busby schools (over Colstrip) positively influences school performance levels while suspensions, absences and transfers have negative effects on mean GPA.

2. Within the three school contexts, the effects of the being from Lame Deer are negative at the two Indian schools but not at Colstrip public school. Being from the Crow reservation also has a negative effect on school performance at St. Labre. The school experience variables, suspensions, absences and transfers, generally have negative effects on school performance, but are significant only at Colstrip. However, extracurricular activities have a significant, positive effect on mean GPA at both Colstrip and St. Labre. Only Lame Deer residence has a significant effect on school performance at Busby, but the signs of most coefficients are generally consistent with those of the other schools.

3. The analysis of school performance at Colstrip revealed that being female and Indian both have negative effects on mean GPA. Additionally, school performance is negatively affected by transfers, absences and suspensions, while it is positively affected by involvement with extracurricular activities.

Using the data presented in both Part I and II, we may relate our project findings to

those of earlier studies and our substantive interests. From the findings presented in Part I, we can confirm the continuing difference between Indian and non-Indian students' school performance indicated by other studies of majority and minority students' educational achievement. Our study found that Indian students had lower GPAs than non-Indian students.

In terms of the effects of individual and family characteristics, we considered the effects of gender and home town and reservation origins on school performance. While our initial analyses indicated that gender had little effect on Indian students' performance levels overall, the analyses of Colstrip public school found that being female had a very positive effect on school performance within that school population. These findings contradict studies which have found higher performance for boys than girls.

Our measures of community residence, which indicate roughly the effects of cultural and other family or social differences within the Northern Cheyenne reservation, were revealed to affect school performance: residence in Busby had a positive effect compared to Lame Deer, while residence in Lame Deer had a negative effect at Busby and St. Labre. Similarly, school performance was negatively affected by being from the Crow reservation. Both of these results suggest that social and cultural differences as well as family/community allegiances may affect the schooling of Indian students. Such findings indicate the need to examine more closely exactly which dimensions of social and cultural formations, such as community residence and tribal or reservation affiliation, affect the school experiences of students and the mechanisms by which this may occur.

Unlike the previous studies of the influences of family background on students'

attainment, our study found that characteristics of families, such as family structure, parents' high school education and employment status, had little to do with students' academic performance levels. Since we had only a few measures of family background, it is possible that these measures were not the most meaningful within this reservation context. Future research should address the need for better indicators of parental involvement with their children's schooling as well as their social and economic standing in the reservation community.

We may also evaluate our findings in light of the research by Coleman and Hoffer (1988) about the different effects of private and public schools on school achievement and dropout behavior. For example, their study found that Catholic, private school contexts had a positive effect on minority students in that they were more likely to have higher levels of school performance and lower levels of dropping out than in other private schools or public schools. Our study looked at two measures of school performance in Part I: standardized tests and mean GPA. The findings demonstrated higher levels of school performance (for standardized tests) among Indian students attending the public school, although performance levels were next highest at the Catholic private school. The lowest levels of school performance were found at the Tribal high school. These results contradict the findings of the Coleman and Hoffer study. On the other hand, Indian students had higher mean GPAs at the two Indian schools than at the public school overall.

Moreover, school experiences were found to have the most influence on school performance within the context of the public school. That is, problems such as higher levels of transfers and absences were more likely to negatively affect Indian students' performance

at the public school. Additionally, extracurricular activity involvement played a positive role in improving school performance. Such findings suggest that school performance among Indian students at Colstrip is least affected by personal or other background factors, and most affected by what happens within the school itself. However, when we examine more closely the effect of being Indian compared to being non-Indian within the public school environment, we see that ethnicity as well as being female strongly affected how well students did overall. We may conclude, therefore, that the public school environment provides somewhat greater opportunities for Indian students to succeed academically without the effects of community or other background characteristics. However, ethnic status does make a difference in the success levels of Indian students relative to non-Indian students and to Indian students at the two Indian schools.

In contrast, community and reservation origins have important influences on school performance along with extracurricular activity involvement at the Catholic school; Lame Deer and Crow reservation origins both had very negative effects on performance. Similarly, Lame Deer residence was found to be the single most important influence (negative) on school performance at the Tribal school. Thus, community and reservation origins along with involvement in the social life of the school appear to make the most difference in academic success within the two Indian school environments.

The findings of this study indicate that, in general, for Indian students from communities of the Northern Cheyenne reservation, choosing the primarily Indian, Catholic private school may have more of a positive effect on school performance levels. Indian students from Lame Deer, however, seem to have a problem with academic success at all

three schools, although they may find their Lame Deer origins to have the least effect overall on their performance at Colstrip. School climate, specifically including greater encouragement for Indian students to become involved with extracurricular activities, is likely to have the desired effect of increasing their engagement with school and improving school performance levels. Given the importance of the choice of school attended, we may also hypothesize a connection between students' perceptions of the school they chose to attend and school activities with which they were involved. Although the analysis of school choice presented in Table 1 did not indicate a selection process other than location which influences the school students chose to attend, the findings in Table 2 suggest that school choice is important for performance.

Programmatic actions considered by the public school to improve school performance may address problems with school climate and school experiences of Indian students by increasing the school activity involvement of Indian students prone to absence, suspensions or who do not participate. Such actions should be designed to improve the accessibility of social activities to Indian students as well as provide for academic opportunities.

Efforts may be made at the Tribal School and Catholic School as well to address the negative effects of being outsiders based on either cultural or social differences. Other programmatic activities may be made to increase engagement with school through increasing extracurricular activity involvement, a factor which appears to strongly influence student performance levels.

In addition to efforts to improve the school experiences and engagement of Indian students with school, addressing the social relationships or climate within the school may also

be an important source of influence for improving school performance. Because each school has a different set of relationships within its unique context, different types of actions or activities may be appropriate. However, the point in each case would be to decrease differences between groups of students which appear from the data to have effects on school performance levels. Whether the distinction is between Indians and non-Indians at Colstrip, between students from different reservations at St. Labre, or between residents of different areas on the reservation at St. Labre and Busby, efforts to improve social relations and academic opportunities for all these groups may well enhance school involvement and performance.

Dropout Behavior.

Turning to the evidence presented concerning dropout behavior, the following summarizes our findings:

1. Important influences on dropout behavior for Indian students overall include community residence, family structure, parents' high school completion, involvement in extracurricular activities and mean GPA. Residence in Busby (compared to Lame Deer) appears to have a positive effect on school completion as do all the other variables except family structure. Data for this item indicate that being from a single-parent home has a negative influence on finishing school. Of the school experience variables, school performance and extracurricular activities have the most influence on dropping out. Mean GPA is affected by school experiences which, in turn, affects dropout behavior.

2. Within the contexts of the three schools, many of the same influences on dropout

behavior are at work. However, within the two Indian schools, having an adult at home with a high school diploma or GED is much more important for finishing school than at the public school. At Busby Tribal school, the effect of being from a single-parent home has an especially negative effect on finishing school. Among the school experience variables, the role of school performance is important in each of the school contexts, although extracurricular activities are more important at Colstrip public school and St. Labre Catholic school than at Busby.

3. Dropout behavior at Colstrip school is affected by both school experience variables found to be important in previous analyses, school performance and extracurricular activity involvement. Additionally, individual attributes, gender and ethnicity, are also highly associated with dropping out such that members of these groups are much more likely to drop out of high school.

Earlier studies of the effects of dropout behavior suggested that Indian girls and boys were equally likely to drop out while Indian students were found to have a higher dropout rate than most other students. The findings of our study indicate that girls are still just about as likely as boys to drop out except within the context of the Tribal school where girls drop out more often. Our findings comparing Indian and non-Indian students at Colstrip showed that Indian students have higher dropout rates.

Results related to the effects of home town and reservation residence suggest that community origin has an effect on dropout behavior. Although we do not know the specific dimensions of Busby residence, for example, which positively affect finishing school compared to other communities, we have observed that Busby has one of the highest

percentages of high school and GED graduates among adults on the reservation. We have also noted the negative effect of living in Lame Deer on school performance at all three schools and on high school graduation at Colstrip. Since we know that Lame Deer students do not perform as well and that they are more likely to drop out, this could explain why Busby school has the highest dropout rate and yet Busby residence has a positive effect on performance and graduation compared to Lame Deer. It is the Lame Deer students attending Busby school that are more likely to drop out while Busby residents do relatively better. The effects of both of these communities will require further investigation before we can gain a more complete understanding of exactly how community residence affects school completion.

With regard to family background characteristics, the findings generally upheld previous research concerning the role of family structure in the school completion process. These results can be contrasted with the school performance analyses in which the family variables had little influence on students' performance levels. The finding that students from single-parent homes were more likely to drop out is consistent with other studies of family traits. However, this influence was more important at Busby Tribal school than the Catholic or public school. The effect of parents' education on dropout behavior also was consistent with previous research on the influence of parents' education on the educational attainment of their children. Since this variable was most important at the two Indian schools, it seems likely that students attending these schools needed more parental support for educational attainment. The last variable, parents' employment status, however, did not have the expected importance for students' school completion. As suggested above, future research

should include more appropriate or relevant measures of the socioeconomic status of parents in order to better determine the influence of this dimension of students' background.

Finally, we can consider our dropout results in relation to studies focusing on the effects of school experiences and school contexts. The findings of this study (Part I), again, contradicted the results expected using Coleman and Hoffer's study: dropout rates were the lowest at the public school rather than the two private schools. However, of the two Indian private schools, the Catholic school showed a somewhat lower level of dropping out among Indian students.

The processes that affected dropout behavior were similar in some respects at the three schools: extracurricular activity involvement and school performance levels were the crucial school experiences influencing dropout behavior. While absences, suspensions and transfers were important influences on school performance, it was a student's academic success and involvement in activities at school that were more likely to affect whether or not they finished high school. In other words, suspensions, absences and transfers had indirect effects on dropping out through mean GPA. However, the different effects of personal and family background influences on dropout behavior among the three schools indicated that different processes occurred in the three school populations.

These results suggest that school contexts do matter. However, unlike the findings of Coleman and Hoffer, the most supportive school environment for completion of high school is not necessarily found in the Catholic private school. On the one hand, students' performance in the public school was not affected by whether they received support for schooling at home or whether they were from an intact family. On the other hand, Indian

students in the public school may have had a more difficult time staying in school through graduation. In this school environment, being Indian and/or female made a big difference in whether a student graduated, even after taking into account school engagement factors, performance and activity levels.

In the private, Indian schools, however, dropping out was more likely despite the fact that, overall, Indian students' performance levels were positively affected by attending these schools compared to Colstrip public school. Of particular importance in these contexts was support for schooling from adults at home. Also, positive school experiences, particularly, academic success and involvement with extracurricular activities made a difference in graduation. These were of special significance at the Catholic school. In terms of the observations made by Coleman and Hoffer of greater support for disadvantaged students within Catholic private schools which ameliorated poor home environments, our findings indicate that it was a balance of school and family experiences that contributed to students' success in this environment. Without either one or both of these sources of support, students were more likely to drop out. This suggests that the Catholic school environment may not have been able to provide Indian students who have "deficiencies" in terms of academic ability or family support with the additional help needed to perform well or to graduate.

In this analysis, therefore, we may conclude that the public school has more of the characteristics associated with the Catholic, private school context that Coleman and Hoffer identified. In that study, minority students who were at risk of dropping out due to poor performance, excessive absences and discipline problems, benefitted from elements of the

Catholic school environment which seemed to lessen problems such as lack of support from family for education. An important finding for our study is that minority students attending the public school in this study still suffered disadvantages related to their ethnic status as American Indians. These students were still more likely to perform at lower levels and drop out more often than the non-Indian students. However, their dropout rates at the public school were lower than the private school Indian students.

A possible explanation for these results is related to the situation with regard to choice of schools. In essence, the private schools appear to act as community schools in much the same way that public schools are community schools in most areas of the country. That is, students generally attend the school that serves the community in which they live. On the other hand, Colstrip public school is more similar to a private school which is located outside the community and has a somewhat wider range of programs and services to offer students. Moreover, the public school environment appears to have had the same kinds of effects on improving Indian student performance and school completion that we would expect from a private, Catholic school, based on the findings of national studies.

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