



***STARTING CED ON THE  
CROW INDIAN  
RESERVATION WITH  
AMERICAN INDIAN SCIENCE,  
TECHNOLOGY AND ENGINEER  
CONSORTIUM  
2001***

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**Community Economic Development Program**

**Southern New Hampshire University**

**PROJECT CONTRACT FINAL REPORT**

**Title: The Apsaalooke STEM Project Is To  
Help Students In The Local High  
Schools Using The Community  
Economic Development.**

**Tool: Lessons Learned**

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## **INTRODUCTION**

In an effort to best utilize the human, natural and financial resources of the Crow Tribe, the Crow Tribal Council established educational programs and an institution to better educate the membership. The resources are there, but the majority of the tribal members do not understand the concepts of community economic development (CED). To develop the valuable resources and meet the needs of the people and to improve the social and economic conditions, the people need to be enlightened in the area of community economic development. Members of the Crow Tribe, who comprise the Crow Tribal Council, felt the best method to better utilize the Crow resources for future generations was to educate the adolescent.

As part of the efforts to maximize the Crow resources, the Crow Tribal Council established the Little Big Horn College as an educational institution to teach students and interested adults, who want to major in modern science, technology, engineering, and math. Thus, the Apsaalooke Science, Technology, Engineering, and Math (STEM) Project was formed at the college, which provided critical academic development and support services to high school students and STEM majors at the college by establishing “Two Plus Two” agreements with the high schools located near and on the Crow reservation, which are: Hardin, Lodge Grass and Plenty Coups. Little Big Horn College provided guidelines in a packet custom designed and arranged according to science, technology, engineering, and math curricula. This on-going project prepared students at the high school level who have ambitions to become STEM majors at the college.

Upon the graduation of STEM students from college, it is with the intention that the students will re-invest their knowledge to identify maximum methods to develop the human, natural, and financial resources of the Crow Tribe.

My project's objective was to educate indigenous people, strengthen and consolidate CED, provide leadership, design, improve and engage direct and indirectly all activities necessary to further my main purpose for CED based on modern science, technology, engineering and math.

### **STEM TEAM**

The STEM Team was made up of four faculty members, and myself as the coordinator. Two added personnel from the Crow Tribal Administration were Sharon Peregoy, Chairman of the College Board of Trustees of Little Big Horn College, and Clifford Birdin Ground, Tribal Chairman of the Crow Tribal Council as the advisors. The STEM Team comprise of all Native American Indians who live on or adjacent the Crow Indian Reservation

### **DEMOGRAPHICS OF THE CROW NATION**

Little Big Horn College is a public two-year **community college chartered by the Crow Tribal Council**. The college is located in the town of Crow Agency, Montana, *Ashkuale*, the capital of the Crow Indian Reservation in south central Montana. The LBHC Associate of Arts programs are designed with seventeen options. The LBHC faculty is highly educated and well prepared. The College has chosen fields of study that are directly reflective of the economic and job opportunities and potentials on or near the Crow Indian Reservation area.



The **LBHC student body** is comprised of Crow Indian tribal members (90%), members of American Indian tribes from the Intermountain west (8%), and residents of Big Horn County (2%). Little Big Horn College has an open admissions policy, and as a public institution, welcomes enrollment from any adult 18 years of age with a high school diploma or GED. All LBHC students commute to campus.

The **college campus** is located in the town of Crow Agency, on the banks of the Little Big Horn River. It is adjacent to the Crow Indian Agency of the Bureau of Indian Affairs and the Crow Tribal Housing Authority headquarters.

The **college facility** has 35,000 square feet of educational space situated on two acres of wooded river valley. The college building trades classes have remodeled and made additions to the college building since 1983.

The **Library** holds 18,000 volumes/items, and has the premier collection of print/video Crow Indian related material. The Library is fully automated, and is a member of a seven-member college/university union catalog, giving LBHC student access to a million item collections through on-line access.

A **campus wide network** provides maximum access to the computer information system, software, and Internet. The **Archives** provides seven hundred feet of primary source materials, photos, tapes and videos of the Crow Indian culture and history.

The college has **major laboratory** facilities in computer science, the life and physical sciences and in business and economic development. **Community services** that include the Extension Project for Economic and Community Development and the Tribal

Business Information are located in trailer buildings adjacent to the main campus building. The educational collaborative, the Rural Systemic Initiative, to improve math, science and technology and the Crow Indian School To Work Opportunities Network, have offices among the academic and student services divisions.

### **PROJECT GOALS**

The general objective of this project was

- To educate indigenous people about community economic development (CED) strategies that provide relief to poor, distressed and underprivileged indigenous communities on and off reservations utilizing human, natural and financial resources of the Crow Tribe based on the knowledge in science, technology, engineering and math for a better outlook.
- To provide educational opportunities to students in science, technology, engineering and math with CED.
- To strengthen and consolidate CED by working cooperatively with Little Big Horn College, tribal leaders, and Administration on curriculum development and implementation so that the future of the Crow Tribe is shaped on the state of the art in science, technology, engineering and math.
- To provide leadership training and development in the said areas with CED by identifying and working with education and others to implement training materials.
- To design, test, and incubate models that support CED from science, technology, engineering and math.

- To improve the quality of life of indigenous people of the Crow Nation through the institution of appropriate educational models that teach the fundamentals of farming, land trusts, community owned businesses, that will lead to increased ownership and control of indigenous community assets.
- To engage directly and indirectly in any and all activities necessary or incidental to further main purpose for CED based on modern science, technology, engineering and math.

### **PROJECT RESULTS**

With the knowledge that I gained from the whole CED Program, I found it very challenging and stimulating. This past summer, the Summer Math Institute (SMI) was a success. Twenty-two students signed up for SMI and twenty of them successfully completed the summer session:

1. 10 students from Lodge Grass High School
2. 9 from Hardin High School
3. 1 from Plenty Coups High School

At least two tutor/mentors assisted during summer quarter at \$8.00 per hour. The tutor/mentors helped students tremendously throughout the summer session. The support made an emphasis on learning, critical thinking, and mutual aid (helping and supporting each other). Also the tutors gave the students that much more confidence in themselves in their studies and grades. Those who completed the SMI successfully will be monitored throughout their high school years.



At the end of the summer session, which was on July 18, 2000, a banquet was held for the students, staff and faculty during which awards were presented. All of the students who successfully completed the summer session received a stipend in the amount of \$250 and also received high school credit.

**Why is this project relevant to CED? Why is math and science education relevant to preparing people for work on the reservation?**

It is not to say that tribal members do not understand the concepts of community economic development, but the lack of understanding is more evident as a result of two cultures clashing, i.e., Crow and dominant society – the non-Indian. The significance and importance of this issue, in the minds of the Crow, is caught in the “whirlwinds of the clashing cultures.” The majority of the tribal membership have reached a level in which the individual and family standards, values, and needs outweigh the concern of general welfare.

My efforts to develop a workshop, seminar or training session in Crow Community Economic Development had to be approached, first, in terms of what is important to the Crow, based on Crow standards and values, using non-Indian learned principles and concepts. Second, the approach had to teach the bare minimum fundamentals, starting with teaching the definitions of the terms “community,” “economic” and “development.” And third, my approach will eventually restore the confidence of the Crow people to boost tribal member involvement and the awareness of the resources the tribe has – left unused for many years.

Among the Crow members of the academia, the Little Big Horn College was established to educate the people in skills and knowledge, not only to help themselves to better their quality of life but also to contribute their knowledge to help others see the many opportunities the Crow Tribe can utilize to improve the social and economic conditions of the Crow Nation. In the attempt, the academics identified courses in which students can be educated into the 21<sup>st</sup> Century, i.e. science, technology, engineering and math. In the course of my work at the Little Big Horn College, I served as a coordinator for the Science, Technology, Engineering and Math Project (STEM), as outlined in my proposal. As a maxim, and nearly known by all races, "Our future lies in our youth," therefore, I placed my knowledge in the project with CED. It is time to educate our youth in economic development for a better future and a better community of the Crow Nation.

### **PROBLEMATIC OVERVIEW**

**Incoming freshmen at LBHC.** Little Big Horn College incoming freshmen are required to take the ASSET Placement Test for math. An analysis of one hundred (100) incoming freshmen revealed that students from all three major feeder high schools (Lodge Grass, Hardin and Pryor) fell at least ten points below the minimum score required for college level math. Nine (9) out of every ten (10) incoming freshmen students are placed in developmental math, pre-algebra, or introduction to algebra. These students spend three (3) to five (5) quarters in remedial courses (math, language arts and science), making up for poor high school math backgrounds. Incoming freshmen are admitted with a GED score on average less than remedial courses (math, language arts and science), making up for poor high school math backgrounds. Incoming freshmen are

admitted with a GED score on average less than one percentage point lower than the high school graduates.

### **ADDITIONAL LESSONS LEARNED**

#### **What jobs on the reservation require a math/science background?**

A local coal mining operation, Bureau of Indian Affairs, Indian Health Service Unit, Tribal Administration, local schools, the college, and a few small businesses provide some jobs in the said areas to tribal members. Those who have earned degrees in science, technology, engineering, and math, go on and off the reservation to seek employment. It is for most of us, who have made sacrifices to earn our degree, cannot find jobs in our own community because of the lack of community economic development. As I have stated throughout the experience with CED, “the Crow Tribe is vast with human, natural and financial resources,” yet there is not one tribal project, business or enterprise that generates any revenue from our own resources. My proposal, to introduce the Science, Technology, Engineering and Math Project together with CED, is formulated so that if and when the day the Crow Tribe ever utilizes its resources, it will be utilized to the maximum with the state of art knowledge.

#### **What tools of CED were used in the deployment of your project?**

A community has to develop means to boost its economy. I have learned that a community has to have capital and resources. The community city hall; family business; the local farmers or ranchers; perhaps a local post office; a school; a hospital; the local fire department are but a few to mention in a community and are the basis from which a economic development plan may start.

First and utmost, a community has to identify where the income flow comes from and into their community. In nearly all cases, there is a need for a banking institution, where such a bank will not only provide the local “bread-winner” to invest profits and earn interest there from but also to provide opportunities to borrow money – to circulate capital.

Because the Crow Tribe does not have its own banking institution and with a few businesses on the reservation, capital income from the Crow community continue to leak off the reservation into other banks and businesses. The people seek loans, bank and do most of their business in the bigger cities like Billings and Hardin, Montana, and Sheridan, Wyoming. All of which are adjacent to the Crow Indian Reservation.

Through common knowledge, there is always an existence of a governing body, which would also provide plans for economic development. Other interest groups provide a variety of contributions such as grants, endowments, foundations or relief organizations.

However, each community must identify their available resources, i.e., human, natural, and financial. Some communities in our large cities do not have any natural resources. Through observances and experience, available resources are factors and play a significant part in stimulating an economy in any community. I have learned that with a working capital, a banking institution, and available natural resources, there is no limit to what a person or a community can do to improve any economic condition.

## **How does the fact that the Crow are bilingual affect their educational performance?**

**Three-fourths of the students speak the Crow Language as their first language.**

Although the Little Big Horn College is open to the general public, the STEM Project provides tutorial services to Crow students in which the respective courses are explained in the Crow language for better understanding of concepts.

Most of the children still speak the Crow language because in most part the language is spoken at home. That is why the Crow language is the first language. As in other cultures, the Crow Tribe tries to maintain its heritage and culture.

## **Assess the effectiveness of your inputs against the outputs and short-term impact of the intervention?**

In the previous pages I explained the purpose of my project, which represented the input. The effectiveness in combining the STEM Project with CED allowed the students to learn and understand the state of art knowledge and skills in science, technology, engineering, and math. It also targeted how to better utilize human and natural resources. It is taken for granted, among the students, that one day they will earn a degree and to help their people. From my observation and meetings with the student advisors, I have observed that some students are not given the opportunity to utilize their knowledge in the areas of STEM as previously mentioned. A primary reason for this setback is that, again, there is hardly any form of development on the Crow reservation and limited job opportunities. Those of us that are involved in the STEM Project have held meetings with the Crow Tribal Administration to provide expertise to improve their planning offices in community economic development.

Furthermore, I have taken it upon myself to provide a workshop with the Education Department of the Crow Tribe, introducing concepts and the importance of the STEM Project. The response was tremendous and the knowledge was welcomed by all of the members of the committee. The workshop enlightened their views about the whole STEM Project. The workshop had opened other doors for me and I am now scheduling similar workshops such as:

- Budgeting in both personnel and businesses
- Forecasting in finances for various tribal groups and departments
- Why community economic development is important on the Crow Reservation

These workshops are to be conducted in the year 2001.

### **What did I learned personally through this project?**

My main focus in combining the STEM Project with the CED is to enlighten the students to the fact that they will be in the position to decide the use of the human and natural resources for the tribe. For many years, the Crow Tribe, with the various entities on the reservation, attempted to improve the social and economic conditions of the Crow Nation. The youth of our community will someday emerge to provide some important decisions and contribute their knowledge and skills for the people through understanding and knowledge of pertinent issues and participation in community building. I have learned that a student, at the freshman year in high school, should decide on a career, especially in this case, in the field of science, technology, engineering and math. The purpose of the STEM Project is to prepare a student with the prerequisite courses for

college entry. I have observed that when a high school student decided on a major at the freshman year in college, most of the prerequisite classes, with the STEM Project, can be better prepared at the high school level, if such classes were taken. This would allow them to understand the basics and fundamentals. I have seen students from the STEM Project earn their respective degree within three years. While in some cases, when a student finally selected a major in one of the areas, at a later year, prolonged their stay at a college because they have to take the prerequisites.

I also observed that once a student decided to participate in the STEM Project, the student must realize that there are other related courses which play a pertinent part in their major, that should be taken and would be of help after they earn their degree. For example, if one were to take writing courses, he/she should also take computer classes as an addition. The STEM Project, in all efforts, encouraged the participating students to dedicate themselves to the courses of the project.

These are the primary reasons – important reasons – as to why I felt that in order for the Crow Nation to prosper in the future, the Crow Tribe must understand the issues, not only for their own but understand the world outside the Crow Nation. Although the Crow Tribe lives in a different culture, the tribal members, the students must take the initiative to seek a better life for themselves and for the better of the community by plans of community economic development through today's science, technology, engineering and math for the 21<sup>st</sup> Century.



### **How the historical process has eroded the Crow sense of community and solidarity.**

Our ancestor's have passed down from generation to generation how our communities and solidarity were eroded. Such stories are still told and exchanged among the bands or clans of Crow Nation. One example of solidarity is that on a moment's notice by a chief and scouts, a village is conditioned to move about in unison, to pack up in fluid motion and without question, when war parties are approaching against them. During these tense moments, children were disciplined that if any intruder would sneak upon them, even young babies in wraps and toddlers, who are still nursing, were taught to be very still and quiet; so quiet that the enemy would not notice or hear the mothers and their young ones in their hiding place. The importance of disciplining children for times as such was of utmost importance for survival.

Our people were conditioned to listen to the village chief. Everyone relied on the decision of the village chief and no one questioned his authority or actions. Everyone thought for each other and protected each other in spiritual accord. Because of today's vested rights from the U.S. Constitution, to each being vested the right to express opinions; the right to the pursuit of happiness – play a significant part in breaking the spiritual accord we once had. In these days, there was solidarity and the village and the community came first. What was once of spiritual accord is now individual selfness – to each his own.

## **CONCLUSION**

In as far as addressing the needs of the Tribal members, there are approximately 10,270 enrolled Crow members according to the last enrollment records. The enrolled members, from 18 years old and older living on, adjacent to, or off-reservation are targeted area for recruitment. A total of 2,322 live off-Reservation and approximately 7,948 live on-Reservation. The STEM Project provided both English and Crow speaking instructors and tutors to assist them, since sixty-five percent of the students speak the Crow language first and English second. As a result, the college student services, academic support and business offices are conducted in both English and the Crow language.

After assessing the current situation, it was decided that the STEM project would continue to focus and serve the students at the local high schools. The STEM project has greatly increased the knowledge of our young people. The main concern is guidance, leadership and education. Little Big Horn College faculty, staff, and with the help and interest of the community of the Crow Nation, goals are beginning to flourish.